# PURPOSE AND ORGANIZATION OF ECONOMIC STOCKPILING

## HEARINGS

BEFORE THE

## SUBCOMMITTEE ON MATERIALS AVAILABILITY

OF THE

## JOINT COMMITTEE ON DEFENSE PRODUCTION

## CONGRESS OF THE UNITED STATES

NINETY-FOURTH CONGRESS

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# HEARINGS ON PURPOSE AND ORGANIZATION OF ECONOMIC STOCKPILING

TUESDAY, JUNE 8, 1976

U.S. CONGRESS,
JOINT COMMITTEE ON DEFENSE PRODUCTION,
SUBCOMMITTEE ON MATERIALS AVAILABILITY,
*Washington, D.C.*

The subcommittee met at 10:00 a.m., pursuant to notice, in room 2222 Rayburn House Office Building, Hon. Leonor K. Sullivan, chairman of the subcommittee, presiding.

Present: Leonor K. Sullivan.

Chairman SULLIVAN. The Subcommittee on Materials Availability of the Joint Committee on Defense Production will come to order.

I'd like to open with a short statement to set the tone for this meeting this morning.

The Joint Committee on Defense Production was created in 1950 as an oversight committee to monitor activities under the Defense Production Act. Today the Subcommittee on Materials Availability begins 2 days of hearings into the general subject of establishing stockpiles for domestic economic purposes. These would be in contrast to the stockpiles previously authorized under the act for national security purposes only.

This is a controversial subject. We have had the equivalent of economic stockpiles in the agricultural sector since the early days of the New Deal, storing surplus farm commodities when they are in abundance and releasing supplies to the domestic economy, or for sale or donation abroad, during periods of shortages. Yet we have never had a conscious national policy of stockpiling nonagricultural commodities except for defense-related needs.

Should we adopt such a policy now, after a succession of basic materials shortages or foreign embargoes which resulted in soaring prices to industry and to our consumers? What materials would be stockpiled? Under what circumstances would they be released for sale on the domestic economy? What would the existence of such stockpiles do *to* or *for* domestic production of essential materials? How would economic stockpiling affect our relations with foreign producers of the materials we stockpiled? Is economic stockpiling an effective tool for helping to combat inflation?

There are some of the questions we hope to have discussed—and perhaps even answered—in these 2 days of hearings. The proposals for economic stockpiling which have been made in recent years contemplate their achievement through amendment to the Defense Production Act. In our role as "watchdog committee" over that act, the

Joint Committee seeks through these hearings to bring to bear as much information on the subject as possible in order to provide the kind of guidance to the legislative committees of the House and Senate which the Joint Committee is intended to furnish.

In order to understand how economic stockpiling might function, we have to look at some of the ways in which stockpiling for military or national security has actually operated. We shall do so in these hearings. The history of the Strategic and Critical Materials Stockpile shows that although it was intended only for defense purposes, it has been used frequently for economic purposes—but under the guise of security. When American industry has been unable to buy copper or zinc or aluminum or molybdenum or manganese or other stockpiled materials except at very inflated world prices, it has often been successful in having quantities of these materials in the national stockpile declared in excess of defense needs and sold at auction. This has served not only to bolster supplies for civilian requirements but also to dampen the world price, at least temporarily. But always, when such sales have been authorized, many Members of Congress have expressed concern over the danger of depleting supplies needed for security purposes. And, domestic producers have often opposed such sales because of the real or feared price consequences in their markets.

Since the strategic stockpiles have been used, or misused, in this fashion on numerous occasions in the past, should we now consider setting up separate consumer materials stockpiles primarily to combat inflation pressures and to assure adequate supplies for the civilian economy in times of shortages?

Although it was defended at the time in national security terms, the action of the Nixon administration in 1973 in declaring huge quantities of materials in the stockpiles excess to defense needs went beyond its stated purpose. It is apparent that the real aim was to raise revenues for the Treasury through sales of the so-called surpluses. Is this a proper use of stockpiles—as a government investment to be disposed of in order to raise funds or make a profit?

As an inevitable part of our consideration of these issues, we need to know more about the question of whether periodic shortages of commodities are real or contrived. Every time there is a heavy frost in Brazil, there is an immediate worldwide coffee shortage scare, even though the crop which is said to have been damaged is usually the crop to be harvested the following crop year. Sugar prices rise on the news of every hurricane in Cuba even though we don't buy an ounce of sugar from Cuba.

Can we take steps to insulate ourselves from these periodic price crises in imported commodities by stockpiling extra supplies against the day when they might be needed to dampen inflationary developments in any major commodity we use in large quantities? If we *could* do so, *should* we do so? We have tried other devices, such as international agreements to maintain supply and demand in relative balance, but we find, unfortunately, that these agreements seem to run only in one direction—when supplies are suddenly low for any reason, and world prices are rising, the producer countries inevitably seem to find reasons to back out of the agreement and not pour added supplies into the market as they had promised to do.

Secretary Kissinger and the State Department have just suffered a major defeat at the United Nations Conference on Trade and Development in Nairobi in the rejection of a Ford administration proposal to try to stabilize materials markets for the benefit of both producing and consuming nations. Should we now look to our own economic needs in building up adequate supplies of basic materials to keep American workers employed and American prices from skyrocketing when worldwide shortages develop?

I have asked a lot of questions for which I hope our witnesses will have useful answers. Today's witnesses all come from the private sector; tomorrow's are from the Government sector. I do not foresee either unanimity nor easy answers. But the more facts and informed opinions we can adduce, the easier it will be for the Congress and the Government to make the hard decisions confronting us. The problems have grown in intensity in the 30 years since Congress set up many of the existing stockpiles for national security reasons. After three decades of this experience, where do we go from here?

I'm sorry we don't have as many members present as we hoped this morning. We are expecting one or two of the Senators, so when they come in they will just have to pick up where we are.

We are fortunate to have here today a number of witnesses who can give us the benefit of very considerable knowledge on materials problems and informed opinions on how economic stockpiles might affect the domestic economy. I want to welcome C. Fred Bergsten, Senior Fellow at Brookings Institution; Jacob Clayman, Secretary-Treasurer, Industrial Union Department, AFL–CIO; Simon D. Strauss, Chairman of the Minerals Availability Committee of the American Mining Congress; and Timothy Stanley, President of the International Economic Policy Association.

All of the witnesses have been informed that we want you to summarize your statements in 15 minutes and we will incorporate the entire text of your prepared statements in the printed hearings. In that way we will have time to question all four of you as a panel after your opening statements have been made.

We will hear first from Mr. Bergsten, then Mr. Clayman, followed by Mr. Strauss and Mr. Stanley. So, Mr. Bergsten, you may begin.

## STATEMENT OF C. FRED BERGSTEN, SENIOR FELLOW, THE BROOKINGS INSTITUTION

Mr. BERGSTEN. Thank you very much, Madam Chairman.

I will go through my statement quickly and in doing so try to answer some of the questions you raised this morning, in addition to making the points in my own statement that I thought were important as a backdrop for your hearings on this subject.

I start out by distinguishing between physical shortages of raw materials and contrived shortages, or shortages which develop from shortcomings in the way the marketplace operates in the raw materials sector; I argue that there are no problems of physical shortages that we need to worry about and, if there were, stockpiling would not be a proper response to them. So I rule out the issue of physical shortages at the outset.

I then turn to a set of interrelated economic and political problems which in my view do argue for the creation of economic stockpiles by the United States to promote its economic security. For many raw materials, the United States cannot rely on market forces to provide it with assured access at reasonable prices, and I then argue that there have been some fundamental changes on both the demand side and the supply side of the international commodities markets, practically all of which are international markets, which suggest quite a different structural situation from what we have had in the past.

On the demand side, for example, business chooses to hold increased inventory levels due to higher rates of inflation. Higher inflation has also increased investor demand for raw materials with a number of primary products, both metals and in some cases even agricultural commodities, taking on a quasi-monetary function like silver and gold have had in the past. A number of those commodities, along with other real assets such as land, during a period of high inflation has kicked up the demand curve for raw materials and moved it to a structurally higher level.

Incidentally, there's been a lot of empirical work going on at Brookings and elsewhere about the developments in the commodities markets over the last several years, and what comes strikingly out of all those studies is that the traditional relationships between economic growth and raw materials demand—a straightforward relationship in much of the past—simply does not explain what happened in the last few years in terms of both the massive price rise in 1973 and early 1974 and then the subsequent sharp decline. Other factors have come in, a major one of which is often called speculation, or what I call investment demand for commodities as a result of the world's move to higher levels of inflation and the attraction of real assets relative to money assets.

At the same time, and perhaps even more critically, I think there has been a real shift in the supply function that brings forth the needed output of raw materials. It's quite clear that the capital costs of the massive investments needed to bring new mines into production have risen sharply. Environmental requirements have added to these rises. In many cases, the materials industries have become sufficiently concentrated that the benefit to supplying companies from price rises cannot be countered by normal market forces, what economists call oligopoly conditions.

Normally you get new investment, either from existing firms or new firms coming into the market, but that simply does not seem to be happening in a number of the raw materials sectors.

Furthermore, many of the needed investments to increase output have to be undertaken in countries—and here I include Canada and Australia, which are critical for a number of raw materials, as well as most developing countries—which are unwilling to accept foreign investors on traditional terms. Australia has moved back in that direction now, but I think the general direction still holds.

Since the countries where the raw materials are located are not willing to accept private capital, which has to come in for the production to take place, on the traditional terms, the firms have become leery and governments of the home countries where the firms are

based, like the United States, have become less willing to support investments through government insurance and guarantee programs of the type that our own Overseas Private Investment Corporation in past years was willing to help out with.

So international factors clearly play a major role in assessing the severity of the raw materials production for the United States. Of the 36 key materials outlined in a table last month by the Department of the Interior, which I attach to my statement, the United States last year imported more than one-half of its needs of 21 of those 36 key materials and more than 25 percent of its need of 30 of the 36 materials. I don't think we should be mesmerized by these percentages. Some people say, "If we're more than 50 percent dependent it's a problem, and if we're less than 50 percent dependent it's not." I think that's wrong. When the oil crisis hit we were only importing about a quarter of our petroleum needs, and any mechanical formula of 50 percent or even 33 percent would have missed what turned out to be the most critical imported material of all. But the numbers do show that for 30 out of 36 materials, we import more than 25 percent of our needs.

Beyond the economics involved, commodity policy has become a central issue in the increasing political confrontation between developing and developed countries, further dampening the outlook for stable supply conditions.

Now in the best of circumstances—still talking about the supply of materials—the large investments required by mining projects are extremely lumpy. They are big, one-shot operations. They have long gestation periods and those gestation periods, for the reasons I have mentioned, have now become even longer.

So from what I put together as having happened on both the demand and supply sides of the market, I view the world as undergoing a shift from the traditional buyers' markets for raw materials to sellers' markets for many of those materials. That shift to sellers' markets provides fertile soil for market manipulation by sellers, and in several commodities has already been furthered by such manipulation. Once the market forces are moving in their direction, it enables them to manipulate and get further gains. In that environment we have seen cartels of private firms as in the case of uranium, of governments as in the efforts of the copper producers, and joint cartels where the producing companies and the countries have common interests in raising prices, thereby maximizing profits for both, and holding down levels of supply to keep prices up, to form what is really the most powerful of all kinds of market manipulation. That's obviously been the case in oil where the international oil companies have operated as the agents of OPEC. In my view, it's increasingly clear in the aluminum sector where the big multinational aluminum companies are operating not quite as hostages of the International Bauxite Association but clearly in tandem with their goals. One has to remember the really historic change that's going on in terms of relations between mineral-producing countries and the companies that operate in that field. Traditionally, there has been a view that the companies dominate the countries. Now we are seeing an historic shift with the countries harnessing the companies.

If Britain or France or anyone else could ever rely on "our multinational firms" to go out and drive a hard bargain for our country, in terms of assured access of materials for cheaper prices, that era is clearly passed. The most interesting vignette on that comes from the oil case. The day after the oil embargo broke out, Prime Minister Heath of Britain summoned the top management of British Petroleum and informed them that Britain was not going to get one drop less petroleum than it would otherwise. They informed him that Britain would get the same pro rata share as any other country. The Prime Minister pounded his fist and shouted, "What good is it to me that you're a British company?" Remember that the British Government owned 49 percent of BP. They said, "Sir, we're a multinational company and if you want to change that, pass a law." In fact, the data show after the fact that Britain got a little less than one would have thought it might have under the embargo situation. One can't rely on the private firms in the way some have thought we could in the past.

All these changes which lead to contrived shortages add to the economic and political problems which already distort traditional market mechanisms for raw materials.

These changes, significant as they are, do not imply that the United States will face persistent materials problems for the indefinite future. They do, however, suggest that sizable problems from some materials should be expected on a recurring basis, with sufficient economic costs that remedial government policies should be seriously considered.

Economic stockpiling is only one of the many policy options available to the United States to deal with this set of problems. There are a whole variety of options: Substitution at various stages of the production process, more recycling, efforts to find new ways to finance world output like the International Resources Bank that the United States proposed in Nairobi and was voted down a week ago, but which government officials say they are going to keep pushing and try to revive as soon as possible.

So any comprehensive national materials policy would include a whole variety of steps. All of those steps, however, have shortcomings. The efforts to find substitutes at all levels are very long-run in nature. Recycling has finite technical limits and it's extremely costly at some levels. As I indicated, we cannot rely on "our multinational firms" any more.

So economic stockpiling, in my judgment, must play an important role in any serious national effort to assure access to raw materials at reasonable prices. By contrast with most of the alternatives, it can be created fairly quickly—not overnight, but fairly quickly. It is profitable once put in place. It requires no new technology and can readily be internationalized, to cut costs and reduce political frictions. The United States, of course, has already decided to create an economic stockpile for oil, the most critical commodity of all, under the comprehensive energy act passed last year. France and Japan are both now in the process of creating stockpiles of their own to deal with the array of circumstances I have dealt with.

I would therefore suggest that the United States should seriously contemplate constructing what I call a National Resources Stabiliza-

tion Inventory (NRSI). The term "economic stockpiling" has taken on some adverse connotations, so I suggest a new term.

The objective of the enterprise would be threefold: Avoidance of supply interruptions and excessive price rises which would exacerbate domestic inflation, both by intervening directly to counter such developments and by deterring them in the first place through its very existence. Second, the inventory should check excessive price declines which would discourage investment and hence deter the creation of adequate productive capacity to meet future demand. Third, it should reduce the risk of international conflict over commodities, both among consumer nations—which might otherwise scramble competitively for sources of supply, as in the initial reactions to the oil embargo—and between consumer and producer nations. It would be, hopefully, like a nuclear deterrent—you'd never have to use it.

In my view, cutbacks in production to keep prices high, as OPEC is doing now, would be a clear candidate for reaction through a national resources inventory. That's a controversial issue, partly because of the difficulty of determining what exactly is happening in the market—what's the proper response, what are the economic costs? I would think that would be one of the major issues that you might want to get debate on during these hearings.

My third objective would be to use the inventory to try to reduce the risk of international conflict over commodities, both among consumer nations and between consumer and producer nations. We should not forget that the first wave of reaction to the oil embargo was an unseemly scramble among the consuming nations, each trying to get its own special deal that it thought would get it improved access to oil, and that led to a lot of tension and potential conflict among the major industrialized nations.

In addition to the obvious conflict between consumer and producing countries which gets into the whole question of the North-South dialog, a number of issues arise. I focus on five in my statement and try to give brief suggestions about them.

First, what commodities should be included? Obviously commodity problems are highly individualized. Case-by-case studies would be necessary to determine which materials to buy for the inventory. I believe that two criteria should be determinative (a) the importance of the commodity to the U.S. economy and (b) our degree of import dependence.

There are several materials where U.S. import dependence is relatively low, but whose economic importance is immense. As I mentioned earlier, oil is a case in point; now our oil dependence is rising sharply, but at the time of the embargo it was only 25 percent. Yet its obvious economic importance would make it high, or at the top, on anybody's list for an economic stockpile, had we been thinking in those terms at that time.

At the other extreme, there are metals where the United States depends wholly on imports but whose economic impact is small. The platinum group metals and cobalt might be examples. Including those materials in the strategic stockpile may make sense because of their irreplaceable nature for particular defense purposes, but their

overall economic impact is not very great and therefore they might be of lower priority for inclusion in an economic stockpile.

Finally, there are, of course, metals where both U.S. import dependence and economic importance rank high. Examples are bauxite, tin and perhaps nickel. A priori, they would rank at the top of the list of products to be considered, although commodities with smaller import ratios but greater economic importance might still deserve priority in the final analysis.

Again, I think the size of the individual inventories could be derived straightforwardly by comparing the probability of supply interruptions or monopoly prices on the one hand and the cost to the U.S. economy of such events on the other. The Department of the Interior has made such a calculation for the aluminum industry and published it, and presented an array of optimum stockpile sizes and prices under varying probabilities. That kind of methodology, suitably refined, could be readily applied to other commodities.

I should indicate that, in my view, a national economic inventory should err toward the high side in its accumulation of the commodities. The buffer stocks which have failed in the past, such as that of the International Tin Agreement in 1974, have done so because they were too small. As a net consuming country of the commodities involved, by definition, it is in our interest to assure that economic inventories—be they purely domestic or international—are large enough to cope with situations of sharp rises in demand. It is for protection against precisely these situations that we want the reserves in the first place; so it would be inconsistent to cut costs marginally and risk aborting the whole enterprise. Needless to say, the deterrent and negotiating leverage provided the United States by its NRSI would vary directly with its magnitude, but I would err on the high side rather than on the low side in an effort to cut costs in the short run.

On the other hand, sizable government-held inventories could discourage domestic production of the materials involved—which would run counter to one fundamental objective of an overall materials policy. To minimize this risk, the ceiling price at which sales could be made must be high enough to permit adequate profits on domestic productions and particularly to promote new domestic material sources. The inventory could in fact buy such output directly to enable the firms to make their initial production runs.

Should the inventory be maintained in public or private hands? In my view, that's a straightforward question which should be answered by holding it in public hands. In order for the Government to have effective control over disposal and purchase policy, it seems to me government should have control of the materials.

A subsidiary question is, which government agency should maintain the control? There are a variety of possibilities that have been suggested. My own preference would be for a government corporation, perhaps like the Reserve Metals Corporation in World War I that Simon Strauss—excuse me, World War II, he's not that old—had a great deal of experience with, which I think would be perhaps the most insulated from short-run political pressure.

Chairman SULLIVAN. Mr. Bergsten, we're going to have to cut you off. I think you have gone over the 15 minutes. I noticed you're reading most of this from your testimony that will be included in the record in full.

Mr. BERGSTEN. Fair enough.

Chairman SULLIVAN. So, much as I dislike to do so, I will have to cut yours off now so that we will have time for the other witnesses.

[Prepared statement of Mr. Bergsten follows:]

STATEMENT OF C. FRED BERGSTEN, SENIOR FELLOW, BROOKINGS INSTITUTION

THE PROBLEM

There loom no physical shortages of raw materials. If such shortages ever were to appear, stockpiling would not be a proper response in any event; substitute materials would have to be found, or traditional end-uses foregone. For purposes of discussing stockpile policy, the issue of physical shortages should be ignored.

There are, however, a set of interrelated economic and political problems which argue for the creation of economic stockpiles by the United States to promote its economic security. For many raw materials, the United States cannot rely on market forces to provide it with assured access at reasonable prices.

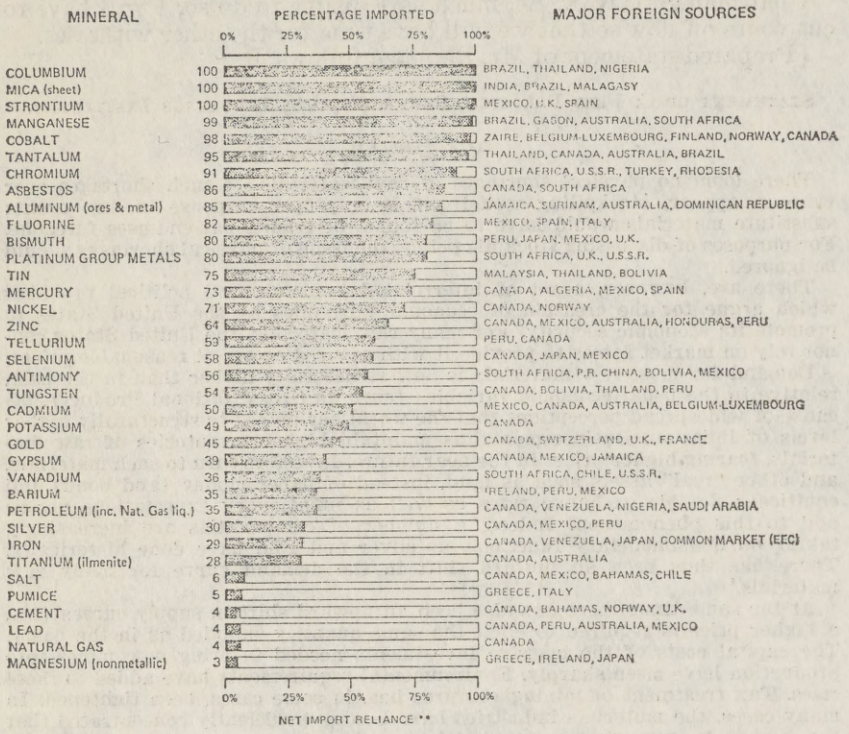
Demand for most raw materials is now structurally higher than in the past, relative to the usual economic variables (such as Gross National Product), because of widespread perceptions that the world has moved to structurally higher levels of inflation. Businessmen thus maintain higher inventories of raw materials, fearing higher prices in the near future. Investors turn to such materials, and other "real" assets such as land, instead of paper money (and bonds and equities); flexible exchange rates as well as inflationary expectations per se add to this phenomenon. Indeed, a number of commodities are increasingly taking on quasimonetary functions, as silver and gold have done historically. There has thus been an upward shift in the demand curve for many raw materials.[1]

At the same time, there has also been an upward shift in supply curves (i.e., a higher price is required to elicit the same quantity supplied as in the past). The capital costs of the massive investments needed to bring new mines into production have risen sharply. Environmental requirements have added to these rises. Tax treatment of mining ventures has, in some cases, been tightened. In many cases, the materials industries have become sufficiently concentrated that the benefit to supplying companies from price rises cannot be countered by normal market forces.

Furthermore, many such investments must be undertaken in countries—including Canada and Australia as well as most developing countries—which are unwilling to accept foreign investors on traditional terms. In turn, governments of the home countries of the private firms have become largely unwilling to support such ventures (e.g., in the United States, through the insurance and guarantee programs of the Overseas Private Investment Corporation). International factors thus play a major role in assessing the severity of the raw materials problem for the United States. Of the thirty-six key materials, the United States in 1975 imported more than one-half of its needs of twenty-one of them and more than 25 percent of its needs of thirty (as shown in the following chart, prepared by the Bureau of Mines). Beyond the economics involved, commodity policy has become a central issue in the increasing political confrontation between developing and developed countries, further dampening the outlook for stable supply conditions.

[1] Some observers believe that this shift is further accelerated by a growing synchronization of the world's major economies. However, the degree of synchronization may now be declining because of the widespread adoption of flexible exchange rates.

## IMPORTS SUPPLIED SIGNIFICANT PERCENTAGE OF MINERALS AND METALS CONSUMPTION* IN 1975




* APPARENT CONSUMPTION = U.S. PRIMARY + SECONDARY PRODUCTION + NET IMPORT RELIANCE

** NET IMPORT RELIANCE = IMPORTS – EXPORTS ± GOV'T STOCKPILE AND INDUSTRY STOCK CHANGES

BUREAU OF MINES, U.S. DEPARTMENT OF THE INTERIOR (import-export data from Bureau of the Census)

In the best of circumstances, the large investments required by mining projects are extremely lumpy. They have long gestation periods, both as cause and effect of the traditionally cyclical nature of the markets for raw materials. For the reasons just cited, and in the absence of significant technological advances, these gestation periods have now become even longer.

This shift from buyers' to sellers' markets[2] for many raw materials provides fertile soil for market manipulation by sellers, and in several commodities has already been furthered by such manipulation. Both private (e.g., zinc and uranium) and government (e.g., copper and phosphates) cartels are involved, often working in tandem with each other (e.g., oil and bauxite[3]). Hence contrived shortages add to the economic and political problems which already distort traditional market mechanisms for raw materials.

These changes, significant as they are, do not imply that the United States will face persistent materials problems for the indefinite future. But they do

[2] All of these arguments are expanded in my "The New Era in World Commodity Markets," *Challenge*, September–October 1974.

[3] For a detailed case study of the International Bauxite Association see my "The Second OPEC," *Challenge*, July–August 1976.

suggest that sizable problems from some materials should be expected on a recurring basis, with sufficient economic costs, that remedial Government policies should be seriously considered.[4]

Commodity prices rose at an historically unprecedented pace from 1972 through early 1974. They continued to accelerate long after the world recession had begun, in direct contradistinction to their traditional role as a leading indicator of changes in economic activity. After a sharp decline, they have recovered dramatically (a) though the recovery is still at an early stage—and has not yet even begun, or become assured, in several key countries—and despite (b) the existence of large amounts of unutilized industrial capacity in all countries and (c) large inventories of many commodities themselves. The empirical evidence strongly supports the view that fundamental changes have occurred in world commodity markets.[5]

## POLICY OPTIONS

Economic stockpiling is only one of many policy options available to the United States to deal with these problems.[6] It can cut use of the raw material itself, by finding alternative inputs (e.g., Georgia clays instead of bauxite for alumina); or the intermediate product using the material (e.g., copper for aluminum); or the final consumer good at the end of the process (e.g., disposable cans). It can recycle more of the product itself, to cut the need for new quantities thereof. It can create standby production capacity to take up slack from normal sources. It can rely on "its" multinational enterprises to assure supply at reasonable prices, or alternatively it can seek new modes of financing to increase world output (like the International Resources Bank proposed by the United States at the recent UNCTAD meeting in Nairobi).

Any comprehensive national materials policy would probably include all of these steps for at least some commodities. All of them, however, have serious shortcomings. The three levels of substitution are all very long-term approaches.[7] Recycling has finite technical limits, beyond which—like any creation of standby capacity—it is extremely expensive. "Our" multinationals have largely joined forces with the governments of the host countries in which they operate, and cannot be viewed as assuring supplies for the home country.[8]

Hence economic stockpiling must play an important role in any serious national effort to assure access to raw materials at reasonable prices. By contrast with most of the alternatives, it can be created fairly quickly; is profitable once put in place; requires no new technology; and can readily be internationalized, to cut costs and reduce political frictions. It is already being implemented here for oil, the most critical commodity of all. France (for $23 million) and Japan (for $100 million) are building wide-ranging economic stockpiles right now, for precisely these reasons.

## CREATING A NATIONAL RESOURCES STABILIZATION INVENTORY (NRSI)[9]

The United States should have three basic objectives in creating a NRSI. The priority goal would be avoidance of supply interruptions and excessive price rises which would exacerbate domestic inflation, both by intervening directly to counter such developments and by deterring them in the first place through its very existence. Second, the Inventory should check excessive price declines which would discourage investment and hence deter the creation of adequate productive capacity to meet future demand. (These first two goals, taken

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[4] Estimates of costs to the United States of increased prices for ten key commodities can be found in Charles River Associates, *Economic Issues Underlying Supply Access Agreements: A General Analysis and Prospects in Ten Mineral Markets*, July 1975.

[5] See Richard N. Cooper and Roger Z. Lawrence, "The 1972–75 *Commodity Boom*," *Brookings Papers on Economic Activity* 1975 :3.

[6] An excellent short history of U.S. materials policies can be found in F. P. Huddle, "The Evolving National Policy for Materials," *Science*, Vol. 191, No. 4227 (Feb. 20, 1976), pp. 654–59.

[7] S. Victor Radcliffe, Senior Policy Analyst, Science and Technology Policy Office, National Science Foundation, reports that "In general, historical experiences indicate that the substitution of a material or a new process for another takes on the order of 20 years." See his "Materials: The Next Crisis?" in Office of Technology Assessment, *Requirements for Fulfilling A National Materials Policy*, 1974, p. 161.

[8] For documentation see Chapter Six of C. Fred Bergsten, Thomas Horst and Theodore H. Moran, *American Multinationals and American Interests*, Brookings Institution, forthcoming.

[9] The term "economic stockpile" has taken on several adverse connotations. Hence I will henceforth refer to a National Resources Stabilization Inventory (NRSI).

together, would obviously seek to reduce commodity price instabilities by dampening price swings on both the upside and downside.) Third, it should reduce the risk of international conflict over commodities, both among consumer nations (which might otherwise scramble competitively for sources of supply, as in the initial reactions to the oil embargo) and between consumer and producer nations.

A number of central issues arise in contemplating the creation of a NRSI. I will focus on five in the remainder of my comments.[10]

*1. What commodities should be included?*

Obviously, commodity problems are highly individualized. Case-by-case studies would be necessary to determine which materials to buy for the Inventory. I believe that two criteria should be determinative: (a) the importance of the commodity to the U.S. economy and (b) our degree of import dependence.

There are several materials where U.S. import dependence is relatively low, but whose economic importance is immense. The best examples are petroleum and iron ore, where the import ratios in 1975 were "only" 35 percent and 29 percent, respectively.[11] Particularly if those ratios are rising, as is especially true for oil, inventorying of such materials should be seriously considered. (H.R. 9597 is defective in this regard; it treats commodities with import ratios below 35 percent as "lowest priority" for inclusion, and hence would have missed oil altogether before 1975 despite its obvious economic importance.) Differences in geographical sourcing of imports should of course be considered, but one should be cautious in viewing even Canada and Australia as "safe suppliers" in view of their participation in several "producers' associations" and aggressive pursuit of resources diplomacy.

At the other extreme, there are metals where the United States depends almost wholly on imports but whose economic impact is small (e.g., cobalt and platinum group metals). For these materials, inclusion in the *strategic* stockpile—because of their critical, sometimes irreplaceable, use in weapons systems—may make sense whereas inclusion in an economic inventory might not.

Finally, there are of course metals where both U.S. import dependence and economic importance rank high. Examples are bauxite, tin and perhaps nickel. *A priori*, they would rank at the top of the list of products to be considered, although commodities with smaller import ratios but greater economic importance might still deserve priority in the final analysis. Japan is initially focussing its stockpiling effort on copper, aluminum, zinc and lead—whereas U.S. import dependence is quite low for both copper and lead.

*2. How large should individual commodity inventories be?*

The size of individual inventories should be derived straightforwardly by comparing (a) the probability of supply interruptions or monopoly pricing and (b) the cost to the economy of such events. The Department of the Interior has made such a calculation for the aluminum industry, and presented a range of optimum stockpile sizes and prices under varying probabilities of (a) a bauxite embargo by producing countries and (b) monopoly pricing action.[12] This methodology, suitably refined, could be readily applied to other commodities.

In my view, a NRSI should err toward the high side in its accumulation policy. Those buffer stocks which have "failed" in the past, such as that of the International Tin Agreement in 1974, have done so because they were too small. As a net consuming country of the commodities involved, by definition, it is in our interest to assure that economic inventories (be they purely domestic or international) are large enough to cope with situations of sharp rises in demand. It is for protection against precisely these situations that we want the reserves in the first place, so it would be inconsistent to cut costs

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[10] These issues are addressed in H.R. 9597, a bill to create a National Economic Stockpile Association introduced by Congressman Rees on September 11, 1975 after an intensive study of the subject by his Ad Hoc Committee. See *Meeting America's Resources Needs: Problems and Policies*, Report of the Ad Hoc Committee on the Domestic and International Monetary Effect of Energy and Other Natural Resource Pricing, of the House Banking and Currency Committee, November 1974.

[11] Even where U.S. import dependence is very low, or non-existent, action by foreign producers can have major price (though not denial) effects—because most commodity markets are true world markets. The massive price increases by foreign phosphate producers in 1974, much of which was emulated by U.S. firms, is a case in point. So U.S. stocks, for feeding into *world* markets, might even be desirable for such products.

[12] Department of the Interior, *Critical Materials: Commodity Action Analyses*, March 1975, especially pp. 31–37.

marginally and risk aborting the whole enterprise. Needless to say, the deterrent and negotiating leverage provided the United States by its NRSI would vary directly with its magnitude.

On the other hand, sizable government-held inventories could discourage domestic production of the materials involved—which would run counter to the fundamental objective of an overall materials policy. To minimize this risk, the ceiling price at which sales could be made must be high enough to permit adequate profits on domestic production. And, particularly to promote new domestic material sources, the NRSI could buy such output directly to enable the firms to make their initial production runs.

*3. Should the NRSI be maintained in public or private hands?*

Some observers have argued that economic stocks should be held by the private sector. In fact, some stocks are of course *now* held in the inventories of private firms. The issue is where to hold the *additional* stocks necessary to provide *national* economic security, which by definition go beyond the level autonomously accumulated by the firms.[13]

It would be possible, of course, to stimulate private firms to hold larger inventories. However, two problems arise: how to determine what proportion of their holdings are additional, and thus should qualify for the incentives (and in fact *increase* the total national inventory), and how to assure government control over the materials so held. My strong preference is for direct government control of any NRSI, just as the government traditionally has controlled the strategic stockpile.

A subsidiary question is which government agency should maintain that control. H.R. 9597 would provide for control by the Treasury Department, which has a good record in managing the national gold stock. Another possibility would be the General Services Administration, with its experience in managing the strategic stockpile—which has in practice been used for economic purposes from time to time—and the potential savings in combining the two for administrative purposes. A third alternative would be creation of an independent government corporation, along the lines of the Export-Import Bank or Overseas Private Investment Corporation, perhaps replicating to some extent the Metal Reserves Company created in 1940 under the Reconstruction Finance Corporation to acquire and dispose of commodity stocks.

The administrative choice should turn on whichever approach could best be insulated from short-run domestic political pressures. Producers seek high floor prices, and resist disposals. Consumers are less well organized, but want low ceiling prices and minimum purchases—despite their own long-term interest in having stocks sufficient to check price explosions in highly inflationary periods. Hence procedures would be needed so that the decisions on floor and ceiling prices, and on purchases and sales, could be depoliticized as much as possible. The current requirement for Congressional approval of sales from the strategic stockpile runs counter to that objective. A government corporation, operating under clear Congressional guidelines but with a good deal of operating flexibility, might be best placed to achieve such independence, with the Federal Reserve Board as a rough model.

*4. How should the NRSI be financed?*

A NRSI would serve a clear function of public policy—promoting the economic security of the United States. As already indicated, the private sector by definition would not provide financing on its own. I would therefore support straightforward financing of the *capital* costs of a NRSI from the federal budget.

A well-run NRSI would earn *operating* profits. It would buy low and sell high, presumably over a wide enough range to cover interest and storage costs.[14] (Studies should be made of previous stockpiling arrangements—our own strategic stock, the International Tin Agreement, the gold and silver stocks held by

[13] In an effort to cut costs in the 1960s, the Office of Emergency Planning (which then managed the strategic stockpile) studied the possibility of transferring its management to private industry. Their consultant on the subject "found high interest costs and storage costs so high as to make it unprofitable for private investors." Reported in OTA, *op. cit.*, p. 151.

[14] This implies a judgment that the NRSI should operate counter-*cyclically* to dampen price swings in both directions. An alternative view is that such stocks should be used only to counter major *structural* problems, such as an embargo or a new price-manipulation scheme by producers.

Treasury—to see how they fared on these criteria, recognizing however that they usually were pursuing different objectives.) Even the capital costs would be matched by a corresponding credit on the asset sheet of the Government. In addition, sizable capital costs might be avoided altogether by using materials now considered excess in the strategic stockpile.

H.R. 9597 would authorize the flotation of special bonds, secured by the stockpiled commodities, to finance its proposed operation. However, such financing could reduce the flexibility of the NRSI in selling its materials promptly when needed and generalized Treasury guarantees would probably be necessary in any event. I see no argument to favor backdoor financing over normal budgetary appropriations.

*5. How would a National Resources Stabilization Inventory mesh with international buffer stocks?*

Two kinds of international commodity arrangements are now being envisaged for particular commodities. One type would be limited to importing countries, which would pool their reserves to (a) reduce costs to each and (b) demonstrate solidarity, as already arranged for crisis situations in petroleum by the International Energy Agency. The other would comprise both exporting and importing countries, as in the International Tin Agreements.

A U.S. national inventory could readily be meshed with either. In an arrangement limited to importing countries, the U.S. stock would simply represent the U.S. contribution to the joint enterprise. Based on standard insurance and pooling principles, costs could probably be cut as a result (and potential political problems among consuming countries preempted). Hence any legislation creating a NRSI should direct the Administration to seek internationalization thereof. However, the needs of different countries for individual commodities differ sufficiently that internationalization would not be possible for all of them (e.g., copper where the United States is virtually self-sufficient but Japan depends almost wholly on imports).

Integration of a NRSI into producer-consumer commodity agreements could prove more difficult. The producers would obviously wish to eliminate any autonomous U.S. control over its own inventory. At the same time, we might wish to retain at least part of the stock under national control to (a) maintain leverage over the producers and (b) see that the rules of international agreements were faithfully implemented. Indeed, the United States should probably employ a two-track strategy of holding national inventories and supporting international commodity agreements—sometimes for the same commodity, as well as for different commodities. Reconciliation of the opposing viewpoints should be possible, however, perhaps with the national reserve used only after consultation with the relevant international authority.

CONCLUSION

Creation of a National Resources Stabilization Inventory for selected commodities should be a major part of a multipronged U.S. approach to providing economic security for the American people, and contributing to international economic security, in a world where failings of the market and contrived shortages are likely to trigger periodic raw materials problems. Such a proposal raises numerous important issues, but all appear soluble. I hope that the Committee will lend its support to such an endeavor.

Chairman SULLIVAN. Mr. Clayman you are next.

## STATEMENT OF JACOB CLAYMAN, SECRETARY-TREASURER, INDUSTRIAL UNION DEPARTMENT, AFL–CIO

Mr. CLAYMAN. Madam Chairman, I have with me Jocelyn Gutchess, who's been central to all of our research and study in this area and I would feel much more certain with her at my side and I think she may very well add to the wisdom of the committee.

Chairman SULLIVAN. Very good. Would you give her title and so forth for the record?

Mr. CLAYMAN. She's part of the firm of Ruttenberg, Friedman, Kilgallon, Gutchess & Associates. She has a considerable background in research in this specific area as well as other economic areas.

Chairman SULLIVAN. Mr. Clayman, may I ask, so that the other witnesses and the audience can hear you more clearly, that you pull the microphone a little closer to you?

Mr. CLAYMAN. Very good. I'll raise my voice.

Chairman SULLIVAN. Thank you.

Mr. CLAYMAN. I listened very attentively to Mr. Bergsten and there's an amazing degree of coincidence in our thinking on this issue. Obviously, that makes him a wise man and in the main we would accept very much of what he has said to you and this committee.

In the interest of time, and I know it's pressing, let me quickly depart from the script and make some general observations. Last year our industrial union department decided to do a special research in this area and to publish our research findings. We retained the research consulting firm of Ruttenberg, Friedman, Kilgallon, Gutchess & Associates to do this study for us and we published it in October 1975. We think it's a worthy study that adds some sense and wisdom to the prospect of developing a national policy on raw materials and, if I may, I would like to insert it in the record and perhaps make copies available to all members of the committee. Although Congress heretofore individually has received a copy, it still may be of some value.

Chairman SULLIVAN. We'll accept it for the committee to study and if we feel that it should be printed in full or excerpted in the record we will be glad to do so. In any event, we are glad to have it.

Mr. CLAYMAN. Very good. Thank you.

Now it isn't altogether unusual for the trade union movement to do advance study in areas of this nature but we were brought to this concern quite sharply by the atrocities involved in the oil business, when, without notice, prices were increased fivefold. This shook us to our roots and that's one of the reasons we embarked upon the study, although I notice that neither the Administration nor perhaps even the public remain shaken because as you know and we all know, instead of hearing the alarm and rising to the challenge in terms of the future, we have increased our importation of oil. So we are not only back were we were, we are much behind where we were.

A lot of people—nothwithstanding the kind of quiescence about this issue—a number of people still are concerned and I suppose that's why we are all here because we don't want a repetition of the oil debacle in all other areas of raw materials needs.

So we decided that, as one institution at least, we would sound the alarm and we would suggest an ongoing national policy in the whole area of raw materials.

Second—and I'm being rather general now—we became involved in this kind of study and this kind of concern because of our disquiet that there is a steadily growing erosion of the basic industrial base of the United States, in the main unnoticed by the public and yet it's fraught with the gravest kind of danger to our future.

For example, in 1955, 54 percent of the gross national product went to the production of goods and in 1975, it went down to 47 percent.

The production of services jumped from 34 percent in 1955 to 47 percent in 1975. This indicates that there's a rapidly growing development unnoticed in the main which, in turn, indicates that we are changing to a so-called service economy rather than a production economy, a manufacturing economy, and this means ultimately a great depreciation in the standard of living for all Americans.

Chairman SULLIVAN. May I interrupt you there? I think you said it jumped from 55 percent service to 47.

Mr. CLAYMAN. I said that it jumped from 34 percent to 47 percent.

Chairman SULLIVAN. All right.

Mr. CLAYMAN. Now it's obvious that if we are going to maintain a strong industrial base that we have got to have a continuing and certain source of raw materials at reasonable prices.

Third, we were concerned as we started to dig into what we believe are the facts that we have got to be worried that there are reasonable supplies of raw materials that are in short supply and come from foreign soils. We itemize in our testimony, for example, that we rely on imports of 98 percent of our manganese; 72 percent of nickel comes from elsewhere; 88 percent of bauxite, which is the base of aluminum, from elsewhere; 90 percent of chromium from elsewhere; 60 percent of zinc from elsewhere; and some of these—not very many of them—have some substitutes which can be developed, but it doesn't take care of the main base of raw materials that we need that I have described quickly to you.

So the reasons for creating a sound and clear national policy in raw materials are here. That, I guess, is what your hearing is all about and, very quickly, I want to describe to you what we think, in a very broad brush fashion, is a sound national policy.

Back in September of last year, we had the convention of the Industrial Union Department and at that convention we adopted a resolution on raw materials. I think this resolution—and I will read just part of it—I think this resolution with a reasonable degree of clarity spells out where we think the United States should be going in the near future and in the years ahead and I read now from that resolution which is attached to the testimony. It's the quickest way I can do it.

> We recommend that the United States enter into specific bilateral commodity agreements with the nations which supply us with raw materials, particularly those commodities in which the United States is import dependent. In return for agreement on delivery of a specified quantity of the raw materials, the United States should offer a guaranteed, support floor price.

There has to be some kind of quid pro quo in our dealings and we would be in the position to offer guaranteed prices ultimately on a long-range basis so that the producing countries would have some certainty about their income because many of them are in sad economic shape, as you know.

> At the same time that the United States is stabilizing the security of foreign supply sources, it should be developing new and better domestic sources as well as new techniques of increasing the use of raw materials.

One thing that comes to me quickly is the way we have used taconite on the iron range, iron ore that wasn't usable in its raw form, and we developed a technique of enriching it and making it useful and it's changed the whole nature of the future supply of iron ore in our country. This is what we mean.

There has to be more intensive extensive research on the part of the United States. The U.S. Government should increase its support of research and development and it seems to me this is axiomatic. New materials technology for exploration, extraction, processing and fabrication must be developed. Needed is the establishment of a special Federal program similar to the NASA space effort, where specific goals were established and achieved through Federal support of a joint public-private research and development effort.

Another way to strengthen the U.S. ability to survive foreign supply restraints is by establishing a domestic economic stockpile. Such a stockpile should be established to act as a unilaterally managed buffer, to protect both the accessibility and price of U.S. supply sources. The existence of an economic stockpile would increase U.S. leverage in world markets.

U.S. leverage would also be increased, as well as protection against foreign supply restraints, by the building of special standby plants which would assure the ability of the nation to produce what it now imports, even though used sparingly, which would assure the ability of the nation to produce what it now imports.

In other words, if we're going to be really serious enough about forestalling a repetition of the oil situation, then we have got to be prepared to do the important things that call for serious investment, and that includes standby plants which would assure the ability of the Nation to produce what it now imports.

In addition, the United States must be prepared to bring into production mines which contain lower-grade ores which might become economically feasible in the event of international supply or price manipulation,

because there are great stores of minerals that are of lesser grade because we took the cream off the top originally and now we can use much of the residue.

Chairman SULLIVAN. One more minute.

Mr. CLAYMAN. One more minute. Then I shall refrain from finishing this most important document which you will have an opportunity to read, of course, and knowing you, I know you will read it.

Finally,

In order to assure the implementation of these recommendations, a new government corporation should be established, a Commission on National Resources with direct responsibility for the development of materials policy as well as oversight and management of much of the policy program. A Comsat [Communications Satellite Corporation] model offers the best avenue for government participation in seabed development, and perhaps for the management of standby capacity. The Commodity Credit Corporation could provide the model for the operation and management of the economic stockpile.

Well, there, as I finish, in brief is the recommended program. We urge its careful scrutiny. The clear question comes to all of us, I'm afraid over and over again—how many times is it necessary to have a crisis, pay a bitter price, before we act? We always seem to be reacting to the crisis rather than anticipating the crisis and the fact is, in our judgment at least, this is a potential crisis that we can avoid and in our testimony we indicate very briefly how it can be done.

This isn't gilding the lily, but Madam Chairman, I think you and your committee are deserving of great credit for attempting to learn and hopefully to act before the next calamity hits us.

Thank you.

Chairman SULLIVAN. Thank you, Mr. Clayman.

[Prepared statement of Mr. Clayman follows:]

STATEMENT OF MR. JACOB CLAYMAN, SECRETARY-TREASURER, INDUSTRIAL UNION DEPARTMENT, AFL–CIO

Thank you for this opportunity to appear before this committee on behalf of the Industrial Union Department of the AFL–CIO. The subject under consideration by this committee, namely the "purpose and organization of economic stockpiling" is one in which, as you know, the IUD has a great interest. When this issue is considered as part of the broader question—the question of availability of the raw materials on which the industrial activity of this country depends—it is one of the most important issues facing the nation and the Congress today.

THE IUD INTEREST

The interest of the IUD in the raw materials supply availability stems from three sources:

1. The first source is our concern with the shift in the structure of our economy from the production of goods to the provision of services. Along with this is our conviction that the U.S. must maintain a strong, stable industrial base. In the past twenty years there has been a gradual decline in the share of economic activity represented by the production of goods—from fifty four percent of total GNP in 1955 to forty seven percent of GNP last year. In the same period the share of GNP represented by the provision of services jumped from about one third of GNP (34 percent) to almost half (47 percent). We are concerned that this shift represents an erosion of the U.S. industrial base that has serious implications for U.S. economic health, continued growth and prosperity. In the short run, of course, the immediate impact of any decline in industrial production is on the jobs of our members. The long run implications however, are even more serious. Because there is a greater potential for productivity increases in the goods-producing sector than in the service sector, any decrease in the relative position of the goods-producing sector diminishes the potential for overall increases in productivity. And steady improvement in productivity is not only the front line of defense against inflation but also (since we now know that runaway inflation breeds unemployment) against continued high rates of unemployment. In our view, therefore, the maintenance of a strong industrial base is an essential element of sound national economic policy. That in turn means that there must be a steady, secure, reasonably priced supply of raw materials to sustain the industrial base.

2. The second source of our general concern is related to the well-documented, increasing dependence of the U.S. on imported supplies of many essential industrial raw materials. It is clear that the world will not run out of raw materials in the foreseeable future and for that we are relieved. Indeed, this nation is fortunate that its dependence on imported materials is relatively limited compared, for instance, to European industrialized nations or to Japan. But despite our natural abundance there still are some essential commodities in which our import dependence is significant and not easily overcome. In the case of manganese, nickel, bauxite, chrome and tin, for example, U.S. requirements must be met almost entirely by imports. Although the U.S. has some domestic zinc resources, these are gradually being used up so that our import dependence for this metal is increasing. Already we must import about 60 percent of the zinc we consume. Dependence on imports for iron ore, copper, and lead is less than twenty percent. Moreover, for each commodity in this latter group, a substanial portion of our imports come from Canada, thereby providing less cause for concern than is the case with other imported materials which must be supplied by countries farther away, both geographically and economically.

3. The third source of our concern is the potential for serious disruption or restriction of the flow of raw materials supplies either by the producing countries or the market controlling multinational corporations, or both. Immediately after OPEC had successfully imposed a five-fold increase in the price of oil, a wave of concern was felt throughout this country—as well as others—that similar cartels would develop among the producers of other non-fuel industrial raw materials, and that supplies of these materials would be subject to similar disruptions and price manipulations. As it turned out, the world-wide recession of the last two years deflated somewhat the fledgling cartel movement among the producing countries of some metals (particularly copper, iron ore and bauxite). But the

potential for effective cartel action is still there. Moreover, there are other signs of market disruption potential that are equally disturbing. One is the inexorable movement of the third world countries toward what they call the "new international economic order." Without going into the nuances of all of the issues involved in the concept of the new economic order, let me just say here that we in the IUD most certainly agree that there is a strong case to be made for a more equitable distribution of the world's wealth among all peoples and all nations. World peace and security are dependent on our ability to make significant and steady progress toward elimination of the terrible disparity between rich and poor nations. We also believe, however, that any such redistribution of wealth cannot be made at the sacrifice of the standard of living achieved with so much effort by the working men and women of the industrialized nations. Successful redistribution requires continued growth, continued high levels of production, and a sure supply of essential materials.

Another disturbing indication of potential disruption of raw materials supplies is the steady and uncontrolled increase in the grasp and power of the multinational corporations. To the extent that these large corporations are able to develop and exercise oligopoly control over the materials markets, the potential for supply disruption and price manipulation must be taken into account.

MECHANISMS TO ASSURE SUPPLY FLOW

Faced with these uncertainties, there is a clear necessity to develop national policies and adopt mechanisms to assure a steady, secure flow of the raw materials on which U.S. industry depends. Three kinds of policy instruments present themselves: (1) We can adopt policies to stabilize or increase the raw material supplies from foreign sources; (2) we can adopt policies which would increase our own domestic supplies; or (3) we can adopt policies involving direct government intervention in the market in order to counter wild fluctuations in price and supply or market manipulation by either governments or multinational corporations. The establishment and utilization of economic stockpiles would fall into this last group. May I just say here that the raw materials policy resolution adopted last fall by the IUD at its annual convention recommended a blend of all three types of stabilizing policies. A copy of that resolution is appended to this statement.

The first group of policy instruments—those intended to *increase* or stabilize supplies from foreign sources—could include the following:

Bi-lateral commodity agreements which would aim at the establishment of a fixed U.S. supply for a number of years in return for a guaranteed price—a support floor. Although the ultimate aim should be the development of multilateral agreements, as a practical matter we should start out with bi-lateral agreements as the easiest and quickest way to an eventual international agreement.

Producer-consumer arrangements, like the International Tin Agreement, which establishes a buffer stock and sets a fixed range within which the stock manager must buy or sell. In this case, the producers of the material are required to contribute supplies to the buffer stock and the consumers are asked to contribute cash.

Long term purchasing agreements. At the present time most raw materials purchase contracts are for only a one year period. This practice, coupled with the existence of the speculative metals markets has created an unnecessarily volatile market situation for many metals and minerals. This, in turn, has led to a pattern of sharp fluctuations in price and consequent disruptions in supply flows which are not only very damaging to the producing countries—particularly the third world countries which are dependent on materials exports—but also have not inconsequential effects on the consuming nations.

Measures to increase *domestic* supply are equally important. Included among these are increased government support of research and development, to find more efficient ways to obtain industrial materials from lower grade ores, for example, or to develop more cost-effective methods for recycling scarce materials. Perhaps the most promising avenue for increasing domestic supplies of scarce materials is through government support of exploration and development of sea-bed resources. As I said earlier, all of these policy recommendations are included in the IUD resolutions adopted last fall.

Along with measures to assure the flow of foreign supplies and to reduce dependency by increasing domestic supplies, the U.S. must also adopt policies to protect itself from sudden sharp price increases and drastic supply restrictions. We believe that effective market intervention can be accomplished through the establishment of economic stockpiles for certain selected raw materials. We see a program to develop economic stockpiles as a necessary blend of economic inducement and economic force. It is no secret that the United States is better equipped than most nations to withstand economic warfare. We clearly have the potential to exert some economic force. We also are in a position—because of our size and wealth—to offer the materials suppliers fairly strong economic inducements.

THE CASE FOR ECONOMIC STOCKPILES

The conceptual basis for economic stockpiles in many respects is the same as that underlying the use of bi-lateral commodity agreements. In both instances, the objective is the same—to ensure a reliable supply of critical industrial materials. Under a bi-lateral commodity agreement, the United States would assume an obligation to purchase a fixed amount of the material in return for guaranteed access to the material—with the full knowledge and expectation that during slack economic periods the agreement might require accumulation of excess materials over and above actual requirements. In the case of an economic stockpile—which in effect is a sort of unilateral commodity agreement—the U.S. would also assume the obligation to accumulate unneeded stocks at certain times, in order to gain the ability to affect the world market for that material. Indeed, in our view, the development of working economic stockpiles could become a useful stepping stone toward the development of effective commodity agreements.

The establishment of economic stockpiles in certain key commodities is the mechanism which would permit us both to take advantage of our great size and the fact that we represent *a* if not *the* major market for many of the LDC producers of raw materials, and at the same time to introduce a degree of stability into the world commodity markets. Such stability is not only beneficial to us but is esssential to protect the export earnings of the Less Developed Counries if they are to buy the goods and services they must have in order to continue their own development.

Obviously the establishment of economic stockpiles is not necessary or useful for all the materials we import. In setting criteria for stockpile commodities we suggest that a fifty percent dependency ratio might be used as a rough guide. Taking just the metals with which I am most familiar (the IUD study published last year concentrated on nine metals and minerals essential to the basic manufacturing industries) the commodities which might be considered as appropriate candidates for the establishment of economic stockpiles would include bauxite or alumina, chromium or ferrochrome, manganese, nickel and zinc. For the first three of these, domestic production accounts for less than 10 percent of total consumption; that is, for manganese 98% of U.S. requirements are imported; for chromium, 90%; for bauxite or alumina, 88%. Seventy-two percent of the nickel we use is imported and about sixty percent of our zinc requirements. The U.S. also imports almost all of its tin requirements, so that if suggested criteria were adopted tin would also be eligible for economic stockpiling. However, since tin is already subject to international market control through the International Tin Agreement (which the U.S. has joined this year for the first time), establishment of a new separate economic stockpile for tin may be redundant. It is interesting to note, however, that in actual practice the U.S. has probably had a de facto economic stockpile of tin for some time. Although the GSA tin stockpile was originally purchased to meet strategic—not economic—objectives, when the strategic objectives were lowered, and the excess tin gradually sold on the open market, the GSA stockpile took on a substantial economic function and indeed was recognized as a fourth world tin market—the other three being the London, New York and Penang markets.

Another criterion for the establishment of an economic stockpile of any particular commodity relates to the potential for substitution of one material for another. For example, at the present time there is no satisfactory substitute for manganese in its principal uses. That being so, the case for establishment of an economic stockpile of manganese is strengthened. In the case of zinc, on the other hand, plastics can be substituted for some uses, aluminum and magnesium for others. Of course, there are supply and relative price considerations for each

of the potential substitutes, but the point is that, to the degree that substitutes can be obtained at an economic price, the need for an economic stockpile is diminished.

Still a third criterion relates to what might be called the export dependency rate of the producing country. Some of the raw materials producers have single commodity economies—much in the same way that Central American countries used to be called "banana republics." Others, of course, are diversified. Indeed, it may be that in cases where the economy of the producing country is based to a very large extent on exports of a single commodity, a bi-lateral commodity agreement might achieve the same result—namely, access for the U.S. to a secure supply and achievement of market stability—more effectively and efficiently than by establishing a uni-lateral economic stockpile. Here of course, the argument becomes circular, since accumulation of stocks purchased under a commodity agreement creates a de facto economic stockpile, and the stockpile then helps to enforce the commodity agreement. In any event however, the degree of export dependency should be taken into account in any U.S. economic stockpiling decisions.

Any economic stockpile should be kept separate and distinct from the strategic stockpile which, of course, should be strictly geared to safeguard national defense requirements against supply interruptions. The economic stockpiles would not have to be unduly large in order to have the desired stabilizing effect on prices and the flow of supplies, just big enough to impact on the market.

As I understand it the quantitative objectives for the U.S. strategic stockpiles are set on the basis of assumptions relating to the length of time that the U.S. might have to be dependent on its own resources in the event of war, and that this objective is currently set at a one year's supply. Quantitative objectives for economic stockpiles, on the other hand, should be set on the basis of assumptions relating to market control or influence. It would be necessary to determine for each commodity the amount necessary to stockpile in order to have a significant impact on the world market, and thereby to protect the U.S. against potential cartel action or embargoes, or managed price and supply manipulations. As a rough guide, we estimate that, at a minimum, each economic stockpile would have to equal at least five percent of domestic consumption, ranging up to a probable maximum of twenty to twenty-five percent of domestic consumption of each commodity.

The actual size of the stockpile would, of course, vary depending on the commodity, the degree of U.S. import dependency, the potential for the development of substitutes, and the economic and political situation of the country or countries supplying the U.S. market. Where the U.S. dependency ratio is low and the supplier has no other readily available markets for his product, the economic stockpile could be relatively small. Where U.S. dependency is high and the potential for restriction of supplies through embargoes or other cartel activity is high, we would need to maintain a larger stockpile, sufficient to have an economic impact on the world market. The required oil reserve which serves as a useful precedent for the establishment of economic stockpiles is set at ninety days supply, or twenty-five percent of the annual domestic requirement. Probably no materials stockpile would have to be any larger than that.

Economic stockpiles could be used in several ways. Materials could be released for sale on the world market to counter unreasonable price increases—or in an embargo situation, they could be allocated to U.S. consumers to keep industry going.

Some of those who support the idea of economic stockpiles have suggested that such stockpiles be in the form of privately held inventories, collected with government support but held and managed privately. We do not agree with this suggestion. In our view the stockpile should be publicly owned, publicly held and publicly managed. There is ample precedent for government involvement in materials management. A quarter century experience with the strategic stockpile should be evidence enough of government's ability to operate in this area. Indeed the whole point in establishing such stockpiles is to correct the existing situation and inject the public interest into the market place. Foreign governments deal daily with our large corporations, making deals, and entering into binding agreements which vitally affect the flow of supplies on which U.S. industry depends. Sometimes these arrangements are advantageous to the U.S., but not always, and there is no guarantee that the U.S. public interest has been or will be taken into account. In any case, the recent revelations as to the way the multinational

corporations do business with foreign governments does nothing to set our minds at ease on this point. So the stockpile must clearly be handled by public, not private, means.

As with commodity agreements and other methods to introduce stability into the materials markets, the ultimate policy goal should be the development of an internationally managed stockpile for crucial industrial materials. In fact a group of Less Developed Countries (LDC's) has already called for multi-lateral commodity agreements and the establishment of international commodity stocks for what they call ten core commodities. Although these ten core commodities are primarily agricultural (cocoa, coffee, etc.), they also include two essential industrial metals, copper and tin. It is interesting that neither of these two commodities are in the group the IUD would propose as appropriate for domestic stockpiling. This is because, as noted before, tin is already subject to international control, and in the case of copper, since the U.S. is one of the world's major producers, policy measures to increase *domestic* resources would appear to offer a better route to a secure, stable supply than the establishment of an economic stockpile.

I would like to point out that of the several alternative methods suggested here to protect and secure raw materials supplies for U.S. industry, the single one that could be adopted most quickly and implemented most efficiently is the establishment of domestic economic stockpiles. Such policy options as commodity agreements, sea-bed development, increased research and development and even the introduction of long-term purchasing agreements require more time and/or money. On the time element, it is unfortunate but true that multi-lateral international agreements—put together slowly and with laborious effort—take more time than bi-lateral arrangements, and that uni-lateral actions require even less time than the bi-lateral ones. The establishment of economic stockpiles is, of course, a uni-lateral action. All that is required to get going on effective use of the economic stockpile alternative is willingness and determination on our own part.

To wait for international agreement on a package of commodity arrangements, complete with all of the details involved in developing, maintaining and managing multinational stockpiles, is to eliminate for all practical purposes the option of using this particular mechanism for achieving market stability.

On the question of money, it is clear that such options as additional research and development efforts, or sea-bed development, or even the development of long-term purchasing agreements would require not only a substantial initial outlay of public funds, but also a long-term commitment to keep up with such expenditures for years to come. Economic stockpiles, such as we are suggesting here, limited to a few commodities and held to a reasonable size, would not be too costly in our judgment. For example, the cost of purchasing a five percent domestic consumption requirement for the five metals we have suggested as appropriate for economic stockpiling; that is, chromium, manganese, alumina, zinc and nickel, at current prices would amount to something in the neighborhood of $60 to $90 million. Since it would very likely be necessary to accumulate stockpiles larger than the equivalent of a five percent domestic requirement for some of these materials in order to impact on the world market, the total cost would undoubtedly be somewhat higher—perhaps in the range of $300 to $400 million. But even $400 million is only one-tenth of one percent of this year's proposed federal budget, not too great a price to pay for assuring a stable supply of materials for our industry, to maintain our industrial base and, of course, a high level of good industrial jobs for our people.

## CONCLUSION

The interest of the IUD in securing a stable supply of raw materials for U.S. industry is synonymous with our interest in maintaining a strong industrial base for our economy. We are concerned that the supply of raw materials on which we depend is vulnerable to disruptions either from political or economic actions on the part of the producers of some of those materials, or from market and price manipulations by large corporations which, in some cases, effectively control the market for those commodities. We also understand the need of the Less Developed Countries to increase their export earnings. Moreover, we are sympathetic with their desire to move ahead with development activities so as to improve the general standard of living of their people. In our view, progress of the third world countries is inextricably linked to continued economic strength and

growth of the United States and other developed countries—since the industrialized nations, particularly the U.S., provide them—the LDC's—with their best and largest market.

To maintain U.S. economic strength and growth requires a secure supply of raw materials. To protect that supply we suggest a variety of measures. The establishment of economic stockpiles is high on the list of those measures. Indeed it is the measure most easily and quickly implemented.

Economic stockpiles are not necessary for all commodities, but only for those in which the U.S. has considerable import dependency, and which are most vulnerable to supply disruptions or price manipulation. The size of the stockpile will vary from one commodity to the next, and is dependent on the degree of U.S. import dependency, the degree of export dependency of the supplying nation and other factors such as substitutability. Economic stockpiles should be publicly owned and managed, since a main objective in adopting such a policy is to introduce the public interest into what has heretofore been a private domain.

We would hope that eventually all of the policies and programs adopted to assure a reliable secure supply of raw materials can be internationalized. But as a practical matter we cannot wait for international agreements. We must move ahead on a national basis. In the case of the establishment of economic stockpiles, the time to start is now.

Thank you.

RESOLUTION ON RAW MATERIALS

The United States must develop a comprehensive national policy for raw materials in order to secure the stable supply and price of industrial metals. Without a reliable supply the U.S. economy can neither survive nor grow. Almost every industrial job in the United States is at stake as well as the nation's general economic well-being.

Threats of cartelization, similar to OPEC in the energy industry, and the market domination of a few large multinational corporations, have raised serious questions about the continuing reliability and security of our raw material supplies.

Those nations producing raw materials have been exploring the possibilities of limiting the supply and/or raising the price of their exports through cartel-like action. Producers of bauxite, copper and iron have already met for these purposes.

Those corporations producing raw materials have for many years pursued policies of market control and possible manipulation—including the limiting of supply and raising of price. A few large multinational corporations dominate the entire industry—and through merger, acquisition, joint venture, vertical integration, secondary interlocking of directors, etc. have had ample opportunities to pursue cartel-like activities.

The United States, however, has no unified, coherent policy to protect its interests and the interests of its labor force against the threats of either producing countries or producing corporations. There is no contingency plan pending in the event of foreign-initiated supply restraints. Neither is there a policy to encourage U.S. fabricators and manufacturers to produce at home. National policy on recycling development of seabed resources or encouragement of research and development efforts is non-existent—as is any effort to coordinate these very important elements into an overall raw materials strategy.

In the world market the producing companies—so often large U.S. based multinationals—have a powerful voice. The host nation—that nation endowed with the raw material resources—also has a powerful voice. The home nation—in this case quite often the United States—has little if any say.

In order to deal with these shortcomings, the United States needs a coherent and unified policy to assure that the necessary supplies of raw materials are forthcoming.

We recommend that the United States enter into specific bilateral commodity agreements with the nations which supply us with raw materials, particularly those commodities in which the U.S. is import dependent. In return for agreement on delivery of a specified quantity of the raw materials, the U.S. should offer a guaranteed, support floor, price.

At the same time that the U.S. is stabilizing the security of foreign supply sources, it should be developing new and better domestic sources as well as new techniques of increasing the use of raw materials. The U.S. government should increase its support of research and development. New materials technology for

exploration, extraction, processing and fabrication must be developed. Needed is the establishment of a special federal program similar to the NASA space effort, where specific goals were established and achieved through federal support of a joint public-private research and development effort.

Another way to strengthen the U.S. ability to survive foreign supply restraints is by establishing a domestic economic stockpile. Such a stockpile should be established, to act as a unilaterally managed buffer, to protect both the accessibility and price of U.S. supply sources. The existence of an economic stockpile would increase U.S. leverage in world markets.

U.S. leverage would also be increased, as well as protection against foreign supply restraints, by the building of special standby plants which would assure the ability of the nation to produce what it now imports. In addition, the U.S. must be prepared to bring into production mines which contain lower-grade ores which might become economically feasible in the event of international supply or price manipulation.

Another major domestic effort needs to be made to support and encourage recycling and other conservation measures. The increased use of secondary materials is a major way to decrease our dependence on imported raw materials. The U.S. government should support research efforts. Present disincentives toward recycling must be removed.

Anti-trust laws require enforcement. Those firms supplying the U.S. economy with basic raw materials and their products are too important to permit such domination by a few private companies and individuals.

Any raw materials strategy must be sure to protect and strengthen the industrial base of the United States. More research is needed on the proper balances between service-oriented and production-oriented sectors of the U.S. economy. U.S. interests in the location decisions for fabricating and manufacturing plants in essential basic materials industries need special attention—particularly when decisions to locate overseas threaten the production-oriented sector of our economy. U.S. representation in location decisions through inclusion in commodity agreements and/or new legislation is needed. In addition, present tax incentives which encourage U.S. companies to move abroad must be eliminated. The U.S. should also encourage the development of a strong maritime industry so that we have the capacity to transport commodities to the U.S. in U.S. ships, manned by U.S. crews.

In order to assure the implementation of these recommendations a new government corporation should be established—a Commission on National Resources—with direct responsibility for the development of materials policy as well as the oversight and management of much of the policy program. A COMSAT model offers the best avenue for government participation in seabed development, and perhaps for the management of standby capacity. The Commodity Credit Corporation could provide the model for the operation and management of the economic stockpile.

With millions of jobs, billions of dollars, and the stability of the U.S. economy at stake, the United States must adopt a unified, coherent and comprehensive set of policies to assure that the continued supply and price of raw materials be both reasonable and reliable. The machinery to implement these policies is equally essential: Now, therefore, be it

*Resolved*, We urge the U.S. Government to move quickly to plan and develop a comprehensive raw materials policy and programs to assure our economy the steady flow, present and in the future, of the raw ingredients necessary to the American industrial process.

Such programs must of necessity include stockpiling of raw materials; bilateral commodities agreements between the U.S. and other countries which are suppliers of raw materials; development of new domestic sources of such materials; exploration and research for and of new raw commodities; the beefing up of recycling and other conservation methods; the building of standby plants to process certain raw materials when and if necessary, and strong anti-trust surveillance of those corporations engaged in the supply of such materials.

Such programs carefully designed and vigorously pursued can achieve a constant stream of basic raw materials sufficient to keep the American industrial machinery in full motion.

Chairman SULLIVAN. You know, there's so much meat in the kind of study you have made, and in the testimony so far, and as we go into the questioning I hope to bring out some of the things that are

bothering us about our materials supply. The subject is tremendously important. It is, unfortunately, very hard to get Members of Congress to find the time to look into such nonpartisan issues. How does this country stay at the top with all of the problems that are coming before us so that we can anticipate what may happen to prevent us from continuing to stay on top? I just hate to keep your testimony to 15 minutes. But as you know, we have tried to study the testimony in advance. This is why the staff pestered you to get it to us early because there's just so much you can absorb in a given time.

We will now hear Mr. Strauss. I'm glad to see you before us again, Mr. Strauss. As you reminded me this morning, you came before us in the House Banking Committee when we were working on coinage legislation.

Mr. STRAUSS. Right.

## STATEMENT OF SIMON D. STRAUSS, CHAIRMAN, MINERALS AVAILABILITY COMMITTEE, AMERICAN MINING CONGRESS

Mr. STRAUSS. Thank you very much, Madam Chairman.

The first part of my statement is largely historical in nature and I will not try to do anything other than to summarize it very briefly.

It reviews the stockpile program and my friend, Mr. Bergsten, has made reference already to my advanced age. I did take part in the early days of stockpiling during World War II when the Metals Reserve Co. handled the procurement of materials for the war effort. When the war ended, because we had done I think a credible job, we had a very substantial residue of materials still on hand and that formed the nucleus of the present strategic stockpile.

In your own very interesting opening remarks, you made some reference to the strategic stockpile and the fact that over the years there appears to have been some deviation from the original purpose. The original purpose was clear. It was to provide materials which were to be drawn on only in the event of a national emergency involving the defense of the country.

One of the reasons that we had these ups and downs in regard to the strategic stockpile was that the objectives were constantly being changed. Now the objectives were reached by a group of undoubtedly dedicated public servants drawn from the various departments of the Government, but were never made public until President Kennedy's concern about the stockpile erupted in 1961, I think it was.

During the previous 15 years—the act was passed in 1946—the objectives were classified information and the objectives were arrived at on the basis of a lot of assumptions—how long a war, what kind of a war, what sources would be secure to us, what sources would not be secure in this country—and it was this up and down movement of the objectives which created a good deal of the opportunity for what you described as the sale of materials from the stockpile to meet price problems that existed at times when there appeared to be shortages. In fact, in respect to some of the most critical materials, the ones which Mr. Bergsten referred to, we now have nothing left in the strategic stockpile. The aluminum and copper and nickel stockpiles have been completely liquidated. The zinc and lead stockpiles have been greatly reduced. Even for tin, chrome, manganese and platinum,

which are among the materials Mr. Clayman referred to, the quantities on hand have been greatly reduced.

Mr. Nixon in 1973 proposed virtual liquidation of the whole stockpile because he said any war we would be in would only last a year and if it lasted longer we would just gear up additional production. Well, in my opinion that is not a feasible method of dealing with the stockpile program. One cannot bring new mining capacity into production in a period of a year, nor can one substitute other materials. There are design problems, retooling problems for industry in substituting one material for another.

So what I would like to say is that in the view of the mining industry, the experience with the strategic stockpile has not been a happy one. It's been disruptive in its effect on the commodity markets. In spite of that, we support the idea of a strategic stockpile for defense purposes because what the stockpile is important for is not tons of materials or even dollars; it's hours of labor in a time of national emergency; it's energy, particularly noticeable in the case of aluminum; it's transportation. I well recall that during World War II, 25 percent of all the bauxite being brought into this country was sunk by German submarines in the Caribbean. That meant the loss of vessels which could have been used, which could have taken people and materials to the fighting front.

In the same way, because of the manpower requirements of gearing up the war effort, the Government had to give automatic deferment to workers in the copper and iron mining business in this country. Those workers had precisely the talents that the Army Engineers, the Sea Bees and the Air Force could have used for the construction of airports and so forth.

So the stockpiles represent a store, not just of materials but of skilled labor, of energy, and transportation, and these are badly needed in times of military emergencies.

So regardless of its unfortunate experience with the strategic stockpile, the mining industry supports the concept of a strategic stockpile.

Now the oil embargo which both my colleagues have already referred to has caused apprehension in government circles about other vital commodities and has raised this question of economic stockpiles. Now I think one ought to reexamine the shortages of commodities which were experienced in late 1973 and early 1974. With the exception of oil, there is no evidence that there was any interruption in the supplies of any of these materials. In fact, the available supplies of most metals and minerals that I'm familiar with in 1973 and early 1974 were at the highest rates ever experienced and these were freely available in world markets, but at escalating prices.

What happened and what caused the problem was not a shortfall or interruption in supply; it was a sudden and very, very marked expansion in demand. This expansion was not only due to the industrial boom that the Western World had suffered in 1972 and 1973, but also to speculative purchases due to currency uncertainties. Mr. Bergsten has referred to those. Commodities that are traded on commodity exchanges are a favorite vehicle for speculation—or investment if you want to call it that. The financial pages of the newspapers were full of advertisements at that time—urging investors to switch to commodities. Many of the brokers were advising that. Now if the

man in the street who doesn't really need the commodity for purposes of keeping a factory going buys copper, lead, zinc, tin or whatever, who is going to sell it to him? There's only a certain amount of production available. So his purchase, in effect, drives the price up and creates a sort of a panic. Widespread fear of cartels caused much of the buying. People thought there might be interruptions in supply. The interruptions did not occur.

And finally, purchasing agents of the large corporations, when they see prices rising, get very nervous because there's nothing a purchasing agent is more concerned about than having a factory shut down because he hasn't provided an adequate supply of raw materials. That's sufficient cause for losing his job. So there was an enormous increase in inventories.

In the middle of 1974 it suddenly dawned on everybody that the industrial boom was over. In fact, it had probably ended in late 1973. Automobile sales were down. Housing was already starting down. But it took until the middle of 1974 before this downturn began to affect the commodity markets because commodity markets were too preoccupied with these other things—the fear of cartels and so forth.

By the third quarter of 1974 the fear of shortage had evaporated and the same purchasing agents who had been busy adding to inventories started to reduce them. They reduced them very drastically indeed, and this caused the sharp drop in prices that has since occurred.

Now I would be less than candid if I didn't say that we will have similar spot shortages of commodities in the future. They will develop because supply is relatively inelastic. It takes a long time to create new mining capacity. While Mr. Clayman has made an interesting suggestion that we should have standby capacity, the cost of such standby capacity is appalling and, furthermore, there is a question of maintaining the plants in good mothball condition.

So if demand fluctuates sharply and supply can increase only slowly, there will probably be a recurrence of shortages, no question about that. Since shortages will develop from time to time, the proposals for an economic stockpile seem at first glance to be imminently reasonable.

If you look at the Bible, at Joseph, he, in effect, created the first economic stockpile when he interpreted Pharaoh's dream and said there were going to be 7 fat years followed by 7 lean years and you'd better stock up. Pharaoh had an advantage that the U.S. Congress and government don't have, and that is his absolute power created no money problem of any kind for him. He just put the stuff away in the granaries at the time of surplus then later on sold it presumably at a profit. The Bible is silent on that point, but he did sell it back to the people for them to have and the whole crisis was met. That is an ideal economic stockpile operation. No question about it.

The difficulty is that since we don't have Pharaoh around, where do we get the money? The amounts involved are going to be absolutely enormous and the effects on the market of economic stockpiling will be great.

Now speaking not just for myself, but for our industry, I would say that we view the proposal for economic stockpiles with misgivings because we are fearful of the way in which they will be managed. But, if they are to be created, if it is the consensus—and after all the decision in this rests not with industry but with government—if the stock-

piles are to be created, they should really be limited to commodities for which the United States is primarily dependent on imports. That seems clear to us. The stockpile should not be used in an effort to control prices because the wisdom of any group of people is not up to judging the marketplace. Madam Chairman, since you were kind enough to refer to the times when we were talking about coinage, there is no clearer example of this than the U.S. Government experience with silver.

Mr. Bergsten was concerned that the tin stockpile wasn't big enough. Well, the silver stockpile in the beginning of the 1960's was 2 billion ounces, which is equivalent to 5 years' production and/or consumption of silver. In spite of the existence of that enormous stockpile, in spite of the fact that the Treasury had a very fundamental reason for trying to control the silver price—they didn't want the coins to disappear from circulation and be melted down and in spite of all the powers of the U.S. Government, the U.S. Government managed to sit on the lid of the silver price at $1.29 an ounce until 1968. Then when the silver reserve was beginning to run out and they couldn't sit on the price any longer, the market exploded and the price of silver this morning is $4.80, roughly four times the level the Government had tried to protect. Why? Because the demand for silver basically is greatly in excess of the potential supplies of silver.

So I'm saying to you that if you really want to use economic stockpiles as a means for trying to control prices, you're talking about enormous sums of money. The oil economic stockpile that Mr. Bergsten referred to, I think, is supposed to be 800 million or 1 billion barrels of oil, so you're talking $8 to $10 billion, and when you go down the list of commodities you're going to find very large sums involved.

So I want to say—and I'll be glad to elaborate on this during the question period—I do not believe that there is likely to be effective cartel action in hard minerals comparable with the oil experience. I differ seriously with Mr. Bergsten on that point. And while he referred to oligopoly and the limited number of producers, the facts are exactly the opposite. In 1950, when the Paley Commission made its studies of the resource position of the United States, there were only five countries in the world producing as much as 100,000 tons of copper a year. Today there are 13, and there are at least five others that are going to be substantial producers of copper in the future. There has been, in the case of most materials—not all—an increase in the number of potential suppliers. Furthermore, most of these materials are much more subject to changes in cyclical demands, drops in periods of poor business, sharp increases in periods of good business, so that an effective cartel will be very difficult. There has been an attempt to control the price of tin through the International Tin Agreement. It has not been conspicuously successful, even though the consuming and producing countries signed the agreement.

So I want to emphasize that as far as I'm concerned individually, and speaking for our industry as a group, we do not believe that the economic stockpile, if it is created, should be used for the purpose of price control. It should be used as an instrument for mitigating the effects of an unexpected interruption in supplies and I will give you a very homely example.

Mr. Bergsten doesn't seem to think platinum is terribly important to the U.S. economy, but the fact is that the whole program for dealing with automobile car emissions is based on the use of a device in which platinum is the catalyst for dealing with automobile emissions. I think it is an essential industrial material. There are only three sources of platinum of any consequence in the world: Canada, the Union of Soviet Socialist Republics, and South Africa. It's conceivable that given the present troubled political situation in Africa, should there be a civil war, those mines in South Africa might be closed down. It's quite conceivable and I can see the desirability of having an economic stockpile of platinum to be drawn on under those circumstances.

So interruptions in supply; yes. Control of prices, I think it's a mere myth.

So, Madam Chairman, I see you looking at your watch, and I'm sure I've used my time. Thank you very much.

Chairman SULLIVAN. Thank you, Mr. Strauss.

[The prepared statement of Mr. Strauss follows:]

STATEMENT OF SIMON D. STRAUSS, EXECUTIVE VICE PRESIDENT, ASARCO INCORPORATED, ON BEHALF OF THE AMERICAN MINING CONGRESS

Madam Chairman and members of the subcommittee, my name is Simon D. Strauss. I am Executive Vice President of ASARCO Incorporated, a diversified producer of some 24 different metals and minerals. I appear on behalf of the American Mining Congress, a trade association. I serve as Chairman of its Committee on Minerals Availability.

Your interest is in economic stockpiles, a matter that has been receiving Congressional attention since the Arab oil embargo and the quadrupling of oil prices by the Organization of Petroleum Exporting Countries in early 1974. The U.S. government really began stockpiling in early 1940 when legislation authorized the Treasury Department to purchase modest quantities of certain strategic materials for which this country is heavily dependent on imports—tin, rubber, chrome and manganese were among the first items included in this program.

With the fall of France, the Roosevelt Administration became greatly concerned over access to imported raw materials and created three subsidiaries of the Reconstruction Finance Corporation—the Metals Reserve Company, the Rubber Reserve Company and Defense Supplies Corporation—to deal with the problem. They were intended to assure adequate supplies of strategic materials for the greatly expanded defense effort initiated following Hitler's victory in Western Europe.

I joined the staff of the Metals Reserve Company in March 1941, ten months before U.S. entry into the Second World War and remained in government service until the end of 1945. During this period Metals Reserve became the sole importer of metal and mineral products into the United States, acting in concert with the War Production Board with regard to quantities purchased and with the Office of Price Administration in regard to the prices at which the imported materials were distributed to U.S. industry—either for war or for essential civilian purposes. In addition, to stimulate domestic production of strategic materials, Metals Reserve made long-term contracts with domestic producers to develop new mineral properties or to expand capacity of existing properties.

When the war ended Metals Reserve held title to substantial quantities of essential metals and minerals needed either in a wartime or peacetime economy. Thus when, in 1946, Congress enacted basic stockpile legislation, Metals Reserve was able to transfer large tonnages of essential metals and minerals to the strategic stockpile.

As the Committee recognizes, the 1946 legislation authorized stockpiles purely for national security purposes. The quantities of each individual commodity to be stockpiled were set by the administrative agencies, the initial responsibility resting in the Army and Navy Munitions Board which coordinated the views of the other government agencies and departments. Later this responsibility was

transferred to the Office of Emergency Management. These stockpile targets were classified information. Private industry was consulted only in order to define specifications for the commodities purchased. Its views were not sought as to the proper amounts to be held nor was information published as to the quantities actually in government possession or under contract for future delivery. Global figures were published showing aggregate dollar value of stockpiles, not broken down by individual commodity.

U.S. involvement in the Korean War in the early '50s greatly accelerated interest in stockpiling. Until early 1957 there was a period of active stockpile procurement by the government. Purchases were made in a variety of ways. Some material was acquired under the Defense Production Act, enacted by Congress during the Korean War; some material was acquired by barter in exchange for surplus agricultural commodities of a non-strategic nature; and much material was bought from producers or dealers on a short-term bid basis.

Shortly after John F. Kennedy became President in early 1961, he made a critical evaluation of the strategic stockpile program and concluded that stockpile holdings were excessive. As a result, under the chairmanship of Senator Stuart Symington of Missouri, a prolonged investigation of the entire stockpile program was carried on in the early '60s. Stockpile objectives for individual commodities and the quantities actually held became public knowledge for the first time. A critical reevaluation of stockpile objectives resulted in substantial reductions. As a consequence the government by the mid-'60s embarked on a program of liquidating many of its holdings—either in whole or in part.

To illustrate, of the six major nonferrous metals held in the government stockpile—aluminum, copper, lead, nickel, tin and zinc—the government since 1963 has completely liquidated its holdings of aluminum, copper and nickel; has greatly reduced its holdings of lead and zinc; and has even substantially reduced its holdings of tin, a commodity for which this country is enitrely dependent on imports, originating primarily in countries of the Third World.

President Nixon in the Spring of 1974 announced drastic reductions in stockpile objectives. The new targets were based on the belief that strategic stockpiles would be needed only to cover emergency needs for one year as a military emergency was unlikely to last longer. Should it last longer, it was argued, new sources could be developed or substitute materials could be used. Under previous programs stockpile targets had been based on other assumptions—whether a war would last three or five years; whether certain countries could be considered reliable suppliers; whether the nature of the war would be similar to World War II or the Korean War; or whether the war involvement would be a nuclear holocaust.

When stockpile objectives are based on such radically variable assumptions enormous changes occur each time a new set of assumptions is postulated. These changes in turn disrupt the normal pattern of the commodity markets and are of great concern to the mining industry. Miners claim no expert knowledge as to how long a war might last or what the nature of a war might be. Experience, however, prompts those in the mining industry to feel that it is usually safer to rely on facts rather than assumptions.

Thus no one can gainsay this country's dependence on imported materials as measured in trade figures collected by the Bureau of the Census. No one can dispute the fact that this country is almost entirely dependent on imports of certain virgin metals and ores—tin, metallurgical chrome ore, platinum metals, and manganese are examples. For other materials the United States is virtually self-sufficient. And for others it is only partially self-sufficient.

Experience also has taught the mining industry that new production of mineral commodities cannot be developed in a one-year period. Also, though one material may be substituted for another, the design changes and the necessary tooling process take much longer than one year.

For these reasons many in the mining industry differed wtih President Nixon's 1973 assumptions with respect to stockpile policy. It appeared that sales of stockpile material newly classed as surplus were to be used for non-defense purposes—to attempt to control prices, then rising sharply, and perhaps also to narrow the budget gap between the government's receipts and disbursements.

In resolutions adopted at meetings in 1973, 1974 and 1975 the American Mining Congress has urged that stockpile objectives should be based on a mathematical formula related to actual import experience for individual commodities.

The average level of imports for a period of, say, three years would be used to determine the initial stockpile objective. This would be reviewed every few years. Should domestic sources be developed and U.S. import dependence lessened, the stockpile objective would automatically drop. Should domestic resources be depleted and U.S. dependence on imports increase, the target objective would rise.

Further, the American Mining Congress recommends that objectives should vary with the degree of import dependence. Three possible classifications would be (a) commodities for which imports represent more than 75% of total supply; (b) commodities for which imports represent 50 to 75% of total supply; and (c) commodities for which less than half the supply is imported.

This Committee is considering whether there should be an economic stockpile in addition to the strategic stockpile. The original concept of the strategic stockpile unfortnately has not been adhered to in recent years. The original legislation clearly spelled out that strategic stockpiles were to be held for military purposes and military purposes only.

The Symington investigation of the early '60s indicated that at times stockpile objectives had been increased to accomplish purposes other than military ones—to assist in foreign trade or to stimulate domestic employment. More recently, during the period of substantial stockpile liquidation, releases from the stockpile have obviously been used at times to try to control prices or to meet industrial needs when sudden shortages developed but when a military emergency had not been declared.

In the view of most mining people the strategic stockpile program has had a disruptive influence on commodity markets. The heavy buying in the early '50s by overstimulating production, caused expansion of capactiy which led to surpluses when the stockpile ceased to buy toward the end of the decade. During the '60s the drastic reduction in stockpile objectives and the heavy liquidation of stockpile materials in turn inhibited expansion of capacity, thereby laying the groundwork for the shortages which developed in 1973 and 1974. The industry is apprehensive that untimely government buying and selling will interfere with normal operation of markets.

Nevertheless the industry, recognizing the importance of national security, supports the basic concept of a strategic stockpile—particularly for those materials that are not produced in large quantities within the nation's boundaries. Such stockpiles save manpower, transportation facilities and scarce earth-moving equipment in times of genuine military emergencies.

The oil embargo and subsequent sharp rises in oil prices caused understandable apprehension in government circles and among the public generally about interruptions in the flow of other vital commodities. This Committee's interest in economic stockpiles—as distinct from strategic stockpiles—develops from that concern. The shortages in other commodities experienced in late 1973 and early 1974, however, should be viewed in proper perspective.

Apart from oil, they did not arise from interruption in supplies. Production of most commodities was normal and there was no political interference with trade flows in other commodities such as occurred in the case of the oil embargo. The shortages that developed were due to an enormous expansion in demand, caused only in part by the industrial boom of 1972 and 1973. Added to this genuine increase in consumption were demands created by speculative purchases due to currency uncertainties, fear of cartels that might be formed, disillusionment with securities on the part of many investors who were advised to buy commodities instead, and, finally, as prices responded to these non-trade demands, a rush by purchasing agents to increase inventories.

The business recession actually began in late 1973 but was not widely recognized until mid-1974. By the third quarter of 1974 the fear of shortages began to subside. Instead of adding to inventories, purchasing management began to reduce stocks. Speculators switched out of commodities into high-yield bonds or savings deposits. Concern over cartel action abated as the major differences between the oil industry and other commodities became more widely recognized.

In future spot shortages of certain commodities may again occur when business is good or when supplies are temporarily interrupted by military developments, labor strikes, or natural disasters. In the mineral industry supply cannot be quickly increased because of the long lead time and heavy investment required to create new capacity. On the other hand, demand is rapidly influenced by changes in the political, economic or military climate.

Since shortages will develop from time to time, the proposal for an economic stockpile seems at first glance to be eminently reasonable. The first such stockpile is referred to in the Bible, when Joseph interpreted Pharaoh's dream as a forecast of seven good years followed by seven lean years. Accepting that interpretation. Pharaoh stockpiled grain and cattle during the seven good years and sold them to a populace that might otherwise have starved during the seven lean years.

The Bible does not specify how Pharaoh financed this operation but, since his authority over his subjects was absolute, one must presume he had less difficulty in funding this operation than might be the case today with a similar attempt on the part of the U.S. government.

The amounts of money that could be involved in a comprehensive economic stockpile are enormous. Its effect on the markets would be great. The theory of buying in times of surplus and selling in times of shortage sounds simple but putting it into effective practice is difficult.

The mining industry believes that if economic stockpiles are created they should be limited to those products for which the U.S. is heavily dependent on import sources—say, at least half of the total supply. Furthermore, the stockpile should not be used to try to control prices—an exercise that will inevitably be futile and counterproductive in the long run for internationally traded commodities. The stockpile, if created, should be used only to assure supplies to U.S. industry in the event of an interruption in the normal flow of imports—a move comparable with the Arab oil embargo. A limited program of this sort, if adopted, should be administered by an independent publicly owned corporation comparable in structure with Comsat or Fannie Mae. Conceivably such an organization could finance purchases through the issuing of its own debt obligations backed by the value of the stockpiles.

For many reasons, which this witness will be glad to elaborate during the question period if the Committee wishes, there appears to be little likelihood of effective cartel action in hard minerals comparable with the oil experience. U.S. consumers have not been denied access to supplies of vital hard minerals from foreign sources. The market mechanism does function in the long run. Shortages of minerals, when they occur, will prove temporary. With few exceptions known reserves of the major minerals are greater today than at any time in the past. The sources of these minerals are more numerous. For example, since the end of World War II the number of Free World countries producing large quantities of nickel has expanded from three to seven. Similar diversification in supply sources has occurred in copper, zinc, bauxite and in many other metals and minerals.

Government management of economic stockpiles would involve large sums of money, would create serious problems of possible market disruption, and would entail further proliferation of the bureaucratic structure. On the whole, therefore, the mining industry does not support economic stockpiling. However, if it is to be undertaken, then the limitations outlined with respect to the commodities involved and the provisions for release should be borne in mind.

Thank you for this opportunity to present our views.

Chairman SULLIVAN. Now Mr. Stanley, it's your turn.

## STATEMENT OF TIMOTHY STANLEY, PRESIDENT, INTERNATIONAL ECONOMIC POLICY ASSOCIATION

Mr. STANLEY. Thank you, Madam Chairman. I'm happy to join this distinguished panel today.

The International Economic Policy Association is a non-profit research group which has been studying public policy questions affecting the international economic position of the United States for some two decades. We have had the advice of industry experts on our Committee on National Resources on the two reports we have published on raw materials and foreign economic policy. The views I express today draw upon this research but they are my own views and do not necessarily represent the opinions of our organization as a whole.

Economic stockpiling has to be examined I think in the context of both the United States and the world economies of which the latter has been increasingly politicized in recent years. That's another way of saying that economics is what politics is all about. However much one may deplore the confrontational approach, the fact is that we and the other industrial countries have been confronted by OPEC and the Arab oil embargo, both proceeding via international legal and contract violations, and second by the so-called New International Economic Order, which is premised on the use of "resource power" to gain advantages.

I do not favor treating North-South relationships in economic warfare terms and I happen to be in favor of "detente", whatever that may mean, to the maximum extent feasible on both the East-West and the North-South axes of world politics. But in an era of conflict, it seems to me detente has to be founded on a capability for both deterrence against hostile actions and for defense in case they occur.

Thus, I conceive of economic stockpiling as a logical extension of the defense stockpiles we have maintained ever since World War I, an extension which is necessary to accommodate the changes in the nature of the conflicts facing us.

We therefore propose a separate type of stockpile authority for this purpose but I'm making this analogy to defense in order to clearly distinguish economic stockpiling related to foreign governmental actions affecting raw materials from various other concepts sometimes advocated and which I think some of my copanelists are advocating today.

Thus, I want to be very clear that we are not proposing any concept of U.S. buffer stocks intended to stabilize raw material price movements over an extended period or for any large range of commodities. We do not believe that an effort so to buffer prices is either desirable or feasible; for it would be both very costly, as Mr. Strauss has just indicated, and it would also be extremely internationally disruptive.

Our recommendation is for a limited stockpile for economic defense purposes only; and we see this as an exception to the general principle of relying on market forces which is made necessary by other governments' use, or misuse, of their sovereign powers in ways which are harmful to the U.S. national interests.

We have been through four phases I believe, starting with the 1973 oil crisis. That led to great apprehensions and fears and it encouraged other cartel formations. Then the global recession, which was brought on in large measure by the jump in oil prices, caused raw material prices to fall very sharply and made it very difficult to fix prices of key resources.

We are now in a phase in which the prices of the primary commodities are again rising; and this may renew and intensify efforts by raw materials producers. The longer term potential for shortages is also increased, as Mr. Bergsten indicated, by the inhospitable climate for foreign investments. These have traditionally been, and in my view still are, the most efficient source of capital, and the marketing, technological and management skills necessary to utilize natural resources.

I think I agree with the other witnesses that security of imported supply must be a major concern of the U.S. Government. As others have pointed out this morning, the imports provide a large and generally growing proportion of domestic consumption for natural rubber, bauxite, tin, nickel, manganese and chromium. In copper and iron we are less dependent upon imports, but the quantities and values are large. Many of the so-called minor metals may not be significant as imports in quantity, but they are so important to industrial production that problems with their supply could impact both on production and on employment.

I include in this group the platinum group metals, cobalt, columbium, strontium, tantalum, titanium and tungsten.

The problem I think that your committee is going to have, Madam Chairman, is that no one can prove the probability of any one of the contingencies, whether it be a cartel, a politically motivated action or a military situation. No one can say that a particular contingency—for example, an outbreak of serious strife in the South African area or another Middle Eastern embargo—is very high, but if you add up all the probabilities—and they are added, rather than multiplied, in this application of probability theory—you reach quite a high possibility that one or more vital resources to the United States is going to be adversely affected.

Mr. Bergsten used the term "deterrence," and I like that concept myself because I think if the United States establishes that it has both a will and an ability to protect its own interests it will limit the confrontational options of other countries and leaders who may be so motivated. And if one can limit their options by expanding our own options, this can be a positive inducement to the more cooperative patterns of behavior which the world badly needs.

Therefore, as in the report which we first published on this subject in 1974, we do favor a limited stockpile concentrated on industrially significant raw materials on which we substantially depend on imports and to be held only in the form in which the resources are currently imported, that is, not in the intermediate or refined versions, if we don't in fact import them or rely on imports in that form.

We have not made any study of what specific commodities should be in this type of limited stockpile nor the quantities and costs that might be involved, but even a full year, which would probably be more than required, of all current mineral imports other than iron and copper would involve something on the order of $7 billion. The current excesses, so-called, resulting from the Administration's shift in strategic stockpile objectives to which you referred is, I think, on the order of $6 billion. So we are not talking about a lot of potential new money; and conceivably if the stockpile were small enough there would still be some budgetary surplus from selling off the excesses.

It makes no sense to me to sell off what has been declared to be excess for defense purposes (and may not, in fact, even be excess for those purposes; I understand that whole question is currently under review in the executive branch) but then to perhaps buy back some of those materials thus doubling the potential for market disruption. So I think as a minimum your committee should put its weight behind holding up on disposals until our government has collectively made up its mind whether it's going to do anything on the subject of your hearings and, if so, what.

Very briefly then, we have proposed a public-private stockpile corporation, not a government agency, but with as much independence in its management as can be developed, consistent, of course, with the kinds of coordination that would have to be done with overall government materials policy.

My written statement also suggests some criteria for limiting the stockpile. One is that the supply problem be directly related to cartel or other actions by foreign governments as distinguished from those caused by cyclical trends. Another is that the shortage ought to have a major public policy significance, measured by its aggregate national impact. Thus there would be, in my view, a presumption against government involvement with the market unless it can be established that the effects of the shortage are likely to significantly raise the annual GNP deflator, curtail overall industrial production during a protracted adjustment period, adversely affect national employment trends or—and this is the point many people don't raise—require U.S. export or other controls likely to have major foreign policy repercussions as our abrupt imposition of soybean controls did.

Now what is "significant" is a subjective judgment; but I think there are enough input-output and other macroeconomic modeling systems and techniques available to make an estimate of whether a given contingency and a given shortage is likely to have a significantly harmful effect on the economy as a whole. So I would hope that your committee could perhaps encourage some of this work that's available in economic theory to be applied to this very practical problem.

Stockpiling is only one of the areas in which government action is needed. Other witnesses have mentioned already maintaining a standby capacity. I'd like to call the committee's attention to the Swedish tax system, which encourages industry to maintain larger inventories than it otherwise might, to see whether that might be an avenue that the United States could usefully follow.

And finally, I believe attention is badly needed to overall governmental organization, both analytical and policy planning. I happen to believe that eliminating the Office of Emergency Preparedness and downgrading the Council on International Economic Policy has moved away from giving the President the advice and control he needs; and, as you well know, Congress has its own problems of getting adequate advice and information. So I hope that your committee can address itself to the broader structural aspects going beyond mere stockpiling as such and, of course, to the petroleum issue. There I agree with all the other witnesses that it overshadows all the others: it is one on which the United States still, in my judgment, has no adequate policy.

Thank you, Madam Chairman.

[Prepared statement of Mr. Stanley follows:]

STATEMENT OF TIMOTHY W. STANLEY, PRESIDENT, INTERNATIONAL ECONOMIC POLICY ASSOCIATION

I. INTRODUCTION

The International Economic Policy Association is a private, non-profit research organization, founded in 1957 and specializing in the analysis of international monetary, investment, trade, and taxation issues and related public policy questions affecting the international economic posture of the United States.

The Association's member companies are involved in diverse industrial activities including chemicals, metals, food products, automotive components, electronics, and services such as accounting, transportation, and tourism. As leading U.S. firms in their fields, they share an extensive experience and interest in the international economy.

In recent years the Association has undertaken a number of research projects examining the interaction between U.S. natural resource requirements and foreign economic policy, in recognition of the nation's dependence on foreign sources for petroleum and other vital industrial raw materials. In July 1974 an interim report on this effort was issued by IEPA and its industry advisory committee composed of experts from member companies.[1] This project was followed in May 1975 by a second study, "Petroleum and Foreign Economic Policy." The Association continues to monitor developments in this area, although some of the basic research has been taken over by the recently formed International Economic Studies Institute, which will be publishing a book on "Raw Materials and Foreign Policy" early this fall.[2]

I appreciate the invitation to testify at your hearings today. I do so in my capacity as President of the International Economic Policy Association and on the basis of the research which it has done. While I have had the advice of individual experts on our industry advisory committee, I do not speak on their behalf or that of our member companies, which may not share all of the views I express.

Before turning to proposals for economic stockpiling, I would like to review briefly with you the developments in the world political economy which make the consideration of a new type of stockpile necessary.

In today's world, economics has become politicized, which is a way of saying that economics is increasingly what international politics is all about. It therefore behooves us to treat this subject in a broad "strategic" context rather than under a narrow and traditional heading such as "trade and investment"; for conflict between nations is being expressed in more than military terms, and economic "weapons" are being used by states to reach national goals.

Our strategic stockpile has been designed to deal with traditional military threats. An "economic stockpile" as here discussed is also needed, as a deterrent against economic policies which threaten the U.S. long-term national interest; and as a "defense" in the event that deterrence fails and we need to act to preserve our own economic sovereignty. People tend to think of an economic stockpile as unrelated to the basic strategic interests or national security of the United States in the usual sense. To my way of thinking, the adoption of such a stockpile concept would be merely an adjustment to the current changes in the strategic issues facing the United States—from East-West political-military to North-South political-economic. We are fortunate that in the North-South context, economic realities tend to constrain the implementation of some of the wilder Third World proposals. It is to supplement this natural deterrent that an economic stockpile can be useful and effective.

In recognizing that the United States and the other industrialized countries have been "confronted" by the developing world, I am not unsympathetic to the desires of nations to achieve higher standards of living, nor do I favor a policy of treating North-South relationships in economic warfare terms. It is important, however, to apply to the North-South relationship a lesson we should have learned from the East-West "cold war": Where a conflict exists, "detente," even in its most ambitious sense of peaceful reconciliation of differences, has to be preceded by both a capability for deterrence against hostile actions, and for defense in case they occur. Having a defense capability is, of course, an integral part of deterrence. To my way of thinking, an economic stockpile for certain limited purposes would be an overdue adjustment to continuing changes in the nature of conflict facing the United States.

One other introductory comment is appropriate: To many, even such a limited economic stockpile seems undesirable in principle, because it implies further government involvement in the private sector, supplanting private enterprise. I share this concern for, in general, government involvement in the market sys-

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[1] "Interim Report on U.S. Natural Resource and Foreign Economic Policy" by the International Economic Policy Association and the IEPA Advisory Committee on Natural Resources, IEPA, July 1974, Washington, D.C.

[2] The Institute has also published a research compendium on "Basic Data for Estimating U.S. Mineral Requirements and Availability," and two *Contemporary Issues* Papers, including Dr. Harald Malmgren's "The Raw Materials and Commodity Controversy."

tem interferes with its efficient functioning on behalf of producers and consumers. Nevertheless, in the current world environment, sovereign governments often seek to maximize their national advantage by market interventions, expropriations, and other actions in restraint of trade which adversely affect the U.S. economy as a whole. In such cases, the costs of any actions by our government should be weighed against the consequences of inaction. In my view, therefore, we should treat the subject of stockpiles as an exception to the general principle of relying on market forces to adjust supply and demand. The purpose should be related primarily to political actions by other governments affecting key U.S. resource imports.

## II. NATURAL RESOURCES AND THE WORLD POLITICAL ECONOMY

World economic and political developments related to raw materials have recently passed through four distinct phases. First, the energy crisis of 1973 began with the growing vulnerability of the United States to petroleum supply disruptions brought about by growing dependence on imports. The supply disruptions were realized, of course, during the Arab oil destination embargo in the fall of that year. At the same time, the economic boom experienced simultaneously by Europe, the United States, Canada, and Japan placed increasing pressure upon other raw materials supplies as well, and set the stage for the soaring natural resource prices of 1973 and 1974.

In the second phase, the threat of OPEC-inspired cartel activity in other raw material markets and the possibility of politically motivated cutoffs of foreign sources similar to the Arab (or OAPEC) embargo intensified the worries generated by the raw materials shortages and escalating prices which accompanied the boom. Adding to the troubled atmosphere, of course, was the new emphasis on "resource power" by raw material producers, typified by the Third World's demands for a "New International Economic Order" (NIEO). The NIEO implied severe disadvantages for the developed, industrialized states of the West in future economic dealings with the Third World.

A third phase coincided with the global recession in mid-1974, brought on in part by the fourfold jump in oil prices. The recession caused many of the immediate fears to evaporate. Prices of many market traded raw materials fell severely—for example, the London Metal Exchange price of copper (expressed in dollars) dropped by 67 percent between its peak in April 1974 and its bottom in January 1975.

By and large, the commodity price declines from mid-1974 to 1975 severely affected the less developed countries' export earnings, and the market weaknesses deflated the more grandiose schemes for cartelization and price fixing of world resources. But success did come to some efforts. For example, in June 1974 Jamaica unilaterally forced renegotiation of its contracts with the aluminum companies operating there and it has refused to honor its prior arbitration agreement with the ICSID, the World Bank's International Centre for the Settlement of Investment Disputes. The new arrangement calculated local taxes as a percentage of the final selling price of aluminum, raising payments 470 percent, and established production quotas. Later in 1974 most of the other Caribbean bauxite producing countries in the International Bauxite Association (IBA) followed suit.

However, it could be fairly generalized that in the soft world markets for raw materials in the latter half of 1974 and most of 1975, exorbitant demands by producers have been difficult to realize. For example, CIPEC (the copper cartel) was unable to shore up the price of copper despite a 15 percent export cutback by its members; CIPEC was also unable to arrange for a price buffer stock to be financed by OPEC, despite the NIEO rhetoric. This device may now be a possibility, however, if UNCTAD succeeds in establishing a general fund for commodity buffer stocks.

A fourth phase of natural resources problems is now emerging. In the last 6 months, the prices of primary commodities traded on international markets have been slowly and substantially rising from 1975's depressed levels. For example, the London *Economist's* primary metal dollar price index has risen by 23 percent from January 1976 to May 1976. Although adequate capacity still remains in most primary commodity producing industries in both the developed and less developed worlds, demand caused by post-recession growth will undoubtedly again approach production capacities in some materials. It can be hoped that the feverish pursuit of commodity supplies which characterized 1973 and 1974 will

not recur. This situation may be more easily achieved if solid recovery and growth are not allowed to get out of hand here and in other major countries such as Germany and Japan. President Ford's call for a second economic summit meeting this summer is a useful reminder of the interaction of the major world economies in this regard.

Nevertheless, a strong possibility exists that widespread materials problems will plague the industrial economies for years to come, even if the crisis atmosphere of the oil embargo period is avoided. Among the causes will be the insufficient expansion of materials producing capacity in less developed countries, owing to an inhospitable climate for foreign investments; the tendency to treat multinational enterprises as "objects of economic warfare"; and disregard for standards of international law regarding investments, contracts, and arbitration procedures. Recovery of prices for raw materials in world markets will also strengthen cooperative efforts by producing countries to maintain those price advances through the next recessionary cycle. Such politicized efforts can amount to what U.S. antitrust laws would call "conspiracies in restraint of trade," and the European Community would consider an "abuse of a dominant market position." Prolonged conflict between producing and consuming country interests is likely.

### III. RAW MATERIALS IMPORTS AND THE U.S. ECONOMY

Since the central question before this committee is the adoption of an economic stockpiling program by the U.S. Government, the importance of raw material imports to the normal functioning and stable growth of the U.S. industrial economy must be analyzed. Imports provide a large proportion of domestic consumption for many of the major raw materials, including natural rubber, bauxite, tin, nickel, manganese, and chromium. In some other major materials, such as copper and iron ore, the United States is far from dependent upon imports, but the very large quantities and dollar volumes of these materials which are imported call for close attention. Finally, many of the minor metals, which do not represent large physical or dollar volumes annually, are nonetheless imported in very large proportion to domestic consumption. In cobalt, columbium, strontium, tantalum, titanium, and tungsten, supply problems would cause sharp sectoral problems and economic imbalance. The latest Bureau of Mines tabulation of U.S. import dependence is attached as Appendix A.

The security of these imported supplies to the U.S. civilian economy must be a vital concern to the U.S. Government. Shortages caused by foreign events can dramatically slow the pace of domestic industrial activity, worsen our unemployment problems, intensify inflationary pressures, and interfere with smooth U.S. relationships with foreign countries. (Our abrupt, and probably unwise, imposition of soybean controls is an example of how U.S. response to domestic shortages can affect key allies.) Shortages, of course, can also adversely affect the U.S. ability to support defense production in time of emergency. That is the traditional justification for the federal stockpile system; but the range of possible threats to the domestic economy is considerably broader than the military defense-related concerns upon which the stockpile program has been heretofore focused.

Adequacy of foreign supply can be disrupted by a variety of factors, ranging from natural disasters to labor disputes in either supplier countries or transport systems. But from the standpoint of potential stockpile use, the major concern is political actions by foreign governments. These include internal military and political conflicts within or involving supplying countries, or between neighboring states along key transportation routes. We have seen reductions in global copper supplies resulting from Chilean political disruption in recent years. Currently Zambian copper, and copper and cobalt supplies from Zaire are disrupted because the Angolan conflict put the Benguela railroad out of service, and because Zambia had closed its border with Southern Rhodesia. (Although the slack price of copper has not been to severely affected by this latter situation, we are currently experiencing a cobalt shortage which has resulted in a significant increase in prices.) Political pressures and turmoil may soon cause shortages in world markets of Rhodesian chrome as well.

Expropriation and investment disputes have often interrupted production of foreign raw materials when mine management and technical services are interfered with. Such disputes have also led to legal actions to attach raw material imports in the developed countries, resulting in an interruption of supplies.

Cartel activities, such as the price increases OPEC has successfully imposed on the world petroleum market, are primarily focused on increasing producer revenues from raw material sales. Although the Arab embargo established conditions in which world oil prices could rise several thousand percent over the cost of production, the high prices have been maintained through informally restricted sales, mainly via Saudi Arabian restraint in setting production levels. There may be from time to time more formal efforts to cut back supplies, such as CIPEC's cutback on copper production. But where the objectives are mainly economic, increased revenue depends on restricted sales rather than on cut-offs.

However, politically inspired embargo activities are also a concern, given the Arabs' success in applying the "oil weapon" to the Arab-Israeli conflict. A repeat of the petroleum embargo is certainly a substantial possibility in future months, depending upon progress in arranging an overall Mideast settlement. Against such a threat, the United States and several other industrialized countries have founded the International Energy Agency, with its plans for the emergency sharing of petroleum import supplies. I support that initiative because, despite all of the uncertainty about its functioning in an actual crisis, it may have some deterrent effect, and will surely have some "damage-limiting" utility if deterrence fails.

Fortunately, there currently appear to be few analogous conjunctions of major raw material supply areas with volatile political situations involving direct U.S. (or other Western) policy disagreements with the producing countries. Such a conjunction may occur, however, if events in Southern Africa move toward a confrontation in which mineral resources, such as chrome or ferrochrome, are used for purposes of politial coercion.

Conflicting national goals regarding markets and production may lead to long-run supply diversions. An example can be seen in Canada's plans to limit exports of petroleum and natural gas to the United States, in order to conserve her supplies for Canadian markets. Although such activity by friendly countries can often be handled with adequate notice and consultation so as to permit a relatively smooth transition in the U.S. domestic economy, the possibility of sharp disagreements and abrupt policy changes always exists.

The problem in framing a sensible public policy for the United States is that no single contingency may appear to have a high enough probability or seriousness to warrant precautionary measures. Such measures are not only complex, but they often involve government expenditures, and they may contain the seeds of temptation for misuse as discussed below. Nevertheless, we are living in what might be termed a period of "systemic" change in the world polity which is political and social as well as economic and technological in nature. Whatever probability one may assign to any given contingency—and such judgments are inevitably subjective—the cumulative possibility of a serious curtailment of access to one or more critical foreign supplies at reasonable prices has to be put down as quite high. Regardless of the success of particular cartel or related efforts, the general drive of the New International Economic Order advocates to capture a much larger share of the economic benefits from raw materials production seems likely to continue an atmosphere of acrimonious debate and potential conflict. This trend may of itself have ill effects on steady supply or create economically destabilizing uncertainties which can affect the confidence of business and consumers.

There are potential avenues of cooperative approaches to these problems which will benefit both the industrialized and developing countries. An ability by the United States (and other materials consumers) to limit the "confrontational" options of those who are so motivated can also be viewed as a positive inducement to more cooperative patterns of behavior.

### IV. ECONOMIC STOCKPILING

In its 1974 Interim Report on U.S. Natural Resource Requirements and Foreign Economic Policy, IEPA has proposed an economic stockpiling system with limited and practical objectives. Such a stockpiling system would be intended to help deter, and allow for a smooth adjustment period when there are politically inspired embargoes, major cartel price fixing, or other sudden and severe disruption of overseas supply channels. It should not, in our view, be a vehicle for general stabilization purposes, such as use of buffer stocks to moderate cyclical domestic or international price movements. It should not, of course, be used for political or budget-balancing purposes—which some suspect

was a significant part of the motivation for the Nixon Administration's modification of the stockpile objectives and proposed disposals in 1973.

IEPA's concept involves the creation of an independent stockpile authority (separate from the national defense stockpiles) in the form of a public-private corporation with adequate private sector participation on its management board. It would operate on a legislative charter with as carefully defined guidelines on its purposes and methods of operation as possible; and it should be invested with sufficient capital to fulfill its objectives, possibly through a revolving fund, to avoid political influence via the purse strings.

As noted above, those purposes should be directed to a relatively few commodities where the severity and probability of disruptions in foreign supply appear to warrant the stockpiling of only "reasonable" amounts, i.e., those needed to have some deterrent effect (by extending the period in which foreign producers would have to forego the revenue from exports being withheld) and to provide a transition period for expanded domestic production and increased use of substitutes. It should not, however, aim at a capability for long-term substitution for foreign or other alternative supplies.

The managing board of the stockpile corporation should be as independent as possible from direct political control or influence on a day-to-day basis and should have a balance of both public and private sector participation in its direct management, along with nonpartisan professional expertise. Although its field is entirely different, the Federal Reserve Board comes to mind as a potential model from which some features of independent operation could be adapted.

Such a body would, of course, have to be subject to legislative and executive review of its performance, with such modifications in its charter and operating directives as experience proved necessary. But to enable it to provide continuing and long-term management of the economic stockpile program, without either budget-oriented or other policy twists and turns, a multi-year revolving fund basis would be desirable, with major review and evaluation scheduled, say, only every three years. However, annual public reports should be required.

In its actual operations, the past strategic stockpile management experience ought to be applied, avoiding the pitfalls of some previous acquisition and disposal actions, while following appropriate safeguards for avoiding market disruption and including requirements for consultation with industry. In addition, of course, provisions would be needed to insure adherence to established government standards regarding conflict of interest, profiting from inside information, etc.

### SOME LIMITING CRITERIA

I mentioned at the outset my belief that government involvement in the private sector should be regarded as an exception rather than the rule. This principle certainly applies to stockpiling as well as other government activities; it should guide policymakers in choosing the types of contingencies against which planning and precautionary measures might be considered. I also indicated that as far as disruptions in access to foreign supplies are concerned, we should concentrate primarily on those involving political actions by foreign governments rather than, for example, cyclical factors or labor disputes. But even in such cases not every "shortage" or market failure is of major national public policy significance. I believe that the test should be the aggregate national impact, since there are always some individuals or sectors of the economy who are harmed by shortages—while still others may benefit. Situations which might meet the criteria of national significance could include: an absolute unavailability of foreign supplies with critical applications in defense related or other essential production for which ready substitutes do not exist; a supply disruption likely to significantly raise the rate of inflation, measured by the annual GNP deflator, for example by a third to one-half of 1 percent annually; a shortage threatening to curtail industrial production significantly for a protracted adjustment period; and a supply disruption likely to have an adverse effect on national employment levels, measured by a given percentage deviation from trend lines.

Defining "significant" is, of course, always a matter of judgment; but the point is to establish some threshold below which a presumption ought to exist that government action or intervention is not warranted. Still, various analytical models exist through which the macroeconomic effects of various shortage scenarios can be studied.

A final criterion might provide for cases when the conceivable U.S. corrective measures for a major shortage would be likely to have major foreign policy repercussions because of their effects on foreign countries' economic interests. One cannot draw a clear line between national and international implications of shortages. Even though our concern here, of course, is with the U.S. economy and interests, our interests also include relations with other key countries.

I realize that the foregoing criteria are rather general; but they suggest areas in which your committee might arrange for further work to refine them in the context of economic stockpile proposals.

An economic stockpile system such as that sketched above would include several advantages:

One: The investment required could be reasonable. The equivalent of the currently indicated excesses over inventory objectives in the present critical and strategic stockpiles, if transferred to this new purpose and authority, would probably prove to be sufficient capital stock (after limited, phased, sale of some unneeded materials and acquisition of others). The revision of stockpile objectives in 1973 raised a number of questions about the adequacy of the lower objective levels even in the context of purely national defense contingencies, given the large number of possible scenarios not necessarily involving a major war. It seems appropriate, therefore, that these objectives are currently being reconsidered by an interagency group chaired by the Federal Preparedness Agency. But even on the assumption that considerable excesses are found over the forthcoming revised national defense objectives, I do not believe that Congress should act on any disposal authorizations until the needs of an economic stockpile have been determined. It makes little sense for the government to sell off what is declared as militarily surplus and then perhaps have to buy some of it back in connection with economic defense and deterrence needs, thus doubling the potential for market disruptions!

The strategic stockpile excesses are currently valued at $5.8 billion, while stocks of ores and processed materials necessary to meet U.S. demand for aluminum, chromium, manganese, and tin for one year would cost $2.4 billion, according to a recent GAO study.[3] The purpose of our proposed stockpile system would be to compensate for interferences with supply of imported materials, and not to adjust for normal market related shortages originating both in the United States and abroad (such as processing capability constraints may cause). It would therefore be necessary only to stockpile materials in the form in which they are currently imported. This would minimize the stockpile inventory investment in more expensive processed materials, which would be needed only to the extent that the United States depends on foreign processing facilities.

The major raw materials discussed above represent not only the most prominent candidates for stockpiling, but the largest dollar volume items in terms of annual U.S. imports. Other than iron and copper, for which stockpiling is not urgent, all other mineral raw materials combined were imported in quantities worth $5.1 billion in 1974 and $2.8 billion in 1975. Although many of these materials would not warrant heavy stockpiling, under the arbitrary assumption that a capability to replace imports for one year for all these materials was required, the total capital investment in the stockpile system would be on the order of $7.5 billion—not too far above the present value of the "excesses."

Two: The benefits of a stockpiling program with the limited objective of deterring or compensating for critical temporary shortages and governmental interferences with foreign supply could be structured so as to accrue primarily to the United States. Implementation of temporary trade controls to limit export of stockpile releases during the specified emergency conditions which the system is intended to counteract should be included in enabling legislation, but with requirements for the maximum possible consultation with affected trading partners. Comprehensive and permanent trade barriers would not be required, as they would be with some proposals for a continuously acting price stabilization stockpile system; the inevitable friction with our foreign trading partners which would accompany such a broad and permanent unilateral change in the international trading system would be avoided through adoption of such a limited proposal.

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[3] "U.S. Dependence on Imports of Five Critical Minerals: Implications and Policy Alternatives," GAO, January 29, 1976.

Three: As the United States itself would control the stocks in this system, it would avoid the risks of foreign disagreements regarding goals and objectives, procedures and performance, which might occur in the instance of U.S. involvement in an OECD or international effort on similar lines. Nonetheless, the United States would undoubtedly find it convenient and desirable to coordinate its activities to the extent possible with like activities on the part of other industrialized countries.

Four: As raw materials price levels would be a minor consideration for the stockpile system in normal periods and would not trigger releases, producing countries could not accuse the United States of denying them the benefits of normal long-term upward swings of commodity prices (which might occur if the United States adopted a much more extensive permanent price-buffer stockpile system). To the extent that cooperative international producer-consumer agreements can be reached, they could be readily accommodated by consultations and adjustments in the stockpile's operation, particularly during the periodic review and evaluation of the system by Congress.

Five: In addition, close private sector involvement in the stockpile corporation's management could result in such benefits as stockpiling of materials more closely meeting industrial specifications; minimization of transportation and handling costs through storage near probable ultimate consuming locations; and reduced disruption of materials markets when stockpile purchases are made.

There are, as in all plans, some disadvantages or problems in this type of proposed economic stockpile. Some public funds would be involved even if the transfer of present stockpile excesses were used to initially establish it. It is argued that one cannot "prove" in advance the likelihood of various contingencies against which the stockpile might be relevant, or how effective it would actually prove to be. One answer is that the Defense Department spends a hundred billion dollars a year against contingencies, many of which are equally uncertain, albeit far more dangerous if they occur.

A sophisticated set of guidelines would be needed for the management of the independent stockpile authority, the public-private corporation. Executive branch advice and consultation would be needed in several areas, to include determining whether covert collusive foreign activities are underway in an effort to influence prices, the relationship of U.S. stockpile actions to those of other governments, and similar matters. A central problem would be reconciling the general coordination needed for overall U.S. Government materials activities with the independence which the stockpile corporation must have. This independence is important both to facilitate operating judgments and to prevent a shift in the stockpile's purposes toward serving domestic inflation and antirecessionary policies.

On the other hand, it has been possible for the Federal Reserve Chairman to maintain the independence of his operations while still cooperating whenever appropriate with the U.S. Treasury.

One of the greater drawbacks is that, once established, such a stockpile mechanism could be extended by some future Administration and Congress into a quite different type of program, e.g., a comprehensive set of U.S.-controlled buffer stocks intended to moderate raw materials price movements through purchases, sales, and compensation for any and all shortages.

The stability in raw material prices which may be gained by a massive attempt to buffer prices over time is, in our opinion, illusory; it could not be accomplished except at vast expense, given the inevitability of raw material leakages into and out of the U.S. economy, or the alternative massive disruption of international trade which would be necessary to offset the market forces responding to material import price differentials between the United States and elsewhere. Furthermore, a unilateral U.S. attempt to set global market prices through such an extensive system could thoroughly alienate foreign countries and thereby itself cause turmoil and disruption of foreign supply flows, bringing about the very thing which the program was designed to avoid. Furthermore, the great extent of government involvement in the domestic private economy which would occur with a full-fledged price/buffer stock program would be generally unacceptable and detrimental to the efficient adjustment and development of our economy over time.

Internationally, an extensive system of buffer stocks for many materials funded and controlled by a multilateral organization, such as the plan proposed by Chairman Corea of UNCTAD, is probably not feasible either. In particular, the less developed countries can be expected to press so adamantly for price rises through such a plan that general agreement on price stabilization would not be possible. (Although highly selective agreements involving both producers and consumers may be desirable and feasible for specific commodities such as tin, we tend to favor the approach of the Lome Convention's "Stabex" scheme. Stabex lets the market set prices for covered commodities and grants financial assistance to participating developing countries when their commodity export earnings fall below an agreed level.)

In any case, the limited size, scope, and inventory of the type of U.S. economic stockpile we envisage would itself be insurance against the temptation of later expansion into massive buffer stock programs. (A recent Commodities Research Unit study has estimated that a $5 billion stockpile would be needed to stabilize world copper prices alone; and the added cost of comprehensive stabilization stocks would likely be prohibitive.)

Our conclusion, therefore, is that the most practical program for the United States is an economic stockpile concept having the very limited goals and objectives set out above. Such a plan would not supplant the desirability of pursuing cooperative economic programs and efforts with less developed raw materials producer countries, nor, as explained below, is it by any means the only component of a national materials policy. But it does seem to be a step in the right direction—and one which should not create undue countereffects or problems.

## V. CONCLUSIONS: A COMPREHENSIVE MATERIALS POLICY

Stockpiling is, of course, only one of several areas in which government action is needed. In addition to broad policies to encourage international cooperation and deter harmful employment of "resource power" by other governments, we should be considering a general expansion of domestic raw materials productive capacity and diversification of foreign sources. This would involve more intensive research into the potential substitution of domestically available materials for those now heavily reliant on imports; assistance in foreign mineral discovery programs and investments in production and processing; development and refinement of taxation systems which encourage rather than impede domestic mineral development and domestic recycling of previously used materials; establishment of a workable regime for deep seabed mining; expansion of national petroleum storage capacity and support and encouragement of the involvement of multinational corporations. Despite the controversies surrounding transnational enterprise, it continues to be the major source of the capital and the technological, managerial and marketing skills needed to expand world minerals production efficiently.

On the latter point, despite the cool reception accorded at the UNCTAD Nairobi meeting to Secretary of State Kissinger's proposal for an International Resources Development Bank, the concept may have merit; for it could help overcome the hostile climate which now exists for the private sector in extractive industries, and give investors some reasonable insurance against expropriation. On the other hand, the benefits of providing needed capital, skills, and technology must be weighed against the risks of displacing normal risk capital movements, since this is by far the largest source of potential investment.

Another program more directly related to the topic of stockpiles which should be considered by the U.S. Government is the adoption of tax incentives for encouragement of enlarged private holdings of critical raw materials inventories. Such an incentive could take the form of reducing the risk of book losses in case of raw materials price declines, as well as the risk of tax liability incurred on paper profits from further price rises. Perhaps the system's early tax write-offs of raw material inventory costs as practiced in Sweden and described in IEPA's *Interim Report*, might be adapted to the U.S. tax system. This is a suggestion which bears further inspection, particularly in the light of Sweden's actual experience to date.

Other incentives for domestic production of raw materials might also be considered, such as subsidized procurement for stockpiling purposes of materials from domestic mines which are not currently operated because of existing market conditions. An example might be aluminum; although pilot projects under both government and private sponsorship are underway on the utilization of aluminum-bearing resources in the United States, most U.S. aluminum consumption currently comes from Caribbean and, to a lesser extent, Australian sources. Subsidization in one form or another is needed to bring processes utilizing domestic clays and other sources to a level that could be adapted for large-scale use in the event of exorbitant price increases by the bauxite cartel or a major cutback in foreign availability. Similar programs might apply to other materials such as cobalt, for example, for which domestic production is possible but uneconomic. Over a period of years such a source could supply any necessary stockpile increments and help maintain at least a standby or reserve capacity to expand domestic mine production. All such suggestions, of course, would require detailed cost/benefit and feasibility analysis.

What is needed, obviously, is comprehensive planning regarding future U.S. materials needs in the context of both increasing dependence on foreign sources and an overall international economic strategy for the United States in a changing world. Each program, whether in the form of a limited economic stockpile of the type suggested above or in other areas can interact positively or negatively with other aspects of domestic economic and materials policy. Both analytical research and coordinated policy planning are necessary.

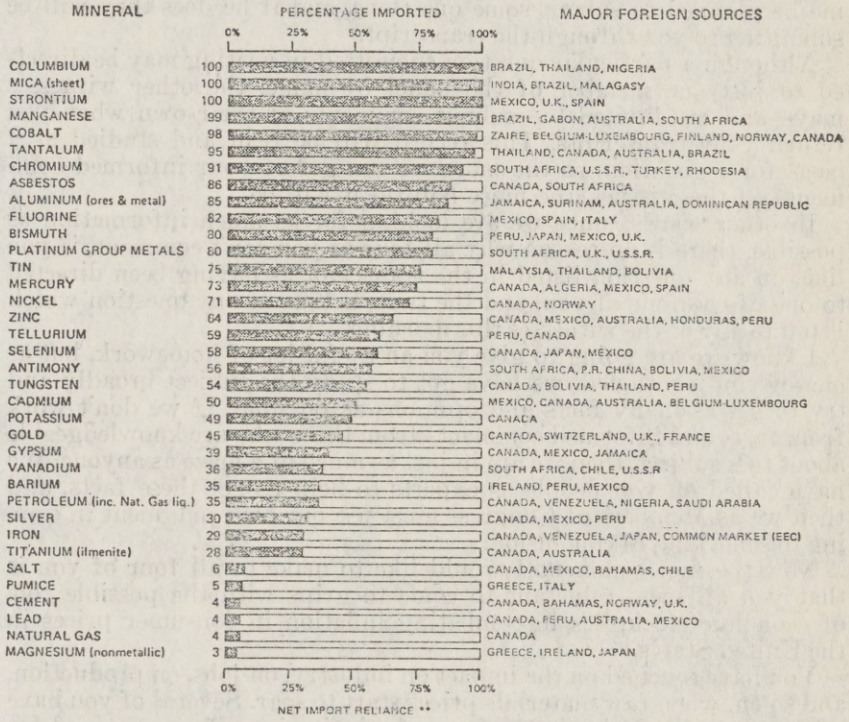
There is now a welter of separate agencies of the U.S. Government and a network of coordinating bodies concerned with this problem. The phaseout of the Office of Emergency Preparedness has removed one focal point for overall materials policy at the Presidential-National Security Council level; and the subordination of the Council on International Economic Policy to the Economic Policy Board (and its general downgrading in recent years) has tended to diffuse an important focus on foreign economic policy as a whole.

The structural and organizational aspects, therefore, are vital, even though they cannot be addressed in this testimony in any detail. I hope that the Subcommittee will include them in as broad a scope as possible in its ongoing work.

In speaking generally about natural resources and raw materials, we must not lose sight of the unique situation and magnitude of the petroleum problem. Oil is vital not only as a source of energy but of essential petrochemical feedstocks. Despite our experience with an embargo and a successful cartel operation which was a significant factor in causing the world's worst recession since the 1930's, we have allowed our dependence upon foreign sources, particularly the OAPEC countries, to rise steadily. This is also too complex a subject for discussion here. But I would like to conclude this statement by urging the Congress to heed the warnings of the Federal Energy Administration that our dependence is growing dramatically and to take further actions to implement the President's recommendations. The risks of not doing so, in my opinion, are large, but they are seen as long or medium term by the public. The costs of any effective program are also large; and they are seen as more immediate. Thus there seems to be a bias toward procrastination and a hope that the problem will somehow go away. Facing up to this challenge is a test of our people and their leadership in both branches of government.

APPENDIX A

## IMPORTS SUPPLIED SIGNIFICANT PERCENTAGE OF MINERALS AND METALS CONSUMPTION* IN 1975




* APPARENT CONSUMPTION = U.S. PRIMARY + SECONDARY PRODUCTION + NET IMPORT RELIANCE

** NET IMPORT RELIANCE = IMPORTS – EXPORTS ± GOV'T STOCKPILE AND INDUSTRY STOCK CHANGES

BUREAU OF MINES, U.S. DEPARTMENT OF THE INTERIOR (import-export data from Bureau of the Census)

Chairman SULLIVAN. Very good, Mr. Stanley. I am glad to have your statement and the summary.

What you have each given orally has been intriguing enough to want to have each of you here for a day. But since that is impossible, we have asked that you all give your oral testimony first, before any questioning, so that the questions can be directed to all of you as a panel.

I have a number of questions that I will probably just read into the record, so that they will appear in the transcripts, and you can then answer them in writing.

Congressman Brown was unable to be here this morning. He told me he planned to submit some questions, and if he does they will be submitted to you through the transcript.

Although a particular question submitted in writing may be directed to just one member of the panel by name, the other witnesses may—and are invited to—submit comments of their own when you return your transcripts. This record will be read and studied as a basis for legislation, so the more we can get of your informed comments on these issues, the more helpful it will be.

In other words, since we are looking for as much information as possible, there is no reason why all four of you can't comment, if you like, on any question listed in the transcript as having been directed to one of the four of you, and the same is true of any question which is put to any of the witnesses this morning.

I know we are going to give you an awful lot of homework, but as one of you mentioned, we have got to study the subject broadly and try to get as many facts and opinions as possible. If we don't work from facts and informed comments from those who are knowledgeable about this subject, then we are in just as much of a maze as anyone. We have called on you people as experts to help us get these facts, and then we as Members of Congress must use our own judgment in coming to some kind of conclusion.

Now the first comment I would like to make to all four of you is that you all seem reluctant to come to grips with the possible role of economic stockpiles in combating inflation in consumer prices in the United States.

You have touched on the impact on industry, on jobs, on production, and so on, when raw materials prices start to soar. Several of you have talked about a solution in the form of substitutions of one material for another, copper for aluminum or vice versa, or plastics for something else.

How much has the cost of an automobile risen in the past four years as a result of higher costs of raw materials which are largely imported?

I wonder does anyone know that? I assume none of you can answer it offhand, but if you have any facts on it I would appreciate it if you would just explain in writing what information you may have on it.

Mr. BERGSTEN. Madam Chairman, could I just say I was not reluctant at all. I suggested explicitly using stockpiles for contracyclical purposes, to dampen inflation rates.

So I just wanted to make that clear.

Chairman SULLIVAN. Yes.

Mr. STANLEY. I wasn't reluctant, either. I strongly disagree with my colleague.

Chairman SULLIVAN. This is good to have agreements and disagreements, because then I think we can get to the heart of it.

Mr. STRAUSS. I think Mr. Stanley and I both share the view you are not likely to have enough money available to seriously dampen the prices of these raw materials.

I will give you a good illustration. When Mr. Nixon came out in 1973 with his proposal to virtually liquidate the stockpile, he indicated that one of the reasons was to fight inflation. And as a result of this, in the spring of 1974 he sold all of the remaining copper in the stockpile, 250,000 tons. It didn't keep the price of copper from going up.

Chairman SULLIVAN. I remember vividly what happened on silver.

Mr. STRAUSS. Yes; the silver is the same. So while I quite understand the desire to keep the consumer from suffering the effects of inflation, in fact I really do not feel it is a practical use of an economic stockpile, because of the amounts that would be required. Mr. Bergsten made some reference to the fact that the reason the tin agreement didn't work too well was because the buffer stock was not enough. It was only 20,000 tons, which is 10 percent of a year's production. At the same time the buffer stock was being liquidated, there were 40,000 tons of government tin sold.

So 60,000 tons of tin were sold, which is 30 percent of a year's world supply of tin. It was thrown on the market, either from the buffer stock or from our strategic stockpile, and the price of tin went from $1.70 or $1.80 a pound to $4.70 a pound.

Because of the amounts involved, when the public gets its sights on a commodity and believes the commodity is going to be in short supply—particularly where those commodities are traded on commodity exchanges, where you can call your broker and say "Buy me a forward contract"—it is very, very difficult for the Government to control that situation.

Chairman SULLIVAN. This is exactly what I wanted to put before you, too, because I have had some experience in the Banking Committee in trying to deal with it. So let me put question No. 2. What is the the impact on recurrent price inflation of raw materials, and particularly imported raw materials, of speculation in commodity futures trading?

I know this is a tough question, because the traders and brokers and the exchanges always maintain that the futures prices do not pull up cash prices. But the evidence is strong that the opposite is true—that inflation in commodity futures prices usually or often results in higher prices for the actual commodities, even when there is no hanky-panky in the exchanges.

From your own individual knowledge of the commodity markets, do you or do you not see a direct relationship between the futures price increases based on heavy speculation in certain commodities, and the cash prices of the same commodities perhaps a week or so later?

To follow up on that point, I asked that question because I wonder how you can stabilize or maintain stable commodity prices through a stockpiling system without, at the same time, imposing much stronger control on speculation in those commodities in the futures markets.

The new Commodities Future Trading Commission is just really getting underway, and in the case of those Maine potatoes it is still being caught by surprise.

Do any of you think the law is strong enough to give that Commission enough power to prevent inflationary trading activity?

Mr. STRAUSS. May I speak to that point, because it is something I have given a lot of thought to.

I think the problem is that the commodities we are talking about are international. And if we succeed in dampening speculation on our own commodity exchanges here, or even shutting them down, which is a possibility—it was done during the war—the problem is that since these are international commodities, and since there is a lot of money made by people dealing in commodities through exchanges, you are going to find an exchange opening somewhere else.

In the case of metals, the London Exchange is a very influential one. The British Government has at times talked as if they were going to close the exchange in London.

But if London and New York were closed, I can assure you within a matter of weeks, or perhaps months at the most, there would be exchanges in Zurich, Hamburg, or Rotterdam, or Tokyo.

Chairman SULLIVAN. Well, I believe that the work of this committee is going to be noted throughout the world when it comes to so many imported raw materials. And this is good. I think it is good to let some of this get started and talked about, and worried about. These are the reasons that I think we should bring it up and discuss it. We are going to find a myriad of different opinions on what would happen and what should be done.

Mr. CLAYMAN. Mrs. Sullivan, I note your sensitivity to the issue of the consumer.

It strikes me that inevitably, if we don't maintain some kind of longstanding countermeasures, the producing countries are going to jack up their prices as far and as high as they can go.

Most of them are in desperate need and they will do it for that reason, to our detriment. And to suggest that this will not affect prices seems to me belies the obvious.

And the central dicotomy in this panel is obvious. One suggests that we should not use economic stockpiling for controlling prices, but merely to control supply. And another point of view is that we ought to use it to control prices, and that is where the consumer——

Chairman SULLIVAN. That has an indirect effect.

Mr. CLAYMAN. At least in our judgment, yes. And the specific questions you have asked relating to the method of futures, handling commodities, we would like the opportunity to think more carefully about that, and in a written statement give you our views after we have pondered it a little more carefully.

[Answer submitted for the record follows:]

Mr. CLAYMAN. The issue under discussion concerned the handling or regulation of futures trading commodities. This is a highly technical matter in which I nor my colleagues in the Industrial Union Department have any special expertise. However, I think it is clear that there is a relationship between the speculative market, dealing in futures of certain commodities, and the real materials market, where material producers and consumers bargain with each other to effect an optimum exchange.

I tend to agree with both Mr. Strauss and Mr. Bergsten that the speculative market tends to exert pressure on prices (although the pressure is sometimes both weak and delayed). Moreover, at least on the basis of empirical evidence, regular market prices are more directly affected by changes in the market when the trend is up than when it is down. There is a more pronounced upward drag than a downward push. The explanation for this disparity may lie in part in the kinds of structural changes in the demand for raw materials which Dr. Bergsten noted in his statement. In any case, the real question is how to control the speculative commodity market. Certainly, the establishment of the new Commodities Futures Trading Commission is a step in the right direction. However, I think that Mr. Strauss' point concerning the international nature of commodities trade is well taken. Whatever steps are taken to regulate or control futures trading in the U.S. can be contravened by activities in other world commodity markets. In the long run, the only way to assure that commodities futures is regulated in the public interest is to obtain international agreement on the conditions surrounding such trading. And, unfortunately, obtaining such agreement is a long way off.

Chairman SULLIVAN. This is why I am putting this out in this way—to give you an opportunity to think about it and submit your views.

Mr. Stanley?

Mr. STANLEY. I think the point that was raised about the international nature of the commodities is very important. People, regardless of which side of this particular issue they are on, sometimes don't raise at all the fact that if the United States were to have buffer stocks of its own, there would be inevitable leakage into and out of the U.S. economy. As soon as one recommends this, one has to simultaneously recommend a new set of trade policies and controls, which again is an important substantive matter that sometimes is not raised at all, and I think it should be.

Second, on the international side, I would just like to express my own feeling that the Stabex approach of the Lomé Convention, which as you know does not involve buffer stocks or an effort to set prices, but lets the market set prices, tries to meet the very real need of the poor exporting countries by providing, in effect, aid funds geared to keeping their exchange earnings up to an agreed level. But they are quite different things from international buffer stocks; and I wish the UNCTAD (United Nations Conference on Trade and Development) group had given more time and attention to the feasibility of the Stabex approach instead of the international buffer stock that they did recommend.

Chairman SULLIVAN. As a followup to this question, I would like each of you to comment for the record when you receive your transcripts as to whether you think we should give the Commodity Futures Regulatory Agency the power to set minimum margins on speculative transactions.

[The answers submitted for the record follow:]

Mr. BERGSTEN. No comment.

Mr. CLAYMAN. The question raised was whether the Commodities Futures Regulation Agency should be empowered to set minimum margins for speculative transactions. Most certainly, yes.

Mr. STRAUSS. The CFRA should have the power to set minimum margins on speculative transactions. The situation is comparable with the authority of the SEC in relation to transactions in securities. As a matter of administrative judgment CFRA may conclude that margins on commodity transactions of a genuine hedging nature—i.e., transactions by producers or consumers of the

commodity—can safely be set at a lower level than margins on transactions by speculators or investors not actually engaged in physical handling of the commodities.

Mr. STANLEY. As our organization has had no specific experience with commodities trading, nor done studies in this area, we cannot comment knowledgeably on the issue of whether the Commodity Futures Regulatory Agency should be empowered to set minimum margins on speculative transactions.

And, 3—and this is based on legislative oversight investigations we have made and that is why I want to get this into the record—I know that coffee is not one of the commodities any of you seem to think would be suitable for an economic stockpiling program. But I want to use this as an example for the purposes of getting your comments on another aspect of commodity price inflation during the periods of alleged or contrived or real shortages.

I happen to know a little about coffee and how it is purchased, and I am wondering whether it is true of any other commodities which are largely imported. When world coffee prices are low, as happens from time to time, imports drop off, and inventories of green coffee decline from quarter to quarter. But the minute something happens to send futures up, all of the roasters and importers immediately start buying coffee and they keep buying as long as the price is going up, and that helps to keep prices rising. Then, when the price finally hits a peak and starts to decline, everybody stops buying again and rests on his inventories.

I have been told the reason for this kind of behavior is that as long as the prices are relatively low and stable, the importers and roasters see no reason to stock up, because they can get all they need when they need it. But as prices start to rise, they get scared that they will go even higher, and their panic buying makes prices go higher.

When prices start to fall, they stop buying, to see how low prices will eventually drop.

Now does this sort of thing happen in the case of other imported commodities, or is it just a phenomenon of the coffee trade?

Mr. STRAUSS. No, it is the psychology of purchasing for every commodity. It is a lemming instinct.

Chairman SULLIVAN. Following that up, it seems to me it would be smarter to buy and store a commodity when the price is at a historical low point and stop buying when the price is rising.

Wouldn't a stockpiling program have to be based pretty much on that kind of economics?

Mr. STRAUSS. The problem in the minerals commodities, which are bought primarily by large industrial concerns, and not by the public, is money.

The low prices that we saw in 1975 coincided with the period when many of the large consuming companies were already heavily in debt, where paying very high interest rates, and even though they recognized—I think every copper consumer today recognizes, for example—that the present price of copper is well below what is required to expand copper production in the future.

So it is a bargain in terms of the prices that will prevail 3, or 4, or 5 years from now.

But they are still not willing to build up their inventories today, because they are short of cash and their own business is not very good.

The minute business starts getting better, they start buying and then you have this sort of cumulative effect that you have described for coffee, which in my experience applies to all commodities.

Chairman SULLIVAN. Mr. Clayman?

Mr. CLAYMAN. You see, one of the profound basic elements of our approach is the creation of economic stockpiles, and with such stockpiles you can buy when prices are low, not only to achieve some satisfactory economic results for yourself, but indeed to assist the very producer nations at that point who need some jacking up of prices for their purposes as well as ours. And you sell from the stockpile when the prices are highest.

This has the tendency of bringing down prices when they are too high and raising prices when they are too low. This is a desirable result. But the basic thesis seems to be so wholesome that I find it difficult in my own mind to try to comprehend truly the other side of that problem, the other side of that issue.

Chairman SULLIVAN. Isn't it always true that the logical simple answers seem to be too simple for people to use?

Continuing on to question 4. Does anyone here know whether we have made or lost money over the past 30 years on the operations of our various stockpiling programs?

Mr. STRAUSS. The Government has made a great deal of money on the strategic stockpile.

When President Kennedy stated in 1961 that the stockpiles were excessive, at then prevailing prices the value of the materials in the stockpile was about $7 billion.

I believe that the cumulative sales since then has been between $6.5 and $7 billion, and as I think Mr. Stanley said, the material still in the stockpile is worth $7 billion; after having sold off roughly half of the stockpile, we still have that.

Now have we made money or is it just the result of inflation and the depreciated value of the dollar?

The difficulty, of course, is that the dollar is not a very good yardstick, because its value is changing all of the time. But in terms of dollars, the stockpile has been overall a financial success, and as Mr. Clayman indicated, and it is probably true, that an economic stockpile operation, if wisely conducted, could finance itself by buying low and selling high.

That is the classic way one makes money in the stock market, too, but there are lots of people who have not figured out exactly when the price is low and when the price is high.

Chairman SULLIVAN. If they knew, we probably wouldn't have all of these troubles.

The next question is this: One of the major programs under the Defense Production Act of 1950 was to stimulate the development of productive capacity of electric power, aluminum, and so on, particularly electric power and aluminum, so as to have the ability to increase production substantially in case of national defense needs.

It is my recollection that in the case of aluminum, the United States guaranteed to buy $x$ amount of aluminum over a period of years, in case the producers who agreed to expand productivity and production capacity could not find markets for their increased production.

What I would like each of you to answer, if you can, is, how successful was that program? And what were the consequences to the economy compared to the costs to the Federal Government?

Are any of you familiar with that history? If you are, if you could give us an answer on that in writing I think it would be helpful.

[Answers submitted for the record follow:]

Mr. BERGSTEN. No knowledge of program.

Mr. CLAYMAN. The question concerned information or knowledge on the experience and success of the Defense Production Act of 1950. Unfortunately, I cannot provide any helpful insight on that program.

Mr. STRAUSS. During the Korean War the Defense Production Act authorized the government to offer purchase contracts to encourage the expansion of strategic materials. These contracts provided industry with a back-up market for production from new facilities in the event that the producers were unable to sell in the open market. The government undertook to pay certain prices; the seller was free to sell at higher prices in the open market; he was not compelled to deliver to the government; the fact that the stockpile would take his output, however, encouraged him to invest in projects for new production. A substantial number of such contracts for copper expansion were negotiated but only in the case of two of these contracts—those with White Pine Copper and San Manuel—was metal delivered to the stockpile. Subsequently during the Viet Nam War the same authority was used for a major copper contract with Duval Mining covering the Sierrita project. A substantial loan was involved and in this case Duval was required to deliver copper at the negotiated price. Completion of this contract, and repayment of the government loan, occurred at the end of 1975. The General Services Administration can provide full details.

Mr. STANLEY. As a general proposition, we look favorably on federal efforts to encourage development of domestic capacity in materials which are currently on the edge of commercial feasibility when foreign sources possess unusual market power or cartel potential. The major costs to the government from price guarantee programs occur if market prices for the material drop below the break-even point for the expanded production capacity. Likewise the benefits become tangible only if foreign producers successfully capitalize on tight supply situations. Of course, there is also the investment opportunity cost, that is, the effects of allocating capital to new material productive capacity instead of elsewhere in the economy, but its significance depends on the alternative uses available.

Basically, such programs should be thought of in insurance terms, whereby the costs may be high in relation to the benefit if the event insured against does not occur, while the benefits outweigh the costs if it does. But in this case, there is the important difference that the existence of some insurance may help to "deter" (or make less feasible) the employment of foreign or cartel market power against U.S. interests. However, our organization does not currently have the resources to comprehensively analyze either possible future programs or past Defense Production Act programs, such as the aluminum example, from the standpoint of detailed costs, benefits and probabilities.

The next question is: Is it a generally agreed-upon fact that demands for nearly all basic commodities will expand in the coming 5 or 10 years, and that any commodity we brought up now and salted away in an economic stockpile would probably be worth much more 5 or 10 years from now than it would cost to acquire now, if it were bought carefully over a period of time?

That is another "iffy" one.

Mr. CLAYMAN. It is a good question.

[The answers submitted for the record follow:]

Mr. BERGSTEN. As noted in my statement, I believe that structural changes on both the demand and supply sides will produce higher relative prices for many industrial raw materials—over the course of the business cycle—for at least the next five years and probably longer. The detailed analysis is in my "The

New Era in World Commodity Markets," *Challenge*, Sept.–Oct. 1974, reprinted as Chapter 18 in *Toward a New International Economic Order: Selected Papers of C. Fred Bergsten, 1972–1974* (Lexington, Mass.: D. C. Heath and Co., 1975).

Mr. CLAYMAN. The question raised concerns the nature, or the inevitability of increased demand and increased prices of raw materials over the next five or ten years. Certainly the long-term trend is that the demand for raw materials will increase, and that this increase in demand will be accompanied by an increase in prices. Within the next five years, the changes may not be particularly steep or sharp, perhaps not even within the next ten years. But as world population increases, as the less developed countries manage to gradually improve their standard of living (and in my mind there is no doubt that such an improvement will occur), the demand for raw materials is certain to increase. Put this gradually increasing demand up against a supply of materials resources which is both gradually dwindling in terms of physical content and increasing in the cost of extraction—and clearly the price of the materials is going to rise. In addition, it is also likely that the general worldwide expectation of inflation will become a self-fulfilling prophecy.

It is true that improvements in materials efficiency could have a stabilizing effect on demand, but I think it is likely that this efficiency will be offset by improvements in the standard of living. Mr. Strauss used as an example of increased materials efficiency the fact that one 747 could carry more people than several railroad cars, which would take more raw materials to build. However, as our standard of living has risen, many more people travel today—using the 747—than they did when the only way to get across the country was in a railroad car. Indeed our use of raw materials has increased in geometric proportion to the population despite improvements in materials efficiency.

Mr. STRAUSS. Consumption trends for almost all mineral commodities have shown long-term growth but the rates vary considerably. For example, consumption of steel and lead has increased on average by only about 2% a year, while consumption of copper and zinc has risen at a rate of close to 4% a year, of nickel by 6% a year, and of aluminum by 8% a year. There is reason to expect continued long-term expansion of demand, but precise forecasts are extremely difficult to make. I enclose an analysis which shows how the Paley forecasts, made in 1950–51, of probable level of demand in 1975 compare with what has actually transpired. As to prices, given a general inflationary trend, it is reasonable to assume that these also will rise. However, whether they will rise by as much as the cumulative cost of compound interest is a highly debatable proposition. A commodity purchase program can almost surely be expected to show a "profit", if interest is excluded. Whether that profit will equal the original cost plus compound interest is less certain.

FORECASTING OF MINERAL PRODUCTION AND CONSUMPTION

The forward estimating of demand for and supply of mineral commodities is difficult because of technological developments, the rate of mineral discoveries, and the economic climate. An effort in depth to make such projections was undertaken in the years 1950 and 1951 by the President's Materials Policy Commission, headed by William S. Paley. This Commission, popularly known as the Paley Commission, issued a report in June, 1952.

Volume II of the report entitled "The Outlook for Key Commodities" contained estimates by the Commission of the level of demand in 1975 for metals and minerals both within the United States and in the rest of the Free World.

It is enlightening to compare the Paley Commission's estimates with the actual experience. Because 1975 was a year of recession and because the recession actually began in 1974, the attached tabulation compares the Paley estimates—originally made for 1975—with the actual demand for metals in 1973; a year of general prosperity and high demand not only in the United States but in the other major industrialized countries. For most of these mineral commodities, demand in 1973 set all-time records.

The tabulation shows that with respect to most of the metals the Paley projections for U.S. demand proved to be on the high side—consumption did not actually reach the expectations held by the Commission. In the case of the major metals the short fall was not substantial. In the case of some of the minor elements, however, the actual level of demand fell far below the Paley estimates—note particularly the figures for antimony, cadmium, cobalt and tita-

nium. In only two materials did the level of demand exceed the Paley estimates—aluminum and molybdenum.

Where the Paley Report went far astray of the mark, however, was in projecting demand in the rest of the world. For most of the materials, the actual level of demand outside the United States was two to three times the level estimated by the Paley Commission. The resurgence of industrial activity in Western Europe and Japan clearly was not foreseen when the Paley Commission studied the resources situation in 1950 and 1951.

The unanticipated surplus of demand outside the United States far outweighs the short fall of demand in the United States so that only with the minor exceptions of antimony, cobalt and titanium, the Free World total of demand for these 15 metals was well in excess of the amounts anticipated by the Paley study.

The remarkable feature is that this excess of demand was readily met in the case of every material. Far from running into chronic shortages, exploration and development of new mineral resources during the period of more than two decades added substantially to the world's known resources. New sources were developed in areas not previously considered to be potential sources of supply for most of these materials. In virtually every case there are today more countries that are significant producers than was the case in 1950–51. Tin is a possible exception to this rule but in such materials as nickel, manganese, copper and zinc very large reserves have been developed in countries that were not producers at all in 1950–51.

The experience with the Paley Report appears to contradict the fears of some studies, such as that of The Club of Rome, that the world faces imminent depletion of mineral resources. It also points up quite clearly the difficulties involved in making forward projections with respect to either mineral requirements or mineral supplies.

PALEY COMMISSION ESTIMATES OF 1975 DEMAND FOR METALS AND MINERALS MADE IN 1951, COMPARED WITH 1973 ACTUALS

[Figures in thousands]

| Material | In United States | | Rest of World | |
|---|---|---|---|---|
| | Paley, estimate 1975 | Actual, 1973 | Paley, estimate 1975 | Actual 1973 |
| Manganese ore (short tons) | 2,700 | 2,140 | 2,300 | [1] 12,000 |
| Chromium (long tons) | 1,750 | 1,250 | 1,100 | [1] 3,700 |
| Nickel (short tons) | 200 | 197 | 64 | [1] 325 |
| Molybdenum (short tons) | 35 | 41 | 14 | [1] 50 |
| Cobalt (short tons) | 20 | 9 | 13 | 17 |
| Tungsten (short tons) | 8 | 9 | 28 | 30 |
| Copper (short tons) | 2,500 | 2,400 | 2,050 | 5,180 |
| Lead (short tons) | 1,950 | 1,540 | 1,500 | 2,250 |
| Zinc (short tons) | 1,600 | 1,544 | 1,700 | 3,470 |
| Tin (long tons) | 118 | 75 | 109 | 150 |
| Antimony (short tons) | 66 | 21 | 50 | 55 |
| Cadmium (pounds) | 25,000 | 12,500 | 6,000 | 10,000 |
| Bismuth (pounds) | 3,500 | 2,900 | 1,500 | 4,000 |
| Aluminum (short tons) | 4,500 | 5,685 | 2,400 | 6,275 |
| Titanium (short tons) | 50 | 20 | [2] | [3] |

[1] Estimate.
[2] No estimate.
[3] No data.

Mr. STANLEY. We would agree with the likelihood that materials prices are generally likely to rise over the next five to ten years. This will be a function of both demand (and population) increases in the U.S. and world economies and of delays in the expansion of world materials productive capacity. This, in turn, relates to uncertainties about future markets, inhospitable investment climates and risks of expropriation, and in some cases shortages of capital.

Then, too, of course, materials prices will be affected by general inflation, which seems likely to continue at relatively high levels by historical standards, for the medium-range future.

However, with regard to the accretion in value of any economic stockpile, this would be primarily a bookkeeping benefit; for replacement of any necessary

material releases or sales and purchases to rotate or adjust inventories to new situations make it unlikely that much of the "paper profits" would in fact be realized in the form of net Treasury revenues.

Chairman SULLIVAN. Mr. Strauss, I remember your testimony on the coinage legislation under the jurisdiction of the Subcommittee on Consumer Affairs, and I would like to ask you what the outlook is now, as you see it, on copper prices.

I think you went into that briefly already, so you might give us a little more explicit reply.

Is the penny likely to be in jeopardy again?

Mr. STRAUSS. Well, the penny gets in jeopardy when the price of copper is over $1.29 or $1.30 a pound. The price of copper is going to have to rise if our consumption increases, because of the high capital costs involved in bringing new copper production into play.

For example, our company has found that on comparable projects that we are equipping today, compared with projects of the same magnitude 20 years ago, the inflation in cost is roughly three times and it takes three times as much investment to expand capacity by a given amount. We are currently investing between $5,000 and $6,000 per ton of annual capacity of refined copper. Now in order to pay the interest costs, and amortize such an investment, a considerably higher price than today's price of copper is required.

The price of copper now is 70 cents in the United States. That sounds like a very high price to somebody like myself. I worked for a metal publication in the 1930's, and I remember quoting 5 cents a pound as the price of copper.

But in terms of the cost of production in many of the developing countries, and even in the United States, 70 cents today is not a high price due to rising costs.

Most people who have looked at it think the price will have to go to $1 a pound to justify the opening or investment in new mines, and if you start today, that new project won't be finished for another 4 or 5 years.

Now the question is, you know, what do we do about coinage?

I know there were 10 aluminum pennies minted that suddenly disappeared——

Chairman SULLIVAN. I had one and lost it, and they don't believe me. So if the FBI comes along——

Mr. BERGSTEN. They think you smelted it down.

Mr. STRAUSS. But I think probably what is most likely to happen is that we will go to brass, rather than aluminum pennies.

Chairman SULLIVAN. We know the aluminum penny won't work. That is the value we all put on those samples we received at the time the legislation for an aluminum penny was proposed.

Mr. STRAUSS. Since the price of zinc is likely to be lower than the price of copper, I think we will be able to continue to make pennies.

Chairman SULLIVAN. I have to start reading some other questions we have here. We are not going to have too much time, but with your indulgence, I will continue the hearing until we get a call to the House floor. In 5 minutes the call of the House will sound, and I can stay here until we get the bells really calling us to the floor. I will submit the remaining questions to the reporter and you will get your

transcripts just as fast as can be, and we would appreciate your reading them and answering those you feel that you can answer and thereby contribute to our understanding of these issues. I think that would be most helpful.

Mr. Bergsten, let me put to you a question I want to ask each of the witnesses. Some observers have suggested that stockpiles could be the thin end of the wedge for national economic planning because of a presumed need for large economic information and forecasting systems and because they imply interventions in a critical sector of the economy.

Would you agree or disagree with that observation?

Mr. BERGSTEN. Well, of course, some people say that with joy, and some say it with fear.

It need not be. One could set up a materials information system, as some bills have suggested already, without going any further.

It is not planning to me, but the creation of early warning against situations perhaps a la oil. I think we now do not have adequate advance information. We need a better system. I don't see why it implies anything more broadly about national planning.

Chairman SULLIVAN. Do any of the other gentlemen care to comment on the economic planning implications of the proposed economic stockpiles?

If you wish, you can do it later or now.

Mr. STRAUSS. Well, I agree entirely with Mr. Bergsten. It is not a necessary consequence. It could be that both of these moves would develop.

Mr. Clayman and I jointly serve on an Advisory Committee on National Growth Policies that supposedly is considering this matter of the degree of planning, the flow of information, and the early warning system that Mr. Bergsten is referring to.

I think one of the problems with a government early warning system about potential shortages is that for the short term it tends to be a self-fulfilling prophecy. If the Government came out tomorrow and said there is going to be a shortage of copper, it would create one.

We saw that with respect to toilet paper.

Mr. CLAYMAN. First, I am not distressed by the idea of economic planning. As a matter of fact, I am entranced by it, and that is why I am for, for example, the Humphrey-Hawkins bill, because it initiates a form of planning I think we desperately need in our country.

But I would make the suggestion, however, that economic stockpiling, strictly on its own, even under the program that we suggest, would be the most modest kind of planning, relatively insignificant in terms of the totality of our economy, but some of course will be distressed even by a smidgeon of planning.

Without planning, I think we will continue to have the kinds of chaos that the oil embargo imposed on us.

Chairman SULLIVAN. Mr. Bergsten, your prepared statement represents a rather sophisticated economic summary. I am sure we would have profited from the privilege of studying it carefully before the hearings. One of your primary points is that the demand for most raw materials has increased due to a variety of perceptions.

Does that mean that there has been no real expansion of actual industrial demand for materials worldwide?

Mr. BERGSTEN. Well, one has to distinguish between increases in demand at the cyclical level and at the more structural level.

Mr. Strauss said there was in 1973 and 1974 the tail end of a synchronized global economic boom which certainly increased the level of demand cyclically.

Some people have argued that an increased synchronization of the world economy makes that a structural situation; with world economies moving in coincidence, we will have sharper peaks and troughs in demand levels over the future.

I am not so sure that is right, because of the move to flexible exchange rates, which permit national economies to diverge from world economic trends more than was the case 4 or 5 years ago. Nevertheless, that may be a factor that adds to the demand level.

The other key structural point is the materials intensity of a given level of economic output. And that has been declining over time, as industry has learned how to use materials more efficiently. I see no reason why that would turn around. So I am pointing to other factors than that. Certainly that should be added as a contrary factor that is tending to reduce the necessary level of raw material input for a given level of economic output.

Mr. STRAUSS. A simple illustration of the point Mr. Bergsten just made is in the transportation field. One 747 flying between New York and Los Angeles can transport more people than three railroad trains which would require much larger amounts of raw materials to build.

Chairman SULLIVAN. That is a good example.

Mr. Bergsten, would any of the three purposes you have proposed for your National Resources Stabilization Inventory conflict with any of the other goals? For example, you noted the commodity markets are truly world markets. Isn't it possible that stockpile disposals aimed at curbing monopoly pricing or contrived increases domestically would affect world markets and antagonize allies such as Canada and Australia?

Mr. BERGSTEN. Under those conditions, I would be happy to take that antagonism. I did indicate in the final section of my written statement, which I didn't read orally, that our national inventory would have to be meshed quite consciously with international efforts.

I think Mr. Clayman was right in saying that the longer run goal should be international commodity agreements, in a number of materials, and en route to that one might create national inventories because you can do it more quickly and because it increases your leverage in being able to get the right kind of international agreement.

Somebody raised the point, that once in an international commodity agreement, the consumer loses because the producers never want to release materials at the price ceiling that has been agreed to.

For that reason I would probably maintain a U.S. national resource inventory, even in those commodities where we had an international agreement, just to make sure that the international agreement to release at the agreed ceiling was actually implemented.

I think we have to maintain a two-track strategy—domestic stocks and international agreements—which may differ from commodity to commodity. But I would certainly think, to the extent that the national stock helps us implement the kind of international agreement

we want to see, that it is desirable. I would think the two can be meshed administratively in an effective way.

But certainly that is an important point; they need to be considered in tandem.

Chairman SULLIVAN. Do you know what the international reaction has been to the French and Japanese stockpiles?

Are they meeting resistance of any kind from foreign producers, or governments?

Mr. BERGSTEN. I am not aware of any. The French have been, along with creating a national stockpile, among the leading advocates for creating international commodity agreements. I am sure that would diffuse the political risk they might have otherwise triggered.

I am just not aware of any foreign reaction to the Japanese efforts.

Mr. STRAUSS. They are both very small programs. The Japanese program, for example, is only the equivalent of a little over $100 million. So they are starting in a very modest way.

And I think far from creating any antagonism on the part of the foreign suppliers, because these efforts are being made at a time when there are surpluses and when prices have been weak, the foreign producers are welcoming the creation of these stockpiles.

I have made the suggestion to our State Department, which has been involved in some of these talks about international agreements, that due to the necessary fact that an international agreement has to publish its goals, the floor price, the ceiling price, and so forth, in a sense for those commodities traded on commodity exchanges, the agreement plays into the hands of the speculator. The speculators are in the happy position of playing their cards close to their chest, whereas the international buffer stock is playing its cards with everything spread out on the table, the level at which they buy, the level at which they sell, how much they have got on hand.

When the traders on the London Metal Exchange found out that the 20,000 ton buffer stock of tin was gone, they had a field day.

Consequently, my suggestion to the State Department for consideration, and it is not put forward as anything more than a trial balloon, was that perhaps this Japanese-French experiment could be expanded and that each of the major industrial nations would assure the exporting countries that each of them would carry some kind of a buffer stock in their particular commodity for a period equivalent to a certain level of imports, and that they would acquire it during periods of weakness, such as Mr. Clayman described, and would agree further that they would not sell it except when world stocks were beginning to shrink, when there was clear evidence that demand was outrunning supply.

But since each of these national stockpiles would retain its own autonomy, the speculator would not know at which level the Japanese would start selling or the French would start buying, and there would be less of a clear indication of what was in store.

I think one of the big difficulties (and this would not apply to commodities that are not traded on commodity exchanges, like bauxite, for example) but one of the real difficulties with commodities like copper, tin, lead, and zinc, is the fact that they are traded on commodity exchanges. International agreements become a matter of pub-

lic knowledge, and therefore the speculator in effect really has a big thing going for him.

Mr. BERGSTEN. The problem in Mr. Strauss' suggestion is that if the speculators don't know when the Japanese are going to be selling, neither do the Chileans and they, as producers, are very concerned about when the Japanese start selling out of their copper stock—which is the question you raise about politics.

In my view you have to take a risk with the speculators in order to get a producer-consumer agreement at the international level. And if you have the floor and ceiling prices defended by an adequately sized and financed buffer, you will hold out. In fact, you will trigger what economists call stabilizing speculation.* As the price moves close to the ceiling you want to hold, the speculators know you are close to the ceiling and will cease buying and might even start selling, and to the contrary at the floor.

So if the buffer and its price range as preannounced are credible, and backed up by agreement among the countries with adequate financing and material, I think you have a deterring effect and you turn the speculators to work in your favor rather than against you.

So I would come out opposite on that.

Chairman SULLIVAN. Do we have the people who have the expertise to be such operators?

Mr. BERGSTEN. Just hire the people who are now operating the private market.

Mr. STRAUSS. But keeping them honest is a very difficult problem.

Mr. BERGSTEN. Spoken like a true operator.

Mr. STRAUSS. I don't want to seem to be casting stones here, but in the situation of the International Tin Agreement, the buffer stock manager and his assistant were both requested to leave because it had been alleged they had been operating on their own.

Chairman SULLIVAN. This is what worries me, how, in things like this, that are so——

Mr. STRAUSS. It is a very real problem.

Mr. BERGSTEN. The Watergate of the Tin Agreement.

Chairman SULLIVAN. I know.

Mr. Strauss, you clearly state the worst we need to expect is temporary shortages of selected minerals due to chance occurrences, such as strikes or natural disasters.

I take it your view is that economic stockpiles would not be justified to deal with these momentary disruptions, that they would constitute overkill. Is that correct?

Mr. STRAUSS. I don't want to say there will never be a long-term shortage of these materials, because they are extractive resources. Certainly if the problems Mr. Bergsten described at the start persist, the difficulties of capital going into the development of new properties, it may be that we will have serious and ongoing shortages of these materials.

When I spoke about the spot nature of shortages, I was describing what has happened in the 30 years since World War II ended, and what I can see for the next few years.

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*Editorial note: See Bergsten-Strauss letter exchange for more on this point about behavior of speculators, pp. 167–169.

But further down the road there are possibilities of real shortages coming about simply from the fact, in the case of the developing countries, their national shift in policies is discouraging investment on the private side. While they are looking for public investment, they are all in terrible trouble with regard to their debts; they are going to have a hard time getting the money.

Chairman SULLIVAN. Would you endorse changes in the strategic stockpile legislation to permit them to be used on a limited basis to tide us over these occasional rough spots?

Hasn't that been one of the historical uses of the military stockpiles?

Mr. STRAUSS. It has. Of course this has been a question that has been widely debated as to whether this was proper or not. But several of the administrations have done this.

Mr. Johnson, during the Vietnamese war, released both copper and aluminum in an effort to control prices. It wasn't clear that he had to do so in order to meet the strict military needs.

I think this is one of the alternatives that your committee will want to examine, whether some kind of modification of the existing legislation and combination of the two stockpiles would be advisable.

I certainly endorse Mr. Stanley's statement with respect to the undesirability on the one hand of strategic stockpile being liquidated in large amounts, and on the other hand buying for an economic stockpile. That would be ridiculous.

If some of the surpluses in the strategic stockpile tie in, and I think certain commodities would, with the economic stockpile, obviously you would transfer rather than go to the market and buy.

Chairman SULLIVAN. Mr. Strauss, on what does the American Mining Congress base its assurance that America's import dependence is not an Achilles heel, and would not be exploited either intentionally or otherwise?

This seems to conflict with the other testimony.

Mr. STRAUSS. Well, basically our largest sources of imported metals and minerals are Canada, Australia, and the Union of South Africa, and to me it seems most unlikely that they will adopt policies of excluding U.S. access to their raw materials.

I could be wrong, of course. But that is one.

Second is the fact that much as we need other's raw materials, they need our market. The Chileans, Peruvians, Mexicans, send trade delegations constantly to the Communist countries to talk about selling them commodities, but in fact in the centrally planned economies, trade is very closely controlled, and the Russians or Chinese or the Poles don't buy one pound of anything if they can produce it themselves.

And so in effect, the developing countries have no alternative market other than the industrialized countries.

Now one of the things that has made the oil situation so different in my judgment from other materials is that the production of oil can be controlled by turning valves and it does not create much local unemployment, and many—not all—but many of the governments were financially strong.

On the other hand, in the case of the mining industry, like the copper industry in Chile or the tin industry in Bolivia, this is the chief source of industrial employment. For them to cut back production creates social havoc in their countries.

On the other hand, they can't afford to continue to produce and not sell, because they are poor countries. So I really find it very difficult to foresee a situation in which we will have a repetition of the oil experience in other materials.

Mr. BERGSTEN. Madam Chairman, I would like to add one comment, and that is to make a clear distinction between interruption of supplies and higher prices in this context.

I fully agree that Canada and Australia are not likely to physically interrupt exports to the United States, but they might very well cooperate with other producing countries in raising prices and therefore have an adverse effect on American consumers and U.S. inflation rates.

Canada followed right along with the OPEC price rises in oil, through manipulating their export tax, as if they were a member of OPEC.

Australia has joined the International Bauxite Association and the International Iron Ore Agreement, and could take collaborative measures to push up prices in those commodities.

So, depending on what the objective of the stockpile would be, I would demur from Mr. Strauss' confidence about those key suppliers in price terms.

Chairman SULLIVAN. Mr. Strauss, in a report submitted to the Joint Committee a year ago, the Defense Department expressed considerable concern about America's import dependence.

The Navy has, in part, predicted the need for a larger fleet based on the growing condition of overseas resource dependence, and the need to protect our sea lanes.

Is it your view that these concerns are perhaps exaggerated, or ill-founded?

If they are not, then why shouldn't we undertake stockpiling to insure our continued economic security just as we do for our military security?

Mr. STRAUSS. Well, I am certainly not competent to comment on the Navy's need for more ships and so I will make no comment with respect to that.

As far as our import dependence is concerned, as our population rises, certainly with respect to many materials we will have to import larger quantities. There is no doubt about that.

Our dependence on foreign supplies, however, has actually been reduced in the case of certain materials. Copper and lead are two examples where we today import a smaller percentage of our total requirement than we did 20 years ago.

So it is a mixed bag. As I have said in my testimony, I think if the Congress decides that an economic stockpiling program is warranted, I think the emphasis has to be on the commodities which we import, and I personally—and I know I am in disagreement with Mr. Bergsten on this—I personally would see very little point in the U.S. Government having an economic stockpile of copper.

Mr. BERGSTEN. Madam Chairman, the overriding point is that ships carrying raw materials are only going to be blown out of the water in wartime. So it is for the strategic stockpile to deal with that question. The economic stockpile would be created, by definition, to deal with peacetime problems.

Chairman SULLIVAN. Mr. Clayman, your proposal suggests the initial stockpiling of five substances at a cost of about $400 million.

This is a very low cost compared with the estimates for stockpiles having much more modest goals than yours.

Can a stockpile of this size and cost have any significant effect on the national economy?

Mr. CLAYMAN. First, we picked five items; we didn't pick the whole gamut of imported raw materials, we picked chromium, manganese, alumina, bauxite, zinc, and nickel, and we said if you wanted to achieve a 5-percent stockpile, 5 percent of the annual needs of that particular item, it would run $60 to $90 million.

I am sure we could be off a few million dollars. If we wanted to increase that to, roughly, say, 25 percent, which I would guess might have a significant impact, it might be in the neighborhood of $400 million, or a half billion dollars.

At least in these specific areas of needed raw materials, the investment need not be as immense as some of the figures I have heard to have a significant impact both on prices and on assuring against so-called interruption or short supplies.

Chairman SULLIVAN. Do you think it would have the desired effects on the international markets?

Mr. CLAYMAN. It might very well. I think that market is sensitive enough to respond, let's say, to a 25-percent margin of stockpiles of specific items of raw materials.

But even if we are too cautious in our approach or we understate, perhaps we are talking about $1 billion or $2 billion, conceivably, which of course for the kind of protection, for the kind of impact, for the kind of security we are talking about, is relatively insignificant in terms of our economy.

And I think it is absolutely clear that if we think this is a problem, and after what has happened on oil we don't act, I think we are indulging in dangerous inaction.

Then we have to be prepared to spend reasonable sums of money for standby production plants. So we are going to make an investment. It is going to cost us money, because standby plants are not going to be utilized as effectively as a plant in full-time manufacturing. But that is the price we pay for protection.

Mr. BERGSTEN. Madam Chairman, there is really confusion here on costs.

One has to distinguish between capital costs and operating costs.

Take Mr. Strauss' number about the big runup in tin price. Suppose we had sold a lot of tin at the fourfold higher price. We would have made back the capital costs very quickly.

Look at the profits Treasury has made on the gold stockpile, on which it has been living now for 40 years, and now we have another threefold writeup for recent sales. The capital costs may look big in one-shot terms, but the operating profits, given the degree of flexibility that would still exist in these markets even with the U.S. stockpile would be quite sizable and over time would probably amortize the capital costs.

Chairman SULLIVAN. It still depends on how you buy and sell. But I think your answer, Mr. Clayman, answers the other things I

was going to ask you. These were about the prospects for expansion of the stockpile, and about whether the stockpile at the size you propose is a possible forerunner of a much larger one.

I think your answers indicate that that is the way you feel.

Mr. Stanley, the possible cost of your proposal, some $7\frac{1}{2}$ billion, exceeds by several times over, the cost estimates for stockpiles having much more ambitious aims, including price stabilization.

With your more limited objectives, why must the stockpile be so large and cost so much?

Mr. STANLEY. I am glad to have a chance to clarify that, Madam Chairman, because I put that figure down just as an outside limit to show that even *if* you wanted a full year, which of course is far larger than our strategic objectives currently for most materials of the major ones we have talked about, that would be the outside cost and you certainly wouldn't want to stockpile all of them, and not in anything like a year.

So that was not a proposal, but rather the maximum.

I would think the actual cost might be a third of that.

Chairman SULLIVAN. You mentioned the use of a revolving fund to finance the stockpile. The revolving fund established under the Defense Production Act to finance industrial expansion was totally depleted.

How can we be sure that a revolving fund to finance the stockpile would not be totally depleted?

Mr. STANLEY. I am not sure you can ever guarantee that, but I think the discussion of other witnesses a moment ago suggests that over time at least there would be an amortization of your costs.

I would have to research the actual experience of the revolving fund that you refer to.

Chairman SULLIVAN. I frankly am not familiar either with how it was depleted, when it was depleted or the details, because the staff provided me with this example.

But it is interesting to contemplate, you know, how far we might go, and how far we can get the Congress to go in appropriating funds for such a thing.

I agree, though, Mr. Clayman, with your idea, that if we don't plan, we are playing a very, very risky game about what is going to happen to our future. We are assisting every developing country through all of our assistance banks, the Asian Development Bank, the Inter-American Bank, all of these others, largely at our expense. At the same time, what are we doing for ourselves to see that we stay strong and are not weakened by what we are helping to do in building up the rest of the world?

As we go into the Law of the Sea and all of these other international conferences, we find we are on the lower end of their scale of confidence, when they want to work with us. They want to take, but they don't want to give, in any way, their cooperation in meeting our problems.

One other question, Mr. Strauss. One of your arguments against creation of a large economic stockpile is that it would cost an enormous amount of money, but you do not specify how much. Another witness has suggested a cost of $400 million for a stockpile that would have a considerable stabilizing effect on the economy.

That bell is the call to the floor, so I will have to leave. But read this when the transcript comes to you and give us your answer in writing.

How does Mr. Clayman's cost estimates measure up with your own? And how much is an "unreasonable" cost?

[Answer submitted for the record follows:]

Mr. STRAUSS. The U.S. Treasury made a study estimating that to try to stabilize the price of a single commodity—copper—through a buffer stock would cost upwards of $3 billion. I do not have the details as to how the Treasury arrived at this figure. Analogy with experience in tin may be relevant. Despite the sale of 60,000 tons of tin in late 1973 and early 1974 (20,000 tons from the buffer stock and 40,000 tons from U.S. stockpiles) a runaway market occurred at that time in tin—the price rose in 14 months from $1.75 a pound to $4.70 a pound. The 60,000 tons added to supplies represents 30 percent of the annual Free World new production of tin. Free World production of copper is seven million tons annually, so a 30 percent buffer would be 2.1 million tons. At the price of 63¢ a pound or $1,260 a short ton prevailing at the end of 1975, 2.1 million tons of copper would cost about $2.5 billion. This is only a single commodity—but please note that it is analogous to the amount of tin that failed to "stabilize" the tin market. The argument about economic stockpile costs depends on the objectives—if the objective is only to make this country less subject to interruption of supplies of those commodities that it must import the cost will be much less than if the objective is to insure employment; to placate the Third World; or to stabilize prices. My reference to prohibitive costs was in the context of price stabilization. Not only do I feel that the cost would be great; I also believe that the chances of success would be poor. See also my testimony on page 28 as to the eventual inability of the United States government to control the silver price despite the enormous quantities of silver it held in the early 1960s.

I think these are all guesses to a large extent. But this discussion, as we have had it, has been enlightening. It has certainly been so to me, and I am sure it has been to the staff, and I wish we could continue it.

But we will turn over to the reporter these other questions, and we have a lot of them. If you will do some homework when we get the transcripts to you, and do it as quickly as possible, we will greatly appreciate it.

Thank you very much for your help this morning.

Tomorrow we meet at 10 in this same room and we are going to hear from government witnesses on this matter.

Thank you all very much.

[Thereupon, at 12:10 p.m. the hearing was recessed, to reconvene at 10 a.m. the following day.]

# PURPOSE AND ORGANIZATION OF ECONOMIC STOCKPILING

WEDNESDAY, JUNE 9, 1976

U.S. CONGRESS,
JOINT COMMITTEE ON DEFENSE PRODUCTION,
SUBCOMMITTEE ON MATERIALS AVAILABILITY,
*Washington, D.C.*

The subcommittee met at 10 a.m., pursuant to notice in room 2222, Rayburn House Office Building, Hon. Leonor K. Sullivan, Chairman of the subcommittee, presiding.

Present: Chairman Leonor K. Sullivan and Senator Harrison Williams.

Chairman SULLIVAN. Good morning, everyone. This hearing by the Subcommittee on Materials Availability of the Joint Committee on Defense Production will come to order. I'm sorry that we are not going to have the time to wait for the other members to come, but they will be here if it's possible. In the meantime, I'll just go ahead.

I have an introductory statement to set the tone of the meeting this morning. This is the second day of hearings before the Joint Committee on Defense Production on the subject of economic stockpiling. Yesterday, we heard from private witnesses on the need for economic stockpiles, the various purposes which they might serve, and the various ways in which they might be organized.

That testimony revealed that there are numerous objectives which economic stockpiles might serve. Most of these objectives are, in one way or another, relatable to the economic security of the Nation. This contrasts with the justification and purpose of the existing strategic and critical materials stockpile, which has as its declared purpose the protection of the military security of the Nation.

Yesterday's testimony also revealed that the national security stockpile has been used for a variety of purposes other than its avowed intent of supporting a future wartime mobilization effort. The fact that the military stockpile has been used for other than intended purposes should serve as a caution to us in contemplating still other stockpiles. At a minimum, we would want to be assured that any new stockpiling program contains adequate safeguards against misuse.

Economic stockpiles are not the only measures that have been proposed for assuring adequate supplies of the materials necessary to maintain our economy or of avoiding disruptive and harmful shortages and price increases. In the past, the United States has joined in commodity agreements with producer nations for this same purpose. These agreements have not always been lived up to and hence have not accomplished their purpose. Recently a proposal for an international

resource bank, made by the current administration with similar ends in mind, was rejected by producing nations at the United Nations Conference on Trade and Development in Nairobi. So there are a number of alternatives to economic stockpiling, but our experience with them has not been salutary.

This experience with stockpiles and with multilateral approaches to materials problems suggests two things. First, it suggests that there are no easy answers to the issue of providing our economy with an assured supply of materials at an affordable price and with a minimum of economic dislocation. It also suggests that economic stockpiles cannot be looked at in isolation, that they cannot be examined outside the context of the entire range of American economic policy and American foreign policy.

Today we have with us several government witnesses who will, I hope, be able to address the question of economic stockpiles in terms of the Government's current policy positions. To some degree, we shall be going over matters that were discussed yesterday. These include questions of what materials, if any, should be stockpiled, of what circumstances would trigger their release for sale on the domestic economy, of the effect of economic stockpiling on our relations with foreign producers, and of what effect economic stockpiles might have as a tool for combating inflation or unemployment.

In inviting our witnesses to testify we have asked each of them to supply their entire testimony to be part of the record, but have asked them to limit their oral testimony to 15 minutes each so that we can use the rest of the time for questioning. We have found on many occasions that the prepared statements do not always reveal all we need to know, and the only way we can get it out of you, frankly, is by questioning. So we are going to take as much time to question as is necessary for the individual witnesses.

There will be four witnesses, one from the State Department, one from the Federal Preparedness Agency, one from Treasury, and Mr. Lawrence, formerly with the Office of Emergency Preparedness, and we will hear them in that order.

I'm going to have to call a recess for as long as it takes me to go over to the floor and be recorded, but in the meantime, Mr. Greenwald, as the first witness, you can get your 15-minute summary ready because that's the time you will have as soon as I come back. Then I'll start the questioning and I hope by that time we have at least one of the Senators and possibly another House Member. So with the bell's ringing, I'll be back just as quickly as I can get over and back. There are going to be other interruptions this morning, I'm afraid, because the House went into session at 10 a.m. and there will be numerous votes, but we will hold this hearing just as long as necessary in order to finish with all four witnesses.

[Recess.]

Chairman SULLIVAN. Thank you for your patience and the committee will now come to order again.

What I wanted to say before you start, Mr. Greenwald, is that if we cannot ask all the questions that we have prepared and we think need to be answered, we will have them inserted in the transcript that will come to each witness for correction. At that time we'd like to have you

answer in writing the questions that are inserted in that place in the transcript and then have it back to us as fully and quickly as possible. But we are just going to have to play by the clock today.

So I'm glad to welcome Joseph Greenwald, Assistant Secretary of State for Economic and Business Affairs, as our first witness. Mr. Greenwald, if you can summarize your statement within 15 minutes we would be very happy.

## STATEMENT OF JOSEPH A. GREENWALD, ASSISTANT SECRETARY OF STATE FOR ECONOMIC AND BUSINESS AFFAIRS

Mr. GREENWALD. Madam Chairman, I'd like to take advantage of your invitation and use 15 minutes, but not to summarize the prepared statement, if that's all right with you.

Chairman SULLIVAN. All right.

Mr. GREENWALD. I would rather pick up from a couple of points in your opening remarks and concentrate on the international foreign policy aspects which you underlined toward the end of your comments—particularly about the effect of economic stockpiling on our relations with foreign producers—and the general context of the international commodity problem as it's seen in foreign policy terms, especially in our relations with the developing countries. You mentioned the Nairobi Conference and I'd like to address myself to that, too. You mentioned the result of the discussion of the proposal for an International Resource Bank.

Also, you noted that as a result of your deliberations as well as the work that you have done before, you have concluded that there are no easy answers to these problems. I think you will find out from the Government witnesses that the Administration hasn't found any easy answers either, and that there is, as yet, no Administration position on the question of economic stockpiling, which I imagine doesn't surprise you. A lot of work is going on and will continue.

You also noted that our actual experience with stockpiling, strategic or any other, hasn't been all that successful or salutary. A lot of problems have arisen and there hasn't been any basis for firm conclusions. Assistant Secretary Parsky will address himself to the various specific questions that we'll be looking at in order to try to determine what the policy should be with respect to the idea of economic stockpiles.

On the international side, there has been a pretty consistent reaction, particularly to the disposal of our stockpiles. In almost every case where we have had a stockpile disposal program we have had representations from the developing countries who produce the same commodity expressing concern that the magnitude and the pace of our disposal would disrupt international markets, depress prices, and adversely affect their own economic development through its impact on their foreign exchange earnings. So taking that as our past experience, we can certainly draw the conclusion that any stockpiling program, economic, strategic, or otherwise, will certainly have important foreign policy repercussions and implications. I'm delighted to see that you recognize that this is an important aspect of the problem which will have to be taken into account in any final determination of what our policies and programs should be in this field.

Now, if I can go to the broader question of how the developing world in particular looks at this commodity issue, I think it may help you in your further deliberations. Many of the developing countries depend, for their foreign exchange, primarily on exports of raw materials and primary products. This has been an issue in our discussions in what we now call the North-South dialog for at least 5 or 10 years, but it has now come to the forefront. In these international discussions, one issue emerges from all the others as the current concern and the main subject of the dialog, and particularly at the UNCTAD meeting in Nairobi that you mentioned. The No. 1 item was commodity policy.

Our attitude toward international commodity agreements and commodity questions has been fairly consistent from one administration to another. I don't think it's a partisan issue. Our consistent approach has been that of a case-by-case basis, taking each commodity, looking at it on its merits to see whether there were problems in the international trade or the market structure for these commodities and whether it was either necessary or desirable to try to do something in terms of international cooperation to deal with, as we see it, the wide fluctuations that there may be in prices of these commodities and try to smooth out those fluctuations. If it's possible this will also provide the necessary stability and encouragement for the continued exploitation of the resources. This has been our basic approach and in accordance with this approach we have participated in international commodity conferences and have joined a small number of commodity agreements where we felt that the terms were beneficial to both producers and consumers and in the national interest of the United States.

Most recently, we have submitted to the Senate for advice and consent to ratification, agreements on tin and coffee. The developing countries feel that what's required is not just a case-by-case approach, but what they call an integrated program. By this they mean that a broad spectrum of commodities, say anywhere between 10 and 18, ought to be selected, not only for the commodity discussions, but also for negotiations, commodity agreements, and particularly for the creation of a buffer stock as the main mechanism for achieving market stabilization for these commodities. At the UNCTAD meeting in Nairobi they put forward this integrated program which included the number of commodities to be dealt with in negotiations as well as in the establishment of what they call a common fund. The common fund would presumably be somewhere between $3 billion and $6 billion to be used for financing of buffer stocks to support market stabilization in the commodities of interest to the developing countries.

Our approach to the commodities problem, which was set out in the opening speech by Secretary Kissinger on May 5 or 6 in Nairobi, also tried to deal with the commodity issue on a comprehensive basis, but our fundamental difference with the proposals of developing countries was that we felt they were coming at the problem from the wrong direction. Their proposal was to have a buffer stock financing mechanism set up with contributions made—substantial contributions—before there had been an examination of the commodities on a case-

by-case and individual commodity basis to determine whether or not the problems of these commodities—if there were problems—lent themselves to international agreement and whether such agreements required or could use the mechanism of a buffer stock to achieve its purposes. As I said, what we proposed was a comprehensive program of discussions of commodities between producers and consumers on an individual basis and that, after that examination had been concluded, we were prepared to look at the question of financing a buffer stock if that turned out to be a problem.

We are not opposed to the idea of either commodity agreements or buffer stocks in principle, but we have to look at each individual case; and as far as the financing is concerned, there are a number of ways in which the financing of buffer stocks can be handled. Sometimes it's done by direct contribution of the participants, the producers in the case of the tin agreement. It could be done by an export tax, or it could be used as collateral to raise money on private markets. There are a number of techniques that could be used, and these techniques might vary again from commodity to commodity. Our approach was to start out with individual commodity discussions, and then when those were concluded, we would see how many commodity agreements were appropriate for negotiation, if they had been negotiated or could be negotiated between producers and consumers, and whether the buffer stock was an appropriate mechanism for such agreements.

We had one other feature, the one that you mentioned in your opening statement, which we called an International Resource Bank. In fact, it would not be a bank in the usual sense of the word. It would not make any direct contributions to developing countries or to commodity production. The idea, rather, was that there was a need for an international and multilateral mechanism to promote the development of raw material resources in the developing countries. The reasons that we felt some new mechanism was necessary were because the cost of getting these materials out has increased substantially over the years and because the investment has to be made for a much longer time than has been the case in the past. Another reason was that investors—at least investors in the United States—were showing some reluctance, because of the political instability and uncertainty in many of these countries, to go into the large investment involved for such a long period of time.

The idea behind this bank, which would basically provide a sort of guarantee function against political risks—not against commercial risks, but against political risks—was to establish a multilateral element that could provide assurances to both investors and producing countries that a fair, equitable and lasting arrangement would be made. One of the other problems that has arisen is that the developing countries, in some cases, have changed the rules of the game even after they have entered agreements with outside investors. Thus, if we could have this bank or this facility really act as a kind of objective third party, somewhat in the way that certain parts of the World Bank do, it could give some assurance to the developing country that it was not being taken advantage of and to the investor that he would have more stability and assurance that the conditions of the contract would be

observed. We felt this might serve to encourage production in developing countries.

The alternative, which we think is not the most economical way to proceed, is that investors might be putting more of their money in the development of resources in industrialized countries where it would cost more. Such investments would not necessarily be the most economic way to proceed because of political factors that might come about. That would be to the disadvantage of both the developing and the industrialized countries.

We consider that there is a gap in the integrated program proposed by the developing countries, some feature which would encourage the production of raw materials. This is why we proposed the International Resource Bank.

It's very unfortunate that there was a vote on this subject while there wasn't one on any other. We were suggesting that this idea be studied. As you may have seen from the statement made by Secretary Kissinger and Secretary Simon, our feeling was that the result was more a consequence of parliamentary maneuvering in the late morning hours of a large conference in Nairobi rather than any substantive rejection of the principle of the concept. It is our intention to try to make our ideas better understood and to continue to pursue this in appropriate ways both bilaterally and multilaterally, because we think it is the right solution both for the developing countries and the industrialized countries.

If I could now sum up where we are on the international aspects of commodity policy—despite the vote on the International Resource Bank which we regret and which unfortunately got all the attention—there was agreement on the resolution on commodities which established a timetable for individual commodity discussions, as well as on a preliminary meeting, which we are prepared to go to to discuss the objectives and modalities of the idea of a common fund. But for the reasons that I gave, we consider that starting off with a common fund for buffer stock financing is turning the issue upside down and beginning from the wrong end.

Our own approach would be to see the results of the commodity-by-commodity discussion and then come back to the question of buffer stock financing, if that indeed turns out still to be an issue. Commodity-by-commodity studies and negotiations, if everyone agrees there should be negotiations, will take place over the next year, 1½ or 2 years. This is the prospect and this is the framework within which discussions of these commodity issues will take place.

These considerations relate largely to metals and minerals. There are some agricultural products included in the list proposed by the developing countries, like bananas, which are so perishable that it is hard to conceive of a buffer stock or really any commodity agreement for them. They might be a little mashed up when you finished your buffer stock arrangements.

There are other discussions taking place in another context with respect to grains, for example, which are not of primary interest to the developing countries since they are mainly consumers and not producers. Those discussions take place in a different context at the International Wheat Council in London and are looking toward some sort

of a grains reserves arrangement which was part of Secretary Kissinger's initiative at the World Food Conference some time ago.

Those are, I think, the general outlines of our approach to the international aspects of the commodities question and, as I say, particularly in the context of the North-South dialog, the commodity issue will be very much in the forefront.

Now what we would do on stockpiling, whether strategic or economic, obviously has to be related to these ongoing international activities and would have to be very closely coordinated with any movements that we make in the international field.

Thank you.

[Prepared statement of Mr. Greenwald follows:]

STATEMENT OF JOSEPH A. GREENWALD, ASSISTANT SECRETARY OF STATE FOR ECONOMIC AND BUSINESS AFFAIRS

Madam Chairman, I welcome this opportunity to appear before your Committee to discuss the subject of economic stockpiles. This topic has gained wide and growing attention over the past several months and will continue to be an important element of focus in the future. The related problem of commodity shortages and supply of critical materials has been under discussion in many international bodies, including the United Nations Conference of Trade and Development (UNCTAD), the UN General Assembly, the Conference on International Economic Cooperation (CIEC) and the General Agreement on Tariffs and Trade (GATT).

Commodity policy generally and stockpile policy in particular have been the subject of continuing study within the US government. It is most appropriate that this Subcommittee is seeking in the course of these hearings to explore a broad range of issues relevant to the possible establishment of economic stockpiles, including consideration of the administration of existing defense-related stockpiles and the effects of stockpiles on international relations.

THE PRESENT SITUATION

A good deal of useful work has already been done on the subject of stockpiles. The recently released Office of Technological Assessment (OTA) *Study on Economic Stockpiling* has done pioneering work in assessing the purposes for economic stockpiling and in elaborating the costs and benefits of such a policy. The National Commission on Supplies and Shortages (NCSS) is in process of doing a related study of alternatives designed to deal with the problems of resources and commodity supplies and shortages. The NCSS Study will include specific recommendations on organization of the government to deal with materials issues, and will be directly addressing the topic of economic stockpiling.

Interagency groups within the Executive have also looked at the question of economic stockpiling at least on an initial basis, and a number of studies on related issues have been completed. One such study was the Council on International Economic Policy's (CIEP) *Special Report on Critical Imported Materials* issued in December, 1974.

Discussions of stockpiling is continuing. On the strategic stockpile question, an interagency group chaired by the Federal Preparedness Agency (FPA) has been reviewing the question of strategic stockpile objective levels for nearly a year. On economic stockpiles, no Administration position has yet been developed. Because of the complexity of the subject and the effects of stockpiling on economic institutions, business, and markets both at home and abroad, the evolution of government policy must proceed deliberately and carefully.

DEFINITION

One of the initial questions to be considered in the development of an economic stockpile policy is that of definition. What is an economic stockpile and what is its purpose? The OTA Report gives as a general definition: "Economic stockpiling is the accumulation and storage of materials for the express inten-

tion of being able to effect their distribution to accomplish public purposes other than the wartime emergency conditions stipulated for the strategic stockpile".

It is perhaps clearer, however, to define an economic stockpile by its purpose. There are two possible objectives which have international implications and are therefore of particular interest to the Department of State: 1. To counteract cartels or unilateral actions for political reasons, 2. To smooth out price or supply fluctuations.

COSTS AND BENEFITS

Of key importance in consideration of a policy of economic stockpiling is a determination of the costs and benefits. The OTA Report has made an important contribution by drawing up a balance sheet of costs and benefits for specific purpose stockpiles of copper, tungsten, petroleum and tin.

One clear advantage of having an economic stockpile is that it reduces the probability of embargos and/or cartel-like actions by its deterrent effect. Stockpiles can also perform a price stabilizing function by helping reduce or prevent major increases in price and conversely by limiting sharp falls in price in periods of slack demand. A third benefit might flow from a greater degree of market stability, which would encourage economic growth and the timely development of new sources of supply.

There are, on the other hand, numerous disadvantages. The most obvious is the cost, both direct and indirect, of acquiring and maintaining commodity stocks. Another disadvantage would be the impact on markets which could result from build-up and release of stocks, particularly if stockpile objectives were to change. There is a risk that sudden changes in stockpile objectives could disrupt normal commercial markets, unless care were taken. In our management of the strategic stockpile, we have exercised particular care, both as a matter of law and of policy, to avoid such disruption.

The disposal of commodities from the strategic stockpile has been an irritant in US relations with producing countries over the past decade. Some countries complain that any sales from the stockpile have an adverse effect on the market and that even the existence of the stockpile has a depressing effect on world prices. These complications would probably be more acute in the case of economic stockpiles and there would be difficult questions to answer. What would be the triggering mechanism for buying and selling, for example, to whom would sales be made—to traders, processors, end users? In what proportion? and at what price?

It is clear that stockpile acquisitions or disposals involve government intervention in the market with significant consequences both at home and abroad. With many developing countries dependent on commodities for their foreign exchange, our actions in stocking or de-stocking would have an important foreign policy impact. Would we operate our stockpiles on a purely national basis or would we try to coordinate our policy internationally? Thus, a careful cost/benefit analysis of the broad implications, both economic and political, of stockpiling is essential before any policy decisions.

PREVIOUS EXPERIENCE WITH STOCKPILING

*Against cartels*

We have had limited experience in operating a stockpile to combat cartel-like actions. In general, however, our studies have indicated the potential for effective cartel action is not present for most raw materials and furthermore in purely economic terms, such actions do not make sense. The CIEP *Critical Materials* Report pointed out that long-term supply and demand responses in the minerals field have generally been adequate to deter aggressive and precipitate price increases. In the short run, the *Report* concluded, producers in only a few cases might be able to impose substantial price increases before alternative sources and substitution have a counter-acting effect. We agree with the CIEP conclusions. The *Report* singled out three particular commodities where it recommended special attention be given to the possibility of cartel action: bauxite, chrome, and platinum.

The successful action by OPEC countries in raising prices to inordinate levels has led to national and international action. As a participant in the International Energy Agency (IEA) Emergency Program, the United States has taken a commitment to hold emergency reserves (stocks) of crude oil or product sufficient to sustain consumption for at least 70 days with no net imports. To

further strengthen our emergency reserve position and reduce our vulnerability to petroleum supply interruptions, the recently passed Energy Policy and Conservation Act (PL 94–193) calls for the establishment of a strategic storage reserve.

*Stockpiling for price stabilization*

Our experience has been even more limited in connection with economic stockpiling for market stabilization purposes. We have only the indirect effects of disposal from the strategic stockpile. But the question of the use of buffer stocks in international commodity agreements has been very much in the forefront of recent debate. The developing countries have been pressing for the establishment of international buffer stocks for many key minerals including copper, tungsten, manganese and iron ore as well as several agricultural commodities. We will examine these commodities in a series of meetings over the next two years.

With the exception of tin, for which a buffer stock has been in operation for several years under the aegis of the International Tin Agreement (ITA), there have been no examples of international economic stockpiles of critical minerals. The United States has recently signed the Tin Agreement and submitted it to the Senate for advice and consent to ratification.

Under the ITA a buffer stock made up of compulsory contributions from producer member-countries and voluntary contributions from a few consumer member-countries is used by a Buffer Stock manager to intervene in the free tin market to try to maintain tin prices within a prescribed range.

The United States, as a condition of its membership in the ITA has insisted that contributions to a buffer stock be the responsibility of producing, not consuming countries, since it is producer-countries that benefit most directly from the stockpile operations. As a further condition of membership, the US has insisted that disposals from our General Services Administration (GSA) administered strategic stockpile will not be affected by membership in ITA. We have, however, consulted with the Tin Council on our surplus disposals of tin and will continue to do so. The objective of the ITA is to reduce fluctuations of tin prices in international markets; our objective in surplus disposal operations is to assure that they are carried out in a way that will minimize impact upon the commercial markets.

*Strategic stockpiles*

Most U.S. Government experience has been with strategic rather than economic stockpiles. However, as far as the impact on markets and the problems caused by acquisitions and disposals in international economic relations are concerned, the operations seem similar.

The Department of State has over the years participated in and advised on both the acquisition and disposal for the US strategic stockpile. Our interest has been to ensure that, in the process of buying and selling commodities in domestic and international markets, undue disruption of markets is avoided.

Current directives enjoin the General Services Administration (GSA) which administers stockpile operations to acquire or dispose of excess materials in such a way as to give "due regard to the protection of the United States against avoidable losses and *to the protection of producers, processors, and consumers against avoidable disruption of their usual markets.*"

The Department of State is required to inform the President of the effect of stockpile disposals on US international relations. To this end we undertake consultations with major producing countries prior to implementation of the annual disposal program.

I have briefly sketched some of the basic areas to be considered in approaching a decision on economic stockpiling. It seems abundantly clear that the thrust of future consideration must be to weigh the risks of shortages or market fluctuations against the costs of stockpiling. While some work has been carried out, a fully adequate and comprehensive balancing of costs and benefits in the widest sense remains to be done. The Department of State together with other agencies is continuing its efforts to sharpen the focus of such consideration and looks forward to the useful outcome of these hearings. Thank you.

Chairman SULLIVAN. That was a good summary. You have answered a few of the things that I had down here to ask you about.

I wanted to say that I have been most familiar with two imported commodities over the years, coffee and sugar. My interest in coffee imports dates back to 1954, when prices skyrocketed on the basis of a claimed shortage. Some time in the near future I'd like to be briefed by someone at State about what happened under the International Coffee Agreement that we had which was intended to help the producing countries as well as protect us as the largest importer.

Mr. GREENWALD. We would be happy to submit an updating of the recent developments in coffee if you'd like.

[Material submitted by Mr. Greenwald for the record follows:]

INTERNATIONAL COFFEE AGREEMENT 1976

COFFEE IN WORLD TRADE

Coffee is the most important export of the developing countries, next to petroleum.

In 1974, total exports of coffee amounted to over $4 billion, all from developing countries.

U.S. imports amounted $1.5 billion, 34 percent of world imports.

COFFEE EXPORTERS

43 producing countries in Latin America, Africa, and Asia participated in the negotiations for the new Coffee Agreement.

Brazil is the largest producer, with Colombia, the Ivory Coast, Angola, El Salvador, Guatemala, Mexico, Uganda, Indonesia, and the Cameroon included among the top ten producers.

Burundi, Colombia, Ethiopia, Haiti, and Uganda rely on coffee for over 50 percent of their export earnings.

Fifteen developing countries depend on coffee for over 25 percent of their export earnings.

BACKGROUND

In 1962 the United States joined the first International Coffee Agreement, designed to protect coffee producers from low prices and excessive production, and agreed to its renewal in 1968. It was extended in 1972 and again in 1975 with its economic provisions suspended in order to provide statistical data and a forum for new negotiations.

WORLD COFFEE MARKET IN 1976

The world coffee market today is considerably different from the one in 1962. Stocks have been depleted; prices are at record highs.

The market has yet to recover from a major frost in Brazil last July. Prices remained relatively depressed during the first half of 1975, with coffee stocks at relative lows, and rose sharply after reports of widespread damage to the Brazilian crop.

Civil war in Angola, floods in Colombia, and the earthquake in Guatemala also contributed to uncertainties in the coffee market.

Brazilian coffee production is not expected to be restored—nor coffee prices to decline—until well into 1978.

PURPOSE

The new Coffee Agreement seeks:

To help provide a stable flow of coffee onto the market.

To encourage producing countries to restore adequate production levels.

To avoid fixed price objectives and prevent prices from rising above long-term market trends.

HOW THE AGREEMENT WORKS

Export quotas are the main instrument for stabilizing prices at reasonable levels whenever supplies are in surplus.

The Agreement will come into effect with quotas in suspense. Due to current supply tightness, quotas will not be imposed until 1979 at the earliest when drops in prices should signal a return to normal supplies.

Quotas will be suspended whenever prices rise by 15 percent above previous or agreed levels.

Price ranges at which quotas will be triggered will be set by decision of a two-thirds majority of consumers and producers voting separately in the International Coffee Council.

Quotas will be distributed among producers according to a formula which includes their export performance during the first two years of the Agreement.

The Agreement will remain in force for six years. However, the United States and other members have the option to withdraw after the third year.

CONSUMER PROTECTION

The Coffee Agreement will protect our interests as consumers during the next three or four years when coffee prices will be high due to a severe frost in Brazil last July.

Producers are encouraged to ship everything they have during the next few years of high prices and tight supplies.

When production is restored, producers are rewarded for building up stocks as a hedge against future disruptions in supply.

Producing countries have an incentive to declare anticipated shortfalls in exports in time to allow their redistribution to producers who have surplus coffee to ship.

There are no fixed prices and no quotas in effect when the Agreement enters into force.

Quotas will be suspended automatically whenever prices rise sharply. The net effect of these provisions and incentives is to encourage lower prices not by trying to control market forces but by influencing them.

NEXT STEPS

The President authorized signature of the Agreement after an intensive interagency review concluded it contains significant improvements over previous Coffee Agreements. It will be submitted shortly to the Senate for advice and consent to ratification, then to both Houses of Congress with a request for implementing legislation. The Agreement is scheduled to come into effect October 1, 1976.

Chairman SULLIVAN. What I would like to do—and when that bell rings again I'm going to have to take another 5, 6, or 7 minutes to get over to the House and back. I know what the vote is on.

Mr. Greenwald, may I say first, that your answers may be brief. If we feel an answer should be extended we will ask you to elaborate. But otherwise you can expand on your answers when you get the transcript, to bring out more clearly some of the things that would help us in our study. Our minds are certainly open on what is the thing to do, and the more facts we have, the better able we are to study and try to come up with some conclusions.

Yesterday we heard testimony that buffer stocks, such as created under the International Tin Agreement, have failed in the past. What advantages are there for the United States in signing a tin agreement now? Isn't this likely to become another indication of a producer-consumer agreement that is honored only so long as it benefits the producers? Or are we wrong in our assumption of that?

Mr. GREENWALD. I'm not sure that you can say the agreement failed. What the agreement, which includes a buffer stock feature, is designed to do is to try to keep the price fluctuations within a certain range. Now it hasn't succeeded completely. In most cases it's gone up through the top rather than drop through the floor, but it has had some success in moderating the large fluctuations in prices.

Some people would argue that in order to do it more successfully you'd need a much larger buffer stock. Someone even suggested we should combine our stockpile with the international buffer stock, but that's not the U.S. Government position. We joined the agreement because it is an agreement that has worked relatively well compared to some of the others that have been much less successful and also for foreign policy reasons. This is an agreement that has been in existence for a long time. It has worked fairly well, and we have in fact been able to continue our stockpile disposals without any disruption. We always consulted informally with the Tin Council and we tried to coordinate any of our activities which would affect them, so that in a sense, although we were not officially parties to the agreement, we really acted as though we were. What we have really done is suggest that it's helpful to show our good faith in this case-by-case approach by actually joining the agreement and sending it to the Senate for ratification.

Chairman SULLIVAN. You say very little in your statement about the actual threats of commodity shortages from international causes. I think you could answer briefly on this and then expand because probably the answer will need some expansion. Give us the State Department's current assessment of this situation. For example, what about chrome? What's the latest assessment of the situation in Rhodesia? And I think, since that's currently in discussion, you may answer that within the next 10 days from this hearing.

Mr. GREENWALD. All right.

[Material submitted for the record by Mr. Greenwald follows:]

THE UNITED STATES CHROMIUM REQUIREMENTS

I. CHROMIUM

Chromium is a hard, lustrous, brittle metallic element which, because of its corrosion resistance, high melting point and other properties, is particularly important in the industrial world. Principal uses in the U.S. are in the iron and steel industry which consumes 60% of U.S. chromium imports for the manufacture of stainless steel and other alloy products; the chemical industry which consumes 20% of total chromium imports in steel plating, manufacture of paints and leather tanning; and the refractory industry which uses the balance of total U.S. consumption for the manufacture of high temperature refractory bricks for the steel and cement industries.

Chromium is produced from chromite, an ore which is divided into three categories for industrial purposes. Metallurgical grade chromite is a high quality ore containing more than 46% chromium; 60% of total U.S. imports are of metallurgical grade chromite for the iron and steel industry. Chemical grade chromite is ore containing 40–45% chromium. In 1975, 20% of U.S. imports were of this grade. Refractory grade chromite is any ore that contains less than 40% chromium and in 1975 accounted for 20% of total U.S. imports.

II. WORLD PRODUCTION AND RESERVES

Due to the world-wide recession in 1975, production of chromite decreased from 7,931,000 to 7,350,000 short tons, a decrease of approximately 6%.

WORLD CHROMITE PRODUCTION

[Thousands of tons gross weight]

| World chromite production | Production 1974 | Production 1975 |
|---|---|---|
| United States | | |
| Philippines | 584 | 500 |
| Rhodesia | 650 | 650 |
| South Africa | 2,069 | 2,000 |
| Turkey | 550 | 500 |
| Other market economy countries | 1,176 | 1,000 |
| Central economy countries | 2,902 | 2,700 |
| World total | 7,931 | 7,350 |

According to U.S. Bureau of Mines estimates, general reserves of mineable chromite ore of all grades total 1.9 billion tons of which 64 percent is located in South Africa and 32 percent in Rhodesia. For metallurgical grade chromite ore, the grade most often used in the production of stainless and specialty steels, Rhodesia possesses 67 percent of the world's known reserves; South Africa, 22 percent; the U.S.S.R. and other communist countries, 6 percent; and Turkey, 2 percent. All other sources have a total of less than 3 percent.

Based on present estimates, there are sufficient known reserves of metallurgical grade chromite to last for about 125 years at the present rate of consumption. The known reserves of chemical and refractory grade chromite are over one billion tons, sufficient for the next 350 years at present rates of consumption. It is noteworthy that recent improvements in steel smelting (the AOD process) have enabled industry to utilize chemical grade chromite in steel making. Further developments in this area could result in effectively expanding the chromite resources available to the metals industry.

## III. U.S. IMPORTS OF CHROMITE AND FERROCHROMIUM

While the United States has sizeable deposits of low grade chromite, these deposits cannot be exploited economically at present market prices. Thus, the U.S. is now totally dependent on imports for its chromium requirements. Traditionally, the U.S. iron and steel industry imported chromite and processed it domestically into ferrochromium containing 35–70% chromium content. In recent years, however, the U.S. has been importing increasing amounts of processed ferrochromium, averaging about 35% of total domestic requirements from 1972 to 1974. In 1975, imports of ferrochromium jumped dramatically to 93% of domestic consumption.

In 1975 the United States imported a total of 1,252,000 short tons of chromite ore. Imports were divided among the following sources:

1975.—U.S. IMPORTS OF CHROMITE BY COUNTRY OF ORIGIN

[In short tons]

| | Gross weight | Percentage of gross weight | Chromium content | Percentage of chromium content |
|---|---|---|---|---|
| Philippines | [1] 210 | 17 | 70 | 13 |
| Rhodesia | [2] 138 | 11 | 66 | 12 |
| South Africa | [3] 289 | 23 | 134 | 24 |
| Turkey | 173 | 14 | 75 | 13 |
| U.S.S.R. | [4] 349 | 28 | 175 | 31 |
| Other [5] | 93 | 7 | 39 | 7 |
| Total | 1,252 | 100 | 559 | 100 |

[1] Consist almost entirely of refractory grade chromite.
[2] Of which 103,000 short tons was of metallurgical grade equal to 17 percent of total imports of metallurgical grade.
[3] Of which 218,000 short tons was of chemical grade equal to 60 percent of total imports of that grade.
[4] Including 292,000 short tons of metallurgical grade chromite equal to 49.4 percent of total imports of that grade.
[5] Including Albania, Finland, India, and Iran.

As noted previously, there has been an increasing trend by U.S. importers to decrease imports of unprocessed chromite in favor of increased imports of finished ferrochromium. In 1975 imports of ferrochromium alloys reached an all-time high of 319,000 short tons, more than was produced in the United States that year and equal to approximately 93% of estimated U.S. consumption that year. Much of that imported ferrochromium was held in stockpiles by traders and consumers. Ferrochromium was imported from the following sources in 1975.

U.S. IMPORTS OF FERROCHROMIUM BY COUNTRY OF ORIGIN

[In short tons]

| | Gross weight | Percentage of gross weight | Chromium content | Percentage of chromium content |
|---|---|---|---|---|
| Brazil | 16,039 | 5 | 9,099 | 5 |
| Finland | 6,050 | 2 | 3,092 | 2 |
| West Germany | 6,499 | 2 | 4,559 | 2 |
| Japan | 84,970 | 26 | 53,918 | 27 |
| Rhodesia | 82,093 | 26 | 55,546 | 28 |
| South Africa | 99,279 | 31 | 55,612 | 28 |
| Yugoslavia | 12,383 | 4 | 8,195 | 4 |
| Others [1] | 11,496 | 4 | 7,967 | 4 |
| Total | 318,809 | 100 | 197,988 | 100 |

[1] Includes Canada, France, India, South Korea, Norway, Sweden, Taiwan, and Turkey.

## IV. THE RHODESIAN PROBLEM

In December 1966 the United Nations imposed mandatory economic sanctions on the illegal Smith regime in Rhodesia, in effect prohibiting all member nations from engaging in trade with that country. The United States supported this action and abided fully with the sanctions, which are binding as treaty obligations on all UN members, until 1971. Late in that year, Congress passed the so-called Byrd Amendment which allows the import of strategic materials from Rhodesia as long as their importation is permitted from communist countries. In effect, the Byrd Amendment permitted the U.S. to import chrome and several other strategic materials, such as nickel and asbestos, from Rhodesia despite the UN sanctions.

The Administration opposed passage of the Byrd Amendment and has consistently supported Congressional efforts, to bring about its repeal. The Administration has taken this position because it believes that Rhodesia can no longer be considered a reliable source of chromium for the U.S. Mozambique closed its border to Rhodesia in March. Stepped up guerrilla warfare in Rhodesia threatens to disrupt its remaining transportation routes to South Africa whose own future intentions and capabilities regarding Rhodesian exports are, in any case, uncertain. If, through violence, the Rhodesian chrome mines are shut down or abandoned, it would require years to bring them back into service. By applying all available means, including repeal of the Byrd Amendment, to force the Smith regime to a negotiated settlement with the black majority, we are safeguarding our long term access to Rhodesian chrome.

For the short term, the substantial inventory of chromite and ferrochrome held by U.S. manufacturers, supplemented by imports from non-Rhodesian sources will adequately provide for our civilian and defense needs. Repeal of the Byrd Amendment does not mean increased dependency on the U.S.S.R. for our chrome needs, however. There are several other major suppliers of high grade chrome ore. Our more significant chrome imports from Rhodesia are in the form of ferrochrome, which we do not import from the Soviet Union. In 1975 we imported ferrochrome from 14 different countries.

## V. INDUSTRY AND GOVERNMENT STOCKPILES

Because of the long supply lines involved in importing chromite and ferrochromium, U.S. industry normally maintains substantial stockpiles to bridge possible interruptions of supply. At the beginning of 1976, Industrial Stockpiles of chromite were approximately 952,000 short tons equal to about one year's con-

sumption, while the amount of ferrochromium held by producers and consumers totaled 88,000 short tons, equal to three months requirements of U.S. industry.

As of May 31, 1976, the U.S. Strategic Stockpile contained the following types and amounts of chromium, none of which is available for disposal unless authorizing legislation is passed:

CHROMIUM IN U.S. STRATEGIC STOCKPILE AS OF MAY 1976

[Short tons, gross weight]

| | Total in stockpile | Present objective | Excess |
|---|---|---|---|
| Metallurgical-grade chromite | 1,952,802 | 444,710 | 1,508,092 |
| Nonstockpile grade chromite | 551,758 | 0 | 551,758 |
| Chemical-grade chromite | 250,000 | 8,400 | 241,600 |
| Refractory-grade chromite | 399,960 | 54,000 | 345,960 |
| High-carbon ferrochromium | 402,001 | 11,476 | 390,525 |
| Nonstockpile grade | 693 | 0 | 693 |
| Low-carbon ferrochromium | 298,570 | 0 | 298,570 |
| Nonstockpile grade | 20,324 | 0 | 20,324 |
| Chromium metal | 3,763 | 0 | 3,763 |
| Ferrochromium silicon | 55,608 | 0 | 55,608 |
| Nonstockpile grade | 2,747 | 0 | 2,747 |

It is highly unlikely that Congress will authorize the disposal of any of the excess chromium listed above any time in the near future. An interagency group chaired by the Federal Preparedness Agency has been reviewing the question of strategic stockpile objective levels for nearly a year.

The Federal Preparedness Agency has taken the position that "the Federal Government should be wary of disposal actions for a large number of strategic and critical materials" and that, until the interagency study is completed, "it is in the national interest to continue to suspend or curtail disposals of many materials."

VI. OUTLOOK

In the short term, there are sufficient quantities of chromite available from world-wide sources to meet U.S. demand for chromium. Continued production and export by the U.S.S.R., Turkey, the Republic of South Africa, Brazil, Finland, the Philippines, and India should be adequate to satisfy U.S. and other industrial countries requirements, even if Rhodesian supplies should not be available. Over the long-term, however, unless substantial new deposits are discovered elsewhere, the United States and other industrialized nations will be heavily dependent on Rhodesia and South Africa for both chromite and ferrochromium.

Of equal note is the present trend to U.S. industry to import ferrochromium rather than produce it domestically from imported chromite. The dramatic switch to imported ferrochromium has its origins in cheaper foreign labor, less expensive freight for the finished product, more relaxed environment control legislation abroad, and low U.S. tariffs, all factors which will have a continuing impact on industry. By the end of the decade it is quite possible that the U.S. will be totally dependent on imports for its ferrochromium requirements.

Chairman SULLIVAN. You're going to have to excuse me again and I will be back.

Senator WILLIAMS. Chairman Sullivan, I'd just like to say I have a rollcall vote, too, so I'm going to have to leave. I wonder if I could work out an arrangement here to submit some written questions.

Chairman SULLIVAN. That's exactly what we've arranged to do.

Senator WILLIAMS. Because this is obviously most distracting to have to break in and out.

Chairman SULLIVAN. If you would give it to the staff they will see that those questions are submitted to any witness. Would you have a moment to carry on while I go?

Senator WILLIAMS. I wish I could, but it's hazardous if I do.

Chairman SULLIVAN. If we don't vote on a rollcall, then questions are always raised what are we doing to earn our salaries.

Senator WILLIAMS. I would ask, Mr. Greenwald, are there any other countries that are now active in stockpiling programs?

Mr. GREENWALD. In their own national stockpiling programs?

Senator WILLIAMS. Yes.

Mr. GREENWALD. Well, some countries have them. I don't happen to have the information with me, but countries like Switzerland have traditionally had national security or strategic stockpiling. Sweden has some, too. My impression is that most of the industrialized countries don't have such programs. The Japanese are beginning a little bit in the agricultural field. They have government purchasing and they use that technique to stockpile. They may not call it a stockpile, but the government agency tries to hold stocks because Japan is so dependent on imports of raw materials, including agricultural products. But we could try to get additional information and submit it.

[Additional information submitted by Mr. Greenwald for the record follows:]

*Question* [of Chairman Sullivan]. Many national and international organizations are currently involved in economic materials stockpiling or evaluations thereof. What are the current and anticipated economic materials stockpiling practices and policies of France, Japan, Sweden, the European Economic Community, West Germany, and other countries, and what are the major similarities and differences?

Answer. In most cases the consideration of economic stockpiling in other countries is still in the development stage and in some instances the information is closely held by the governments concerned.

According to information released by the French government, expenditures of $55 million were made for stockpile purchases during 1975. There has been no announcement of exactly what materials are being stockpiled, but copper, nickel, zinc, lead, tin, molybdenum and precious metals are likely candidates for stockpiling. The French goal is believed to be constitution of a stock equaling two months' normal imports. Management of the stockpile is to be largely on an economic rather than on a strategic basis. A special interministerial committee will review prices on a continuing basis and authorize purchases whenever it considers the buying price favorable. The committee will likewise authorize sales from the stockpile, whenever French manufacturers cannot get supplies at reasonable prices.

In contrast to the French system, the Swedes and the Japanese encourage private firms to hold larger than normal stocks of materials by tax incentives and/or government guarantees of loans to purchase stocks. In the case of Japan, copper has figured importantly in such a program. Since 1974, when the Japanese government provided special loans and credits to the domestic copper industry to acquire and hold stocks, Japan has established two non-ferrous metals stockpiling corporations: one to handle copper, lead, zinc and aluminum, the second to specialize in nickel, chromium, cobalt, and tungsten. Details of the stockpiling plans are still under discussion, but the Japanese Ministry of Trade and Industry (MITI) has reportedly agreed with major refiners and end-users to set up a nonprofit corporation that would begin actual purchasing of metal later this year. Press reports say that MITI will provide $1.2 million in interest subsidies to enable the stockpiling corporations to borrow at a 6.5 percent rate of interest.

The Swedish government's inventory subsidy program, which provides government assistance to firms to hold larger than normal commercial stocks, is primarily directed toward maintenance of production and employment at high levels during periods of recession and would only have indirect effects as an economic stockpile to help regulate prices or counter shortages.

There is no indication that either the European Economic Community, West Germany, or other countries have active programs for economic stockpiling.

Senator WILLIAMS. It would be interesting and useful perhaps. I regret that I can't be here through the rest of this today. I'm just wondering whether when our Nation goes to Nairobi our objectives I'm sure are defined, and the other countries at these conferences have their objectives in mind. They are different objectives.

Mr. GREENWALD. I'm not sure they are different objectives. We may differ on the means to get to them.

Senator WILLIAMS. Well, that's what I'd like to develop. Certainly it is one of our objectives to see stability in their countries.

Mr. GREENWALD. Exactly.

Senator WILLIAMS. We are also, in terms of our stockpiling approach, looking at our national interests in reliable supply and if our objective and theirs come together, we have no problem.

Mr. GREENWALD. I think our objectives are the same in the sense of stability, economic development. I think that our long-run concern with relations with developing countries is to achieve the same objectives that they have in mind. Where we disagree is on the techniques, methods to get there. For example, they start with a buffer stock financing fund and we would take a look at that after you have discussed each individual commodity.

I think there may also be one other difference in their approach to the commodity problem as to whether you look upon commodity agreements as a means for transfer of resources from the rich to the poor countries. We think it's not a very efficient technique for that purpose. So we talk about stabilization. They do too, but probably their view of stabilization would be at a higher level. We would talk about stablization more or less consistent with the long-term equilibruim trend in the price of a commodity. We are interested in security of supply and reliable suppliers and they are interested in consistent opportunities for access to markets, as well as the possibility of moving on their raw materials to the next stage of processing. We are working on both of those concerns.

I didn't talk much about the access to markets, which is a matter that comes up not in UNCTAD but in the trade negotiations under the General Agreement on Tariffs and Trade, but it's all part of what we would see as a comprehensive approach to the commodity question and, again, in the interest of the developing countries as well as the industrialized countries.

Senator WILLIAMS. Will these hearings, do you know, develop those materials of critical nature and where we stand in terms of present supply and our projection of national needs? Does anybody know if that is going to go on?

Mr. GREENWALD. There was a study, a special report on critical imported material, done by the Council on International Economic Policy in December 1974. I don't know whether that has been brought up to date or whether somebody is planning to bring it up to date, but that's the basic administration analysis of the kind of problem you're talking about the availability of critical materials, what the risks are that they may be used for cartel-like actions or embargoes, and that sort of thing. It covers all these products, but it is dated in December 1974.

Senator WILLIAMS. Thank you very much, Mr. Greenwald.

We will now recess.

[Recess.]

Chairman SULLIVAN. Back again. I think we are safe from more votes in the House, at least for a couple of hours, during general debate in the House on the pending bill, before amendments are in order.

Now, Mr. Greenwald, let's see where we left off. I think I had asked you what about chrome and what's the latest assessment of the situation in Rhodesia. If you can answer that partly now, I'd like to hear your answers.

Mr. GREENWALD. As you suggested, the question of chrome from Rhodesia is under active consideration in the legislative branch of the Government and I think I would prefer, if it's agreeable to you, to submit something in writing on the chrome situation.

Chairman SULLIVAN. All right.

Mr. GREENWALD. You also asked about our general view or assessment of commodity shortages from foreign sources and what difficulties we see.

I think our basic assessment is still similar to the conclusion that came out in a study done by the Council on International Economic Policy (CIEP) on critical imported materials. By and large, the conclusion there is that the situation in most commodities is not such that would lend itself to the same sort of thing that has happened in petroleum; also, that you can't have an effective cartel either because there are a large number of producers, unlike petroleum which is not limited to a small number of countries which have been working together. Many of the sources are in the industrialized countries or there are substitutes or alternative sources that could be easily exploited.

With the exception of a few commodities, which I think some of the more recent studies have talked about too—such as the study by the Office of Technological Assessment which mentioned as illustrative examples for stockpiling: copper, tungsten, zinc, petroleum, and tin—for most of those, I don't think we feel that there is any great risk.

There are other ones that the CIEP study indicates, like chrome and bauxite, which are perhaps more serious problems in the immediate future; but again, our overall assessment is that petroleum is, in many senses, a unique case that can't be duplicated in the case of most other critical materials.

I should have mentioned, by the way, that we have launched a policy of stockpiling petroleum where we have our own national legislation and national program that the Federal Energy Administration (FEA) is carrying forward. Also, in the international field, we have among the industrialized petroleum-consuming nations an international agreement that each should bring its stockpile up to a certain level—60—day supply and then ultimately to 90 days—as a basic instrument to try to deal with the present petroleum problem or the prospective problem where the production and price of petroleum may be used in a political context, which is the most difficult one to deal with. That's why we think it's the most serious problem; but we also think that petroleum is unique in that sense and that there aren't many, if any, other commodities where the same sort of thing could be done.

Chairman SULLIVAN. The Third World countries play a large role in U.S. commodity policy, but the role of industrialized nations is also important. Canada has recently announced a policy of retaining

more of her materials for internal use. How is this Canadian policy affecting the availability of materials here in the United States?

Mr. GREENWALD. Well, as far as I know, it has had an impact mainly in the petroleum and gas field. That's where there have been restrictions on exports and differential prices applied for exports and Canadian domestic consumption. I'm not aware of any other difficulties that have arisen with respect to other raw materials, but I'm not absolutely sure about that.

The ones that—in the 4 months that I have been back in Washington—have come to my attention have been gas and petroleum, and we have had consultations with the Canadians in an effort to try to ameliorate the effects of Canadian policies on our own economy and our own consumers.

[Additional material submitted for the record by Mr. Greenwald follows:]

CANADIAN RESTRICTIONS ON EXPORTS OF OIL AND GAS TO THE UNITED STATES

GAS

*Price.*—Approximately one trillion cubic feet of natural gas (4.5 percent of total U.S. consumption and 45 percent of Canada's current gas production) is imported from Canada annually under long term contracts, many of which do not terminate until the late 1980's or 1990's. Consumption of Canadian natural gas is concentrated in 12 states, principally in the tier of border states, and Northern California.

The average export price of Canadian gas has risen rapidly from $.58 per thousand cubic feet in 1974 to $1.60 on November 1, 1975. In June of this year the government of Canada announced its intention to increase this price further, to $1.94 on January 1, 1977, with an interim increase to $1.80 on September 10, 1976. The government of Canada claimed that the $1.60 price was the fair "commodity value" of gas (the equivalent value on a BTU basis with competing fuels in the U.S. market).

The most recently announced price increases are justified on the basis of an equivalency with "replacement fuels" in the Canadian market. The replacement fuel in this case is imported oil delivered to Montreal. In the future, as suggested in a report by the British Columbia Energy Commission, there is some possibility that Canada will claim additional price increases are needed to compensate for the replacement cost of *gas*. This may mean that Canada will insist on a price equivalent to either Arctic gas, synthetic gas or liquefied natural gas imports, all of which are extremely expensive.

*Supply.*—Another serious problem with imports of Canadian natural gas is the continuing possibility of curtailments. The U.S. is and has been considered a residual market for Canadian natural gas exports. Canadian law requires gas shipments to the U.S. to be "surplus to domestic needs". The recent upsurge in exploratory activity, resulting from the improved financial return to producers, and Canada's decision to increase domestic gas prices should improve the respective supply and demand situations. The long term prospects are not encouraging, however, and while the government of Canada has assured the U.S. of full consultations in advance of any curtailments, it is likely that U.S. consumers will have to bear the brunt of the expected Canadian shortfalls by the end of this decade.

OIL

*Supply.*—Since the 1973 oil embargo Canada has re-examined its energy policy and resources base. In 1974 it announced a decision to limit crude exports to the United States and to phase them out gradually. Exports have dropped from a high of 1.3 million barrels per day (b/d) in 1973 to about 510,000 (b/d) in the first half of this year. This figure is expected to decline further as the effect of the newly opened Sarnia-Montreal pipeline is felt.

The phase-out of exports has been dealt with through the Federal Energy Administration's Preferential Allocation Program. This program insures that

U.S. refineries in the northern tier states dependent upon Canadian crude will have priority access to the remaining Canadian crude exported to the United States. Swapping arrangements have also been used. The Canadians, however, will only accept U.S. domestic crudes in swap and this poses obvious problems for the future.

Chairman SULLIVAN. Let me ask you about your consultations with major producing nations on disposals from the U.S. strategic stockpile. Have these consultations had any effect in reducing what you called an irritant in U.S. relations with producing nations over the past decade?

Mr. GREENWALD. We have had consultations with producing countries that have been interested in the disposals. In some cases we have been able to explain what it is that we were doing and how we propose to do it. That has removed a great deal of the concern that the action would have some disruptive impact on the market. In other cases, by making slight modifications in the program, in the timing of the disposal, et cetera, it has been possible to remove some of the difficulties or irritants, as you call them, in our relations with the developing countries. However, we have our own objectives and we haven't changed the programs basically.

On the other hand, legislation makes it clear that disposals should be carried out in such a way as not to disrupt either the national or international markets and that has been the policy of the people who have been responsible for the disposals.

Chairman SULLIVAN. On a related matter—would you say that the advice of the State Department on the international effect of strategic stockpile disposals has had any appreciable influence on these disposals? In other words, does the Department of State have any real voice in stockpile policy or disposals?

Mr. GREENWALD. I think there have been a number of cases where our consultations and interdepartmental discussions have resulted in modifications of programs which have resulted in less serious impact on foreign policy and on international markets. We feel that we have had some influence through the interdepartmental discussions.

Chairman SULLIVAN. I have an issue I want to go back to, Mr. Greenwald. The State Department is properly concerned about the impact of our economic policies on other governments, because you're the people who have to explain to foreign governments why we have done something or other which may adversely affect their economies. Sometimes we in the Congress think you carry this concern much too far.

You speak of the "irritant" in our foreign relations when we release materials from stockpiles because this depresses world markets, but isn't it true that the only time we have released materials from the stockpile has been when world markets have been chaotic and prices have gone sky high? At what point do we worry more about the inflationary impact on our own people of these soaring prices rather than about their effect on other governments when we are trying to bring excessive prices down?

Mr. GREENWALD. Well, Madam Chairman, any decision made by the Government that affects the domestic economy and domestic consumers, as well as the international markets and foreign governments or foreign producers, has to be arrived at through a fine balance be-

tween various concerns. We in the State Department feel that our recommendations are consistent with our overall national interest and we are not in any way neglecting our domestic concerns, including inflation, or the need for materials or the need for reasonable prices. Most of our suggestions have had to do with—I won't call them marginal--changes in the techniques or the timing and amount of the disposal action which doesn't necessarily go to the heart of it, but which has helped prevent undue disruption.

Certainly any substantial disposal is going to have an effect on the international market and affect the price. If the prices are what we in the Government as a whole consider unreasonable, we certainly are not going to stand in the way of the disposal.

Let me give you an example, which isn't one of the critical ones that's in here, that has come up since I have been in office. We have a stockpile of wattle. It's a dye used in the tanning of shoe leather. This is in our stockpile and there's a proposal for disposal. The government of one of the countries that produces this came in and said it would be unfortunate if we disposed of such and such an amount of the stockpile at such and such a time because it would disrupt the markets and cause a decline in prices.

We took a look at the price developments and, although the demand had decreased, the price was still up, and—this is the State Department view—we felt that perhaps there had been some price rigging and that the market hadn't reflected the change in supply and demand. We concluded that it would be in the overall interest of the United States as well as the international interest to go ahead with the disposal. For that reason we didn't interpose any objection and explained to our visitors that, after looking at the market developments, it looked to us as though perhaps somebody was manipulating the price and that the disposal might have a salutary effect rather than a disruptive one.

Chairman SULLIVAN. You mean the State Department really does those things?

Mr. GREENWALD. Yes.

Chairman SULLIVAN. I'm glad to hear it. I have been using coffee as an example in these hearings, although I know it's not the kind of commodity anyone suggests that we stockpile. But as I told you, I had some experience with coffee prices as chairman of the House Subcommittee on Consumer Affairs over a dozen years, and, in fact, going back to 1954, long before I became chairman. Until the most recent skyrocketing of coffee prices, didn't Brazil always tend to regard the 1954 prices as "normal" and anything below that as "depressed," even though the 1954 coffee prices were as abnormal as they are this year? The tremendous increases in coffee prices in 1954 got me interested in this subject during my first term in Congress.

Mr. GREENWALD. Well, I'm afraid I don't have your long experience in the coffee agreement and I really don't know enough about the price trends.

Chairman SULLIVAN. This is something that I think the State Department should answer for us, because it gives us an example of the kind of commodity problems we are talking about here. We did participate in the International Coffee Agreement because it was supposed

to help both producers and consumers. In view of the fiasco over the last International Coffee Agreement, which petered out when the producers refused to supply sufficient coffee to stabilize coffee prices, why are we now proposing U.S. adherence to a new coffee agreement, and one which doesn't even pretend to set or maintain a ceiling on coffee prices? I think that should be included in the answer that you get for us.

Mr. GREENWALD. If I could just answer briefly in general terms about the present coffee agreement and the present developments. The real problem, as I'm sure you know, is the frost in Brazil. That's what's affected the price much more than the agreement or negotiations or Government intervention.

Chairman SULLIVAN. That was the same reason given in 1954 and again in 1964.

Mr. GREENWALD. And that's the reason for the skyrocketing prices in this case. I think our assessment is that the current agreement won't have any real economic impact for the 3 years of its life, in practice; our hope, however, is that with the agreement it will give some sort of assurance or encouragement in Brazil and in other countries to increase production so that in the longer run we hope it will serve to increase the supply and hopefully bring prices down.

Chairman SULLIVAN. This is exactly the reason I voted for the first agreement, to the dismay of some of my own constitutents as well as to the coffee drinkers around this country. We thought, since we're the largest importer and we import nearly all of our coffee, that if we could help the producing nations to stabilize their prices, or at least let them know what our needs were going to be through some sort of quota agreement, we could have them produce what they knew could sell and not have an excess, which could not be sold, depress the price. The whole thing started because in 1954 coffee just soared for no valid reason. We had large inventories on hand. A study was made which found that all the charges that I had made in January and February of 1954 were true. A 6-month study, made by the Federal Trade Commission, established that it was based on market manipulation, not crop damage. They had a bad frost in Brazil and they had a little fire, but it was not anywhere near as bad as Brazil had claimed, and it was the next crop which was affected, not the current one. Besides, we had large inventories. There was absolutely no justification for the prices except the pressure to get as much as the market would bear, with a tremendous amount of insider market manipulation. Immediately after the FTC study was made public, prices came down. There was a similar scare in 1964. Then they started working on a coffee agreement which we joined to try to stabilize supply and demand. It worked effectively for a number of years until, again, they began to say, well, "we want more." Then they refused to sell as much as they should have in order to try to boost prices to the 1954 "norm." The agreement collapsed as a result. Now prices are even higher than 1954.

We have been hearing about the inordinate costs, running into billions, of trying to set up economic stockpiles. Maybe this would be a mistake. But isn't it money that we could confidently expect to get back, just as we hope to get back the $2 billion just given to Great Britain to stabilize the pound? Now this may be something you want to think about before answering.

Mr. GREENWALD. I want to think about it, but I'd like to say I'd draw a distinction between the financial support for Britain and for a stockpile operation. Just very briefly, this agreement with the United Kingdom is what's called swaps by the Federal Reserve Bank and the Treasury. Unless the country is going to go into bankruptcy, swaps are only for 30 days and can be turned over for another 30 days before Dr. Arthur Burns starts to foreclose. I think it's a somewhat different situation from the question of purchase and disposal of stockpiles. I'm not sure it's a parallel.

Chairman SULLIVAN. I agree that there's a great difference there, but with the witnesses yesterday, we brought out the fact that it depends upon how you buy and how you sell as to whether or not your money comes back.

Mr. GREENWALD. Agreed.

Chairman SULLIVAN. But again, these are the things that we have got to know and weigh in considering the issue.

Well, thank you for your answers, and when you get the transcript if you will answer the additional questions, I will appreciate it. Senator Williams has indicated he will also have some to supply. Thank you very much.

Our next witness is Maj. Gen. Leslie Bray, Jr., Director of the Federal Preparedness Agency. We are glad to have you here, General Bray.

General BRAY. Thank you very much, Madam Chairman.

Chairman SULLIVAN. You know the rules of our hearing, 15 minutes for your oral presentation and your full statement will be printed in the record.

## STATEMENT OF MAJ. GEN. LESLIE W. BRAY, JR., DIRECTOR, FEDERAL PREPAREDNESS AGENCY

General BRAY. Since my statement is already in general summary form, I will go through it quickly because I think it does cover the salient points I would like to make.

Chairman SULLIVAN. That's fine.

General BRAY. I certainly do appreciate the opportunity to meet with you this morning to discuss briefly my strategic and critical materials stockpile responsibilities and to offer a few general observations on the complex issue of economic stockpiling. The origins of the strategic and critical materials stockpile precede World War II. The basic legislation, passed in June 1939 and substantially amended in 1946, is known as the Strategic and Critical Materials Stock Piling Act. The act provides for the acquisition and retention of stocks of materials and encourages materials conservation measures and the development of domestic sources of supply to decrease and prevent dangerous and costly dependence upon foreign sources to meet the needs of the common defense in national emergencies. I want to talk later about how these words have been interpreted over the years: "the needs of the common defense." In practice, the act has been used largely to build a stockpile to deal with anticipated mobilization shortages and has not generally been used to establish conservation programs or to develop domestic sources. Actions to develop domestic sources of supply have, for the most part, been under the aegis of

Title III of the Defense Production Act. The functions of the President under the Stockpile Act, upon the abolishment of the Office of Emergency Preparedness (OEP) in June 1973, were assigned to the Administrator of General Services by Executive Order 11725. The Administrator, in turn, established the Federal Preparedness Agency to administer the former OEP functions, including stockpiling, that were transferred to the General Services Administration.

As the principal Government official concerned with the strategic and critical materals stockpile. I am responsible, under appropriate guidance from the National Security Council and with the cooperation of the departments and agencies involved, for (1) establishing stockpile policy and objectives, (2) obtaining congressional approval of proposed peacetime stockpile acquisitions and disposals, and (3) handling approved disposal actions. Managing the strategic and critical materials stockpile program is a complex undertaking.

The establishment of objectives requires the identification and quantification of probable supply/requirements imbalances during future national emergencies. Many factors are involved in this critical step. They include among others: the time, level, and length of likely future conflicts; the degree of austerity to be imposed on the civilian population; the type and level of capital investment expenditures; the degree to which substitutes for strategic and critical materials can be used during emergencies; domestic production capabilities; the availability of imports; shipping losses; the methodology used; and data reliability. To take all the appropriate factors into account, FPA has developed and applies very sophisticated economic modeling techniques. Despite our advanced modeling techniques and attempts to take proper account of all relevant factors, the accuracy of our imbalance estimates is of course affected by the timeliness and quality of data entering into our calculations. We spend a great amount of effort and time, working with the appropriate resource agencies, to obtain the very best data on materials consumption and supply and production capabilities.

Because of the importance of the stockpile program to national security, we continuously reevaluate and attempt to improve our basis for projecting mobilization strategic and critical materials imbalances. I am currently directing a thorough and comprehensive interagency study to evaluate current methodology, to identify the sensitivity of imbalance projections to changes in policy factors, to review and, to the extent possible, improve these policy factors, and to further improve the currency and quality of our data base. The following agencies are playing an active role in this study: Interior, Treasury, Defense, State, Commerce, Office of Management and Budget, the National Security Council, and the Council on International Economic Policy.

Sections 3 and 5 of the Stock Pile Act place very stringent controls on the release of strategic and critical materials from government inventories. While section 3 provides limited authority to us to dispose of obsolete materials, it requires specific congressional approval before materials determined to be excess to national security needs can be released. The law further requires that approved disposals be made in a way to protect against avoidable disruptions of the market. As a

result, very careful market studies must be made when planning disposals. Section 5 permits materials held in the stockpile to be used only when judged by the President to be required for purposes of the common defense or when required for the common defense in time of war or national emergency. This section very narrowly and specifically defines the purpose of the Strategic and Critical Materials Stock Piling Act to be to meet the needs of the common defense.

I hope that this brief synopsis of the purpose of the strategic and critical materials stockpile and my responsibilities has highlighted its very special nature, some of the complexities in administering it, and the fact that our efforts in stockpile planning are very much affected by the availability of accurate, timely data.

When we turn to economic stockpiling, the complexities and data requirements to me seem to multiply. Furthermore, a number of basic questions come to mind, such as, what form would such a stockpile take? That is, would the Government actually buy and store materials or would it encourage private industry to retain larger inventories? Would stockpiling be an end in itself or would it be part of a larger strategy to deal with shortages? If so, how would it be integrated into a larger strategy? An even more fundamental question as I see it is, "What would be the objective of an economic stockpile program?" In the case of the strategic and critical materials stockpile, its objective is narrowly and clearly defined. Despite this clearly defined objective, I am impressed with the complexity and implications of our current stockpile program. Without a clear understanding of the objectives of an economic stockpile program, consideration of policy, administrative arrangements, and data requirements are nearly impossible. Stockpile policies, data requirements, and administrative arrangements suitable for one objective would not necessarily be desirable for another. Conceivably, an economic stockpile might be established for any of, or a combination of, several purposes that range from dealing with adverse cartel actions—in which case stockpiling could probably offer only a short term solution—to insuring that the full productive capacity of our Nation is maintained, to full employment. The Office of Technology Assessment, in a study it recently completed for the Congress, identified 11 different objectives for which an economic stockpile might be established.

Only after we carefully define the objective that an economic stockpile is to meet, can we intelligently turn to the conceptual, policy, administrative, and data problems. I noted earlier that our ability to administer the strategic and critical materials stockpile effectively and efficiently is affected by the availability of data. The premium on data availability, reliability, and timeliness would appear to be even greater in most conceivable economic stockpile programs. Except during war or national emergencies where the need for direct action is clear and immediate, strategic and critical materials acquisition and disposal actions, from proposal through the approval process to implementation, take place at a relatively deliberate pace in order not to unduly disturb the commodity markets. On the other hand, the purpose of some types of economic stockpiles could be to influence or counteract market forces, albeit in a constructive and timely manner. In my view, the ability to play such a role is dependent on

appropriate institutional arrangements and an accurate understanding of and ability to anticipate changing market conditions. The latter requires advanced economic analysis and complete, reliable and timely data. It is not clear that our present data systems are up to the challenge. Congress itself raised questions about the adequacy, dissemination and use of materials data when it established the National Commission on Supplies and Shortages.

I do not appear this morning as an expert on economic stockpiling. However, based on my experience as manager of the strategic and critical materials stockpile, I can attest to the complexity of issues surrounding any stockpile program. I would hope that we will continue to strive for a better understanding of the problems and implications of an economic stockpile program and, in particular, give serious attention to defining its objectives before reaching any firm conclusions about the desirability of such a potentially costly undertaking.

I hope my comments will prove useful to the committee. If you have any questions, I shall be glad to try to answer them. Thank you.

[Prepared statement of Gen. Bray follows:]

TESTIMONY OF LESLIE W. BRAY, JR., DIRECTOR FEDERAL PREPAREDNESS AGENCY, GENERAL SERVICES ADMINISTRATION

Mr. Chairman and Members of the Committee: I appreciate the opportunity to meet with you this morning to discuss briefly my strategic and critical materials stockpile responsibilities and to offer a few general observations on the complex issue of economic stockpiling. The origins of the strategic and critical materials stockpile precede World War II. The basic legislation, passed in June 1939 and substantially amended in 1946, is known as the "Strategic and Critical Materials Stock Piling Act." The Act provides for the acquisition and retention of stocks of materials and encourages materials conservation measures and the development of domestic sources of supply to decrease and prevent dangerous and costly dependence upon foreign sources to meet the needs of the common defense in national emergencies. In practice, the Act has been used largely to build a stockpile to deal with anticipated mobilization shortages and has not generally been used to establish conservation programs or to develop domestic sources. Actions to develop domestic sources of supply have, for the most part, been under the aegis of the Defense Production Act. The functions of the President under the Stockpile Act, upon the abolishment of the Office of Emergency Preparedness (OEP) in June 1973, were assigned to the Administrator of General Services by Executive Order 11725. The Administrator, in turn, established the Federal Preparedness Agency to administer the former OEP functions, including stockpiling, that were transferred to the General Services Administration.

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When we turn to Economic Stockpiling, the complexities and data requirements seem to multiply. Furthermore, a number of basic questions come to mind, such as—What form would such a stockpile take? That is, would the Government actually buy and store materials or encourage private industry to retain larger inventories? Would stockpiling be an end in itself or would it be part of a larger strategy to deal with shortages? If so, how would it be integrated into a larger strategy? An even more fundamental question as I see it is—"What will be the objective of an Economic Stockpile program?" In the case of the Strategic and Critical Materials Stockpile, its objective is narrowly and clearly defined. Despite this clearly stated objective, I am impressed with the complexity and implications of our current stockpile program. Without a clear understanding of the objectives of an Economic Stockpile program, consideration of policy, administrative arrangements, and data requirements is near impossible. Stockpile policies, data requirements, and administrative arrangements suitable for one objective would not necessarily be desirable for another. Conceivably, an Economic Stockpile might be established for any of, or a combination of, several purposes that range from dealing with adverse cartel actions (in which case stockpiling could probably offer only a short-term solution) to insuring that the full productive capacity of our nation is maintained. The Office of Technology Assessment, in a study it recently completed for the Congress, identified eleven different objectives for which an Economic Stockpile might be established.

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Stockpiles could be to influence or counteract market forces (albeit in a constructive and timely manner). The ability to play such a role is dependent on appropriate institutional arrangements and an accurate understanding of and ability to anticipate changing market conditions. The latter requires advanced economic analysis and complete, reliable, and timely data. It is not clear that our present data systems are up to such a challenge. Congress, itself, raised questions about the adequacy, dissemination, and use of materials data when it established the National Commission on Supplies and Shortages.

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I hope my comments will prove useful to the Committee. If you have any questions, I shall be glad to try to answer them. Thank you.

Chairman SULLIVAN. Thank you, General. I do have some questions to bring out some of the things we are concerned about.

In regard to the new interagency study of strategic stockpile objectives, why is a new interagency study needed so soon after the one completed in 1973? Did it stem from Defense Department objections that the 1973 objectives are dangerously low?

General BRAY. No; I don't think it stemmed precisely from the Department of Defense objections that they are too low. I think the Department of Defense, along with ourselves and several other departments and agencies felt it was time to conduct a review.

Our general reasons for that are that there have been significant changes since 1973 in the world situation. The aftermath of the oil embargo, the CIEP study Mr. Greenwald referred to, and several other changing complexities led us all to believe it was time for review.

Very candidly, from a practical standpoint, since 1973 the administration has had differences with Congress, particularly the committees dealing with disposal legislation. We had reached an impasse on further disposal programs, and that influenced the fact that we felt it was timely and necessary to conduct an overall policy review at this time.

Chairman SULLIVAN. Fine. Why is there so much secrecy concerning the conclusions of this new interagency study? Didn't the policy of keeping stockpile objectives secret officially end during the Kennedy administration?

General BRAY. Let me answer the question in two parts. Obviously, once our stockpile objectives are established, they are no longer considered secret and they are public and open to everyone. However, while we are in the process of developing policy alternatives, we must look at several issues which do have a security basis; for example, the extent of our mobilization, what sort of war and what the risks and dangers are associated with it. These are similar to defense policy planning that also must be maintained with security.

I anticipate that we will probably never release to the public all of the detailed considerations that went into our policy. So there is a necessity, while we are reviewing our policy, to hold a number of the factors in a security mode.

I think there is another broader consideration, however, and that is this: While we are discussing different policy alternatives, before

a decision is reached, publication of the actions that we are considering could be misinterpreted by a lot of people and cause very severe speculative swings in the commodity market. We are dealing with some large numbers and very large dollars. Some people may hear just a little bit of the whole range of alternatives being considered and assume we are ready to increase objectives or decrease objectives in this or that commodity, creating the sort of undesirable speculation that our stockpile policies hope to avoid.

To have some perspective while we review the policy, we need to keep the discussion internal but certainly with a view toward making full disclosure on everything that does not involve national security policy at the time the decisions are made.

Chairman SULLIVAN. Has the Congress been briefed at all on the new stockpile objectives in the last month?

General BRAY. Madam Chairman, let me clarify a point. The study is still underway. We have broken the study up into two fundamental parts or phases as we call it.

Phase 1 was a portion of the study done last summer and last fall, and we rendered a report through the National Security Council at that time. That particular part of the study dealt with methodologies, what the alternate ways are in which our Government can determine our stockpile level.

Phase 2, on which we are presently working, involves assigning specific values to a large number of variables in a very complex econometric equation. We have not finished that. When we do finish it, we will be going back through the National Security Council to the President again, outlining some basic policy issues, probably four or five fundamental basic policy issues, on which we expect to get policy guidance. Then we will run those values through our computers and come up with new stockpile objectives. So we have not really established new objectives. We are still involved in the review process.

With regard to keeping Congress informed and advised, I have briefed the appropriate congressional committees as to everything we did in phase 1. I have given them a complete detailed briefing as to what the alternatives were and in which direction we were going.

We have also kept most of the committees informed as to where we are in phase 2, and beyond that, I have invited the appropriate committees to actually sit in on our discussions since they are in fact true partners in the establishment of stockpile programs. We certainly cannot dispose of stockpile surpluses without having a specific authorization from Congress. So we have made a full and complete partnership and are making full disclosures to the Congress through the appropriate congressional committees at this time.

Chairman SULLIVAN. Has the Banking and Currency Committee been briefed on this?

General BRAY. Yes; but not the full committee. What we have done is brief the staff of the Banking and Currency Committee. We have also briefed the House Armed Services Committee, the appropriate subcommittees, the appropriate budget committees, as well as on the Senate side of the Congress.

Chairman SULLIVAN. I asked that because I am a member of the subcommittee that handles the authorization legislation for defense

production, and in the last year I haven't had any briefing from the staff or from anybody on it.

General BRAY. We have kept the staff informed. Let me make a distinction here, if I might. The House Banking and Currency Committee is the appropriate subcommittee with regard to the Defense Production Act. The Strategic and Critical Materials Stockpiling Act, particularly that part dealing with disposals, has been assigned to the Subcommittee of the House Armed Services Committee dealing with the strategic——

Chairman SULLIVAN. Yes; I am familiar with that.

General BRAY. That is the committee we have been closest to. But certainly I would be more than pleased to give you or, if you would prefer, the subcommittee itself, a complete detailed rundown at your convenience.

Chairman SULLIVAN. Well, I know that when they want to release some of the stockpiled material, it goes to Armed Services. When it is authorized it comes to our committee.

General BRAY. Yes.

Chairman SULLIVAN. I don't want a private briefing, I just want to be sure our committee is brought into contact with it. Has private industry been briefed at a White House meeting?

General BRAY. No; not overall. I have had a couple of meetings with different associations from segments of industry. For example, last week I met with the Refractory Metals Association at the White House, and briefed them generally, not on the security aspects, but generally on stockpile policy review. We have not, at this point, however, made an attempt to conduct any overall series of briefings of industry, primarily because we felt it was premature.

As I indicated, we are still in the process of running out some of our calculations, assigning some of our values, and our review hasn't really reached the point at which I could be very specific with regard to the industry groups.

Chairman SULLIVAN. Of course you did participate in these briefings at the White House?

General BRAY. Yes.

Chairman SULLIVAN. At whose invitation or direction did you go?

General BRAY. Well, I went at the invitation of Mr. John Vickerman, who works in the Executive Office of the President. It was one of the groups under Mr. Bill Baroody's program of openness to the public and to industry, and I am not sure whether it was set up on the initiative by the association itself, or whether it was set up on an initiative by Mr. Baroody's office. When the meeting was scheduled, representatives from the State Department and a representative of Commerce and I all appeared and discussed this with the group which represented, I believe, 15 to 20 major refractory metals producers of the country.

Chairman SULLIVAN. General Bray, it has been reported that the new stockpile objectives will be circulated to Congress, agencies, and selected industry executives next month. Some industrial executives were already briefed ahead of Congress last month, and while you did give some explanation, you might want to think about this and answer more fully. Can you explain why industry is getting preferential treat-

ment, and would it not be more appropriate to get industry reaction after both branches of the Government have reviewed the proposed objectives? Won't this kind of special treatment inevitably raise suspicions about the real beneficiaries of stockpile transactions?

General BRAY. I agree completely with the thrust of your question, and I would like to respond to it at this point by explaining the manner in which we have kept the appropriate congressional staffs and committees informed, versus the briefing that we had for industry.

We have made complete detailed briefings, with no withholdings at all, on all matters of stockpile planning to the appropriate congressional committees. The briefing that I held with members of the industry was general in nature. It was generally an indoctrination, telling them that such a review was underway. Although I had several questions from different people, asking if our objective is going to be established higher or lower for a particular metal, I was forced to answer that I didn't know, we have not run out the alternatives yet, and we do not have the figures, and it would be premature for me to attempt to provide that detail. So I would say that in our briefings, we have complied clearly with keeping the Congress informed in great detail while the contacts with industry have been on a broad basis.

With respect to the release next month of stockpile objectives, I don't think that is an accurate reflection of our present program schedule. We hope to complete our study next month, but the completion of our study is then going to require the resolution of those particular policy issues that we have illuminated in our study.

As soon as we get a decision on those major policy issues, then we will establish new stockpile objectives. That will probably be later in the summer. Certainly we intend to include all of the appropriate congressional committees in the discussion of both the policy issues, and the specific numbers associated with stockpile objectives before they are published.

Chairman SULLIVAN. I see.

General Bray, when you release materials from stockpiles, you do not customarily restrict their sale to American firms for domestic production, do you?

General BRAY. No; not usually. Now there are exceptions to that. If the action involves a commodity which is being controlled through an export license provided by other departments, then obviously it would fall under that program. We have at times in the past, due to our own market analysis that the material is in short supply to our own consumers, sold commodities with the stipulation that they must be retained within this country.

But other than those particular cases in which there has been a clear reason to hold the commodity within our country, we have sold commodities to producers who in turn may resell them overseas or to some foreign buyers themselves. But we have been aware of and protected the consumers' interests in those commodities that are in short supply by putting those stipulations in our disposal contracts.

Chairman SULLIVAN. This is what I was going to ask you. Don't you often have a lot of foreign buyers, or American firms buying for export? I wanted to ask you if it is advisable to do this.

General BRAY. I think under the conditions in which we do it, it is advisable, provided again that we are very cognizant and conscious of the domestic consumer and that we are not allowing materials that are in short supply to be resold and go out of our country. I agree wholeheartedly with that but I think it does no harm to allow materials not in short supply to go on the international market as well as the domestic market.

Chairman SULLIVAN. If we would have economic stockpiles, shouldn't we restrict sales to domestic production purposes?

General BRAY. Well, I think, Madam Chairman, I would have to go back and repeat a fundamental point I made in my presentation. That really depends upon the objective of the economic stockpile. You know there are some people who say the only reason we ought to have an economic stockpile is simply to avoid a sudden and abrupt market disruption, that we should not try to use it for price influencing at all, but we should simply have a source available in the event that we run into a cartel action on some other basic commodity.

Others, however, would set up an economic stockpile on a much broader and complex basis. I think the answer to the question of whether we should allow the disposal of materials out of the economic stockpile to remain domestic would be tied closely to what our specific well-defined objectives of the stockpile would be. Under certain conditions I could argue they should be restricted domestically; under other objectives I would argue they could be allowed internationally as well.

Chairman SULLIVAN. Every witness at yesterday's hearing testified that despite the stockpiling statute, the strategic stockpiles have been used in the past for a variety of economic purposes not related to national defense. Do you foresee this practice continuing in the future?

General BRAY. Madam Chairman, I will have to comment slightly as Mr. Greenwald did a little earlier. I have been in this job about 2½ years now, and I am sure that I am not as familiar as some people might be or, perhaps, some of the witnesses that appeared yesterday might be with regard to what occurred many years prior to that time. To my knowledge, within the 2½ years I have been associated with the stockpile, we have not in any instance used the stockpile primarily or essentially or predominantly for an economic purpose.

I have, in my judgment, defined the purpose of the stockpile in a way consistent with what I think was the intent of Congress when the law was passed. It is my intention, as long as I remain the principal manager of the stockpile, to continue to do so. So my answer is that I do not intend to allow the strategic stockpile to be used for essentially economic purposes.

Now, having made that sort of grand statement, I would be naive if I took the view that the disposal programs do not have an economic impact. Obviously they do, as Mr. Greenwald indicated, and any major acquisition or major disposal program will have economic impacts and it is our job to insure that we do not cause an undue market disruption when that occurs, I am going to the fundamental reason for which the release was made or the acquisition was made.

Chairman SULLIVAN. I don't know whether you studied the sales back in 1973 or not. It might be worthwhile to go into some of that.

General BRAY. Yes.

Chairman SULLIVAN. If we continue to use the strategic stockpile for economic purposes, aren't we running certain risks in terms of industrial mobilization preparedness?

General BRAY. Well, again, I would have to go back and question the phrase "if we continue to use it." In the broad interagency review that we have been conducting, the one I have been talking about, our entire methodology and all the identification of factors that we have put into the equation are aimed at the purposes of the Strategic and Critical Materials Stock Piling Act for the common defense. We have not introduced into our review those sorts of factors that you would have to if you were running an economic stockpile. Our intention is clear. I find no disagreement on this among any of the agencies or departments that are participating in the review as to what is the purpose and objective of our current strategic stockpile.

Chairman SULLIVAN. This is what I am asking you, to review, historically, since your tenure has been brief. Would you consider the past economic uses or misuses of the strategic stockpile as reason enough to create a separate reserve for domestic nonstrategic purposes? Or would you recommend changes in the 1946 Stock Piling Act to permit recognition of the dual purposes of the strategic stockpile, and if not, why? I think if you answer this when you get the transcript——

General BRAY. I will do so, but if I may answer briefly now, let me say I do not agree or believe that the current law should be expanded. I think the narrow purpose of the law as it is presently interpreted is correct. I think the Congress and the Government should address any broader use in separate legislation, and I have so indicated in writing to various people, including the General Accounting Office and other people who have looked at this particular program policy in the past.

[Additional material submitted by General Bray for the record follows:]

The Federal Preparedness Agency does not recommend broadening the purpose of the Strategic and Critical Materials (SCM) Stockpiling Act beyond its present narrow objective of meeting the needs of the common defense. The issues involved in economic stockpiling are so complex that we believe they should be addressed in separate legislation if the Congress wishes to establish such a stockpile.

We do recognize that if an economic stockpile were to be established to deal only with sudden supply disruptions, the strong similarities in management requirements and policy considerations of the two stockpiles may make it desirable to closely relate their management to facilitate coordination of policy and operations.

Chairman SULLIVAN. I have just two more questions to ask you.

You mention that the Federal Preparedness Agency has capability for doing sophisticated econometric modeling in order to account for all factors related to setting stockpile objectives. There are before the Congress proposals to establish a national resources management information system to give us a better capacity for forecasting shortages and the like. Would it be fair to say that your agency already possessess such a capacity, and if not, is the Federal Preparedness Agency an appropriate place to locate such an information system, given its current capabilities and experience?

General BRAY. Let me answer the question this way: I do not believe that the Federal Preparedness Agency has the total capability that would probably be needed for the broader purposes of the issue as it was raised in Congress. I think certainly our capability has to be

considered, along with the capabilities of other existing departments and agencies such as Commerce, Interior, Bureau of Mines, and Department of Defense. We can complement each other and each provide a piece of the capability, without anyone assuming an overall responsibility to meet the total requirement.

We do have, I think, a very useful role to play in any overall assessment. I would have serious questions though, as to whether the Federal Preparedness Agency should be designated a central agency with a broader role. My concern is it may tend over time to deemphasize the primary purpose for which the Federal Preparedness Agency was established; that is, for emergency situations and common defense situations, as opposed to the much broader uses of a data collection agency, such as we have just discussed.

Chairman SULLIVAN. My last question: Yesterday testimony suggested that management of any economic stockpiles could be facilitated by placing them under the same agency that now manages the strategic stockpiles. Do you have any views on this issue?

General BRAY. Yes. Again, I would go back to a fundamental theme. It would depend upon the objective or the purpose of the stockpile. If the purpose of the stockpile was fairly limited, perhaps essentially to protect us from cartel actions. I could see that those sorts of actions could be very closely related to the sort of actions we are concerned about with the strategic stockpile at the present time.

On the other hand, if you develop some objectives that are very broad in nature, influencing the market in terms of price fluctuations, insuring full productive capacity and so on, I am not sure, even though they have a complementary role, that using FPA to run it would be a useful organizational arrangement.

In any event, I do think our capability, the experience that we have had, can be very useful and whoever its manager is and under certain circumstances I would think an organizational arrangement involving us could be effective, provided we got adequate policy guidance from other sources as we get our security guidance from the National Security Council and other people at this time. It is most important that we get clear in our minds what is the purpose, what do we want economic stockpiles to do for our country. Then we can come up with some reasonable organizational arrangements, data requirements, and all of the other things necessary to make it work.

Chairman SULLIVAN. I thank you very much, General, for your testimony, and your answers. We have used just a little over a half hour with you, so I think we did very well.

The bells which just rang are for a House quorum call. I am not going to take out time from this hearing to answer it, so I will be marked absent. But I think we should go on with this, since we still have two witnesses to hear.

Thank you very much.

I understand that our next witness, Gerald Parsky, is not here. Who is the staff man in attendance from the Treasury Department? Is he coming?

Mr. GALE. Yes; he is. He is in another hearing downstairs, and as soon as he is out of there, he will be up here.

Chairman SULLIVAN. Then we will go to the fourth witness, Mr. William Lawrence, formerly Chief of the Stockpile Policy Division, Office of Emergency Preparedness.

Welcome, Mr. Lawrence.

## STATEMENT OF WILLIAM N. LAWRENCE, VICE PRESIDENT OF WILLKING INTERNATIONAL

Mr. LAWRENCE. Madam Chairman and members of the subcommittee, I wish to express my appreciation for the opportunity to appear before the subcommittee to provide my views on how possible economic stockpiles might be administered and organized within the Government and to share with you some thoughts on economic stockpiling in general.

As you know, for 15 years I was Chief of Stockpile Policy in the Office of Emergency Preparedness—and its predecessor agencies—where my principal responsibility involved the management of inventories and objectives of the strategic and critical stockpile, as well as the implementation of policies relating to the three basic components of the strategic and critical stockpile—the national stockpile, the supplemental stockpile, and the Defense Production Act inventory.

It is my understanding that the purpose of today's hearing is to focus on administrative and organizational considerations of economic stockpiling, including examination of past and present policies and procedures for administration of the strategic stockpile. Therefore, I will attempt to review briefly some of the past organization and procedures for stockpile policy in the hope that this will shed some light on the subcommittee's evaluation of economic stockpiles.

The basic authority for the defense-related stockpiling is the Strategic and Critical Stock Piling Act of 1946, which has origins stemming back to 1939. The objective of this act was primarily to acquire and maintain stockpiles of commodities, where domestic resources are "deficient or insufficiently developed to supply the industrial, military, and naval needs of the country for common defense." Stockpiling authority was further expanded by the Defense Production Act of 1950, which established more flexible authority for acquisition and disposal of commodities, primarily to provide incentives for expansion of domestic capacity essential to the national defense.

The Director of the Office of Emergency Preparedness, to whom I reported, was responsible for stockpile policy and for carrying out the mandates of both acts. This office was, in turn, organized under the Executive Office of the President. Significantly, the goals of stockpile policy and management were conducted separately and independently, with responsibility for actual administration of acquisitions and disposals, as well as storage, organized under the General Services Administration. This separation reflected an intent to avoid possible conflicts between apparent opposing goals. On July 1, 1973, the stockpile policy functions were reorganized under the General Services Administration, and more recently, administrative and management activities—including acquisition, disposal, and storage—have been reorganized to report to the Director of the Federal Preparedness Agency, General Services Administration.

Further to this discussion of government organization, I would also like to point out that there is a long history of interagency cooperation in both the policy and management functions, which contributed substantially to what I feel was, on the whole, a successful stockpile policy. The most outstanding example of this cooperation was the Interagency Materials Advisory Committee, which provided a variety of insights to supply and demand, industry, and foreign policy considerations. An even more formal example, still active today, are the supply and consumption data reports on individual commodities that are provided annually by the Department of the Interior and the Department of Commerce, and which I assume are used in calculation of stockpile objectives.

At this point, I would like to turn briefly to the procedural question by summarizing my own role in stockpile policy. To simplify, this responsibility largely involved the establishment of stockpile objectives for individual stockpile commodities, through a complex process of analyzing and weighing economic and market conditions, as well as industry structures, in the strategic and critical materials—particularly considering the effect of these factors upon U.S. supply and demand and how they might impart potential supply-demand in the event of a national emergency.

This analysis was, in turn, weighted against the various criteria used in stockpile policy, with the ultimate goal being preparedness for a possible emergency by preventing supply-demand imbalances in the event of a mobilization. These criteria or assumptions shifted depending upon national security considerations and included such factors as the anticipated length or duration of a possible emergency—guns versus butter philosophy—the location of strategic and critical sources of supply and the dependability of these sources, expected accessibility of foreign supplies in an emergency situation, the capability to substitute one material for another, and anticipated shipping capabilities. Recommendations for acquisition of commodities below stockpile objective or disposal of surplus inventories were also part of my responsibility, with final authorization from the Congress.

Although the overall goals of stockpile policy and the principles behind determining the most desirable levels—that is, calculating imbalances based on policy assumptions—remain the same today, the actual methodology has changed considerably. General Bray's testimony will undoubtedly cover much of the current procedures for arriving at the optimum stockpile inventory levels.

I would like to discuss for a moment the past relationship between the strategic and critical stockpile before turning to some of my personal views on economic stockpiling and how it might, or might not, be organized.

The Stock Piling Act requires that disposals of excess stockpile commodities be made ". . . with due regard to the protection of the United States against avoidable loss . . . and the protection of producers, processors, and consumers against avoidable disruption of their usual markets." Yet, despite the restriction against use of the national stockpile for economic purposes, the act also requires that purchases "shall be made, so far as is practicable, from supplies of materials in excess of the current industrial demand," implying a de-

gree of stockpiling for economic purposes. In fact, most of the post-Korean acquisition was in the manner supportive of essential domestic materials industries that were experiencing weak demand.

Similarly, the opposite has been true, with the most recent example being the substantial contribution made to supplies during the 1973–74 period of tight supply by disposals of stockpile materials that were excess to objective and authorized for sale. Importantly, from the standpoint of future supplies, many of these excess stockpile inventories were exhausted, or nearly exhausted, and are no longer available to the supply stream. Copper and aluminum are prominent cases that come to mind.

In each acquisition and disposal activity, precaution is taken to avoid disruption of the marketplace, as well as to achieve the most equitable method of distribution and to maximize the return to the Government. Yet few would deny that acquisitions and disposals had a profound impact on demand, supply, and even prices.

Another direct example of direct stockpile intervention in the market can be cited in the case of nickel at the end of 1969. A lengthy strike against Canadian nickel producers had severely curtailed supplies during a period of relatively strong demand, forcing U.S. consumers to pay up to seven or eight times the normal producer price for nickel in the free market. Although care was taken during the strike not to interfere with the labor-management bargaining process, 20 million pounds of nickel were loaned at the end of the strike to the International Nickel Co., to permit restoration of depleted inventories and inventory pipelines. The loan, which permitted a more rapid return to normal delivery schedules following the strike, was restricted to defense-rated orders and was aimed at upgrading the nickel in the stockpile by contracting for higher-grade nickel cathode as repayment.

Actually, INCO paid cash at market prices for the loan.

Because of the flexible authority granted under Title III, the Defense Production Act has been considered an economic stockpiling authority of sorts, since it permits acquisition and disposal of DPA inventories without congressional approval. Sections 302 and 303 of the act provide authority for:

(1) Loans to private business for expanding capacity, developing technical processes, or producing essential materials, including the exploration, development, and mining of strategic and critical metals and minerals;

(2) To provide for purchases or commitments to purchase metals, minerals, and other materials for government use or resale and encourage the exploration, development, and mining of strategic and critical metals and minerals;

(3) To transport, store, and have processed and refined any material produced; and

(4) To install additional equipment, facilities, processes, or improvements to plants, factories, and other government-owned facilities, and to install government-owned equipment in privately owned plants, factories, and other industrial facilities.

Despite this apparent attitude, the caveat for use of Defense Production Act authority has remained "defense-related production or acquisition."

I would like to make one final point in this vein: that, although complex procedures have been undertaken over the years to prevent market disruption, industry has frequently argued that the existence of stockpile inventories—either in the form of their actual overhang on the market or through the threat of disposal—has on the whole acted as a deterrent to new capacity investment. Although I cannot say that I would agree completely, this consideration deserves further exploration in the light of your examination of economic stockpiling.

Now, if the members of the subcommittee will permit, I would like to use this background of my past experience with the stockpile to briefly share with you my views on economic stockpiling. First, it is important to note that we have to define specifically what the goals or purposes of such a stockpile would be, although I must assume that such a stockpile would be designed for one or both of two principal purposes:

(1) To stabilize supplies and prices of industrial commodities in the marketplace, much as the Federal Reserve Board attempts to influence the supply and cost of money; or

(2) To provide some degree of protection against supply curtailments or price-gouging in essential materials for which the United States must depend upon overseas sources, as in the case of chromium, bauxite, manganese, or tin.

In either case, I must state to the subcommittee that I would be opposed to stockpiling by the Government for other than defense-related purposes. In my statement today, I have attempted to demonstrate the complexities, difficulties, and even the possible ramifications of stockpile management and policy when the goals and purposes are well established—in the form of national defense—and when the guidelines for developing the optimum stockpile objectives and inventory levels are relatively clear cut.

In economic stockpiling, however, whatever the purpose, such determinations would appear to be administratively unmanageable and would unavoidably lead to highly subjective judgments about a host of factors: for example, what constitutes supply or price stability? What levels of stocks would best achieve this stability? When and how should the stockpile manager enter the marketplace? How much would these stocks cost? Would such stocks, or even the goal of "price stability" in fact discourage new capacity, domestically and abroad, or maintenance of old production, thus compounding future shortage problems? How would such a policy affect foreign policy or even the goals of suppply access in current trade negotiations? How would we best achieve a balance between government accountability and an apparent need for secrecy in stockpile operations? Would such inventories be inflationary, or even recessionary in themselves?

I don't claim to know the answers to these questions. But I doubt seriously that any new bureaucracy created to manage supplies would, either. These problems, Madam Chairman and members of the subcommittee, are best solved in and by the marketplace, in my view.

Thank you.

[Prepared statement of Mr. Lawrence follows:]

TESTIMONY OF MR. WILLIAM N. LAWRENCE, VICE PRESIDENT OF WILLKING INTERNATIONAL

Madame Chairman and Members of the Subcommittee, I wish to express my appreciation for the opportunity to appear before the Subcommittee to provide my views on how possible economic stockpiles might be administered and organized within the Government and to share with you some thoughts on economic stockpiling in general.

As you know, for fifteen years I was Chief of Stockpile Policy in the Office of Emergency Preparedness (and its predecessor agencies), where my principal responsibility involved the management of inventories and objectives of the Strategic and Critical Stockpile, as well as the implementation of policies relating to the three basic components of the Strategic and Critical Stockpile—the National Stockpile, the Supplemental Stockpile, and the Defense Production Act inventory.

It is my understanding that the purpose of today's hearings is to focus on administrative and organizational considerations of economic stockpiling, including examination of past and present policies and procedures for administration of the Strategic Stockpile. Therefore, I will attempt to review briefly some of the past organization and procedures for stockpile policy in the hope that this will shed some light on the Subcommittee's evaluation of economic stockpiles.

The basic authority for the defense-related stockpiling is the Strategic and Critical Stock Piling Act of 1946, which has origins stemming back to 1939. The objective of this Act was primarily to acquire and maintain stockpiles of commodities, where domestic resources are, "deficient or insufficiently developed to supply the industrial, military, and naval needs of the country for common defense." Stockpiling authority was further expanded by the Defense Production Act of 1950, which established more flexible authority for acquisition and disposal of commodities, primarily to provide incentives for expansion of domestic capacity essential to the National defense.

The Director of the Office of Emergency Preparedness, to whom I reported, was responsible for stockpile policy and for carrying out the mandates of both Acts. This Office was in turn organized under the Executive Office of the President. Significantly, the goals of stockpile policy and management were conducted separately and independently, with responsibility for actual administration of acquisitions and disposals, as well as storage, organized under the General Services Administration. This separation reflected an intent to avoid possible conflicts between apparent opposing goals. On July 1, 1973, the stockpile policy functions were reorganized under the General Services Administration, and more recently administrative and management activities (including acquisition, disposal, and storage) have been reorganized to report to the Director of the Federal Preparedness Agency, General Services Administration.

Further to this discussion of Government organization, I would also like to point out that there is a long history of interagency cooperation in both the policy and management functions, which contributed substantially to what I feel was on the whole a successful stockpile policy. The most outstanding example of this cooperation was the Interagency Materials Advisory Committee, which provided a variety of insights to supply and demand, industry, and foreign policy considerations. And even more formal example, still active today, are the supply and consumption data reports on individual commodities that are provided annually by the Department of the Interior and the Department of Commerce, which are used in calculation of stockpile objectives.

At this point, I would like to turn briefly to the procedural question by summarizing my own role in stockpile policy. To simplify, this responsibility largely involved the establishment of stockpile objectives for individual stockpile commodities, through a complex process of analyzing and weighing economic and market conditions, as well as industry structures, in the strategic and critical materials—particularly considering the effect of these factors upon United States supply and demand or how they might impact potential supply—demand in the event of a national emergency. This analysis was in turn weighted against the various criteria used in stockpile policy, with the ultimate goal being preparedness for a possible emergency by preventing supply-demand im-

balances in the event of a mobilization. These criteria or assumptions shifted depending upon national security considerations and included such factors as the anticipated length or duration of a possible emergency, guns versus butter philosophy, the location of strategic and critical sources of supply and the dependability of these sources, expected accessibility of foreign supplies in an emergency situation, the capability to substitute one material for another, and anticipated shipping capabilities. Recommendations for acquisition of commodities below stockpile objective or disposal of surplus inventories were also part of my responsibility, with final authorization from the Congress.

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In each acquisition and disposal activity, precaution is taken to avoid disruption to the marketplace, as well as to achieve the most equitable method of distribution and to maximize the return to the Government. Yet, few would deny that acquisitions and disposals had a profound impact on demand, supply, and even prices.

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Despite this apparent attitude, the caveat for use of Defense Production Act authority has remained *defense-related production or acquisition.*

I would like to make one final point in this vein: that, although complex procedures have been undertaken over the years to prevent market disruption, industry has frequently argued that the existence of stockpile inventories—either in the form of their actual overhand on the market or through the threat of disposal—has on the whole acted as a deterrent to new capacity investment. Although I cannot say that I would agree completely, this consideration deserved further exploration in the light of your examination of economic stockpiling.

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I don't claim to know the answers to these questions. But I doubt seriously that any new bureaucracy created to manage supplies would either. These problems, Madame Chairman and Members of the Subcommittee are best solved in and by the marketplace, in my view.

Thank you.

Chairman SULLIVAN. Thank you very much.

Mr. Lawrence, one absolute requirement of any successful stockpile is the availability of reliable data. Who and what in your opinion are the best sources of these data? Have they been employed to best advantage in your experience with the stockpile?

Mr. LAWRENCE. I would say that the sources of data that we had when I was in the stockpile operation were the Interior, Commerce, State Department, the Department of Defense, GSA itself, and many others that were on the Interdepartmental Materials Advisory Committee. I think the data sources there were as good as any you can obtain anywhere in the United States.

I must say that the methods that we used would seem somewhat crude—I mean they were all hand tabulations, and that type of thing. But the fact that they were examined by all departments and agencies, and I must say there was considerable discussion in these committee meetings as to the validity of the data, and I have no quarrel with the fact that they were there.

When we abandoned the hand method in the interest of having computers do it, I have always had a suspicion that a considerable lot of the data that was put into the computer, because of the fact that it has been so finely subdivided, was giving erroneous results. For example, I know and I hope that this has been changed since then, that the supply data that was in the computer to compute the 1-year objective was all erroneous, it was deliberately done that way, and I didn't discover it until it had been put into the computer.

What it was was a complete overstatement of supply from foreign countries. They had supply figures that never existed and never would. In other words, the supply just doesn't come to the United States in the quantities that were put in there. I am sure that has probably been rectified by now. It certainly deserves someone's attention.

Chairman SULLIVAN. A frequent criticism of the strategic stockpile, as well as any possible economic stockpile, is manipulation by special interests. How serious a problem has this been in the past operation of the strategic stockpile?

Mr. LAWRENCE. Well, there isn't any denying the fact that there was considerable manipulation in the stockpile, and particularly back in the Korean days. For example, the device that was used, and I might as well confess that I was the one that did it, on orders from higher up, was to change the objectives on lead and zinc, so we could make purchases of lead and zinc for a number of years, and obtain the sizable quantities which we didn't need.

There were other devices which could be used to manipulate them. The fact that when you were bartering surplus agricultural materials for strategic and critical materials, which was a sizable program, there were often changes made in the instructions to Agriculture in order to provide equities to all producers or participants in such a barter deal.

Chairman SULLIVAN. You indicate that there have been direct interventions in the market in several cases by the strategic stockpile managers. On the whole, how serious has this problem been of deviating from the legal purpose?

Mr. LAWRENCE. Well, I can't say that this has been detrimental to the purposes of the stockpile, although at the time, for example, when the aluminum companies in the United States were forced to buy back all of the aluminum in the stockpile, and I would say that word "force" is a good word to use, there appeared to be, and everybody said the pressure from the White House was terrible. Actually as it turned out, the disposal program of aluminum turned out to be a godsend to the aluminum companies because the demands for aluminum increased so rapidly in a certain period there that there was no opportunity to build new capacity. I think this is a good illustration of why I do not agree with industry that disposals are a deterrant to new capacity. The aluminum industry had no opportunity to build new capacity to

meet the demands and the stockpiled aluminum was there for them and they were able to take care of most of their orders.

Chairman SULLIVAN. Were the manipulations you mentioned in the stockpile objectives after Korea dictated by the White House for political reasons, or by the Defense Department, or by whom?

Mr. LAWRENCE. The Defense Department never got into that. You cannot in any way accuse them. Actually the manipulation was done at the direction of members of the Cabinet.

Chairman SULLIVAN. Done knowingly?

Mr. Lawrence, you say that interagency cooperation in making policy for the strategic stockpile has been good on the whole.

Mr. LAWRENCE. Yes.

Chairman SULLIVAN. But haven't there been some serious conflicts and disagreements within these interagency groups?

Mr. LAWRENCE. Oh, yes, a number of times new objectives were not approved, there were a number of times when disposals were not approved, that type of thing.

Chairman SULLIVAN. In fact, weren't the recommendations of an interagency group which you chaired ignored in making the 1973 decision to lower stockpile objectives?

Mr. LAWRENCE. The interagency group was abolished on orders from the White House before the establishment of the 1-year objectives.

Chairman SULLIVAN. The strategic and critical materials stockpile and related stockpiles are dedicated to national defense. Based on your experience, what role have the Secretary of Defense and the Joint Chiefs of Staff played in making stockpile policy?

Mr. LAWRENCE. Well, they always provided the input for all of the objectives over the years, up until the 1973 objectives, at which time the Department of Defense was deliberately ruled out of any connection with the objectives. They were kept out of all the deliberations.

Chairman SULLIVAN. What, in your opinion, has been the role of the Office of Management and Budget in making strategic stockpile policy?

Mr. LAWRENCE. Well, I think that they were the primary, one of the prime factors in the establishment of the 1-year objectives in 1973.

Chairman SULLIVAN. In yesterday's testimony, Mr. Lawrence, there were a number of recommendations for organizing a stockpiling agency, ranging from industry-held reserves, to a public corporation modeled on the Federal Reserve System or perhaps Comsat, to a strictly governmental agency. Based on your experience with stockpiles, what would your view be on the best way of organizing economic stockpiles? And how would such an organization achieve responsiveness while remaining as independent as possible of special interests or political pressures?

Mr. LAWRENCE. Well, there is no doubt in my mind that if it was determined by Congress that an economic stockpile was necessary, I don't think the function should be changed from the GSA. General Bray just testified he didn't think the Federal Preparedness Agency has the capability now, although I think they could be expanded.

Certainly I don't think anybody other than GSA should have anything to do with the acquisition, disposal and storage. They are al-

ready established, there is no reason to duplicate them. They have had experience in this field for the last 30 years or more.

Chairman SULLIVAN. Why, specifically, do you favor the approach that you describe in preference to other alternatives?

Mr. LAWRENCE. You mean using the marketplace?

Chairman SULLIVAN. Yes.

Mr. LAWRENCE. Because I think this is the only way you can do it. When the Government steps into something, it creates an artificiality that should not be there. And I think that buying and selling of commodities is done by some of the sharpest or smartest people in the world, and I don't think the Government can compete with them.

Frankly, if you had an economic stockpile, you simply couldn't let it sit still like the national Strategic and Critical Materials Stockpile. It would have to be kept up to date and revolving all the time. If it got sizable enough, as big as the current stockpile of $7 billion, the influence of any stockpile manager on the market could totally disrupt the marketplace on any material. This is the thing I would be very fearful of.

Chairman SULLIVAN. Mr. Lawrence, I would like to know who made the decision and how it was made in 1969, when 25½ million ounces of silver in the stockpile were suddenly declared excess. This happened to be, by coincidence, exactly the amount of silver the Mint said it needed to produce 150 million Eisenhower silver dollars proposed by a group of western Senators.

Mr. LAWRENCE. I guess we made a quick review of the requirements and supply, and we found we suddenly had 25 million too much in the stockpile.

Chairman SULLIVAN. So it was made by your group itself?

Mr. LAWRENCE. That is right.

Chairman SULLIVAN. As it subsequently turned out, the Mint was unable to sell 150 million proof and uncirculated silver dollars——

Mr. LAWRENCE. That is right.

Chairman SULLIVAN [continuing]. Either as Eisenhower commemoratives or as Bicentennial commemoratives. But that is not the point. How did it happen that the stockpile was found to have exactly 25½ million ounces of surplus silver?

Mr. LAWRENCE. I don't remember all of the details. I remember enough of it to remember that this was what was done, we suddenly found in a new review we had 25 million ounces of surplus.

Chairman SULLIVAN. I was involved deeply in that fight.

Mr. LAWRENCE. I remember that, too.

Chairman SULLIVAN. And I did everything I could to prevent it, because silver was going up and up and up.

Mr. LAWRENCE. That is right.

Chairman SULLIVAN. No matter how the decision was reached, how can we maintain much confidence in the integrity of the present stockpile goals if they are subject to this kind of manipulation for purely political purposes, when stockpile objectives can be changed overnight for such flimsy reasons as making 150 million coins that couldn't be sold in the volume anticipated?

Mr. LAWRENCE. Well, I think General Bray gave you the answer there, when he said he intended, when he completes the study, to come

up to the Congress and explain his methods and show them the figures. Every time he changes, whoever is in charge of the stockpile, if they kept the Congress informed, you wouldn't have this type of manipulation.

Chairman SULLIVAN. Going back to the Cabinet manipulations that you mentioned, what Cabinet officers were involved in doing the manipulating? Benson, Wilson, McKay, Freeman, Udall? Who and when?

Mr. LAWRENCE. On lead and zinc, I can't remember his name, but he was an Assistant Secretary of Interior. This was brought out in the Symington hearings back in 1962 and 1963. I don't remember his name, but he was an official of one of the lead companies.

Chairman SULLIVAN. Do you remember what year that was? If you can recall either of them through any file or notes you might have, I wish you would supply it for the record.

Mr. LAWRENCE. I will be glad to.

[Material submitted for the record by Mr. Lawrence follows:]

Assistant Secretary of the Interior, Felix Wormser, also vice president of St. Joe Lead before and after Government service.
The years were 1953–57.

Chairman SULLIVAN. And then I wish you would give us some specific examples that may be ancient history, but I think it is history we need to know.

With that, I thank you for your very frank answers. When you get the transcript, if you want to add to your answers, we would appreciate it.

Now is our next witness here?

Mr. GALE. Mr. Parsky is still engaged in a hearing downstairs.

Chairman SULLIVAN. Have you been down to find out?

Mr. GALE. Yes; he is still down there.

Chairman SULLIVAN. What are they putting him through?

Mr. GALE. I believe he is testifying on the boycott problem.

Chairman SULLIVAN. We are not going to have any more hearings on this.

Mr. GALE. I would suggest we could submit his statement for the record, and if you have some questions you would like to have him answer, we could submit the answers for the record.

Chairman SULLIVAN. We would love to have him answer some of our questions out loud. We set this hearing date at his convenience, really.

Mr. GALE. I understand that, but unfortunately he just can't be here.

Chairman SULLIVAN. Will you please deliver that message to him?

Mr. GALE. Yes; I will.

Chairman SULLIVAN. I understand that it was his testimony that we didn't get until 10 o'clock last night. So I think he has been a very disappointing kind of witness. I don't know what he is afraid to answer. That is for the record.

Mr. GALE. I am sure he is not afraid to answer any of the questions, but unfortunately his schedule is very tight.

Chairman SULLIVAN. I know. But we specifically set this hearing date today for his convenience, and we think it is important, too. I don't know what other committee he is appearing before, but we set

this hearing at his convenience and now find he is tied up elsewhere. I wonder if you could go down and find out about how long before Mr. Parsky can come up, and we will wait for you?

Mr. GALE. All right.

[Short recess.]

Chairman SULLIVAN. The committee will come to order, please.

Our next witness is Mr. Gerald Parsky, Assistant Secretary of the Treasury for International Affairs.

## STATEMENT OF GERALD L. PARSKY, ASSISTANT SECRETARY OF THE TREASURY FOR INTERNATIONAL AFFAIRS, ACCOMPANIED BY HAZEN GALE, DIRECTOR OF RAW MATERIALS AND OCEANS POLICY, TREASURY DEPARTMENT

Chairman SULLIVAN. We are sorry you weren't here, and had to send for you, but we are glad to have you now.

We are sorry, too, that we didn't have your testimony in advance so that we could really study it, until last night. We have given each witness 15 minutes for oral testimony before questioning, and we will follow that same pattern.

So, will you start?

Mr. PARSKY. Yes; please accept my apology on two accounts, Madam Chairman. I have just completed another testimony this morning on the subject of the Arab boycott, and the only reason that I wasn't able to adhere to the request of the committee to supply the testimony ahead of time was that I have three testimonies in a short period of time and I apologize for that.

But I appreciate the opportunity to discuss with you the question of economic stockpiling. I think it is a subject that in recent months has received a great deal of attention. The concern that we have is that there may not have been as yet enough economic analysis of this important subject.

We in the Treasury have a considerable interest in this concept, because of its implications both for U.S. commodity policy and its potential substantial cost. We have only recently managed to relieve American taxpayers of the burden of excessive grain stockpiles; further, we have significantly reduced our strategic stockpiles to levels which are more consistent with our real needs and we are studying additional steps that can be taken.

Underlying these policies is our belief that we should be doing everything we can to minimize Government involvement in commodity markets. Our emphasis should be on strengthening the functioning of market forces which can best determine price and allocate supply. I would like to summarize some aspects of the testimony and I will submit the entire statement for the record.

Chairman SULLIVAN. The entire statement will be made a part of the record.

Mr. PARSKY. My prepared text provides an assessment of what our commodity policy in the United States is. Our fundamental objectives are to promote sustainable noninflationary growth for the U.S. economy. With respect to our policy abroad, we have been seek-

ing to minimize the Government's interference with the marketplace, and at the same time we have recognized that a number of other countries, especially those that are heavily dependent on one or two commodities, have suffered economic difficulties due to sharp fluctuations in their export earnings.

We have come forward internationally with a number of what we believe are very constructive proposals aimed at strengthening the functioning of the marketplace. We have in the past, and I believe we should continue to resist any proposals that are aimed at distorting the market, that are aimed at fixing price above the market, or that are aimed at in fact interfering with natural forces of supply and demand.

At times in the international environment today people have indicated that the United States can't be isolated, or that we are not forthcoming enough. I happen to believe we have been very forthcoming and we do need to be concerned that we cooperate with other countries, but not at the expense of abandoning an economic system that we believe in or an economic system we believe will benefit our country and the rest of the world.

We recognize, I think, that ideally operated stockpiles might reduce volatility in certain markets in certain circumstances. But we feel that the cost of such stockpiles are potentially of such magnitude that they must be analyzed carefully to establish that the benefits substantially outweigh the costs.

Although in theory stockpiles can play a valuable role in reducing excessive volatility in certain markets, we have found in practice that stockpiling to stabilize international commodities trade has had little impact on U.S. markets. For example, the operation of the international tin buffer stock has had no appreciable effect on U.S. prices of tin. The principal difficulty with effective stockpiling is the identification of probable future shortages far enough in advance to accumulate the needed stocks without unduly disrupting the market.

We think the private sector is far more able than the U.S. Government to identify potential shortages. They can take actions to build private stockpiles to balance the risk that industry faces. For example, there currently is a great deal of concern about the future supply of chromite ore and chrome alloys because much of the U.S. supply originates in Rhodesia, where political events could disrupt supply. Private companies are aware of this potential difficulty and have on hand inventories of 370,000 tons of chrome, enough to satisfy U.S. consumption needs for nearly 1 year.

A second difficulty is the potential disruption of a commodity market that can be caused by the buying and selling of the material by the stockpile activity, as was demonstrated by the U.S. acquisition of a tin strategic stockpile in the early 1950's. The United States began buying at the beginning of the Korean conflict to build a reserve against a possible cutoff of southeast Asian supplies. The purchases coincided with major increases in purchasing by private firms to guard against the same potential supply interruption, thus causing large price increases.

Most proposals for stockpiles involve general objectives, such as to moderate price fluctuations, to assure a flow of supplies, or to promote

a stable investment climate. The problem, however, is that those proposals rarely specify the detailed objectives that can be translated into operational criteria that will guide a board of directors or a stockpile manager. Before any stockpile system can be initiated, many questions must be answered.

For example, for which commodities will stockpiles be instituted? What criteria will be used in selecting a commodity? What level of "normal" prices or supplies is that country willing to set as targets? What is the cost to government of building stockpiles of sufficient size to reduce price fluctuations by a certain amount and how much is the United States willing to budget for a national or international stockpile program? How large an agency for information analysis and management will be required? By how much will government stocks displace private stocks in a stockpiling scheme? What is the longrun impact of economic stockpiling on production and consumption of a commodity? What are the external and intangible benefits to the public that would justify government stockpiling in excess of normal private stockpiling?

If thorough investigation of these issues shows clear net benefits for a particular commodity and improvements in market efficiency, then we are certainly willing to give full consideration to implementation of a stockpile scheme for that commodity.

But we believe that we should be wary of sweeping programs that are devised solely on the basis of the recent oil embargo or the 1972–74 commodity price boom. Studies have shown that capital will be scarce enough during the next decade without the U.S. Government diverting scarce capital resources into nonproductive stocks and away from needed investment for the goods and services demanded by the world economy.

In my prepared text I have outlined the types of stockpiles and their potential effectiveness. Since the primary concern of most economic stockpile proposals is industrial commodities, I would like to focus on the two major types of economic stockpiles, buffer stocks and contingency reserves. Even though there is only one international buffer stock in operation, the model for such stocks usually calls for management in accordance with agreed rules, so that the buying and selling activities of the stockpile manager will counteract rapid changes in prices for the particular commodity. The manager has a stock of commodities and a fund of cash that he can use to prevent low prices by buying commodities or to prevent high prices by selling from the stockpile.

A successful buffer stock operation must have a skillful governing board that can set the floor and ceiling prices, so that prices are stabilized, but are not sustained at artificially high or low levels. The manager's effectiveness will be limited by the funds available to buy when prices are low, and the stocks on hand to sell when prices are high.

Buffer stocks are attractive because of their theoretical simplicity—buy low and sell high. In practice, however, buffer stocks are usually supplemented by direct supply management, usually export or production controls, in order to limit stockpile funding requirements. Exact estimates of the cost of financing buffer stocks are difficult to

obtain, but some studies have projected a maximum investment of $1 billion to $2 billion for copper alone.

Further, the cost of supporting agricultural prices has been several billion dollars a year during the late 1960's and early 1970's. These large potential costs have led to supply control measures to support the operation of the buffer stock in defending the floor of the price range. No corresponding mechanism is available to supplement the defense of the ceiling in the event of stockpile exhaustion. Consequently, there is a danger that buffer stocks combined with supply management will artificially raise long-term prices by being much more effective in protecting the floor than in protecting the ceiling, unless the floor and ceiling are carefully set and frequently adjusted to reflect actual market trends.

A severe operational problem is the correct reading of the market to permit timely purchases and disposals. Unless a manager can forecast the market trends accurately, he will not be able to counteract market forces and may even accentuate them. In practice, then, the operation of international buffer stocks is very difficult.

Contingency reserves are accumulated as insurance against a disruption of foreign or domestic supply because of such things as embargoes or natural disasters, or against a sudden surge in demand that temporarily exhausts supply. The major concern we have with such a reserves program relates to the timing of accumulations and disposals and the determination of an adequate size stock. We do not believe that adequate analysis has been done to show how and when such accumulations would occur or how large a stock would be needed.

Further, the list of commodities that should be considered for contingency reserves has not been clearly identified. A recent review by the administration identified three critical commodities that showed some potential for interruption of foreign supply that might damage U.S. industry: bauxite, chrome, and platinum. Other people have suggested cobalt, molybdenum, and nickel as candidates for stockpiling to guard against domestic or international shortages. We believe that further study is needed to identify which commodities are appropriate for such reserves.

I provide more detail on the operational needs of stockpiles, what kind of data and analysis and what kind of management is required, and indicate the kind of response that had we established such a scheme, would have taken place during 1972, 1973, and 1974. I conclude that it probably would have been difficult, if not impossible, for a manager of a stockpile to in fact respond adequately to the kind of information with which he would have been provided based on the data that we now have available.

In light of all of these factors, we have concluded that there simply has not been enough analysis done about the criteria or the technical details to operate an economic stockpile successfully, whatever its purpose. Therefore we believe that it would not be in the United States' interest to proceed legislatively or otherwise to establish economic stockpiles at this time.

However, there are efforts in progress to increase our understanding of economic stockpiling and to improve the related institutional capabilities in the Govenment. The National Commission on Supplies

and Shortages is now examining some of the conceptual and operational problems associated with stockpiles. After its report later this year, we may be in a much better position to assess the need and feasibility of economic stockpiles for particular commodities. The Commission is also studying possible changes in government institutions to enhance the capability to identify and handle shortages. The Office of Technology Assessment has also suggested alternative ways to restructure institutional arrangements to provide greater capability for dealing with shortages. The Federal Preparedness Agency is conducting a reevaluation of the methodology which guides the management of the nation's defense-related stockpile. When the endeavors are completed, we should know a great deal more about establishing and operating economic stockpiles and we will be better able to judge if they can be used to improve economic performance in the United States and around the world.

Until we know much more, however, I believe that our experience with stockpiles shows that it is relatively easy for a manager to take actions that will destabilize the market rather than improve market performance. In light of this, and considering that in most cases the market will correct a violatile situation by itself, we should proceed cautiously and not create economic stockpiles until it can be clearly established that the economic benefits in terms of stability and efficiency justify the increased role the Government will have to play in the market.

Thank you very much.

[The prepared statement of Mr. Parsky follows:]

STATEMENT BY THE HONORABLE GERALD L. PARSKY, ASSISTANT SECRETARY OF THE TREASURY FOR INTERNATIONAL AFFAIRS

ECONOMIC STOCKPILING

Madam Chairman, Members of the Committee: I appreciate the opportunity to speak to you today about economic stockpiling—a subject which in recent months has received a great deal of attention, but perhaps not enough economic analysis. The Treasury Department has considerable interest in the concept of economic stockpiling because of its implications for U.S. commodity policy and its potentially substantial cost. We have only recently managed to relieve American taxpayers of the burden of excessive grain stockpiles; further, we have significantly reduced our strategic stockpiles to levels which are more consistent with our real needs and we are studying additional steps that can be taken. Underlying these policies is our belief that we should be doing everything we can to minimize government involvement in commodity markets. Our emphasis should be on strengthening the functioning of market forces which can best determine price and allocate supply.

Our experience with agricultural stock programs and with strategic stockpiles for critical materials cannot easily be applied to more general stockpiles for non-fuel industrial commodities. Nevertheless, the difficulty which we have had in operating effective agricultural and strategic stockpile programs alone makes us highly skeptical of proposals for a broader economic stockpile.

I would like to discuss with you today the principles of our commodity policy which I believe argue strongly against the creation of further domestic stockpiles at this time. I will offer our judgment of the impact that such stockpiles would have had upon the 1972–74 commodity shortage situation. And I will discuss in more detail the applicability of our strategic stockpile operations to a broader economic stockpile. My testimony will attempt to demonstrate that we do not believe there is evidence to support a broad economic stockpiling program for industrial products at this time. Because our knowledge of such stockpiles is inadequate, however, we do believe that further work should be done in this area and we are willing to participate in this effort jointly with the Congress.

## U.S. COMMODITY POLICY

The fundamental objective of U.S. commodity policy is to help promote sustainable non-inflationary growth for the U.S. economy with maximum employment. Our system relies primarily on the functioning of markets to identify demand and the necessary production to satisfy that demand at prices that clear the market. The Government's role is to provide stable and responsible fiscal, monetary and related policies that allow the market to allocate the consumption and investment of resources efficiently to achieve U.S. economic objectives.

We believe that government's interference in the operation of markets should be limited to those activities which are essential to promoting efficient allocation of resources to meet the economic needs of its citizens. At the same time, we are willing to consider proposals to solve individual commodity problems on a case-by-case basis. We have steadfastly adhered to that policy, in spite of strong efforts by developing nations to launch negotiation of a series of new commodity agreements to maintain or increase commodity prices—without economic analysis of the dynamics of each individual commodity—through buffer stocks and a common fund for financing. As a result of the recent UNCTAD IV conference in Nairobi, we have agreed to participate in preparatory meetings for particular commodities to determine, without commitment, the measures which might be suitable for each product. This agreement is consistent with our case-by-case approach and our determination to negotiate agreements only for those commodities for which we think they are appropriate.

We believe this is a realistic approach. It has led us to a decision to join the International Tin Agreement, and the International Coffee Agreement. We reached these decisions because we concluded that these agreements would not artificially raise prices. We will not participate in any agreement that has the effect of fixing price above the market. It's for this and other reasons that we did not sign the new International Cocoa Agreement. We are willing to participate in a renegotiation of this agreement if one is called, but only on terms that will improve the operation of the market. We also have agreed to participate in negotiation of a new International Sugar Agreement.

Recent demands that the U.S. Government become more involved in commodity and other markets stem in part from the belief that highly volatile prices and alternate shortages are symptoms of "malfunctioning" markets. Those demands are usually based on the assumption that the government can act quickly with perfect foresight and thus achieve more efficient market performance than the free interplay of natural economic forces. In this regard, proposals for government-operated economic stockpiles are perhaps the most commonly recommended vehicles for government action to improve market performance.

The Administration recognizes that ideally operated stockpiles might reduce volatility in certain markets in certain circumstances, but we feel the costs of such stockpiles are potentially of such magnitude that they must be analyzed carefully to establish that the benefits substantially outweigh the costs.

## THE ROLE OF STOCKPILING

Although in theory stockpiles can play a valuable role in reducing excessive volatility in certain markets, we have found in practice that stockpiling to stabilize international commodity trade has had little impact on U.S. markets. For example, the operation of the International Tin Buffer Stock has had no appreciable effect on U.S. prices of tin.

A principal difficulty with effective stockpiling is the identification of probable future shortages far enough in advance to accumulate the needed stocks without unduly disrupting the market. We think that the private sector is far more able than the U.S. Government to identify potential shortages. They can take actions to build private stockpiles to balance the risk that industry faces. For example, there currently is a great deal of concern about the future supply of chromite ore and chrome alloys because much of the U.S. supply originates in Rhodesia where political events could disrupt supply. Private companies are aware of this potential difficulty and have on hand inventories of 370,000 tons of chrome, enough to satisfy U.S. consumption needs for nearly a year.

A second difficulty is the potential disruption of a commodity market that can be caused by the buying and selling of the material by the stockpile activity, as was demonstrated by the U.S. acquisition of a tin strategic stockpile in the early 1950's. The United States began buying at the beginning of the Korean conflict

to build a reserve against a possible cutoff of southeast Asian supplies. The purchases coincided with major increases in purchasing by private firms to guard against the same potential supply interruption, thus causing large price increases. In early 1951, the U.S. Government ceased its purchases for a time and the price fell. These unpredictable and quick changes by a government agency caused great uncertainty for U.S. industry and exporting countries.

Most proposals for stockpiles involve general objectives, such as (1) to moderate price fluctuations, (2) to assure a flow of supplies, or (3) to promote a stable investment climate. The problem, however, is that these proposals rarely specify the detailed objectives that can be translated into operational criteria that will guide a board of directors or a stockpile manager. Before any stockpile system can be initiated, many questions must be answered. For example:

1. For which commodities will stockpiles be instituted?
2. What criteria will be used in selecting a commodity?
3. What level of "normal" prices or supplies is that country will to set as targets?
4. What is the cost to government of building stockpiles of sufficient size to reduce price fluctuations by a certain amount and how much is the U.S. willing to budget for a national or international stockpile program?
5. How large an agency for information analysis and management will be required?
6. By how much will government stocks displace private stocks in a stockpiling scheme?
7. What is the long run impact of economic stockpiling on production and consumption of a commodity?
8. What are the external and intangible benefits to the public that would justify government stockpiling in excess of normal private stockpiling?

If thorough investigation of these issues shows clear net benefits for a particular commodity and improvements in market efficiency, then we are certainly willing to give full consideration to implementation of a stockpile scheme for that commodity. But we believe that we should be wary of sweeping programs that are devised solely on the basis of the recent oil embargo or the 1972–74 commodity price boom. Studies have shown that capital will be scarce enough during the next decade without the U.S. Government diverting scarce capital resources into non-productive stocks and away from needed investment for the goods and services demanded by the world economy.

### TYPES OF ECONOMIC STOCKPILES AND THEIR EFFECTIVENESS

As part of an analysis, it is important to identify the various types of stockpiles and the functions they are expected to perform. Though they are not mutually exclusive, the major types and the principal functions are as follows:

Strategic stockpiles to assure supply availability in case of national military emergency.

International buffer stocks (or national buffer stocks that are internationally coordinated) to reduce volatility of world prices for a commodity.

Domestically held reserves for economic contingencies such as relief of unexpected shortages.

Price support stocks to guarantee a minimum price for a commodity.

Seasonal stockpiles to provide stead supply on an annual basis.

All of these types of stocks could be applied to food, industrial, or mineral commodities, but seasonal reserves would be more applicable to agricultural commodities, while strategic stockpiles would be most relevant for industrial materials. The other three types could be used for any storable commodity. As perishability increases, the management of a stockpile becomes increasingly difficult, and stockpiling schemes are not feasible for highly perishable commodities.

Since the primary concern of most stockpile proposals is economic stockpiles for industrial commodities, I would like to focus on the two major types of economic stockpiles—buffer stocks and contingency reserves.

*Buffer Stocks.* Even though there is only one international buffer stock in operation, the model for such stocks usually calls for management in accordance with agreed rules so that the buying and selling activities of the stockpile manager will counteract rapid changes in prices for the particular commodity. The manager has a stock of commodities and a fund of cash that he can use to prevent low prices by buying commodities or to prevent high prices by selling

from the stockpile. A successful buffer stock operation must have a skillful governing board that can set the floor and ceiling prices so that prices are stabilized, but are not sustained at artificially high or low levels. The manager's effectiveness will be limited by the funds available to buy, when prices are low, and the stocks on hand to sell, when prices are high.

Buffer stocks are attractive because of their theoretical simplicity—buy low and sell high. In practice, however, buffer stocks are usually supplemented by direct supply management, usually export or production controls, in order to limit stockpile funding requirements. Exact estimates of the cost of financing buffer stocks are difficult to obtain, but some studies have projected a maximum investment of $1–2 billion for copper alone. Further, the cost of supporting agricultural prices has several billion dollars a year during the late 1960's and early 1970's. These large potential costs have led to supply control measures to support the operation of the buffer stock in defending the floor of the price range. No corresponding mechanism is available to supplement the defense of the ceiling in the event of stockpile exhaustion. Consequently, there is a danger that buffer stocks combined with supply management will artificially raise long-term prices by being much more effective in protecting the floor than in protecting the ceiling—unless the floor and ceiling are carefully set and frequently adjusted to reflect actual market trends.

A severe operational problem is the correct "reading" of the market to permit timely purchases and disposals.

Unless a manager can forecast the market trends accurately, he will not be able to counteract market forces and may even accentuate them. In practice, then, the operation of international buffer stocks is very difficult.

*Contingency reserves.* Contingency reserves are accumulated as insurance against a disruption of foreign or domestic supply because of such things as embargoes or natural disasters, or against a sudden surge in demand that temporarily exhausts supply. The major concern we have with such a reserves program relates to the timing of accumulations and disposals and the determination of an adequate size stock. We do not believe that adequate analysis has been done to show how and when such accumulations would occur or how large a stock would be needed. Further, the list of commodities that should be considered for contingency reserves has not been clearly identified. A recent review by the Administration identified three critical commodities that showed some potential for interruption of foreign supply that might damage U.S. industry—bauxite, chrome and platinum. Other people have suggested cobalt, molybdenum, and nickel as candidates for stockpiling to guard against domestic or international shortages. We believe that further study is needed to identify which commodities are appropriate for such reserves.

### OPERATIONAL NEEDS OF STOCKPILES—DATA, ANALYSIS, MANAGEMENT

Effective operation of stockpiles would require a system of data collection, analysis and economic forecasting well beyond our present capabilities. A recent study published by the Brookings Institution shows the difficulty of trying to run an effective buffer stock on the basis of available forecasting capabilities. That economic analysis of the 1971–74 period shows that under a standard forecasting model, we should have expected prices of metal commodities to start rising in early 1972. On this basis, if we had an operating stockpile at that time, a stockpile manager might have reached the conclusion that stocks should have been released to prevent the price increases. In fact, prices did not actually rise sharply until late 1972, and it is entirely possible that a manager's premature release of stocks based on his projection would have further depressed prices of metals and would have injured producers.

To further illustrate the difficulty that a stockpile manager would have faced during that time, it might be useful to review what actually took place in 1973 with respect to the General Services Administration's sales of excess stockpiles. As actual prices rose rapidly in 1973, large volumes of excess materials in the Strategic Stockpile were sold by the General Services Administration in an effort to hold down the rise in commodity prices. During 1973 GSA sold 19,300 tons of tin—about 35 percent of U.S. consumption. This amounted to one of the largest sales of a raw material by a stockpile organization. Despite the volume of these sales, prices continued to rise; in fact, by 81 percent. The reason for this was that highly speculative factors were operating in domestic and world

markets as consumers built huge inventories in the fear that their operations would suffer if supplies of materials were curtailed. If such sales did not affect the price of tin, it would appear unlikely that smaller volumes of sales from stockpiles could affect the price of a raw material either. It would seem to be impossible to satisfy the kind of demand that existed in 1973 by dumping enormous amounts of stockpiles.

In addition, the model in the Brookings study indicated that prices should have started falling in late 1973, a signal for a stock manager to stop selling and eventually start buying. In fact, however, actual prices kept rising at a fast rate until early 1974 and buyers' demands for inventories seemed insatiable. Thus a decision by a stock manager to stop sales would have made the situation worse.

After the rapid decline in metals prices in 1974, we might have expected a stockpile manager to start rebuilding his inventories. However, it would have been almost impossible for him to decide the proper time because even though metals prices reached a bottom in late 1975 they were still 29 percent above the low of 1972. A conservative manager might still be waiting for prices to drop to the old low!

Stockpiles designed to meet interruptions in supply also would have faced considerable problems during 1972–74. The most difficult problem would have been timing the acquisition and disposal of a particular commodity. Whether the stock is meant to protect against outright physical shortage (a situation in which the selected material is simply not available), or is meant to moderate or discourage a price increase imposed by producers who control supply, decision rules for release of stocks are not simple.

In the case of an outright physical shortage, the signal to trigger the release of stocks might have been the price of the material, the lead time for delivery of the material, purchasers' and suppliers' inventories of the material, or some combination of these indicators. The problem with such signals is that the "normal" changes in them, which result from the normal working of the market, are difficult, if not impossible, to distinguish from the "abnormal" changes which might indicate a shortage. There is too much at stake to permit disruption of markets by sale/purchase decisions taken by government employees.

In the case of an imposed price increase, it is somewhat easier to distinguish foreign producer countries' efforts to increase price artificially, from price increases that result from market conditions. However, we have concluded that overriding economic realities make artificially high pricing by producers unlikely for most raw materials that the United States imports. Therefore, it would be a mistake to focus a large contingency stockpile program solely on discouraging potential cartel pricing action by producers.

Another illustration of the difficulties that are involved in managing an economic stockpile can be found in the experience of managing the nation's Strategic Stockpile. Though we have nearly 100 materials in that stockpile to supply our industrial base during a war, there is great uncertainty over the amount of each material needed. Indeed, the Administration currently cannot dispose of excess materials in those stockpiles because it cannot reach agreement with Congress on the amount of excess. The Federal Preparedness Agency, which is in charge of managing the stockpile, has in recent years developed new analytical procedures to determine the level of stockpiles needed. Those procedures, while a substantial improvement over earlier ones, are still imprecise in determining the most efficient size of a strategic stockpile. In addition, the experience with the Strategic Stockpile would not be particularly helpful to the operations of an economic stockpile because the Strategic Stockpile by law is operated so that its activities do not disrupt markets, whereas an economic stockpile is specifically designed to change market situations.

## CONCLUSION AND OUTLOOK

In light of all of these factors, we have concluded that there simply has not been enough analysis done about the criteria or the technical details to operate an economic stockpile successfully—whatever its purpose. Therefore, we believe that it would not be in the United States' interest to proceed legislatively or otherwise to establish economic stockpiles at this time. However, there are efforts in progress to increase our understanding of economic stockpiling and to improve the related institutional capabilities in the government. The National Commission on Supplies and Shortages is now examining some of the conceptual

and operational problems associated with stockpiles. After its report later this year, we may be in a much better position to assess the need and feasibility of economic stockpiles for particular commodities. The Commission is also studying possible changes in government institutions to enhance the capability to identify and handle shortages. The Office of Technology Assessment has also suggested alternative ways to restructure institutional arrangements to provide greater capability for dealing with shortages. The Federal Preparedness Agency is conducting a reevaluation of the methodology which guides the management of the nation's defense-related stockpile.

When these endeavors are completed, we should know a great deal more about establishing and operating economic stockpiles and we will be better able to judge if they can be used to improve economic performance in the U.S. and around the world.

Until we know much more, however, I believe that our experience with stockpiles shows that it is relatively easy for a manager to take actions that will destabilize the market rather than improve market performance. In light of this, and considering that in most cases the market will correct a volatile situation by itself, we should proceed cautiously and not create economic stockpiles until it can be clearly established that the economic benefits in terms of stability and efficiency justify the increased role the government will have to play in the market.

Chairman SULLIVAN. Thank you, Mr. Parsky. This is exactly why we are having these hearings, so that we can get the facts from which to try to find some answers as to whether or not we need and should have stockpiling for economic purposes. I am glad that you got through your other appearance this morning in time to come up because, as you know, we set this hearing date for your convenience.

Mr. PARSKY. So I understand, and I wish all of your other colleagues in the Congress would respond as nicely as you have.

Chairman SULLIVAN. Well now, let's see how you respond to these questions.

Mr. PARSKY. I knew that was a lead-in to some very difficult questions, but I would be delighted to try.

Chairman SULLIVAN. Well, we need some answers. We will go on for a short time here. I have a number of questions, and if I can't get through them, or if your answers bring up other questions, we will submit them to you and you can answer them in writing.

Mr. Parsky, you suggest private industry knows the materials field best. What gives you the assurance that actions of industry will always reflect the best interests of the country and of groups such as labor or consumers?

Mr. PARSKY. Well, I happen to believe that our economic system, which has been based on free enterprise and the private sector, is the best system, and I think the Government obviously has a role in the process. We set policy, whether it be tax policy, setting tariffs, a number of other policies that would move the direction of the economy as we so desire, or fiscal and monetary policy.

But the basic engine to the development of our economy is our private sector. And I have a good deal of confidence in private industry. Obviously there are going to be self-interests that are going to be perpetuated, but at the same time I think industry has in the past and will continue to make decisions based on what is really in the best interests of themselves and the economy as a whole. And it is that kind of belief that has led me to feel that government should stay away as much as possible from interfering with the functioning of the market.

That holds true with respect to the raw materials markets as it would with others.

Chairman SULLIVAN. Why couldn't the U.S. Government develop expertise in the materials field comparable to that of private industry?

Mr. PARSKY. We could.

Chairman SULLIVAN. Is there anything so special about the materials area that would prevent this?

Mr. PARSKY. No; I am sure that there are many people in the Government that are intelligent enough that we could develop expertise. But I believe that the duplication of effort is not called for. In fact, the Government ought to be concentrating on reducing its size and not increasing its size.

Chairman SULLIVAN. Don't the Bureau of Mines in the Commerce Department, and the Federal Preparedness Agency, have significant materials information and analysis capabilities?

Mr. PARSKY. Yes; and we use that. I think it is important that the Government, the Congress, and the American people be informed. And to a large extent the private sector cannot adequately inform the American people of what the situation is with respect to materials policy.

But because we have the data and we have a degree of expertise doesn't mean that we have to supplant the operations of the private sector. I think we can perform a viable and important function by bringing adequate information to the American people without supplanting the private sector.

Chairman SULLIVAN. We have heard testimony indicating that there are powerful nonmarket forces, including actions by foreign governments, influencing commodity and materials supplies. Aren't you recommending that the U.S. Government stand idly by and not prepare to take any countervailing action? Isn't that an ostrich-like stance?

Mr. PARKSY. Well, I am not recommending that we stand idly by. You are absolutely correct when you say other governments are involved. I don't think we can really talk about the existence of what I would call a pure free market when you have government on one side and private business on the other. But we do have clear choices, in all of the commodities and raw materials areas, whether it be oil or copper or coffee or anything. We have the choice between more government involvement or less.

It seems to me that our government has a legitimate role to make sure that our private interests are protected, to make sure our companies are treated the same as companies in other countries, that in fact the rules of the game that are being applied are adequate for the free functioning of our private sector. But that is a far different role than in fact the Government agreeing to sit down with other governments to set prices, to allocate the market, and to determine how the forces of supply and demand will work. It is that kind of role that I would object to.

Chairman SULLIVAN. What makes you feel the market is good enough to overcome the disruptive influences?

Mr. PARSKY. Well, I haven't had a lot of experience in the market, so I am not drawing a great deal on my own personal experience. I am not that old. But I have read a lot about it and I think history has

shown us that the marketplace is the best allocator, that every time the Government has attempted to either control prices, allocate supplies, or to intervene in the market, we have caused more distortion, more distortion to our economy and more distortion to the needed forces of supply and demand. It is based on that kind of experience and history that I have concluded as I have.

Chairman SULLIVAN. Undoubtably private industry knows the materials field best, but, I repeat, what gives you the assurance that actions of industry will always reflect the best interests of the country and of groups such as the consumers of this country and the job situation?

Mr. PARSKY. Well, it is clear that the private sector won't always reflect those interests, and there is a role for the Government. We have antitrust laws, for instance, that are meant to apply to situations where an industry or part of an industry are not competitive and the result is lack of benefits to the American people. There is a definite role.

But again by recognizing the fact that there is an initiating policy responsibility by the Government, and an oversight responsibility as well, does not mean the Government has got to replace the entire operation of the private sector. It is that kind of distinction that I would urge we draw.

Chairman SULLIVAN. In your testimony you say that the Government has significantly increased strategic stockpiles to levels consistent with real needs. It is the committee's understanding that many in the national security community feel the stockpiles have been reduced to dangerously low levels.

There is also the feeling that the assumptions for the stockpile's reductions were optimistic in the extreme, and a new study is underway that will set higher stockpile objectives. Can you reconcile these apparent differences within the Government concerning realistic stockpile levels?

Mr. PARSKY. Well, there obviously is a disagreement as to what levels are adequate and what are not. That is the specific reason that we have a study underway to try to make that determination. We have believed that they were adequate. If the study shows, based on analysis, that they are not, then we would increase them.

Chairman SULLIVAN. Well, you suggest that the Government has relieved the taxpayer of the burden of maintaining large grain stockpiles. Could this have been achieved without the very poor harvests which the Soviet Union has experienced in recent years? In other words, isn't the Government claiming credit for an accomplishment made possible only by circumstances in Russia?

Mr. PARSKY. Well, there is no question that the circumstances in the Soviet Union affected it, but we opened the trade relationship with the Soviet Union and with other countries.

I think the policy of the Government has got to be aimed at maximizing the potential markets for goods and services that are produced in this country. If we ask the American farmer to maximize production, we can't think about closing off a potential market for that production. It is that kind of policy that I think the Government should take credit for, where we have in fact moved to liberalize trade and open potential markets. That is what enabled us in fact to take the action that we did.

Chairman SULLIVAN. I agree that we have got to sell when we produce over the needs of our own country; and if we have good salesmen, we will sell; and if we have good products, we will sell.

Mr. PARSKY. And markets.

Chairman SULLIVAN. Well, that is what a salesman is supposed to do. We have become "ordertakers" in this country for many years, not salesmen of what we produce. And I think some of the methods of selling that have been coming to our attention recently are not the American way of selling, which is having something that you can stand behind to sell, based on quality and price. If you have to bribe people to buy from you, it seems to be a lack of something—either salesmanship or the quality of what we are trying to sell.

Are there any figures available to show whether reducing the tax burden of grain stockpiles offset the price burden which consumers experienced in paying more for bread, meat, and other foodstuffs?

Mr. PARSKY. I don't have any figures with me, but I would be delighted to submit any we have. I don't have them here.

Chairman SULLIVAN. If you can supply that information, I think that would be helpful.

[Material submitted for the record by Mr. Parsky follows:]

It is impossible to be precise in judging cause and effect relationships for agricultural commodity prices. However, Government expenditures to carry grain surpluses are in fact far from inconsequential. Over the 15 years from 1961 to 1975, grain support programs cost the U.S. Government some $24 billion in direct payments. This seems a very high price to pay for a form of consumer price stability insurance for those relatively infrequent years when foreign grain demand is sufficiently strong to drive up grain prices substantially.

Long-term benefits of a market-oriented farm policy without massive grain stockpiles are increased farm income, additional jobs in transportation, shipping, grain handling and farm input industries, a strengthened rural economy, larger foreign exchange earnings, and greater tax revenues. The costs are smaller grain supplies for domestic use, somewhat higher and more volatile food prices and fluctuating grain stock levels.

I wonder if you could spell out in more detail the United States objections to the common fund for buffer stocks at the UNCTAD conference? Don't your objections to this plan strain our relations with some of the leading Third World nations?

Mr. PARSKY. It may. But I think it is time the United States indicated to the world what we do stand for. And we stand for an economic system that is based on the operation of the marketplace. We are willing and we have put forward at the President's directive a number of constructive proposals to bring us closer to the developing countries, and to improve the conditions in those countries. Those were articulated by Secretary Kissinger at the U.N. 7th Special Session in September, and articulated again by the Secretary and further proposals in Nairobi.

We made it clear before we went to Nairobi that we would not agree to any proposals that would hamper or counter the functioning of the marketplace. We also agreed that we would not accept the concept of a series of price-fixing agreements for commodities, that we were willing to look on a case-by-case basis at the problems that existed with respect to any individual commodity, but the position as expressed by some countries that we should in fact sit down and negotiate price-fixing agreements for commodities was not acceptable to us.

Inherent in the integrated program is an acceptance of a series of commodity agreements covering major commodities and at the same time the establishment of a fund called the Common Fund, which finances the buffer stocks that are necessary in order to make those commodity agreements work. We rejected that approach. We offered a series of alternative proposals that were aimed at looking at those problems.

In addition to that, we happen to believe that the propellant for development and improvement in developing countries is investment. We offered a proposal that would potentially increase investment in the developing world, we referred to it as an International Resources Bank. In fact, a bank may be somewhat of a misnomer, because it is really a means of eliminating or reducing the political or noncommercial risk that is inherent in investment in some countries. We think it is a positive proposal. Unfortunately, due to parliamentary procedures, a number of countries abstained and refused to even study that proposal.

To me it is an intolerable situation that the countries of the world will not even study a legitimate proposal put forward by the United States. And to the extent that our unwillingness to accept the Common Fund or unwillingness to accept commodity agreements may cause some strain, we will accept that strain at this point, because we believe that our system is worth defending.

Chairman SULLIVAN. Were these proposals really made out loud by our people who were attending that meeting?

I ask this because I have sat through many of the discussions at the Law of the Sea Conference, where I was shocked at the lack of expression of our positions, by our own delegates, to the Third World. They sat there and let us be berated, up and down. Anything we proposed was just dismissed as out of the question. So there was just silence. Did we really propose these things out loud in Nairobi?

Mr. PARSKY. Madam Chairman, first I would say that I have never known Secretary Kissinger to be quiet, and when he was there, he articulated very clearly in the text of his speech and otherwise what our position was and I think he set the record very straight on that count.

We obviously do not want to create confrontation with other countries of the world. We are living today in a very complex and interdependent world that demands cooperation. And so where necessary, we seek to work toward a cooperative environment. But where resolve is needed, where firmness is needed, we must be willing to express it and we did in Nairobi. Some people have characterized the performance there as giving in, as losing the battle with the Third World. I don't see that at all. We clearly reserved on the proposals that were outlined there, and we will do so in the future.

Chairman SULLIVAN. I am so glad to hear this, because my experience over the years is that we are too quiet in these international meetings. We are afraid to be fair and open, to try to get responses; and we are beaten down by our silence because we don't want to "upset the boat."

Mr. PARSKY. I agree with you, at times we have been.

Chairman SULLIVAN. I am thinking of one international situation I have been involved in, not only for the years I have been in Congress,

24 years, but before that, and that is the Panama Canal. Our silence on attacks against us has been very weighty.

When you get the transcript of this hearing, I wish you would answer further this question I am going to ask you now: At the UNCTAD conference, our major proposal, the International Resources Bank, was defeated. What were the Third World objections to this, if you know, and where does this defeat leave our international commodity policy?

Mr. PARSKY. Well, first of all, I think we should make clear that what was defeated was a willingness to study the proposal. We are going to continue to put forward our position of seeking a study of that proposal. The actual procedure that took place was that 33 countries voted against the study and 31 countries voted in favor, with 90, approximately, abstaining. There was a great deal of negative reaction from a number of the Communist socialist countries. And I am not sure that it is a total reflection of the entire developing world. I think it was an unfortunate development, but as I said, we are going to continue to put forward that proposal and I believe it will be accepted, at least in study form.

[Additional material submitted for the record by Mr. Parsky follows:]

The vote on the International Resources Bank (IRB) at UNCTAD IV was not a clear rejection of the proposal by Third World nations. The proposal only failed by two votes and ninety developing countries either abstained or were absent. Several Latin American countries backed the proposal, while a number of African countries opposed it. There are several reasons for the failure of the proposal to be adopted.

First, there was a great deal of confusion at the time of the vote. It took place at 3:00 A.M. and some delegations did not have copies of the resolution. Many delegations had not examined the IRB proposal in detail and thus were unprepared to take a position.

Second, lobbying by the socialist countries, all of which voted against the IRB except for Yugoslavia, had its toll; and hostile rhetoric by some of the more radical Third World countries induced a number of LDCs [Lesser Developed Countries] to abstain rather than appear to break developing country ranks.

Third, because of the prominence given to the IRB in Secretary Kissinger's speech and the lack of reference to the Common Fund, it is probable that a number of developing countries assumed the IRB was a counterproposal to the Common Fund. We can only hope that with further explanation of the proposal it will become clear that the IRB would be an investment vehicle rather than a facility to deal with the problem of short-run price instability.

There have also been indications that some LDCs felt the IRB by increasing production of commodities would over the long run drive commodity prices lower. Instead, the proposal is aimed at insuring a more rational pattern of investment into economically viable resource projects in the developing countries by reducing political risk, rather than an overall increase in raw materials production. Once again, a clearer understanding of the proposal should eliminate this confusion.

Chairman SULLIVAN. You mentioned scarcity of capital as one reason for not having economic stockpiles. You also mention that private industry is enlarging its own inventories in anticipation of some shortages. Wouldn't a government stockpile actually free private capital for needed investment in other areas?

Mr. PARSKY. Well, I think you have to recognize the fact that the increased use of government resources is still a drain on the potential available capital for the economy as a whole. I don't think that you can really look at a choice between private capital and government capital.

The reason I mentioned the Government capital was that as we assess the cost of establishing these stockpiles, we have to recognize the fact that the capital availability in this country is an important consideration, and we shouldn't necessarily separate what the private sector can provide from the Government, because it is capital as a whole that is needed. When the Government has to enter the market to finance its spending programs, that does affect the availability of capital to the private sector.

Chairman SULLIVAN. In your statement you noted pointedly that the 1973 disposals from the strategic stockpile failed to accomplish the goal of holding down rising prices, using the tin case as an example. Isn't it possible that this strategy failed to achieve its objective because we were trying to use the strategic stockpile for a purpose not suited to an economic stockpile?

Mr. PARSKY. That could be. I used the illustration in order to indicate that the volume of sales that took place at that point in time didn't affect the market, and if it didn't, then considerably smaller volumes of transactions conceivably wouldn't, as well. And that was related to the economic stockpile that might be created. I didn't mean to suggest that it ruled out the possibility that it could, but I used it only as an illustration, to send a cautionary signal in terms of how we look at the impact that selling from a stockpile might have on the market.

Chairman SULLIVAN. Can you tell me how the 1973 decision to sell strategic stocks as a price depressant was reached? You might not know it, but could you give us that for the record?

Mr. PARSKY. I would be glad to supply that. I don't know.

Chairman SULLIVAN. The official explanation has mentioned only national security reasons. I wish you would supply that for us.

Mr. PARSKY. I will.

[Additional material submitted for the record by Mr. Parsky follows:]

Because the purpose of the U.S. Strategic Stockpiles is ". . . to supply the industrial, military, and naval needs of the country for common defense . . ." (50 U.S.C. 98(a), the Strategic Stockpiles could not and were not used for the expressed economic purpose of price control. In fact, a report by the Office of Technology Assessment entitled "A Technology Assessment of Economic Stockpile Policy" indicated that requests for releases from the Strategic Stockpiles have been made by industries with shortages for raw materials and were consistently resisted. Nonetheless, the Strategic Stockpiles are unavoidably intertwined with both the U.S. economy and the raw materials markets, because of the large quantities of materials that are bought and sold.

The sales of stockpiles since World War II have been based on the need to rotate stocks, to upgrade the materials stockpiles or to reduce stockpile levels in accordance with reduced stockpile goals. Under the Strategic and Critical Materials Stock Piling Act of 1946 (53 Stat. 811, as amended, 50 U.S.C. 98–98h), changes in stockpile goals are accomplished through Defense Mobilization Orders (DMOs). On April 11, 1973, DMO 8600.1B provided that the stockpile objectives be limited to those stockpiles estimated necessary to meet the material shortages which might be caused by a one year war. The pre-1973 strategic stockpiles were based on preparedness for shortages that might be caused by a three year war. The new goals defined by DMO 8600.1B resulted in an excess of many raw materials which became available for disposal. The law provides that such sales be made so as to protect ". . . producers, processors, and consumers against avoidable disruption of their usual markets . . ." (50 U.S.C. 98(b)). Accordingly, the Office of Emergency Preparedness made these sales at the prevailing Cost

of Living Council ceiling prices over a reasonable period of time. It seemed appropriate at the time that large amounts of excess materials could be disposed of without disrupting markets.

Chairman SULLIVAN. You are the Assistant Secretary for International Affairs of the Treasury Department. What, exactly, is the role of the Treasury in the issue of economic stockpiles and particularly the Office of International Affairs?

Mr. PARSKY. Well, the Treasury Department has a role, principal at times, participant at all times, in the development of all economic policy, domestic and international. To some extent that varies with the role that the Secretary of the Treasury plays in various Cabinet-level groups. For instance, the Secretary of the Treasury is the Chairman of the Economic Policy Board. That Policy Board has responsibility for the development of domestic and international economic policy.

I have responsibility in the Treasury for the international aspects of that policy, and with respect to commodities policy, we have taken an increasing interest, not only from an economic standpoint, in terms of the cost that is imposed on the American consumer, but also because it has such an important role vis-a-vis our relations with other countries, and in particular the developing countries. So our interest in the Treasury is both directly economic in terms of how it affects our economy, and also it relates to our relations with a growing number of countries in the world.

Chairman SULLIVAN. Well, I have been led to believe that you are the chief spokesman for the administration on this issue, and I wonder how that occurs from an administrative or bureaucratic standpoint. Have you consulted such agencies as Interior, Labor, Consumer Affairs, and the Council on Price and Wage Stability on this issue?

Mr. PARSKY. Well, I am not sure I consider myself the principal spokesman. I am a spokesman.

We have established within the Economic Policy Board and the National Security Council a group called the Commodities Policy Coordinating Committee, which I cochair with the Assistant Secretary for Economic and Business Affairs from the State Department. And we have participants from all of the agencies represented on those two groups, and we review matters of policy once a week, and report to the principal group usually once every 1½ to 2 weeks.

In that process we bring all of the interested parties, most of whom you mentioned but others as well, into the process of review. And we attempt, although at times we are deficient, to coordinate the development of policy with all of the departments. Obviously departments will take on a different degree of emphasis, depending on the interests of the Cabinet man in charge of the Department. Secretary Simon is particularly interested in this area, and he has asked me to pay a lot of personal attention to it.

Chairman SULLIVAN. I would think that these groups that I mentioned, the Council on Price and Wage Stability, Interior, Consumer Affairs, are very important in considering this kind of question. You suggest in your statement that if the Government had an economic stockpile and was buying a particular commodity for that stockpile, private industry might also be buying for inventory, and together they would raise prices unnecessarily.

Wouldn't an economic stockpile program need to monitor what private industry was doing in buying for inventory? If supplies were assured to be on hand, the Government wouldn't have to buy, would it?

Mr. PARSKY. Well, certainly there would have to be some monitoring role depending on the kind of stockpile you created. But again that is an added burden that would be imposed on the Government machinery.

I pointed out a potential or a possibility that could take place. Obviously the extent to which your monitoring system was developed would alleviate that, but it is certainly a potential that has to be borne in mind, I think.

Chairman SULLIVAN. How good are the Government's statistics for keeping abreast of inventory accumulation by American industry? Are they reliable? And if not, why not?

Mr. PARSKY. I think our data and statistics both on the inventory side and on the market reaction side are not very good.

My statement indicates that much more data would have to be developed in order to operate a stockpile in practice the way we theoretically feel it should be operated. And I tried to point out that had we had a stockpile based on the data and information that was available during the 1972–74 period, it probably would have evoked a response to the market that would have been counterproductive, rather than supportive. So clearly if we made a decision to go forward with an economic stockpile, we clearly would have to develop more information or data than we have now.

Chairman SULLIVAN. Isn't this really a responsibility of government to know what these inventories are of things that are necessary for our own economy?

Mr. PARSKY. I didn't mean to suggest there wasn't information. There is information. The question is whether the information on inventories and the information on the market action is adequate enough to bring out the proper kinds of response by a manager of a stockpile. And we do have information and that should be improved and provided to the public.

But the question really is whether we have enough information about inventories and about market reaction to in fact enable a manager of a stockpile to respond to the market. That, to me, is a different set of criteria from one that would allow us to provide enough information to the people.

Chairman SULLIVAN. I remember, at least 10 years ago, when we reprimanded the Department of Agriculture for their lack of accurate information on sugar, when sugar supply was being manipulated and prices were rising daily so that the big users of sugar had no way of knowing what to do about their inventory, whether to buy, to wait, or to stop production. It was absolutely out of order. And we could not get the proper kind of information from the Department that should have been responsible for keeping us up to date accurately. The administration has made its position clear over and over in the last 7½ years that it believes completely and wholeheartedly in the private enterprise system and doesn't seem to think the Federal Government can do anything right.

Of course after seeing the way the Government programs have been operated in many instances, a lot of people now seem to agree that the less government the better. But when we depend on the free market to regulate prices of essential raw materials, we are asking for exactly the kind of roller coaster that we have been on each time there is a dislocation in world supply. And we know that these prices are not set by the free play of the market in a great many cases. They are set by governments imposing export taxes or minimum export prices or entering into cartel agreements, and the consuming countries pay the price in inflation.

Our government has been willing on numerous occasions to subsidize industry, no matter how many billions might be involved, but it always invokes free enterprise arguments in opposition to investing public funds in projects which will pay back their cost to the Treasury. It seems to me that if we invested in essential raw materials when prices are low, and sold them when the prices are high, this could be a useful employment of Federal funds in combating inflation. We have been doing that for 30 years while pretending not to be doing it. Isn't it time to look at this thing with open eyes? That is my question to you.

Mr. PARSKY. Well, I would agree we should be looking at it with open eyes, and I think if you could assure me that we would buy when it was low and sell when it was high, and that we had the wisdom and the capacity to function that way, then I would be in a position to support the establishment of such a policy.

We haven't in our administration advocated the elimination of government or have not felt that the Government has no role. We have just felt that the balance has been tipped too much in the direction of more government than is called for. And that in this particular subject, which I think is a very important subject, that we have to be careful, that we should be cautious before we inject the Government more deeply into the marketplace than it already is.

Our government should play an active and forceful role in trying to eliminate barriers to the free flow of market forces, and to the free movement of goods and investment throughout the world. That role can be played vis-a-vis other governments, but because other governments interfere with the market, I don't think the proper reaction is for our government to in fact invoke the same interference.

Chairman SULLIVAN. I agree with the idea that there can be too much government supervision and that a lot of it is not being properly done, because over my period of government service, which is nearly 24 years, I have seen bureaucracies grow and grow. Regardless of whether they are needed or not, they are still there.

Mr. PARSKY. I agree.

Chairman SULLIVAN. Part of it is our fault in the Congress, because we do not always go back to see how the programs that we legislated into being are actually being operated. We need further study on that, but because there are just so many hours in the day—and anyone who works around us knows how most of us spend those hours—we often just don't get to it.

Bureaucracies are hard to break up and they are hard to control. At times the programs that are put into operation under statutes that

we put on the books are not recognizable once they come back to us. Our intent when the law was passed is changed in the program's operation.

I want to say, Mr. Parsky, I am sorry we had to pursue you to another committee and press you to appear but I am glad you were able to testify in person instead of just putting your statement in the record. You are a very articulate and effective witness, and it has been a pleasure to have you here. In fact, when you walked up to me, I thought you were an aide and somebody else was the Assistant Secretary, because I hadn't met you. We don't have many government officials as young as you are coming up here to testify with the knowledge that you have demonstrated.

I would like to close this hearing with a short statement.

I want to thank you, all of you gentlemen, for your testimony. It has helped to establish a useful record on the subject of economic stockpiles and it will be of considerable benefit to Congress in addressing the economic stockpile legislation that has been proposed. It will also assist the Congress in dealing more generally with the recommendations of the National Commission on Supplies and Shortages which are expected later this year. I believe it would be premature to express any decision now about the advisability of having economic stockpiles to protect the Nation's economic stability.

We have heard strong cases propounded for and against such measures, and we have heard of alternative strategies for coping with supply shortages, and of the associated economic and diplomatic problems such stockpiles might cause. The current situation in the materials market and on the international front do not make it clear which course the country should take.

The record made here in the last 2 days, however, amply demonstrates that an ultimate decision to go forward with economic stockpiling must be based on a clear and common understanding of the purposes of such a program.

If the country embarks on this course without a coherent and agreed-upon set of goals, the likely results will be disappointed expectations in many quarters and perhaps no real amelioration of materials-related problems such as extreme price fluctuations, economic disruptions, and international conflict.

The record also demonstrates that our experience with stockpiles and with commodity policy generally is not such as to give us very much confidence that these tools will always be used in a manner most advantageous to the economy and to the consumer. To be successful in promoting the economic security of the American people, any stockpile will have to be credible to the public and to be credible, it will have to have safeguards to prevent manipulation, and uses for other than its intended purposes.

I thank you all for coming and for the witnesses' answers to our questions. If we have further questions, I hope you can get the answers back to us quickly.

Thank you all for coming. The subcommittee hearing stands adjourned.

[Thereupon at 1:10 p.m. the hearings were concluded.]

# APPENDIX I

## MR. BERGSTEN'S RESPONSES TO ADDITIONAL QUESTIONS FOR THE RECORD

*Question 1.* Do you have any recommendations as to how the Board of your proposed stockpile corporation would be constituted? Who belongs on it? What authority would it have? How could it maximize both independence from pressures and responsiveness to public needs?

Answer. Reasonable proposals on all of these administrative details are incorporated in H.R. 9597, the Rees bill.

*Question 2.* Would you expand on your contention that the shift from buyers' to sellers' markets has produced contrived shortages. Perhaps you can provide a concrete example of this?

Answer. The case is outlined in several of my articles, notably "The New Era in World Commodity Markets" and "A Second OPEC in Bauxite," *Challenge*, July–August 1976. Oil is the obvious case to date, with bauxite the most likely successor.

*Question 3.* How do you account for the condition you describe in your testimony of rising commodity prices in the face of large commodity inventories and large amounts of unused industrial capacity? Is this a result of contrivance or market manipulation?

Answer. Neither. As indicated in my statement, it derives from upward shifts in both the demand and supply curves for many commodities. The current condition, like the earlier situations described in my statement, is clear evidence of fundamental change in those markets.

*Question 4.* You mention that France is starting a stockpile for $23 million and Japan for $100 million. Do you have any estimates for the initial capitalization of an economic stockpile such as you describe for the United States? Please supply a range of figures.

Answer. I have no range at present. The methodology for constructing them is cited in my statement, and reference is made to the calculations by the Department of the Interior for "optimum stockpiles" in several products.

*Question 5.* Your recommendations for the financing of the stockpile corporation appear rather optimistic. Just in the last few years, the revolving fund set up under the Defense Production Act to stimulate materials production went broke because sales of purchased materials provided revenues inadequate to cover interest and other costs. Isn't there thus a danger that the stockpile authority would become like the Postal Service or Amtrack, nominally self-sustaining but requiring ever larger congressional handouts while postponing the date of self-sufficiency?

Answer. There is always a risk that mismanagement or undue political influence will abort sensible public policies. But the U.S. strategic stockpile and Treasury gold stock have always made money, though they were not set up to do so. The revolving fund is not analogous, because it sought to stimulate new mines—which, by definition, are almost always more costly—rather than buying cheap from existing capacity and selling dear later. In a sense, it is an alternative—not necessarily a complement—to an economic stockpile.

*Question 6.* You give two major selection criteria of materials for stockpiling: (1) importance of the commodity to the domestic economy, and (2) degree of import dependence. You then give iron ore as an example meeting these criteria.

Is not the 29 percent import figure for iron ore more a result of price and convenience of supplies to steelmakers than of actual domestic shortages of iron ore? Would not an increase in price make domestic ores more attractive to the domestic steel industry? What role does the integrated structure of the steel industry play in this import dependency?

How would you apply these criteria to bauxite? Would not increases in cost of imported bauxite induce companies to develop non-bauxite aluminum sources in the United States?

How does manganese fit your criteria? Nearly all is imported, there are no significant U.S. sources, and it is essential to steelmaking.

Answer. (1) Obviously, increased iron ore prices would lead to increased domestic output. An economic stockpile would *inter alia* seek to preserve the present price and convenience advantages of imported ore, which are national as well as corporate advantages. The steel industry is integrated with respect to both domestic and imported iron ore.

(2) As analyzed in detail in my "A Second OPEC in Bauxite," there is absolutely no tendency toward the development of non-bauxite aluminum sources in the United States over two years after the seven-fold increase in the price of bauxite. Indeed, this case well illustrates my general theme about imperfections in the commodity "markets."

(3) Manganese is certainly a strong candidate for the economic stockpile.

*Question 7.* You advocate the sale of domestically produced materials at a high enough price to permit adequate profits and to promote net domestic material sources. Between 1951 and 1962, a "domestic purchase program" was established for tungsten and other metals under the Defense Production Act. At the height of the tungsten buying program, 715 tungsten mines were operating, but when it closed—after high-cost producers had taken full advantage of the government's generosity—only 3 mines were open.

Would your plan mean a continuing subsidy for mining firms with subeconomic holdings? How could the experience referred to be avoided again?

Answer. I do not envisage direct government purchases from new mines, nor necessarily any rash of new mining ventures. The objective is to maintain adequate levels of output from existing facilities, and sufficiently strong markets that new production will come on stream as needed. It is obviously difficult to set (and subsequently maintain) a price range which achieves these goals without supporting uneconomic output, so the stockpile management would have to re-assess its programs continually and be prepared to admit mistakes quickly.

*Question 8.* A well-run NRSI would earn operating profits, according to you. Is not a profit-making function inconsistent with the NRSI's major function, to damp prices? Please explain more fully how these two functions are compatible.

Answer. Price stabiliation is the objective and profits only a side effect, but the two are fully compatible. The NRSI would stabilize prices by buying when prices were low and selling when prices were high, thus automatically generating profits. (I would leave a wide enough range within which market forces would operate that these profits would almost certainly be large enough to cover interest, storage and administrative costs.) But the goal of the stockpile management should *not* be to maximize profits, or else it might wait too long to both buy and sell.

*Question 9.* What would be the effect on private inventories of an NRSI? Will not government holdings displace private holdings? Would not this change to government stockpiling shift the cost of stockpiling from consumers of products manufactured by specific industries, to the general tax-paying population? How can this shift be justified?

Answer. Government stockpiles might replace private inventories to some extent. They would not do so wholly, because firms have their unique corporate needs and they would not know when the NRSI would sell. The shift, to the extent it occurred, would be desirable because it would increase the likelihood that stocks would (a) be held in adequate amounts and (b) managed to promote public (e.g., anti-inflationary) purposes rather than private (e.g., oligopoly position) purposes. Since the objective of the exercise is to increase the *national* economic security of the United States, it is entirely appropriate to finance the program from general tax revenues.

*Question 10.* You indicate that there has been a real shift in the supply function. Do you mean that there has been a real increase in the cost of producing these materials, e.g., that two units of labor are now needed where one formerly sufficed? Or is the cause mostly inflationary?

You also mention increased capital costs for new production. Is this phenomenon caused by a shortage in the money supply, lack of sufficient savings, or what?

Answer. The shift in the supply function derives from increases in the costs of producing raw materials *relative* to the production costs for other outputs.

Those increases are both economic, such as the *relatively* higher capital costs now attached to extractive than other investments, and political, such as the *relatively* greater risk of extractive than other investments. The cause is not "inflationary," i.e., part of the higher rate of price increases.

*Question 11.* You indicate that manipulations by cartels have caused shortages. How do you distinguish this phenomenon from "a real shift in supply" as a cause of shortages? Is the manipulation you refer to a "phony" shift, not a "real" shift?

Answer. As indicated in my statement, cartel actions both rest on and intensify "real" changes in market conditions. The advent of buyers' markets for many commodities provides fertile soil for cartel action, if the other criteria for such action (e.g., a limited number of suppliers) are present. In turn, cartel action accelerates the dominance of buyers in those markets. Both the "real" and "manipulated" components of such a cycle are susceptible to effective policy response by consuming countries, including economic stockpiling.

*Question 12.* In terms of potential materials shortages and evolving national materials policy, what is your view of the proper mix of policy elements like (1) economic materials stockpiling, (2) R&D on materials substitution and recycling, (3) international trade agreements, and (4) domestic industrial capacity?

Answer. All are important. The mix will differ for each commodity depending on its characteristics, the technology available, and the economics of each alternative.

*Question 13.* It is realistic to expect that multilateral trade agreements for acquiring materials would ensure materials supply and price stability over the long term?

Answer. Multilateral trade agreements can work if they support the interests of both producing and consuming countries. International commodity agreements can do so, by setting floors under producer prices and ceilings over consumer prices and increasing price stability for both. The present balance of uncertainty between the two groups of countries makes a propitious time for negotiating such agreements. Nevertheless, I would retain at least a minimum domestic stock of most commodities subject to such international agreements in order to enhance the likelihood that they would be implemented faithfully.

*Question 14.* What are the relative merits of national vis-a-vis international economic materials stockpiles?

Answer. International stockpiles are cheaper for each participating country and reduce the risk of international friction, both among consuming countries and between producing and consuming countries. National stockpiles provide more autonomy of management in pursuit of national objectives, such as price stability. Both should be included in any comprehensive commodity policy.

*Question 15.* What safeguards might be necessary to protect the public and the government so that a national economic materials stockpile would not be used as a "dumping ground" for materials produced by industry in excess of current needs, or to prevent unlimited expansion of domestic materials production in light of what might appear to be a guaranteed federal market?

Answer. Maximum insulation from short-term political pressures would reduce these risks, though they can never be fully avoided. I therefore advocate the creation of an independent government corporation to manage the NRSI, with provisions for directors modelled on the Federal Reserve Board.

## MR. CLAYMAN'S RESPONSES TO ADDITIONAL QUESTIONS FOR THE RECORD

*Question 1.* There has been considerable speculation about whether recent shortages have been *real* or *contrived.* Much of your testimony implies that deliberate market manipulation has been a cause of shortages. Has this, in your opinion, been the case? If so, please give some specific examples.

Answer. At the present time, of course there are no serious shortages of raw materials, whether real or contrived. In late 1973 and early 1974, however, there were such shortages. And certainly today the fear of shortages is very real. The important question is not so much whether the 1973–74 shortages were real as it is the extent to which raw materials supplies are vulnerable to manipulation. What is the risk to our industry from contrived shortages? We believe that the concentration and oligopolistic nature of many of the materials industries make market manipulation both possible and probable and makes the threat of shortages plausible.

It may be that "contrivance" is not quite the correct word to describe what can happen to supplies of raw materials when there is a conflict between the public interest and an industry concern with profits. For example, the U.S. zinc industry, faced with the necessity to upgrade its aging refining and smelting plants in order to meet stringent environmental standards imposed on them in the public interest, simply closed the plants, with a resulting sharp decrease in U.S. zinc production. Since imports could not keep up with strong U.S. demand this led to a severe shortage, and of course sharply increasing prices. Another example. We read in the May 1976 issue of Fortune Magazine, a statement that aluminum industry industry leaders "aware that the basic outlook for their industry was for shortage rather than surplus, so three of the companies raised their prices 2 to 3 percent . . . the industry's intention is to get a good return on its existing capacity before it considers building more."

In other words even though it is clear that the demand for aluminum is going to increase—and that the increase will occur very soon—the aluminum companies have opted to delay capacity—so that a price increase can be maintained even though a shortage in the future is a near certainty. Their concern in getting a return on existing capital may be understandable—but the shortage, which they foresee, is certainly being contrived.

*Question 2.* Your testimony indicates that irresponsible overseas actions of large U.S.-based multinational corporations have caused many of the recent supply shortages and price increases to the American public. Can you give one or two definite examples of such activity by multinationals, and indicate how your proposal would have prevented or compensated for it?

Answer. If the question were directed at the activities of MNC's producing manufactured goods overseas, one could point more readily to examples of price increases—although not to shortages—for the U.S. consumer.

In regard to industrial raw materials, the question is more difficult. Such abuses of corporate power are not easily identified. In 1973 and '74, the most serious shortages were in aluminum, copper, zinc and, to a certain extent, nickel. Certain steel products were also in a very short supply. For all of these materials, supply is dependent on imports. (In the case of steel, of course, the import dependency is second hand in that it is the steel making materials such as manganese, chromite and other ferro-alloys that are obtained primarily from foreign sources.)

Did the MNC's activities actually bring about the shortages of 1973–74?

Clearly in the case of oil the embargo and the price increase was successfully imposed by the OPEC with the tacit help of the big oil companies. In the case of other materials it is not easy to pinpoint responsibility. (The Justice Department has spent some years trying to do just this—so far without success.)

The question really turns on the interpretation of "irresponsible". Responsible to what and to whom. Certainly the MNC's do not consider their actions to be

irresponsible because they perceive their first responsibility as being to their stockholders. The host government, with which a raw materials producing MNC must cooperate if it wants to stay in business perceives the company's first responsibility as being to contribute to its own national goals. In the U.S., we perceive the American MNC as having a public responsibility to this country, lending its share of support to our own economic and social goals.

The point I would like to emphasize is that the structure of the materials industry, particularly such industries as aluminum and chrome, and nickel where there is a high degree of concentration—and even in the lead, zinc, and copper industries where concentration is of only a slightly lesser degree—the structure is such that the opportunity for and the potential for market manipulation exists. Furthermore, the situation encourages MNC acquiescence and even participation in the host country's demands—even when those demands are contrary and harmful to U.S. interests. For example, the development of a steel industry is a major goal of Brazilian policy. Bethlehem Steel Corp. is involved in a joint venture with a Brazilian government company to develop manganese deposits in northern Brazil. The U.S. steel industry is of course completely independent on imports for manganese—35 percent of which comes from Brazil. The Brazilian government had decreed that exports of manganese from the Bethlehem operation may be restricted.

What is Bethlehem's responsibility in this case?

Bethlehem will undoubtedly adjust its operations to the demands of the host country despite the harm that may do to the U.S. steel industry.

The proposals and recommendations we have made in regard to materials policy cannot entirely solve these problems, but they could help lead us to a solution. First, there must be a rigorous effort to enforce the anti-trust laws (and it is not at all sure that they have been in recent years). Second, a way must be found to introduce the U.S. interest into MNC-host company negotiations. One way this could be accomplished is by the development of bi-lateral commodity agreements. Third, the establishment of economic stockpiles would create a deterrent which could help to keep the MNC's honest, to maintain a competitive market, and to counter to some extent the oligopolistic power of such concentrated industries. And fourth, increased government support of research and development efforts would encourage the kinds of technological advances which in turn would tend to counter concentration and maintain market competition.

*Question 3.* Your proposal for economic stockpiling indicates that materials will be acquired or released for price stabilization only in international markets. What about the domestic scene? Would you advocate the use of stockpiling for price stabilization of materials of primarily domestic origin? Or to check large price increases by domestic producers?

Answer. No I think not. The greatest danger of supply and price manipulation comes in those materials where there is a high degree of import dependency and in which the industry is characterized by a fair degree of concentration among a relatively few large companies—the MNC's. Granted that there are oligopolistic situations where a few companies control the supply of domestic, as opposed to foreign, resources (i.e., copper)—but the fact that they operate within U.S. borders makes supply and price manipulation more difficult. Moreover, there are other more appropriate and less expensive methods available to check prices on the domestic scene—e.g., guidelines, some form of jawboning, or even controls.

Also, in establishing and operating economic stockpiles, the government would be venturing into a new area and therefore should proceed cautiously. Although considerable experience in commodity stockpile management has been developed over time through the operation of the Defense Stockpile, there is sufficient difference in purpose and scope of the proposed economic stockpiles to suggest a slow approach. As we acquire more experience in economic stockpiling, it could be that economic stockpiling of domestic resources would become a more attractive option.

*Question 4.* Many experts believe that international market forces are in the process of stabilizing themselves after the recent disruptions, and that normal operations of the market are still the best way to prevent shortages. The current absence of any major shortages seems to support this view.

Wouldn't operation of your proposal for market intervention cause new disruptions? Wouldn't it disturb the market just as it returns to normal and cause shortages—the opposite of its intended effect?

Answer. The assumption lying behind the question is that international market forces are self-stabilizing and that therefore any outside intervention would

be disruptive. Although it is certainly true that the materials markets do respond to cyclical movements—the response is and will continue to be imperfect. This is because there is already considerable degree of intervention—through both host and home government investment, tax and trade policies, administered pricing, oligopolistic controls, etc. The current absence of major shortages is the result of an overbuild-up of inventories, followed by a sharp decline in international demand as the world experienced the worst recession in forty years.

But as the materials industry industrial capacity utilization rates climb up, the day of new shortages is not far off. One need look no further than the aluminum industry and its reported view of capacity expansion to determine whether market forces function well or not.

On the question of whether the establishment of economic stockpiles would disturb the market and cause shortages, the answer is negative. Adroit and careful management of the stockpile would of course be necessary. Obviously the government could not go out and buy up a year's supply of any material all at once, or even a substantial portion of the annual requirement. Such an action would of course have a disturbing effect. Different circumstances would require a different course of action for each of the commodities for which stockpiles would be developed. But the goal would be to manage the acquisition and disposal in such a way to create as little disturbance as possible—except of course where the "disturbance" in the form of reduced prices, reflected the purpose of the exercise. It may be that susceptibility to disturbance should be one of the criteria on which stockpile goals are determined.

*Question. 5.* How does the concept of economic materials stockpiling fit in with evolving national materials policy and other U.S. policies and how might these individual policies be functionally related in a single administrative system?

Answer. In order to implement a comprehensive materials policy, several new organizations or institutions would be required. The Advisory Committee on National Growth Policy Processes, on which both Mr. Strauss and I serve, has under consideration several proposals which deal with this problem. The first proposal is for the establishment of an independent board of experts on resource assessment and evaluation. This board would be charged with responsibility for continuous evaluation of resource availability, for determination of the impact of alternative growth policies and programs, and for assuring public airing of the problems and consequences of resource utilization. It would be primarily concerned with the medium and long range problems. Operating at another level of concern there would be an expanded planning institution in the executive branch—along with the parallel institution set up in the legislative branch. The function of these institutions, in my mind, follows along the lines described in the Humphrey-Hawkins proposals. Responsibility of this group would be the determination of medium and short range economic plans, including the establishment of annual targets for production, consumption and employment. Fiscal, monetary, and other economic policies and programs would be put forth each year to assure that the targets were met. In my view, the planning capability in the executive branch should include a capability to plan for materials utilization. Determination of stockpile targets could be a part of that responsibility. This would assure the materials policy was integrated with overall economic policy. Also, at the operating level, there is a necessity for coordinated data collection, and analysis. What is needed here I believe is the establishment of a single unified federal economic data collection agency. There is also of course the need for an agency to manage the economic stockpiles. Here I think the best type of instrumentality is a quasi-public agency along the lines of the Commodity Credit Corporation.

To carry out a program of increased federal support of research and development, there are two possibilities. One is that the research activity for materials be combined with government support of energy development; in this case ERDA would be expanded to cover other industrial raw materials. Another possibility is that the research activity for materials should be combined with the active development of new resources and the creation of stand-by facilities. Here I am thinking of another quasi-public corporation—along the lines of COMSAT, which would have responsibility for research, for seabed development and for implementing the stand-by concept.

Finally, although previous proposals for wholesale government reorganization have come to naught, it is worth noting that most of them include pro-

vision for the coordination of physical resource programs. Whether such coordination takes place by bringing all of the bureaus and agencies presently concerned with resource policy in under one big umbrella, or whether it is done through the establishment of a White House coordinating body, or whether it is done by fixing clear responsibility on a designated planning group. I don't know. But there is no doubt that any one of these choices is better than nothing at all—which is the way it is now.

*Question 6.* To what extent might economic materials stockpiling remove the need for the expansion of existing or anticipated industrial capacity, thereby helping to ameliorate the large industrial "capital gap" predicted by some economic observers?

Answer. No. The economic stockpiles would consist of materials of the same grade and in the same form as are normally imported. The purpose of the economic stockpile would be to prevent market manipulation by producer countries acting with or without the active or even passive involvement of the resource controlling MNC's. It is clear that it is not possible to stockpile a sufficient amount of any material to satisfy U.S. domestic requirements for any long periods. The stockpile would be a deterrent, not an alternate source of supply. Therefore it would still be necessary to develop a capability for substituting alternate sources of supply in case the first deterrent didn't work. There would be a need for other measures to backstop the economic stockpiles. These measures would include the development of stand-by capacity. I am thinking here of stand-by capacity at several stages of the materials industry process, beginning with the development of new mines and following through to smelting and refining capacity, perhaps even through to primary fabrication.

There are low grade deposits in this country of many of the import dependent materials. These deposits are uneconomic to mine at present but they would become economically feasible in a tight supply situation. However, it takes months, sometimes years before new mines can reach full production. One of the reasons for the long lead time is the necessity to build an entire infrastructure; roads, milling and grinding facilities, shafts, even housing facilities for miners, etc. While it may not be possible to put all of this infrastructure into place ahead of time, why should we not get at least some of the development work out of the way thereby shortening the time between the decision to open up new sources of supply and full production from that source? In this connection, it seems to me that the construction of such stand-by facilities would provide a very useful form of public service employment—which would serve the double purpose of providing work for the unemployed.

Another kind of stand-by measure which should be considered is the development of plants to process substitute materials, such as the use of non-bauxitic clays for the production of alumina. Here again, the stand-by plant would be a backstop, serving as a complement rather than a replacement for the economic stockpile. If the stockpile should not be an effective deterrent to market manipulation, and as the price of alumina produced from bauxite rose to the point where it neared to cost of production of alumina from non-bauxitic clays, the stand-by plant would come into operation.

An effective materials policy should not rely solely on any one measure, such as the creation of economic stockpiles. It should consist of a blend of both positive and defensive actions. The creation of economic stockpiles is of course a defensive action. This should be coupled with an aggressive program of federally supported materials research and development, along with a continuing effort to reach agreement with the producing nations; first through the establishment of bi-lateral commodity agreements and eventually through international agreement.

## MR. STRAUSS' RESPONSES TO ADDITIONAL QUESTIONS FOR THE RECORD

*Question 1.* Has your organization any views on some of the multilateral solutions that have been proposed for materials problems, such as "buffer stocks" or international reserves, producer-consumer agreements, or the International Resource Bank?

Answer. The experience with the International Tin Agreement tends to make AMC skeptical as to the long-term merits of buffer stocks and international agreements. Because almost all the world's tin supply moves in international commerce, because the number of major producers is limited, because most of the major consumers have participated in the agreement, tin seems almost an ideal commodity for such an undertaking. During the twenty years of its operation, the agreement has worked fairly well during periods of relative economic stability, but it has failed to stabilize the market in periods of violent change such as 1973–75 (see also the response to question 4 in the preceding series). There are far greater difficulties in the case of many other commodities than in tin and therefore less chance of success in working out agreements over the long term. There are advantages in producer-consumer dialogues. The International Lead-Zinc Study Group has been a useful vehicle for governmental consideration of trends in those two commodities. A similar effort has been made in tungsten, and copper is now very much to the fore as a possible candidate for a study group. The International Resources Bank proposed by the United States at the recent Nairobi meeting seems to be only in the formative stage. A mechanism for facilitating investment in resource industries in the third world is probably desirable, but since there already exist the World Bank, the International Finance Corporation, and the International Monetary Fund, one may wonder why it is necessary to create a new instrumentality.

*Question 2.* The American Mining Congress seems to endorse stockpiles for only a single purpose—immediate relief to manufacturers during temporary or spot shortages. It does not endorse stockpiles to stimulate employment or to control price rises caused by scarcity. How does AMC justify this preference for the industrial sector and the shutting out of the consumer or of the unemployment problem? Aren't these elements also vital to economic security?

Answer. AMC has suggested economic stockpiles be restricted to those commodities for which the U.S. is heavily dependent on imports. It is unclear whether the reference to employment in the question is with regard to employment (a) in domestic production of the commodities; (b) in production of the commodities outside the United States; or (c) in insuring the continued operation of the U.S. industries that use these commodities. I see the situation with respect to these three categories of employment as follows: (a) The domestic non-fuel mining industry accounts for only a small fraction of total employment in the country. The record indicates that employment in the domestic non-fuel mining industry is far more stable than in manufacturing or construction industries—it is in these industries that wide employment swings occur. If economic stockpiles are to be used for the purpose of stimulating employment, one might argue that the government should stockpile cars or housing. (b) The AMC does not believe the U.S. taxpayer should bear the cost of stimulating employment in production of commodities outside the United States. (c) There is no evidence that shortages of commodities have inhibited employment in consuming industries such as manufacturing or housing, apart from the effect of occasional strikes such as the copper strike in 1967–68. However, had there been a large stockpile of copper held for "economic" purposes at that time, the labor movement probably would have considered release of copper from the economic stockpile than to have been a strike-breaking tactic. The swings in employment in manufacturing and construction are caused by swings in demand for products and housing—not by shortages of raw materials. Conceivably an interruption in supply of certain commodities—I specifically cited platinum in my testimony—could cause employment problems in

domestic consuming industries in the future. Release of platinum from an economic stockpile at such a time would not only be "relief to manufacturers during temporary or spot shortages". It would also help to maintain employment and perhaps ameliorate price rises caused by scarcity.

It may be useful as an analogy to look again at the experience with the government's extremely large stockpile of silver with which it controlled the price in the early sixties. Over two billion ounces of silver was held; the cost to the government of this silver when purchased in the thirties and early forties was something over $1 billion. The value at the statutory value of silver for monetary purposes was over $2.5 billion. Were the holdings still intact today their value at today's prices would be over $10 billion. By law, until Congress repealed the circulation of silver certificates, much of the silver was backing for paper currency. During the period 1960–68 most of the silver in the stockpile was either sold outright by the government at prices ranging from 90¢ to $1.29 an ounce or issued in exchange for silver certificates. In 1968 the right to exchange silver for certificates terminated. For a period of two years the General Services Administration auctioned off most of the remaining silver at prices ranging up to about $2 an ounce. There now remains in government hands about 150,000,000 ounces of silver which is held in the strategic stockpile, a large portion of which is classified as surplus under the most recent stockpile objective—now being reviewed.

It may be argued that the sale of silver by the government during the decade of the sixties helped maintain employment in the silver-consuming industries and that the sale also helped to control the price of silver to the consumer. However, the effect of those sales was to inhibit employment in exploration, development and production of silver; a considerable gap still exists between the world production and use. The price is now close to $5 an ounce—so the stockpile of silver delayed but did not prevent a sizable price increase in the long run. At every stage of the silver program government administrators had to make decisions involving conflicts of interest between silver producers and consumers or involving the future of the government's own coinage program. The Congress played a role in many of these decisions. But now that the enormous pile of silver has been liquidated it can no longer act as a "stabilizer" of the silver price.

Should the government, having sold most of its silver at less than $2 an ounce, now build up an economic stockpile during occasional periods of price weakness (early this year the price was $4) in order to inhibit later sharp advances? And how much stabilization would such a program exert? Domestic mine production of silver is less than one-third of domestic consumption. This country is a large net importer. Does it need a stockpile as a safeguard against an interruption in imported supplies? To ask these questions with respect to silver illustrates the enormous problems, the conflicts and difficulties involved in an economic stockpile program—no matter how laudable employment stimulus or price stabilization may seem.

In sum, the question comes down to costs and benefits. The cost of an economic stockpile limited to those commodities for which this country is heavily dependent on imports would be relatively modest—the benefits could be substantial for employers, employees, and consumers alike. The cost of an all-embracing economic stockpile would be great and the effort to use it as a price-regulating medium would probably fail—for the reasons set forth in my testimony and in the responses already given.

*Question 3.* When mineral resources are increasingly becoming a tool in international diplomacy in a kind of economic warfare, how can one be sure that, as you say, "The market mechanism does function in the long run"? Doesn't such economic warfare upset all assumption about the operation of the market?

Answer. The ability of the developing nations to withhold supplies of most minerals from the market is extremely limited. Foreign mercury producers, for example, held meetings in early 1974 and agreed on a floor price of over $300 a flask for mercury (a commodity which the United States must import to supply most of its demand). Despite this agreement the price of mercury two years later is $110 a flask. The copper exporters talked of controlling the world price of copper—but were unable to prevent a sharp drop in the world price from $1.51 a pound to $0.53 a pound in a ten-month period. Only in the case of a very few commodities—those which are produced by only a small number of countries—is the economic welfare to which the question refers likely to succeed. With respect to these few AMC has indicated there may be some merit in a U.S. economic stockpile.

*Question 4.* Based on your experience and on the history of stockpile manipulation you have alluded to, do you have any specific suggestions for creating stockpiles that are proof against tampering, so to speak? Wouldn't a privately run stockpile likely be even more subject to unintended manipulation than a government-operated one?

Answer. A reference to stockpile manipulation was made by Mrs. Sullivan in her opening statement—see page 4 of the transcript. AMC agrees with the subcommittee chairman that the strategic stockpile was used for purposes other than the original intention. At the risk of appearing cynical, it seems relevant to observe that memories are short—that administrators, legislators and the public all tend to forget the original intent which caused enactment of much legislation. The AMC review of the strategic stockpile was intended to point up this fact, to underscore the way in which the assurances originally given to industry were forgotten, and to explain why this causes the mining industry to view the economic stockpile with serious misgivings. A large economic stockpile could well be regarded by some future Administration or Congress as a convenient vehicle for bridging budgetary gaps, and stockpiles could be liquidated not because of interruption in supplies or to stabilize prices or employment—they may be sold to raise revenues at a time when the market cannot readily absorb them.

The references to a privately-run stockpile is not understood. AMC has made no such proposal. All producers and consumers carry inventories of materials as an essential part of their business; they could not operate without stocks. These inventories may increase as a result of a deliberate decision; or they may increase involuntarily due to a change in business conditions. Serious market risks ensue from inventory changes and the managements of the individual companies have to bear the responsibility for the consequences.

*Question 5.* If a foreign government or governments intervene in the market to drive mineral prices up, why shouldn't the United States government use stockpiles as a form of counter-intervention to hold prices down and reduce disruptions in the economy?

Answer. As indicated in preceding responses, I am profoundly skeptical as to the number of commodities in which foreign governments could effectively intervene in the market to drive mineral prices up. For those few commodities where there appears to be a well-established risk, AMC has indicated there may be an argument for creating economic stockpiles. In some cases, as suggested by Mr. Stanley in his testimony, perhaps some of the strategic stockpile surplus could be transferred to such a category—after the latest review of strategic stockpile objectives has been completed. In the case of many of the commodities, however, the risk of effective foreign intervention does not appear sufficiently grave to warrant the cost of creating economic stockpiles.

*Question 6.* You indicated that the mining industry had some opposition to President Johnson's release of copper and aluminum from the Strategic Stockpile during the Viet Nam War. Taking what you understand to be prevailing industry opinion, under what kinds of conditions or scenarios would releases from the Strategic Stockpile be proper?

Answer. With respect to the strategic stockpile, the law provided that material may be released in the event of a national emergency. The law also provided that material surplus to stockpile objectives could be sold with the approval of Congress. The Kennedy, Johnson, and Nixon administrations created surpluses by changing the objectives. The objectives for aluminum and copper having been set at zero, all stockpiles of those two metals have been sold. There is therefore no question of the rules under which future releases of these two metals should be made. Somewhat ironically, within the last month the objective for zinc has been increased so that material previously deemed surplus and earmarked for sale is now no longer in that category. AMC has made some suggestions for determining stockpiling objectives on a formula based on facts rather than assumptions. Use of this formula would prevent the rather obvious manipulation of stockpile targets that has occurred in the past.

*Question 7.* To what extent might economic materials stockpiling remove need for the expansion of existing or anticipated industrial capacity, thereby helping to ameliorate the large industrial "capital gap" predicted by some economic observers?

Answer. Economic stockpiles in theory might have some utility as a "flywheel" to even out the ups-and-downs in commodity demand. However, reverting to the silver example, it is clear that even a very large stockpile cannot replace the need for expansion of capacity indefinitely.

*Question 8.* The issue of the ownership and operation of an economic materials stockpiles is related to many aspects of the nation's private enterprise system. Is it realistic to expect that industries would stockpile necessary materials for economic purposes without governmental incentives? If not, what types of governmental incentives might be necessary to encourage industries to stockpile necessary materials for economic purposes?

Answer. A few large, financially-strong corporations that follow commodity developments closely may well find it profitable in times of poor business and low commodity prices to add to their inventories of such price-erratic materials as copper or tin. Most industries, however, lack the financial capacity to undertake such inventory accumulation. Therefore it is unlikely that much of this will occur. The suggestion has been made that tax incentives might encourage private industry to carry larger-than-normal stocks. The problem with this suggestion is that the public regards tax incentives given to private industry as loopholes. The depletion allowance given the mining industry to encourage exploration and development of mineral reserves is under attack now. An inventory tax plan would probably also be vulnerable.

## MR. STANLEY'S RESPONSES TO ADDITIONAL QUESTIONS FOR THE RECORD

*Question 1.* One possible alternative to government stockpiling which you indicate is tax incentives for private industry to hold large inventories of materials. Since such private inventories are partially and indirectly government financed by loss of tax revenue, what share would the public have in their control? Do fears of market disruption when government holds the stocks also apply when the stockpiles are in private hands?

Answer. The possibility of increased private industry stockpiling is not necessarily an alternative to government stockpiling, but might, in fact, be a way of supplementing it. We are not certain, however, how it would work in practice; and we suggest that the subcommittee may wish to get a detailed report on the Swedish system which has, reportedly, been successful in some respects but has also encountered some problems.

Theoretically, if an incentive program could be devised to apply to additional inventorying over a recognized base, and limited in the amount of the increase eligible for incentives, one could make a case that the public benefits in the form of economic stability in time of severe shortage would be at least proprotional to what it had indirectly financed. The entire economy would benefit by a smoother adjustment and avoidance of the loss of national income implicit in a shortage-related downturn in industrial activity.

Some market effects are unavoidable whenever one is dealing through a market; additional demand, even if extended over a long period, would put some upward pressure on prices. But the objective of either governmental or incentives for increased private inventories of key critical materials should seek to minimize market effects, And, of course, the individual stockpiling actions of a large number of firms spread over time could tend to diffuse the potential market disruption more than a single government stockpile. There would undoubtedly be wide differences in company willingness to participate, access to the necessary capital, and perceptions of appropriate stockpile levels, further diffusing the effects.

With regard to public control, this would not be involved if the additional private stockpiles served their purpose of averting or minimizing the effects of severe foreign-caused shortages. On the other hand, in the event of severe shortage, it is likely that the government would seek to control use of the inventories and undertake allocations, as in the recent case of oil. From the company's standpoint, of course, the possibilities of such action reduce the desirability of tying up company private capital in inventories—perhaps requiring rather large tax incentives—which in turn could create an even greater basis for government allocation. This is why some industry experts have reservations about the concept. Again, a careful evaluation of the Swedish and other relevant foreign experience might be instructive.

*Question 2.* You seem to feel that political insulation of the governing board together with automatic formulas for acquisition and disposal are the best safeguards against stockpile abuse. Even with periodic reviews and reports, wouldn't this make the program both obscure and unresponsive to public needs?

Wouldn't clear political responsibility for administering the program, with complete openness to public scrutiny, be the best safeguard against abuse? Wouldn't this assure better responsiveness to public needs?

Answer. If market disruption is to be minimized, any stockpile program would need to be somewhat "obscure." The best safeguard against abuse is careful audit and control on an after-the-fact basis and with strong statutory penalties for improper use of "insider" knowledge. The responsiveness to public needs must be built into the program's legislative mandate; and its performance against that mandate and goals should be evaluated periodically. Isolation from political motivations is intended to prevent manipulation of the program for either inappropriate political purposes or those not contemplated by the legisla-

tion, for example, raising budgetary revenue—which has been alleged as a major consideration in the 1973 changes to the strategic stockpile objectives.

*Question 3.* You cite as one advantage of your proposal the fact that it allows close private sector involvement in stockpile management. Close involvement of private interests have led to manipulation of the Strategic Stockpile.

How can we be sure that this pattern would not repeat itself under your proposal?

Answer. We have thought of the private "involvement" in terms mainly of making sure that the program managers know what types and specifications of materials are most necessary to maintain economic readiness and to provide the program managers with data on changing supply and demand factors. The basic principle that public funds should not be used or manipulated for private gain should, of course, be emphasized in the authorizing legislation and backed up by appropriate audit and review procedures; but as in all governmental activity, some reliance must be placed on the integrity of the administrators.

*Question 4.* You state that the stockpile should be directed to the political actions of foreign nations affecting key U.S. imports. Yet you would attempt to insulate the governing board of the stockpile from political influences.

Isn't this a contradiction? How can stockpile policy be related to foreign policy objectives if it is insulated from political direction, for example, from the State Department?

Answer. The political influences from which we would seek to insulate the governing board and management of the stockpile are of a domestic or partisan nature rather than international. Provision should be made for appropriate inputs of information by and consultations with the State Department and other government agencies. But since the objective of the program would be related to what I feel should be a U.S. foreign policy goal, namely to seek to deter and be able to counteract serious interference with raw materials markets by foreign governments or cartels, the stockpile program could proceed independently on a generally parallel line to U.S. policy.

*Question 5.* Even with safeguards against abuse, the very existence of such a large stockpile as you propose is bound to have a disruptive effect on market conditions. Do you agree, and if so, how do you reconcile this fact with your principle against government intervention in the market?

Answer. As I indicated in my statement and clarified during the hearings, we do *not* propose the creation of a large new stockpile. Rather, we have argued that before so-called "excesses" in present government stockpiles are disposed of, one should be sure that they are not likely to be needed for purposes of "economic" defense. The combined total of a revised strategic stockpile and an economic defense stockpile might well be smaller than the government's present holdings. Over time, adjustments would be necessary, but cautious and attentive program management of releases and purchases should be able to attain inventory objectives with minimum market disruption. In our concept, it should be recalled, the stockpile is *not* intended to stabilize prices in general but rather to operate against specific contingencies, e.g., when the "market" (in which we do feel that governments should not normally intervene) has been distorted by foreign governmental actions.

*Question 6.* You state that the government should intervene in the market only in exceptional cases. You also give considerable evidence that international market conditions are currently exceptional.

Why not, then, intervene directly on the international market, instead of limiting release of stockpile materials to the domestic economy?

Answer. Although international political and economic conditions are exceptional at the present time in some respects, the conditions of producer government actions harmful to U.S. economic interests are not likely to be frequently encountered. Hopefully they can be discouraged by appropriate U.S. preparedness through its economic stockpile as well as other actions. The purpose is not to stabilize international materials prices, but rather to safeguard U.S. national interests against specific types of contingencies. An international stockpile system to achieve similar goals might be explored, but it involves far greater complications, costs, uncertainty, and reduced U.S. control. In general, we do not consider international market interventions desirable in terms of long-run global economic efficiency and development. (For a comprehensive treatment of this subject, with which we generally agree, I would like to refer the committee to Professor Alton Law's book, *International Commodity Agreements: Setting, Performance and Prospects*, D. C. Heath & Company, (1975).

*Question 7.* Aren't you dealing with the effects and not directly with the causes of supply shortages? Couldn't acquisition and release of stockpile materials directly on the international market for stabilization be a more effective way to deal with the causes of shortages?

Answer. As my statement indicates, we are proposing to deal not with supply shortages in general. but those which result from foreign governmental actions. The hope is that such actions could be deterred by knowledge that the U.S. economic stockpile could be used to prevent a cartel from realizing large collusive price gains or the political benefits from embargo-type coercion. The answer to the previous question regarding skepticism of international market stabilization also applies here.

*Question 8.* You indicate that multinational corporations have been restrained by foreign governments from developing sources of supply. Yet another witness indicated that actions of multinationals themselves have caused shortages. Can you explain the apparent contradiction? What roles have multinationals played in the recent shortages?

Answer. I do not know of recent instances in which the purported oligopolistic structure of raw materials industries has, in fact, resulted in price fixing behavior which significantly raised the cost of imported raw materials to the industrial countries. Those examples that might be cited more often pertain to the period between the two world wars when there were many international cartels, mostly involving foreign companies. Multinational companies may have played a role in recent shortages to the extent that they were unwilling to risk their owners' capital in foreign investments in the present atmosphere of uncertainty regarding adherence to contractual obligations, enforceability of arbitration agreements, and uncompensated expropriations. But while multinational companies can perhaps contribute to a more positive atmosphere, the basic responsibility for the problem—and for remedying it—must lie with the governments of Third World countries.

Multinationals are not, of course, immune to host country pressures and manipulations; they have sometimes been forced to comply with foreign government actions to restrict supply and to raise government revenues. But such exploitation of "hostages" by foreign governments is partly a function of the lack of credible U.S. programs and capabilities to discourage improper manipulation of international companies. In other words, I believe that the cause and effect have been inverted in the implications of this question.

*Question 9.* Is it realistic to expect that multilateral trade agreements for acquiring materials would ensure materials supply and price stability over the long term?

Answer. While a broad range of trade agreements could be arranged if supply and price stability were the only relevant considerations the necessary effects on economic efficiency in the development and application of global resources might not be advantageous to the United States and other industrial countries—or to the developing countries which are relatively resource-poor. Realistically, few multilateral trade or commodity agreements seem both feasible and desirable, as the recent experience with such potentially eligible commodities as coffee, tin, cocoa, rubber, sugar and wheat have demonstrated. Again, the study cited in my answer to Question 6 provides useful data on the complexities of such attempts. Still, there may be exceptional cases, and one should not have an automatic or dogmatic exclusion of cases where practical international possibilties do exist.

*Question 10.* What are the relative merits of national vis-a-vis international economic materials stockpiles?

Answer. National and international materials stockpiles are not necessarily mutually exclusive, but, as indicated above, it would be easier and perhaps less costly to try to protect the U.S. interest on a national basis. As a general proposition, explained in my testimony, I do not favor economic stockpiling for price stabilization purposes domestically or internationally. The "Stabex" approach of the Lomé Convention may be a better way to try to safeguard the interests of developing producer countries against disastrous foreign exchange losses from price fluctuations. It involves special assistance programs geared to shortfalls in export earnings rather than buffer stocks and arbitrarily determined floor and ceiling levels. Again, however, there may be exceptions (such as the tin agreement recently negotiated) where the latter approach also may be viable.

*Question 11.* What safeguards might be necessary to protect the public and the government so that a national economic materials stockpile would not be used as a "dumping ground" for materials produced by industry in excess of

current needs, or to prevent unlimited expansion of domestic materials production in light of what might appear to be a guaranteed federal market?

Answer. The type of unlimited expansion or "dumping ground" envisaged in this question should not and need not be involved in the limited "economic defense" stockpile we have suggested. First, it would be limited to a very few commodities which met tests of both criticality and high dependence on uncertain foreign sources. Second, the amounts held might be set as a given percentage (or within a prescribed range) of U.S. imports. And third, if a revolving capital fund were used, that would itself place limits on the program. Thus, the basic legislative guidelines and objectives for the stockpile should be designed to insure that it is and remains limited.

## MR. GREENWALD'S RESPONSES TO ADDITIONAL QUESTIONS FOR THE RECORD

*Question 1.* You say that the administration has no position on economic stockpiling at this time. When does the government expect to adopt a position? Or, to put it differently, what event or events would cause the administration to take a position on economic stockpiling?

Do you foresee an administration position on economic stockpiling as an outcome of the rejection of U.S. proposals at the Nairobi conference?

Answer. There is no definite timetable for the Administration to take a position on economic stockpiling. An important step in the development of our policy will be the study which is presently being carried out by the National Commission on Supplies and Shortages, whose recommendations on economic stockpiling are expected toward the end of this year.

First of all, I do not consider that the basic U.S. proposals made at the Nairobi Conference were rejected. With only a few exceptions, the basic elements of the U.S. approach to international commodity problems are included in the final UNCTAD commodities resolution. These include measures to stabilize and improve commodity markets, measures on compensatory financing, and supply and market access. With regard to our proposal to study the International Resource Bank (IRB), idea, which was not accepted at UNCTAD IV, we intend to pursue this further and have every hope that, following a fuller discussion of the purposes and objectives of the IRB, it will gain broader acceptance. While final solutions to commodity problems were not achieved at Nairobi, I feel that we made significant progress which will provide a good base for future discussions.

Second, while we will obviously take into account international commodity discussions in our consideration of the economic stockpiling issue, developments at international conferences are not necessarily the decisive factors.

However, each individual commodity also faces its own peculiar market conditions which require individually tailored approaches. Over-generalization in dealing with commodities issues would be likely to result in "solutions" which would be adequate for none or only a few of the specific commodities. For instance, in our view an internationally financed common fund for financing buffer stocks makes sense for any individual commodity only if it is first determined that a buffer stock is in fact a useful mechanism for price stabilization for that commodity and that, if so, a "common fund" would be the most effective way to finance this buffer stock. To make these determinations each commodity must be examined on a case-by-case basis.

So, our approach to commodities is, in fact, comprehensive. We have proposed general solutions to general problems, but we also propose that specific solutions be sought for the problems of specific commodities.

*Question 2.* How does the concept of "linkage" in American foreign policy apply specifically to the international economy? Doesn't "linkage" imply that international commodity problems should be treated comprehensively, not on an individual case-by-case basis?

Answer. The global economy is growing increasingly complex. National economies are more interdependent and various aspects of the world economy—such as trade, investment, development—are closely interrelated. In the formulation and execution of its foreign economic policies, the U.S. examines these interrelationships carefully to assure, to the extent possible, that those policies are relevant to all issues they may affect, as well as the specific problems they are designed to address.

Our commodity policy is no exception. It must be integrated with our policies in other areas while addressing specific problems facing commodity trade. There are many types of commodity issues so we must have a variety of approaches. There are issues which concern commodities in general, such as the problem of wide fluctuations in commodity export earnings. We try to deal with these issues in general ways.

*Question 3.* How do you assess the possibility that Third World producer nations might establish a "common fund" for key commodities without U.S. participation? Have any major Western nations, especially Canada and Australia, expressed interest in joining such an arrangement?

Even if the possibility of producer nations' forming such a "common fund" is exceedingly small, would not the consequences to the U.S., should it actually be done, be severe enough to justify economic stockpiling as "insurance" against the risk?

Answer. At the present time, we would assess the possibility of producer nation's establishing a common fund for key commodities without U.S. participation as very small. Among developed nations, only Norway, with a pledge of $25 million, the Netherlands ("prepared to contribute") and Sweden (conditional on broad participation) have indicated a willingness to support the Common Fund. Against the eventuality of a producer-only Common Fund directed against the U.S. and other consuming nations, we would consider a variety of protective measures, including economic stockpiles. However, it is not yet clear that a "common fund" would substantially increase the risks of actions on commodities contrary to U.S. interests. We will have to take developments on a "common fund" into account in our assessment of the advantages and costs of economic stockpiling.

*Question 4.* Even though the U.S. is relatively self-sufficient in materials needed for an industrial economy, many other Western nations are not. How does the U.S. plan to deal with any future shortages of materials affecting key allies, such as Japan or those in Western Europe? Would not an economic stockpile be effective in dealing with this potential problem?

Answer. While it is true the United States is relatively self-sufficient in domestic resources for a number of materials, we are at the same time increasing our imports of a wide range of commodities. Europe and Japan are in an even less favorable position than we are with respect to availability of domestic mineral resources; their response to this situation has historically been to invest in and develop a wide range of sources of raw materials in other countries, including the United States. This trend is being stepped up. Funding of this development has come from both private and government sources.

The United States Government has neither a world plan nor an economic stockpile to deal with future shortages of materials which might affect our key allies. The design and operation of such a plan would be extremely ambitious and enormously expensive. Our first priority should be to assess our own situation. As the study of economic stockpiling progresses, some attention should be given to the interrelated aspects such as "competitive stockpiling" among countries and to possibilities of coordination with other countries in the planning, stocking, and use of critical materials. Studies of stockpiling and coordination are already underway.

Some countries, notably Japan and France, have recently begun programs to build up economic stocks of some particularly critical raw materials, which could be used in the event of unexpected or artificially caused shortages. By and large, most developed countries, however, continue to depend on private investment for the development of resources and on the operations of the market to bring out needed supplies of raw materials.

To deal with potential shortage situations we are actively encouraging increased development of resources around the world, seeking guarantees of access to supply, and providing remunerative returns to producing countries. In this setting, stockpiling and the coordination of stocks take on a more positive aspect. In any event we are consulting closely with our allies on all aspects of commodity problems.

*Question 5.* To what extent should the United States be obliged to export capital and technology to raw material-producing countries as a consideration for the continuation of raw material supplies?

Answer. I do not believe that the export of capital and technology to raw materials producing countries is a question of "obligation" or trade-off. It is rather a question of economic self interest and good sense on the part of industry and government to ensure that sufficient investment flows to resource rich countries to provide the continuous output of needed raw materials.

The United States has made very clear, most recently at Nairobi, that we consider it of the utmost importance that all countries work toward improvement of the conditions for both trade and investment in commodities. Secretary

Kissinger in his speech at UNCTAD IV drew attention to the need for adequate investment to expand the production and exports of primary products of developing countries and for expanded application of technology to the needs of developing countries. Among other areas where new technology could have great importance is in exploiting the vast potential of the oceans, including methods to mine the deep seabed.

In an effort to improve the investment climate we have proposed and are continuing to push the idea of an International Resource Bank, which could promote more rational, systematic, and equitable development of natural resources by mobilizing capital for resource development projects. We are also continuing to urge that the various international financial institutions, such as the World Bank and its affiliates, work with private sources to play an increasing role in bringing together funds from various sources to promote the development of world resources. As one small but concrete example, we announced our decision last year to contribute to and actively support the UN Revolving Fund for natural resources.

We will be seeking commitments on access to raw material supplies in the context of the Multilateral Trade Negotiations now underway in Geneva in accordance with the provisions of the Trade Act of 1974.

*Question 6.* Is it true that international export control arrangements are not developed to the extent of import controls? If so, to what extent might international export control agreements have to be developed to contribute to the success of multinational trade agreements for materials?

Answer. It is true that import controls have been covered more comprehensively in international agreements than export controls. In accordance with the provisions of the Trade Act of 1974, we are exploring in the Geneva negotiations ways to set up rules covering the twin problems of supply access and export controls.

In individual commodity discussions, we would also press for consideration of the question of availability of supplies of raw materials.

*Question 7.* What is the likelihood for a coordinated multilateral policy among the industrialized nations to establish an international economic materials stockpile or stockpiles?

Answer. There is little likelihood at the present time for a coordinated multilateral policy on economic stockpiles for most mineral commodities. Some action has, however, been taken for petroleum. As part of our commitment to the International Energy Agency (IEA) Emergency Program, we, together with other member nations, have undertaken to hold emergency reserves of crude oil or products sufficient to sustain consumption for at least seventy days with no net imports. The IEA has also set as a target the raising of this level to a ninety day supply by 1980.

For mineral commodities in general, since most countries do not now have or are not planning a program of economic stockpiling and only two countries, France and Japan, have just begun modest stockpile programs, the question of multilateral coordination has not yet been addressed.

*Question 8.* What is your view of the current 94th Congress economic stockpiling bills, S. 1869 (Williams) and H.R. 9597 (Rees)?

Answer. I have stated in my prepared testimony that any stockpiling program, whether it be for economic, strategic, or other purposes, raises a host of questions as to its impact on budgets, markets, etc., which have yet to be fully clarified and answered. There are certainly many unexplored implications and repercussions on foreign policy and on our international economic relations as a whole. Some progress, however, has been made in grappling with some of the issues involved. The CIEP *Critical Materials Study*, the OTA Study, and the forthcoming study of the National Commission on Shortages and Supply have made and will make an important contribution toward filling in the gaps; but the picture remains incomplete.

With this in mind, I believe it is too early to recommend passage of either S. 1869, which is directed toward the effects on the U.S. economy of possible future embargoes by foreign countries, or H.R. 9597 which provides for the establishment of a National Economic Stockpile Corporation to form and administer an economic stockpile. I can make no comments on the substance of either bill at this time except to say that we will consider them once our policy is clear on the purposes, costs and benefits of economic stockpiling.

## GEN. BRAY'S RESPONSES TO ADDITIONAL QUESTIONS FOR THE RECORD

*Question 1.* You state that you are subject to appropriate guidance from the National Security Council in setting policy for the Strategic Stockpile. Please explain in more detail the nature of this guidance. How do you understand the division of authority for stockpile policy between FPA and NSC?

Answer. Executive Order 11725 which is concerned with emergency preparedness functions states we "shall exercise such authority in conformance with such guidance as may be provided by the National Security Council . . ." In this connection, the National Security Council has requested a study to develop alternatives to current stockpile planning. The guidelines state which agencies are to participate in the study and stipulate the major factors that are to be analyzed. The Federal Preparedness Agency is the appropriate agency to chair the study since Executive Order 11921 states that preparedness activities "shall be in accordance with guidance provided by, and subject to, evaluation by, the Administrator of the General Services who has established within the General Services Administration, a subordinate agency, the Federal Preparedness Agency . . ."

Representatives of the National Security Council have been among those participating in the work of the interagency study group which is chaired by the Federal Preparedness Agency.

*Question 2.* You list the Office of Management and Budget as participating in the interagency study. Exactly what role does OMB play in formulation of stockpile policy?

Answer. The Office of Management and Budget is one of several agencies participating in the interagency stockpile study chaired by the Federal Preparedness Agency. The views of the OMB are given the same consideration as the views of other participating agencies.

*Question 3.* Would you provide for the record a complete run-down on new proposals, including any information provided to the members of the Refractory Metals Association at the White House?

Answer. The Federal Preparedness Agency has directed a comprehensive interagency study of strategic and critical materials (SCM) options. A draft is currently being coordinated with the agencies that participated in the study before submission to the National Security Council. The study contains several new approaches to stockpiling that will (1) permit the Congress and President to make explicit decisions on the degree of preparedness the stockpile is to provide and (2) permit the rational assignment of priorities in meeting stockpile objectives.

The new approaches involve:

1. *Specification of Requirements Tiers*

Stockpiling objectives have historically been determined on the basis of meeting defense and necessary civilian needs. In the current study, we have subdivided necessary civilian needs into two categories: Essential Civilian and General Civilian. This resulted in the establishment of three tiers of requirements—Defense, Essential Civilian and General Civilian. This identification of tiers permits the specification of planning factor values taking appropriate account of risk levels.

2. *Requirements Matrix*

Recalculated objectives or goals are not yet available from the study. However, when available they will be developed in a nine cell year-tier matrix form as shown in the example below.

SCM OBJECTIVES
[1975 dollars]

| Requirements | Conflict year | | | Total |
|---|---|---|---|---|
| | 1 | 2 | 3 | |
| Tier: | | | | |
| Defense | X | X | X | XXX |
| Essential civilian | X | X | X | XXX |
| General civilian | X | X | X | XXX |
| Total | XXX | XXX | XXX | XXX |

When priorities are assigned to filling the objectives in the individual cells of the above matrix, programs can be designed over an extended period ensuring that highest priority goals are met first.

3. *Upgraded Forms*

A method has been developed in this study for determining the most appropriate quantities of upgraded forms of materials to be stockpiled. In general, storage of materials in upgraded forms reduces the emergency demands on processing capacity and represents the stockpiling of the energy used to produce the upgraded form. On the other hand, flexibility in materials use is limited by prior processing.

4. *Special Materials*

The study takes account of a number of special material considerations. These include 1) very high defense requirements (materials whose use is limited essentially to defense products) ; 2) vulnerability to supply interdiction (lack of substitutes, a scarcity of suppliers, or limited modes of transportation) ; and 3) critical export requirements (those necessary to foreign producers to ensure that their production of goods needed by the U.S. will not be interrupted).

5. *Annual Material Plan*

The study recommends the annual review of stockpile objectives resulting in an annual materials plan covering acquisitions and disposals to be forwarded to the Congress as part of the regular budgetary process.

The May briefing of the Refractories Metal Association did not cover any specific details of the study. The concept of different requirement levels and the intent to recalculate supply/requirement imbalances on the basis of the new approaches in the study were discussed in broad terms. No indication was given or could have been given regarding possible changes in current objectives.

*Question 4.* Has the government made or lost money on the operation of the strategic stockpiling program? Please furnish figures to indicate losses or profits over the past 20 years of operation of the Strategic and Critical Materials Stockpile, the Defense Production Inventory, and the Supplemental Stockpile. Please index your findings to some constant dollar value.

Answer. The national stockpile was not established and is not now viewed as a profit-making program, but rather as a weapon maintained for the national defense. The net cost of the national stockpile is reached by subtracting from the current value of the inventory the costs of its acquisition, maintenance, and administration and with adjustments for sales of stockpile materials. From 1946 through 1975, in 1967 constant dollars, the net cost of the national stockpile program has been $2.87 billion.

Tables 1 through 4 below show in comparable dollars the differences between sales revenue and acquisition costs for Strategic and Critical Materials Stockpile, the DPA, and Other. Acquisition costs have been adjusted by the Wholesale Price Index for metals and metal products to reflect the cost of the material in the year of sale. Sales data represent actual receipts and did not have to be adjusted. Operation costs are also actual data and cover operation costs for the entire stockpile operation, not simply for the disposal function.

The inventory value as of December 31, 1975 of $7.433 billion and its corresponding cost of $3.910 billion were adjusted to 1967 constant dollars as were all other elements of the final computation.

TABLE 1.—DISPOSAL SALES VERSUS ACQUISITION COST AND TONNAGE BY FISCAL YEAR SINCE INCEPTION TO MARCH 31, 1976

[Dollars in millions]

| Program and fiscal year SCM: | Tonnage (thousand short-tons) | Sales value | Acquisition cost adjusted to corresponding sales year | |
|---|---|---|---|---|
| | | | Acquisition cost | Gain or (loss) |
| 1976 | 499.6 | $103.717 | $149.772 | ($46.055) |
| 1975 | 747.2 | 319.034 | 419.294 | (100.260) |
| 1974 | 5,061.1 | 1,840.190 | 2,532.478 | (692.288) |
| 1973 | 1,452.1 | 489.942 | 704.906 | (214.964) |
| 1972 | 1,875.5 | 134.353 | 327.479 | (193.126) |
| 1971 | 4,142.1 | 140.989 | 231.063 | (90.074) |
| 1970 | 290.6 | 125.177 | 153.280 | (28.103) |
| 1969 | 456.8 | 132.813 | 201.698 | (68.885) |
| 1968 | 1,019.5 | 110.576 | 187.800 | (77.224) |
| 1967 | 1,442.1 | 368.217 | 463.361 | (95.144) |
| 1966 | 1,212.6 | 808.942 | 822.420 | (13.478) |
| 1965 | 500.3 | 343.302 | 351.860 | (8.558) |
| 1964 | 169.1 | 127.087 | 163.630 | (36.543) |
| 1963 | 164.5 | 80.461 | 111.626 | (31.165) |
| 1962 and prior | 376.2 | 195.528 | 269.179 | (73.651) |

TABLE 2

[Dollars in millions]

| Program and fiscal year SCM: | Tonnage (thousand short-tons) | Sales value | Acquisition cost adjusted to corresponding sales year | |
|---|---|---|---|---|
| | | | Acquisition cost | Gain or (loss) |
| DPA: | | | | |
| 1976 | 26.1 | $5.744 | $28.661 | ($22.917) |
| 1975 | 1,322.7 | 22.897 | 143.133 | (120.236) |
| 1974 | 417.9 | 206.827 | 497.850 | (291.023) |
| 1973 | 532.9 | 67.189 | 143.745 | (76.286) |
| 1972 | 348.9 | 11.215 | 39.801 | (28.586) |
| 1971 | 120.5 | 166.515 | 193.208 | (26.693) |
| 1970 | 37.3 | 113.087 | 239.805 | (126.718) |
| 1969 | 64.3 | 56.065 | 109.256 | (53.191) |
| 1968 | 32.5 | 23.856 | 45.768 | (21.912) |
| 1967 | 146.5 | 92.272 | 146.396 | (54.124) |
| 1966 | 470.8 | 198.498 | 258.585 | (60.087) |
| 1965 | 118.1 | 80.169 | 86.636 | (6.467) |
| 1964 | 89.1 | 39.998 | 54.577 | (14.579) |
| 1963 | 59.1 | 29.992 | 44.271 | (14.279) |
| 1962 and prior | 565.6 | 239.859 | 296.861 | (57.002) |

TABLE 3

[Dollars in millions]

| Program and fiscal year SCM: | Tonnage (thousand short-tons) | Sales values | Acquisition cost adjusted to corresponding sales year | |
|---|---|---|---|---|
| | | | Acquisition cost | Gain or (loss) |
| Other: | | | | |
| 1976 | 0.4 | $0.792 | $1.037 | ($0.245) |
| 1975 | 628.9 | 3.994 | 7.727 | (3.733) |
| 1974 | 126.1 | 3.608 | 9.981 | (6.373) |
| 1973 | 123.3 | .912 | 1.459 | (0.547) |
| 1972 | 123.2 | .523 | .832 | (0.309) |
| 1971 | 123.4 | 16.661 | 2.718 | 13.943 |
| 1970 | 127.8 | 46.101 | 11.217 | 34.884 |
| 1969 | 123.7 | 63.135 | 4.390 | 58.745 |
| 1968 | 123.9 | 73.006 | 6.309 | 66.697 |
| 1967 | .7 | 6.412 | 3.828 | 2.584 |
| 1966 | 495.6 | 20.726 | 20.072 | .654 |
| 1965 | .8 | 8.987 | 5.544 | 3.443 |
| 1962 | 4.0 | 10.626 | 10.567 | .059 |

TABLE 4
[Dollars in millions]

| Program and fiscal year total | Tonnage (thousand short-tons) | Sales value | Acquisition cost | Gain or (loss) |
|---|---|---|---|---|
| 1976 | 526.1 | $110.253 | $179.456 | ($69.203) |
| 1975 | 2,699.0 | 345.926 | 570.157 | (224.231) |
| 1974 | 5,605.1 | 2,050.625 | 3,040.308 | (989.683) |
| 1973 | 2,108.3 | 558.043 | 849.840 | (291.797) |
| 1972 | 2,347.6 | 146.091 | 368.112 | (222.021) |
| 1971 | 4,386.0 | 324.165 | 426.990 | (102.825) |
| 1970 | 455.7 | 284.365 | 404.302 | (119.937) |
| 1969 | 644.8 | 252.013 | 315.344 | (63.331) |
| 1968 | 1,175.9 | 207.438 | 239.876 | (32.438) |
| 1967 | 1,589.3 | 456.901 | 613.586 | (146.685) |
| 1966 | 2,179.0 | 1,028.166 | 1,101.077 | (72.911) |
| 1965 | 619.2 | 432.458 | 444.040 | (11.582) |
| 1964 | 258.2 | 167.085 | 218.208 | (51.123) |
| 1963 | 223.6 | 110.453 | 155.897 | (45.444) |
| 1962 and prior | 945.8 | 446.013 | 576.607 | (130.594) |

TABLE 5
[Dollars in millions]

| Program and fiscal year | Administrative, maintenance and operations cost | Total gain or (loss) | Total gain or loss (constant 1967) |
|---|---|---|---|
| 1975 | $12.914 | ($237.145) | ($127.772) |
| 1974 | 19.612 | (1,008.845) | (586.879) |
| 1973 | 15.633 | (307.430) | (231.498) |
| 1972 | 16.806 | (238.827) | (193.382) |
| 1971 | 15.605 | (118.430) | (99.521) |
| 1970 | 13.777 | (133.714) | (114.579) |
| 1969 | 15.839 | (79.170) | (72.968) |
| 1968 | 15.369 | (47.807) | (46.596) |
| 1967 | 17.051 | (164.186) | (164.186) |
| 1966 | 15.832 | (88.743) | (92.507) |
| 1965 | 16.002 | (27.584) | (28.614) |
| 1964 | 15.292 | (66.415) | (70.805) |
| 1963 | 20.591 | (66.035) | (72.327) |
| 1962 and prior | 404.274 | (534.868) | (586.478) |
| Total | | | (2,487.662) |

Note: Market value of inventory on hand (constant 1967 dollars in millions) $3,909.900; acquisition cost of inventory on hand (constant 1967 dollars in millions) $4,285,971; surplus (deficit) equal cost of operating stockpile program (constant 1967 dollars in millions ) ($2,863.733). Excludes $60,198,000 sales and $86,847,000 acquisition cost of Presidential releases prior to 1959 and $157,167,300 cost of cotton transferred to Department of Agriculture. Includes silver sales for fiscal year 1968 for the proceeds in excess of $1.2929 per ounce in the amount of $62,423,147. Excess silver for fiscal year 1969 included in the amount of $56,428,587. Excess silver for fiscal year 1970 included in the amount of $7,648,678. Excess silver for fiscal year 1971 included in the amount of $14,175,965.

*Question 5.* Please indicate the different degrees or levels of anticipated mobilization shortages which the Strategic Stockpile is designed to meet. Indicate how the use of the Strategic Stockpile is designed to meet each of these progressively higher degrees of material shortages based on different war scenarios. In your opinion, could a possible economic stockpile be based upon an analogous gradation of degree of shortages in the civilian economy?

Answer. As required under the Stockpiling Act of 1946, the current stockpile provides for "the industrial, military and naval needs of the country for the common defense." Current stockpile objectives are designed to provide for shortfall between supply and anticipated shortages requirements during a national war emergency. The objectives do not provide for possible shortages of nonessential materials.

Although the stockpile objectives are established to meet shortages anticipated for conventional war, the current inventory would serve equally well to meet expected shortages following a nuclear attack on the United States. The reason that the stockpiles are deemed to be adequate for a nuclear attack is that much of the U.S. capacity to consume materials probably would be destroyed during a nuclear attack.

One of the significant results of the current study effort has been the development of the "variable confidence level approach" that permits the assignment of different levels of assuredness to meeting requirements for strategic and critical materials anticipated for various sectors of the economy in a national emergency. In our opinion much of the planning for an economic stockpile could be accomplished with the use of this new analytical approach, because it would provide policies planners an unlimited number of options or degrees of shortages which might occur in the civilian economy. These shortages could be identified by year and type of civilian consumption.

*Question 6.a.* Do the economic modeling techniques now being used by the FPA to evaluate the Strategic Stockpile conform to the consensus of the professional economic community for standards of economic forecasting?

Answer. The economic modeling techniques now being used by the Federal Preparedness Agency (FPA) to evaluate the Strategic Stockpile employ standard techniques widely used throughout the professional economic community for a wide variety of purposes. FPA's Strategic Stockpile evaluations employ a Contingency Impact Analysis System (CIAS) which combines macroeconomic forecasting with input-output modeling. The macroeconomic model is used to forecast the Gross National Product (GNP) and its major components over the period for which stockpile material requirements are being estimated. Bridge tables based on historical distribution of products and services to these GNP components are used to transform the GNP forecasts into bills of goods against the sectors of a standard input-output table published by the Department of Commerce. The input-output model then produces estimates of the total output from each industrial or service sector necessary to satisfy these demands. The total output of each sector is converted to requirements for strategic and critical materials based on trends in the historical pattern of consumption of each material by each industry, as supplied by the Department of Commerce.

The professional economic community makes wide use of macroeconomic models for economic forecasting and a number of concerns publish highly-respected forecasts of this type. Input-output modeling is also widely used throughout both government and business to estimate to requirements for intermediate shipments among economic sectors necessary to satisfy demands of consumers, investment, government, and foreign trade.

The FPA uses outside projections, specifically those provided by Chase Econometrics and Data Resources, Inc., both to compare the consistency of our forecasts with other respected projections and as a source of values for some of the inputs to our model.

*Question 6.b.* Have your techniques been reviewed or critiqued by respected outside economists?

Answer. As part of an ongoing study to evaluate the Strategic Stockpile and its analytical basis, CIAS was evaluated by an interagency review group, including representatives of the Departments of Defense, Commerce, and Interior, the Joint Chiefs of Staff, and the Institute for Defense Analyses.

That group found the design of the CIAS to be fundamentally sound, the models comprising the CIAS based on accepted techniques of economic analysis, and the linking of these models in the system logical. However, there are uncertainties in both the modeling process and the data employed. Greater imprecision is generally associated with the setting of the planning factors used in the system. Obviously, these uncertainties must also be implicit in the estimates produced by the system. The degree of uncertainty varies from material to material. The presence of these uncertainties emphasizes the need for sound professional judgment in the development of inputs to the system and in the interpretation, evaluation, and utilization of the system outputs. In spite of these uncertainties, the group viewed the CIAS system as the basic tool for the calculation of gross material supply/requirement imbalance estimates. Except for well-defined special cases, it is expected that the estimation of stockpile imbalances for other materials will be handled in the context of the Contingency Impact Analysis System.

We have also recently performed comparisons of CIAS projections with published data for recent years, with forecasts of an independent model (the INFORUM Model developed at the University of Maryland) and with direct estimates of titanium consumption associated with a hypothetical set of Defense Department purchases. For the first of these tests, it appears that CIAS forecasts material requirements fairly well. It provides a rough measure with a level of confidence not out of line for what these numbers represent.

For the comparison with INFORUM, the two models produced results that were surprisingly close, and CIAS was closer to published estimates for 12 to 14 materials estimated.

For the direct estimates it was only possible to get a lower bound for titanium requirements, since the CIAS estimates include indirect as well as direct requirements. As expected, the CIAS estimates were consistently higher than the direct estimates in all years of the hypothetical war.

When the present Federal Preparedness Agency first became part of the General Services Administration, a contract was let with Cresap, McCormick and Paget, Inc., to survey the reliability of the FPA computer models. About the macroeconomic model, the Mathematics and Computation Laboratory (MCL) Thurow Model, Cresap, McCormick and Paget had the following to say:

> "Presently the MCL Thurow Model is used in conjunction with a disturbance matrix. This matrix is used as a means to take advantage of 'a priori' information. The analysis has shown that the output of the MCL Thurow Model is reliable for estimates of past years and for short-term forecasts (two to three years) primarily due to the positive contribution of using this matrix."

The model was felt to be less reliable for longer term forecasts.

Since the completion of the Cresap, McCormick and Paget study in February 1975, the entire model has been re-estimated, incorporating more recent data and producing a better measure of statistical reliability.

With respect to the Demand Impact Transformation Tables (DITT), as FPA calls its bridge table connecting the macroeconomic forecasts to the input-output model, Cresap, McCormick and Paget approved the approach as reliable and desirable, but qualified its evaluation pending the inclusion of the most recent distributions published by the Bureau of Economic Analysis. This is now being done.

Of the CIAS, Cresap, McCormick and Paget had this to say:

> Presently the CIAS System is primarily used to estimate past years and forecast short-term (2 to 3 years) material imbalances. Analysis of the reliability of accuracy of its output has shown that it is extremely reliable. Comparison of Department of Interior published estimates for 1973 and CIAS material requirement estimates for 15 materials reflected an average difference of only 10 per cent.
>
> "Essentially the accuracy of the estimates generated by CIAS is due to the currency of the material consumption ratios in the material requirements module and the ability to use a disturbance matrix in conjunction with the MCL Thurow Model enhancing the accuracy of its short-term GNP estimates."

The methodology employed in FPA in evaluating the Strategic Stockpile has also been reviewed with approval by its Program Advisory Committee, a group of senior economists and scientists from the business and educational communities who meet periodically in consultation with the Director of FPA.

In at least these three instances our techniques have been reviewed by respected economists outside the Federal Preparedness Agency and found to be sound, consistent, and acceptable for our intended purpose. Wherever these and our own investigations reveal any shortcomings in data or analysis, our continuing program of research and development in modeling is directed toward improving the accuracy and reliability of the results. Significant efforts are proceeding in our continuing process of enhancing FPA's analytic capability to evaluate resource shortages in all sorts of contingencies and to simulate an impact of the contingency and of proposed government responses.

*Question 7.* You indicate that care is taken in disposals to prevent losses to industry by protecting against avoidable disruptions of the market. What measures do you take in disposals to protect the government from loss?

Answer. Disposals of excess materials from the national stockpile inventories are designed to reduce such excesses in a manner which will provide the best possible return to the government. Using sound merchandising practices and avoiding disruptive impact on the economy or adverse effects on the national interests of the United States, the Federal Preparedness Agency sells excess stockpiled materials by several methods, including negotiation and sealed bid. Excess materials could be made available for utilization by other agencies of the government. In reducing the government-held excess materials, the government realizes a fair return based upon the market value, and reduces its storage, maintenance, accounting, and other property management cost proportionately.

As further protection against avoidable loss, the Federal Preparedness Agency monitors the market for each material to be disposed of so that the government is aware of its market alternatives and then is able to choose the optimum available alternative within the mandate to protect the customary market of processors, producers and consumers against avoidable disruption.

Besides examining the usage of material, the government analyzes also the value of material in relation to its quality so as to determine the fair price for its material according to its quality. If the government's material does not conform to industry specifications or standards as to quality, the price of said material is adjusted.

Moreover, in conjunction with the market analysis, the government conducts industry studies to evaluate the future market conditions and developments which will affect the value of government material. By projecting probable future conditions and developments along with the evaluation of current market opportunities, the government's disposal program is conducted to protect against both present and future avoidable losses.

*Question 8.* Your reading of section 5 of the Stockpiling Act implies that the stockpile can be used only under the most severe of circumstances involving full participation in a major war. Conflicts less severe than total war can, none the less, cause a severe drain on the economy. What is the "tripwire" for release of materials from the stockpile? Must the United States be under direct attack before release can take place?

Answer. Section 5 of the Stockpiling Act permits the release of stockpile material "on order of the President at any time when in his judgement such release is required for purposes of the common defense." Therefore, a direct attack on the United States is not a prerequisite for the release of stockpile materials. Decisions made by Attorneys General have pointed out that releases under Section 5 are not limited to direct military requirements, but neither may the releases be made for economic reasons unrelated to national defense. The FPA with the assistance of other interested agencies, provides recommendations to the President as to whether Section 5 authority should be utilized. Since the Act was passed in 1946 there have been 20 releases under Section 5, primarily during the Korean and Viet Nam conflicts when materials were in short supply for defense purposes.

*Question 9.* Please give in some detail the organization of FPA for practical operation of the Strategic Stockpile. Please highlight those parts of FPA which deal in policy, acquisitions, disposals, and inventory management; and indicate the physical location of these administrative units.

Answer. There are three units within FPA and two units outside of FPA that are concerned with the stockpile. The Stockpile Policy and Objectives Division of FPA develops policy guidance and programs for procurement, upgrading, rotation, storage, maintenance, and disposal of stockpile materials. It also assists in the formulation of assumptions required in the determination of stockpile objectives and determines the quantity and type of materials that are excess to the needs of national security.

The Stockpile Policy and Objectives Division is located in the Central Office of the General Services Administration at 18th and F Streets, N.W., Washington, D.C.

The Mathematics and Computation Laboratory (MCL) is another FPA unit involved in stockpiling activities. This unit is charged with the design and development of models and other analytic tools to simulate the national economy under emergency conditions. One of the most significant areas for the application of such models is the estimation of requirements for specific materials and estimating levels of stockpile objectives for strategic and critical materials. The MCL works closely with the Stockpile Policy and Objectives Division in applying this capability to the evaluation of the strategic stockpile. MCL also provides information systems and computer modeling support to the Office of Stockpile Disposal in its analysis of the impact of proposed stockpile disposals. MCL models and information systems also provide a basis for analysis for all of the other program areas in FPA's federal preparedness mission.

MCL is located in the Central Office of the General Services Administration at 18th and F Streets, Northwest, Washington, D.C.

The third FPA unit concerned with the stockpile is the Stockpile Disposal Office. This office manages the disposal programs of all excess stockpile materials. This entails the formulation of plans for the sale of stockpile materials without disruption to the normal markets or avoidable loss to the Government. The Office is divided into three divisions: 1) the Disposal Plans and Program

Reports Division; 2) the Marketing and Technical Services Division; and 3) the Stockpile Disposal Division.

The Stockpile Disposal Office is located at 2000 L St., Northwest, Washington, D.C., but plans are being made to move the Office into the Central Office at 18th and F Sts., Northwest.

The Office of Property Management of the Federal Supply Service within GSA is responsible for the physical custody of the stockpile including storage and maintenance of stockpile materials at 123 locations. It is also involved in sampling, testing and inspection, acquisition, contracting and inventory management. This Office has four operating units: 1) the Program Coordination and Support Staff; 2) the Inspection Division; 3) the Contract Operations Division and 4) the Stockpile Storage Division.

The Washington headquarters of the Office of Property Management is in Crystal Square #5, Arlington, Virginia.

The other non-FPA unit involved in stockpiling is the Stockpile Inventory Branch of the Central Control Division of the Office of Finance. This unit is responsible for stockpile record keeping and publication of reports on the market values and quantities of materials in inventory.

The Stockpile Inventory Branch is located in the Central Office at 18th & F Streets, Northwest, Washington, D.C.

*Question 10.* What further legislative amendment of existing statutes or what new legislation might be desirable and useful to improve administration of the existing Strategic Stockpile?

Answer. The Strategic and Critical Materials Stockpiling Act of 1946 has worked well for thirty years and is well implemented by appropriate Executive Orders. For this reason, we believe that no new legislation is required to improve the administration of the stockpile.

*Question 11.* What is your view of the current 94th Congress economic stockpiling bills, S. 1869 and HR 9597?

Answer. Earlier this year I was given an opportunity to comment on HR 9597. I said—"There are many questions yet to be answered concerning the appropriateness of an economic stockpile let alone the machinery (A National Economic Stockpile Association operating under rules promulgated by the Secretary of Treasury) for running one. The whole issue is at present under intensive study by the National Commission on Supplies and Shortages. Until this study has been completed, we would prefer not to take a definitive position on economic stockpiling."

In reference to S 1869 which would amend the Defense Production Act to permit economic stockpiling, my comments on HR 9597 also apply.

HR 9597 does at least propose to address the issue of economic stockpiling in separate legislation. It is my position that it would be unwise to broaden either the Defense Production Act or the SCM stockpiling act beyond meeting the needs of the common defense. Economic stockpiling is a complex issue that should be addressed in separate legislation.

It should be noted again that fundamental decisions are required on the objectives for an economic stockpile. If it were decided to establish one to deal only with supply disruptions, it should be managed in close relation to the SCM stockpile. Not only would the objectives be similar, but requirements, determinations and administrative procedures would be similar as well.

## MR. LAWRENCE'S RESPONSES TO ADDITIONAL QUESTIONS FOR THE RECORD

*Question 1.* What further legislative amendment of existing statutes or what new legislation might be desirable and useful to improve administration of the existing strategic stockpile?

Answer. I cannot foresee any new legislation that would be desirable to improve the administration of the strategic stockpile.

Most of the remaining items in the Defense Production Act inventories are readily saleable and parts of ongoing sales programs. I can see no need for change in this area now.

*Question 2.* What is your view of the current 94th Congress economic stockpiling bills, S. 1869 (Williams) and H.R. 9597 (Rees)?

Answer. My views on the two economic stockpile bills introduced in the 94th Congress are as follows:

(a) S. 1869 introduced on June 4, 1975, by Senator Harrison Williams is a simple amendment to the Defense Production Act of 1950, which would provide national (economic) stockpiles to protect the economic security of the United States.

Presumably, legislative hearings would develop the necessary mechanisms for administering these stockpiles.

However, as stated in my testimony, I, personally, am opposed to economic stockpiles.

(b) H.R. 9597, introduced by Congressmen Rees and Stanton provides for the creation of a National Economic Stockpile Association which would operate under rules promulgated by the Secretary of the Treasury.

In my opinion, this bill would create an administrative nightmare that would have no equal in the past history of the United States Government. The composition of the board in this association should be an indication that no positive action would ever take place to accumulate an economic stockpile.

Second, I am opposed to the Treasury Department having anything to do with an economic stockpile. I feel that the Treasury Department has already wandered too far afield from the duties assigned to it by the Congress.

*Question 3.* Is it realistic to expect that private industry would stockpile necessary materials for economic purposes without governmental incentives?

Answer. It is not realistic to expect private industry to carry excess inventories without government incentives. The capital costs, interest and taxes which would be incurred by industry for such an action would make it prohibitive.

*Question 4.* Do you foresee any possibility that establishment of an economic materials stockpile, or incorporation of the same into the existing strategic stockpile, would be detrimental to the current strategic stockpile arrangement?

Answer. I would answer this question in two parts.

First, I do not believe that the establishment of an economic stockpile would be detrimental to the current strategic stockpile arrangement if the buying and selling of materials is carefully coordinated between the two stockpiles. Otherwise, it could be disastrous.

A good example of lack of coordination between Government agencies occurred only about two or three years ago. The Treasury advertised to buy copper for a foreign coinage contract on the same day that the G.S.A. was selling copper from the national stockpile. Fortunately, the Treasury called off its bid solicitation.

Second, there is no possible way an economic stockpile could be combined with the strategic stockpile under current laws. If disposals from an economic stockpile are governed by strategic stockpile law which requires the approval of Congress, the economic stockpile would be valueless to meet an emergency. Rather, the economic stockpile should be a separate entity governed by the same rules as the current Defense Production Act inventory.

## MR. PARSKY'S RESPONSES TO ADDITIONAL QUESTIONS FOR THE RECORD

*Question 1.* If the new stockpile objectives continue to permit substantial disposals of current reserves, would you endorse government retention of these stocks so as to permit a low-cost economic stockpile nucleus and to prevent market disruptions from the anticipated disposals?

Answer. We recommend at this time that the Stategic Stockpile objectives be set in accordance with U.S. preparedness needs. An interagency review is now under way to assess current objectives and to recommend appropriate changes. If disposals and acquisitions are needed after that review, the General Services Administration ought to proceed as in the past to buy and sell according to the dictates of law, but always with the objective of having the least disruptive effect on markets.

*Question 2.* You argue that results of the 1973 GSA sale of tin from the Strategic Stockpile are an illustration of the futility of using stockpiling to stabilize prices (p. 125).

What was the purpose of this sale of tin, price stabilization or raising revenue? If the aim was substantially the latter (or any other besides price stabilization), explain how this aim and the manner of administering it could be consistent with attempts to stabilize prices.

How much certainty was there about the purpose of this sale of tin? Would not a large degree of uncertainty cause excessive speculation, thus contributing to the price increase despite the large amount offered for sale?

Answer. The primary purpose of sales of surplus strategic materials is simply to reduce surplus stocks. In making these sales the General Services Administration diligently tries to avoid disruptive impacts on the market. The tin sales in 1973 were made in accordance with the above guidelines.

Tin sales in 1973 were made at prices set on a daily basis after reviewing the price of tin in the world's three tin markets (Penang, London, and New York) and sales were made without a quantitative limit; i.e. the Federal Government would sell as much tin as was demanded at the day's price. Thus, while the purpose of the tin sales was to reduce the amount of surplus tin, the sales were managed in a fashion similar to the tin sales of the International Tin Council's buffer stock manager, but with the important distinction that the later had less tin to sell and perhaps limited the daily quantity of tin he offered for sale.

Uncertainty about Government sales policy could cause excessive speculation. As indicated above, however, the sales were made on a daily basis and without quantitative restriction in 1973. Buyers and sellers in the tin market at that time had no reason to expect that GSA tin sales would be suddenly stopped, and in fact, they were not.

*Question 3.* Your description of the difficulties faced by a hypothetical stockpile manager in estimating proper buy and sell periods for metals, fails to mention the effect of devaluation of the dollar on this situation (p. 113). Please indicate the extent of devaluation between 1971 and 1975, and include this factor in a revised description of the hypothetical manager's reasoning about metal prices.

Answer. The dollar depreciated 19.6% from May 1970 to June 1973, but it appreciated 8.7% between June 1973 and June 1976. An attached table summarizes quarterly fluctuations in the dollar value of a market basket of OECD currencies since 1971.

A hypothetical stockpile manager who tracks prices in order to purchase or dispose of material may receive misleading signals from price movements, particularly under a flexible exchange rate regime. For example, a domestic buffer stock manager may be required to sell materials from the stockpile when domestic prices climb 10% above the long-run price level. This price increase, however, may simply reflect a domestic inflation rate of 10% and may have been fully offset by a 10% depreciation of the domestic currency. As a result of offsetting price and exchange rate movements, the real cost of the material to for-

eign purchasers has remained constant, and of course, the real cost to domestic consumers is unchanged. A hypothetical stockpile manager who sells material because the domestic price has inflated by 10% may disrupt a market in which no real price change has occurred.

TRADE-WEIGHTED APPRECIATION (+) OR DEPRECIATION (—) OF THE U.S. DOLLAR, EACH QUARTER, 1970–76
[In percent]

| | January to March | April to June | July to September | October to December |
|---|---|---|---|---|
| 1970 | | | | [1]—2.0 |
| 1971 | | | | [1]—6.2 |
| 1972 | | | | [1]—1.2 |
| 1973 | —6.4 | —3.8 | +1.0 | +4.0 |
| 1974 | —2.6 | +.7 | +2.8 | —2.3 |
| 1975 | —1.3 | +2.0 | +5.0 | —.6 |
| 1976 | —.3 | +.3 | | |

[1] The dollar depreciated 2 percent between May 29, and Dec. 31, 1970, 6.2 percent between Jan. 1, and Dec. 31, 1971, and an additional 1.2 percent between Jan. 1, and Dec. 31, 1972. All other figures in the table are changes in the dollar's value during the particular quarter.
Source: Treasury Department, Office of Foreign Exchange Operations.

*Question 4.* You indicate the possibility of distinguishing foreign producer countries' efforts to increase prices artificially from price increases that result from market conditions.

How is it possible to make this distinction? Is it based on studies of the likelihood of producer cartel formation? If so, please submit the findings of these studies.

Using this distinction as a premiss, you conclude that the use of stockpile to deter potential cartel action would be a mistake.

Please explain your reasoning further. Your conclusion does not seem to follow, even if the truth of your premiss be granted.

Answer. It is possible to distinguish an artificially imposed price increase from a market-induced increase when a foreign government or state enterprise announces a change in their pricing policy for raw material exports. The best example of such a policy change is the price increase imposed by oil producers during late 1973 and early 1974. The posted price of a barrel of a benchmark grade of crude oil was increased from $2.59 on January 1, 1973 to $5.12 on October 16, 1973 to $11.65 on January 1, 1974. It was clear at the time of that increase that the posted price was an imposed price increase, independent of market actions. I use the case of cartel pricing by oil-producing countries only as an example familiar to everyone; the same sort of pricing practice has occurred in the cases of other materials for which cartel action by suppliers is economically feasible.

Although we believe that it would be very difficult to specify decision rules for a stockpile intended to deter pricing behavior on the part of producers, we do not conclude that we should reject all uses of stockpiles as deterrents to potential cartel action. Instead, we say that it would be a mistake to create, fund, and manage a large contingency stockpile program *solely* for the purpose of discouraging potential cartel price action. We believe it would be a mistake to set up a large stockpile program solely for this purpose because the evidence to date indicates that overriding economic realities make artificially high pricing by producers unlikely for most raw materials that the United States imports. Two reports which comment on this issue are: *The Special Report on Critical Imported Materials*, by the Council on International Economic Policy, December, 1974; and *U.S. Dependence on Imports of Five Critical Minerals: Implications and Policy Alternatives*, by the General Accounting Office, January, 1976.

*Question 5.* You argue that the Strategic Stockpile is essentially different from any economic stockpile, because the former follows a principle of non-disruption of the market, while the latter is based upon the principle of market stabilization.

What, in practical terms, is the difference between these two principles? Has not non-disruption meant the exercise of care to maintain market stability, and would not stabilization mean efforts to prevent market disruptions?

Answer. The question wrongly equates nondisruption and stability with stabilization. Nondisruption is defined in the Defense Production Act of 1950: acquisition of strategic and critical materials should not, insofar as possible, create a tight supply situation for current industrial demand, and disposal should occur with minimum effect on price. Nondisruption in this sense may foster stability, but stability is not stabilization. Stabilization denotes active operation to maintain market price within a set range around a desired equilibrium price trend by routinely entering the market to increase or reduce the supply of a raw material by selling or purchasing stocks.

The difference, therefore, lies in the purpose of the Strategic Stockpile and of a hypothetical economic stockpile for price stabilization. The former is meant to meet military and industrial needs for common defense, and not to stabilize price. The economic stockpile is meant to operate directly on price.

*Question 6.* You express great confidence in the capacity of the market to stabilize itself after even severe disruptions, and warn against the damage which a stockpile manager could cause by attempts to intervene in this self-corrective process.

Please explain the stabilizing effect of market forces in 1973 and 1974. Considering the great instability of this period, how could the actions of any stockpile manager have made the situation worse?

Answer. We should recognize that much of the difficulty in 1973 and 1974 was caused by government interference in markets through wage and price controls. Changes in government programs, the intermittent application of price controls and export controls, the large purchases of grain by foreign governments, the oil embargo, and the change in the world monetary system all contributed to the disruptions during that time. Although a stockpile manager may not have made things worse for some commodites, he could not expect to improve the situation in such an enviroment either.

Despite these disruptions the rapid price increases did set economic forces to work which tried to rectify the imbalance in the economy. Prices serve an allocative function through which the market corrects itself. Increasing price causes producers to increase supply, which is then allocated marginally to those buyers willing to pay a higher price. Decreasing price causes producers to make reductions in supply, which are absorbed marginally by those producers unwilling to continue full production at a lower price. On the consumer side, high prices cause buyers to reduce purchases and thus reduce upward price pressure; low prices cause increased buying, which eventually raises producers expectations about demand for their products. This self-correcting process depends on fluctuations in price.

*Question 7.* In 1971 the Administration decided on wage and price controls and made large disposals from the Strategic Stockpile. This intervention in the private sector occurred well before the oil embargo and resulting market instability.

How do you reconcile this direct government intervention in the market with your confidence in the strength of the private sector?

Answer. The criteria for disposals from the Strategic Stockpile in 1972 and 1973 were the same as in years before and since. Disposals were made in a manner which avoided disruption of markets. The Defense Production Act of 1950 charges the President to direct the Administrator of General Services to make purchases of strategic and critical materials, "so far as is practicable, from supplies of materials in excess of the current demand" and to make disposals "with due regard to the protection of producers, processors and consumers against avoidable disruption of their usual markets." In reviewing the stockpile activity during those periods, it should be remembered that markets for many commodities were strong after the 1971 recession and that sales of excess commodities were not expected to adversely affect those markets in comparison with previous experience with stockpile disposals.

The record of sales during 1973–75 by the General Services Administration actually shows increasing and decreasing sales in rough correspondence with prices of industrial commodities which accelerated or decelerated during that period. For example, in FY 1973 sales rose by 281 percent to approximately $600 million while prices went up 62 percent; in FY 1974 sales rose by 267 percent to $2 billion at the same time that commodity prices rose 35 percent to record levels; finally in 1975 sales dropped 79 percent as prices declined 35 percent.

Clearly, GSA's authorized disposals did not disrupt markets, or the relation between disposals and prices would have been reversed. We cannot deny that the disposal actions had some impact on markets, but these impacts cannot be deemed disruptions, and they certainly did not alter the fundamental course of the inflation and deflation during the last 5 years.

*Question 8.* To what extent should the United States be obliged to export capital and technology to raw material-producing countries as a consideration for the continuation of raw material supplies?

Answer. The transfer of technology and capital in exchange for a supply access should be negotiated on a case-by-case basis for several reasons. First, in so far as aid is concerned, there is no necessary correlation between those developing countries with either the most need or ability to efficiently utilize capital or technology transfers and those developing countries processing national resources.

Secondly, there are alternative sources of supply for most of the resources for which the United States is import-dependent. Many of the metals and metallic ores that are consumed in the United States, for example, are largely produced either domestically or in other resource rich developed countries. It is, however, in the interest of both the United States and the developing countries to seek ways to reduce the uncertainties of investment in the developing countries in order to deflect less efficient investment presently occurring in lower grade ore deposits in the industrialized countries to higher grade deposits where they exist in LDCs.

If more private capital and technology are to be transferred to the raw-material producing countries, this should occur through the most efficient allocator—the free market. Where impediments to private capital flows exist, the United States should encourage the adoption of measures to reduce or remove these impediments. It is with this objective in mind that the United States has sought a general reduction of tariff and non-tariff barriers in the Multilateral Trade Negotiations and has proposed the International Resources Bank to promote a more rational flow of private capital into economically viable resource projects in the LDCs.

*Question 9.* Is it true that international export control arrangements are not developed to the extent of import controls? If so, to what extent might international export control agreements have to be developed to contribute to the success of multinational trade agreements for materials?

Answer. International efforts to organize and order world trade have historically focused on the question of treatment of imports. The GATT, while having some general guidelines on export controls, consists primarily of a set of rules governing general conduct on import restrictions and a framework within which specific market access commitments can be made and exchanged.

A number of countries, including some developed ones, have indicated in the Multilateral Trade Negotiations (MTN) now underway in Geneva their intention of negotiating guarantees on access to supplies of interest to them in exchange for improved market access for their exports. In particular, some raw material producers feel they can bargain guaranteed access to their raw materials in exchange for improved market access for the export of processed forms of those raw materials. While such offers and the decisions to accept or reject them will obviously be made on a case-by-case basis, it would seem advantageous that such bargaining be also made in the context of a general framework on supply access in the MTN. Negotiations for such rules and procedures governing the imposition of export controls were mandated by Congress in Sections 107, 108 and 121 (8) of the Trade Act.

The Administration is now developing a strategy in the MTN to both ensure adequate supplies of raw materials and maintain open markets. We expect this work to lead to either the negotiation of a general code on supply access, specific negotiations of supply access guarantees by product, or both.

*Question 10.* What is the likelihood for a coordinated multilateral policy among the industrialized nations to establish an international economic materials stockpile or stockpiles?

Answer. The possibility appears to be decreasing. In March 1975, the Secretary General of the Organization for Economic Cooperation and Development proposed that industrialized countries establish multilateral stockpile programs for commodities in order to support prices. The members of OECD did not agree to this proposal. More recently, Japan and France have started economic stock-

piling programs of their own. In addition, Sweden has had a program of tax incentives that encourage private companies to increase inventories. A commission of the United States Government (the National Commission on Supplies and Shortages) is presently studying the issue of economic stockpiling to report to the President and the Congress on a comprehensive national strategic and economic stockpiling policy. Therefore, it appears that, to the extent that there is a trend, the tendency is toward more individual national stockpile or inventory policies.

The closest example of internationally coordinated stockpiling is in the area of petroleum. The countries participating in the OECD International Energy Agency have established a program of emergency measures, including a system for stocking and sharing oil. In the event of an actual or expected cut in oil supplies to one or more of the participating countries, the entire group will share the burden. Each participating country is to maintain emergency oil reserves sufficient to sustain consumption for 60 days (later to be increased to 90 days) with no net imports of oil. Countries with domestic production may substitute it for part or all of their reserve requirement. The reserves are financed, accumulated and managed on a national basis. In an emergency, the reserves will be shared with other countries, but the reserves will still be under the control of separate governments. Thus, the system is based on the political responsibility of individual governments.

*Question 11.* Many national and international organizations are currently involved in economic materials stockpiling or evaluations thereof. What are the current and anticipated economic materials stockpiling practices and policies of France, Japan, Sweden, the European Economic Community, West Germany, and other countries, and what are the major similarities and differences?

Answer. France has appropriated funds for building stocks over 3–4 years to a level equivalent to 2 months' imports of certain minerals which France imports and which could become critical.

Since 1972, Japan has considered proposals and done studies on stockpiling of iron ore, zinc, nickel, bauxite, copper and other ores and concentrates and also of various minor metals. Japan has also considered subsidizing industry stockpiling of non-ferrous metals, and most recently, has decided to acquire about 60,000 metric tons of copper by October 30 (most of which will come from domestic smelters which are still burdened with large stocks of ores and concentrates).

Sweden has a system of tax incentives to support production and encourage industry to hold large inventories. The system was not designed to create a national stockpile, but rather to support the economy. However, the additional inventory accumulation it causes is in effect a stockpile that can be drawn down in case of emergency.

The European Economic Community has made a policy review of economic stockpiling and a study of the possibility of stockpiling bauxite, copper, iron ore, lead and zinc. The State Department has informed us, however, that there is presently no active consideration or evaluation of economic stockpiling taking place in the EEC.

For all of the examples mentioned above, the objective is not active intervention in the market to stabilize prices around a desired trend, but rather security of supply against contingencies. While not a stockpile system established to protect against contingencies, the Swedish tax incentive system has this effect because it encourages larger than normal inventories.

*Question 12.* What is your view of the current 94th Congress economic stockpiling bills, S. 1869 (Williams) and H.R. 9597 (Rees)?

Answer. In Treasury's view, a decision to create economic stockpiles, such as those provided for in S. 1869 and H.R. 9597, should await further study of their desirability and feasibility. The National Commission on Supplies and Shortages is specifically charged with reporting to the President and the Congress with respect to the necessary legislative and administrative actions to develop a comprehensive economic stockpiling policy which facilitates the availability of essential resources. The preliminary findings of the Commission's study should be completed before the end of September with a final report due by the end of the year. Meanwhile the Treasury is continuing to study the feasibility of economic stockpiles and their impact on commodity markets.

S. 1869, which was introduced by Senator Williams (D–N.J.), amends the Defense Production Act of 1950 to provide for national stockpiles to protect

the economic security of the United States. It would simply amend the Declaration of Policy of the Defense Production Act to include a statement that it is the policy of the Congress to establish stockpiles of economically important materials to protect the economic security of the United States and to avoid or mitigate the effects of foreign embargoes of these materials. We feel that any legislation to establish stockpiles, should they be deemed necessary, will have to be much more specific in establishing goals, criteria, and operational principles. The opportunities for abuse of economic stockpiles are much too great to leave these decisions entirely to the discretion of a program administrator.

H.R. 9597, which was introduced by Representative Rees (D–Cal.) and Stanton (R–Ohio), amends the Defense Production Act of 1950 to create a National Economic Stockpile Association. The National Economic Stockpile Association they propose would have its own Board of Directors but would operate under rules promulgated by the Secretary of the Treasury to facilitate the availability of essential natural resources and to prevent disruption of the national economy. It would be a corporation which could issue stock obligations, securities or other instruments with the approval of the Secretary of the Treasury. The Board of Directors would have eleven members representing various interests and serving by Presidential appointment. It would also have a paid director and staff.

If economic stockpiles are deemed necessary, it is possible that H.R. 9597, after suitable amendments, could be used as a vehicle for implementing an economic stockpile program. However, we would expect that appropriate hearings would be held before such legislation is given serious consideration by the Congress. We would be prepared at that time to make specific comments on such a bill.

## APPENDIX II

# ASARCO

Simon D. Strauss
Executive Vice President

July 12, 1976

Mrs. Leonor K. Sullivan
Joint Committee on Defense Production
Room A-421, Senate Annex 111
Washington, D. C. 20510

Dear Mrs. Sullivan:

In connection with the discussion of economic stockpiles before the Joint Defense Committee, while I do not have the copy of the transcript before me any longer, I recall that Mr. Bergsten in his testimony volunteered the opinion that if there are international buffer stocks, speculators would tend to sell as prices of commodities reached the ceilings set for the stock and would tend to buy when prices moved toward the bottom of the price range. He argued in effect that the speculators would supplement the activities of the buffer stocks in stabilizing commodity prices.

I did not take direct issue with Mr. Bergsten at the time although in my own testimony I emphasized the difficulties of trying to stabilize prices for commodities which are traded on commodity exchanges, due to speculator activities.

I enclose herewith from today's issue of Metals Week, dated July 12, an article regarding the effect of speculation in tin. This article indicates the difficulties which the buffer stock manager is encountering in trying to keep the tin price below the ceiling. This is precisely the point which I was endeavoring to make in my own testimony -- namely, that because the buffer stocks by their very nature must reveal what they are doing, speculators in effect are playing poker in a game in which the buffer stock's cards are on the table and their own cards are hidden.

I hope that you and your staff will find the enclosed article of interest.

Enclosure

Sincerely yours,

Simon Strauss

SIMON D. STRAUSS

cc: Mr. C. Fred Bergsten - enc.
Mr. K. R. Knoblock - enc.

METALS WEEK, July 12, 1976, page 3

TIN

## Speculative interests dominate tin market, pushing quotes up to record levels

The tin market exploded last week, and even the International Tin Council was unable to control it. On July 6, the council authorized the buffer stock manager to purchase the 2,820 mt of tin left over from the previous agreement and called up the initial contributions from the producing countries to the buffer stock—7,500 mt of tin or its cash equivalent. In addition, the ITC authorized the buffer stock manager to operate at his discretion, which frees him from trying to protect the current ceiling of M$1,200 per picul.

In recent weeks, speculators have been pushing tin prices up, and the buffer stock manager was required under the agreement to sell tin to keep prices down. However, when it was announced that the ITC stockpile held less than 3,000 mt of tin, speculators put pressure on the ceiling. The BSM began releasing tin in the Penang market, but prices soon broke through the ceiling, hitting M$1,264 (373.7¢ per lb) on Wednesday. In an attempt to hold Straits quotes *only* M$64 above the ceiling, the BSM expended 200 mt in one day.

On Thursday, the situation became hopeless, with Penang smelters receiving orders for nearly 600 mt while supplies were under 400 mt. As a result, the BSM apparently abandoned the Malaysian market, and the Penang price shot up M$56 to M$1,320 (390.1¢) – M$120 above the ceiling.

In London, Bolivia unsuccessfully pressed the council to raise the ceiling to M$1,500 and the floor to M$1,200. Bolivia felt that the council should push the ceiling up M$300 in one step rather than a series of small increases. However, some consumers argued that the speculators will eventually abandon the market and the council will be saddled with the unrealistiely high BSM levels advocated by Bolivia. As a result, the ceiling stayed at M$1,200.

While the debate was continuing in the council, the LME was going wild. LME cash HG quotes began the week at £4,637 per mt (379.1¢ per lb), with an amazing £133 contango. By Thursday, spot prices increased to £4,845 (395.6¢), but the contango dropped to £82. HG and standard contracts traded on parity.

In the US, consumers were shocked at the sudden increase in tin prices and stayed out of the market until the situation became more stable. However, many consumers began to grumble about US participation in the ITC.

## Elsewhere in tin . . .

**The Fifth International Tin Agreement** came into provisional effect on July 1 with the following nations as members: Australia, Belgium/Luxembourg, Bolivia, Bulgaria, Canada, Czechoslovakia, Denmark, France, West Germany, Hungary, Indonesia, Ireland, Japan, Malaysia, the Netherlands, Nigeria, Thailand, Turkey, the UK, the US, the USSR, and Yugoslavia. Austria, India, Italy, Romania, Spain, and Zaire attended the first session as observers.

**The Thai government is considering** a production-sharing formula which would allow Billiton to resume dredging operations in the old Temco concession. The scheme, worked out between Billiton and the state-owned Offshore Mining Organization, provides for a renewable three year lease that would give 70% of the tin ore production to the company and 30% to the government. If the government agrees, the concession could be back in production by early September.

**As expected, Peter Lai of Malaysia has succeeded** Harold Allen of Australia as chairman of the ITC. Allen will remain with the council as a special advisor to Lai.

The Brookings Institution

1775 MASSACHUSETTS AVENUE N.W. / WASHINGTON D.C. 20036 / CABLES: BROOKINST / TELEPHONE: (202) 797-6000

*Foreign Policy Studies Program*

July 14, 1976

The Honorable Leonor K. Sullivan
Joint Committee on Defense Production
U.S. Congress
Washington, D. C. 20510

Dear Mrs. Sullivan:

Simon Strauss' letter to you of July 12 notes the recent difficulty experienced by the management of the International Tin Agreement in countering speculative purchases even when the market price approached and even exceeded the ceiling contained in the agreement. He offers the case as evidence that private speculation will defeat international buffer stocks because the latter must operate openly.

I draw a different inference from this case. It simply reveals that the buffer stock was too small. The article transmitted to you by Mr. Strauss indeed expressed the view of some tin consumers that prices will subsequently fall back again. If this does happen, a larger buffer stock could have obviously prevented the recent run-up.

Alternatively, the price ceiling set by the agreement may be too low. In either case, the situation reveals the practical difficulties of managing an international commodity agreement -- which I fully recognize.

However, either result reinforces the position expressed in my testimony to your Committee that (a) international commodity agreements are in the interests of importing countries and (b) the magnitudes of buffer stocks should err on the high side. If the problems emerged due to an inadequate stockpile, the answer is to maintain a larger one. If the problem was a low ceiling price, consumers benefitted at least for the period that it did hold. I would thus simply reiterate my earlier recommendations and view the recent activities in tin as illustrating their validity.

Sincerely,

C. Fred Bergsten

C. Fred Bergsten
Senior Fellow

# Congress of the United States

JOINT COMMITTEE ON DEFENSE PRODUCTION
(CREATED PURSUANT TO PUBLIC LAW 774, 81ST CONGRESS)
ROOM A-421 SENATE ANNEX III
WASHINGTON, D.C. 20510

July 30, 1976

Mr. Simon D. Strauss
Executive Vice President
ASARCO Incorporated
120 Broadway
New York, New York 10005

Dear Mr. Strauss:

At a meeting today of the Advisory Committee on National Growth Policy Processes, at which I was an observer, you had some observations about how the objectives for the Strategic and Critical Materials Stockpile should be set. Specifically, you were critical of the present practice of basing stockpile objectives on hypothetical and classified war situations, and advocated the increased use of more unambiguous criteria, mainly import dependencies, in setting the objectives. I wonder whether you would be kind enough to supply the Joint Committee with a brief written statement on this matter, as it bears directly on our oversight activities.

In addition, I have found the exchange of correspondence between you and Mr. Bergsten, regarding the effects of speculation in international markets, to be a very interesting commentary on this issue.

Thank you for your consideration.

Sincerely,

/s/ Robert Gray
Professional Staff Member

**ASARCO**

**Simon D. Strauss**
Executive Vice President

August 3, 1976

Mr. Robert Gray
Professional Staff Member
Joint Committee on Defense Production
Congress of the United States
Room A-421 Senate Annex 111
Washington, D. C. 20510

Dear Mr. Gray:

I have your letter of July 30 asking that I outline a possible formula for establishing stockpile objectives which would be less dependent on hypothetical assumptions. I am very pleased to submit my thoughts on this suggestion.

I am not a military expert and I have no way of establishing assumptions as to future military developments. With all due respect to our military leaders, I feel that their best guess is nevertheless still a guess. Their changing assumptions with respect to the nature of future wars have resulted, for example, in a variation as to the projected desirable national stockpile for copper from a maximum of 3,500,000 short tons set on September 28, 1954, to the present stockpile objective of zero. At varying times this objective has been 1,150,000 tons, 2,100,000 tons, 1,050,000 tons, 1,900,000 tons, 1,000,000 tons and 775,000 tons.

While vast changes undoubtedly have occurred and are occurring in our defense problems, it seems to me that the relationship between this country's security and a basic raw material such as copper cannot possibly have varied to that extent in the last 30 years.

In my judgment stockpile objectives should bear a fixed relationship to the U. S. degree of import dependency. At the time of the Korean War roughly 30% of U. S. requirements for primary refined copper were being imported. Currently only between 10 and 15% of U. S. requirements for primary copper are being met through imports. Logically, therefore, the country's security

could be met today through a lower copper stockpile objective than was the case 25 or 30 years ago. However, considering the difficulty in distinguishing between essential civilian requirements and strictly military requirements, a variation from zero to 3,500,000 tons seems a highly erratic measure of this country's exposure in regard to copper needs.

The first requirement is to list those materials essential both to the country's defense and its ability to continue to function as a major industrial power. Then, for each such material, the degree of import dependence can be measured by statistics of imports, exports, domestic production and secondary recovery. The stockpile objective should be related to this degree of import dependence.

If the degree of dependence is high -- say, more than 75% -- the stockpile objective might be established as equivalent to two or three years' imports. If the degree of import dependence is less but still substantial -- say over 50% -- the stockpile objective might cover a shorter period of time, perhaps one year's imports. If import dependence is significant but less than 50%, the stockpile objective might be the amount of imports required for, say, six months' time.

These figures are purely illustrative but they show, I think, the way in which calculations could be made.

Import dependence should be measured on the basis of a moving three-year average. This would insure that as domestic supplies increase, the target would gradually reduce. On the other hand, if domestic supplies tend to diminish and import dependence increases, the target would gradually be adjusted upward.

The enormous swings in objectives over the last 30 years has left the mining industry with the impression that stockpile targets are being influenced by considerations other than strict security matters. This has had the unfortunate effect of undermining support for a concept which was originally sound -- namely, that of providing insurance against unforeseen contingencies.

In February, 1963, after President Kennedy first suggested that stockpiles were excessive, the American Mining Congress issued

a booklet called "The Stockpile Story". As you may have not seen that publication, I am sending you a copy. I think you will find it interesting reading.

With kind regards,

Sincerely yours,

Simon Strauss

Enclosure

SIMON D. STRAUSS

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COMMITTEE ON
BANKING, CURRENCY AND
HOUSING

COMMITTEE ON
SMALL BUSINESS

# Congress of the United States
## House of Representatives
### Washington, D.C. 20515

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The Honorable Leonor K. Sullivan
Chairman
Subcommittee on Materials Availability
Joint Committee on Defense Production
A-417 Annex III
Washington, D.C. 20510

Dear Chairman Sullivan:

In response to your letter of May 12, 1976, I am enclosing a statement which I have prepared on the matter of economic stockpiling, and legislation which I have co-sponsored.

I hope that this statement will prove helpful to you and the other members of the Joint Committee. If you have any questions, or if you feel that I can be of assistance, please don't hesitate to call on me.

Sincerely,

Bill

J. William Stanton

JWS:sl

Enclosure

Statement on Economic Stockpiling

By Congressman J. William Stanton

Ever since the so-called "energy crisis" of 1973-1974 there has been a growing speculation that the U.S. is vulnerable to similar supply cut-offs and shortages of non-fuel natural resources. One response to this situation - and a response that I consider most worthwhile - is economic stockpiling. The justification for economic stockpiling, however, does not stem solely from the recent oil embargo or the threat of other resource cartels. The need for economic stockpiling is inherent within the structure of our economy. This has been recognized by most serious studies of national material policy since the Paley Commission.

Within our economy it is inevitable that occasional material shortages will develop. Changing consumer trends, technological breakthroughs, and material substitutions all create a flucuating demand for non-fuel raw materials. Conversely, some physical limitations and long lead times involved in mining or substitution of resources create an inelastic supply condition for non-fuel raw materials. When these divergent supply and demand conditions intersect, as they inevitably will, material shortages are the result.

In response to this inherent potential for material shortages (and a limited potential for producer cartels), I have co-sponsored the "National Economic Stockpiling Association Act" (HR 9597). This bill establishes a public/private association to purchase and sell those raw materials that are essential to our economy.

The legislation as it stands today is the first comprehensive cut at the issue of economic stockpiling. As such, the bill is in need of some revisions. Yet, its basic structure and its intended emphasis on material shortages rather that price stabilization represent the most generally accepted approaches to this issue.

The National Economic Stockpiling Association as envisioned by HR 9597 is intended to complement rather than replace our existing strategic stockpile. Additionally, the legislation aims to help establish a stable market for the secondary materials industry, the recycling industry. Finally, the Association is intended to be self-supporting through an initial appropriation of $750,000, the sale of obligations, and imposition of various fees for its services.

I hope that the Subcommittee on Materials Availability will take a close look at this legislation during its hearings, and I certainly welcome any suggestions that you may offer to improve its basic aims.

Congress of the United States
OFFICE OF TECHNOLOGY ASSESSMENT
WASHINGTON, D.C. 20510

EMILIO Q. DADDARIO
DIRECTOR
DANIEL V. DeSIMONE
DEPUTY DIRECTOR

JUN 9 1976

Hon. Leonor K. (Mrs. John B.) Sullivan
Chairman
Subcommittee on Materials Availability
Congress of the United States
Washington, D. C. 20510

Dear Mrs. Sullivan:

We appreciate your invitation to submit for the record a statement on economic stockpiling.

The attached statement is a digest of the findings from our recently completed assessment on economic stockpile policy. In the study are presented (1) the possible economic, social, and political impacts of five separate economic stockpile policies, each with clearly defined policy objectives; (2) an analysis of alternatives to economic stockpiling; (3) several courses of action open to the Congress in addressing the concept of economic stockpiling; and (4) public policy issues related to economic stockpiling.

We look forward to the Subcommittee's inquiry into such an important area.

Sincerely,

Emilio Q. Daddario

EMILIO Q. DADDARIO
Director

Enclosure

STATEMENT OF EMILIO Q. DADDARIO

Stockpiling critical materials has long been practiced by the United States to ensure a minimal supply in the event of war, with the market place being relied upon as the primary means of correcting temporary shortages and price fluctuations. However, increasing U. S. dependence on materials imports, together with increasing competition for materials among other nations, pose new dangers to the supply required by a healthy economy -- dangers which neither the strategic stockpile nor the normal operations of the market place have effectively averted or counteracted. Stockpiling for economic purposes has therefore been examined by the Office of Technology Assessment (OTA) as a possible component of a national strategy for ensuring materials supply during peacetime.

The OTA assessment includes an analysis of the attributes and consequences, both quantitative and qualitative, of stockpiling non-food commodities for selected economic purposes. The objective of the study was not to develop economic stockpiling policy, but rather to provide information regarding the options available to Congress in considering such policy.

The economic stockpile assessment was requested by the House Committee on Science and Technology which asked for an analysis of the "legislative options in the uses of a national stockpile to assist in the development and use of materials technology for public purposes."

While the assessment was in response to the House Committee on Science and Technology, the results also provide information and analyses useful to the House Committee on Banking and Currency, the Senate Commerce Committee, the Senate Committee on Government Operations, the House Armed Services Committee, and the National Commission on Supplies and Shortages. The results of this study are particularly relevant to the work of the National Commission on Supplies and Shortages, which is charged with drafting the "necessary legislative and administrative actions to develop a comprehensive strategic and economic stockpiling and inventories policy which facilitates the availability of essential resources."

A Draft Report, entitled "A Technology Assessment of Economic Stockpile Policy," was completed and approved by the Technology Assessment Board on March 16, 1976. The report was prepared by the OTA materials program staff with contributions from several private contractors; an Advisory Committee comprised of representatives from the materials field, academia, labor, public interest groups, and private industry; as well as numerous other private and public agencies. A Final Report is being prepared for publication in August 1976.

ASSESSMENT SCOPE

Economic stockpiling is defined in the OTA study as the accumulation and storage of materials for the express intention of being able to effect their distribution to accomplish public purposes other than the wartime emergency conditions stipulated in the strategic stockpile. An economic stockpile is similar to insurance in that acquisition and holding costs are paid in anticipation of reducing the costs of possible future problems. A decision to establish an economic stockpile depends on the belief that there will be eventual net benefits either through deterrance of a problem or through relief if a problem occurs. Because an economic stockpile necessarily involves some intervention in the market place, it is of great importance that estimates of the benefits and costs -- including direct market impacts, as well as other, less direct impacts -- be considered and estimated to the extent possible.

The assessment addresses the following questions:

- Should the United States consider establishing an economic stockpile?
- What possible economic stockpiling policies might be established?
- What possible impacts might result from implementing these policies?
- What are the alternatives to an economic stockpile?
- What options and institutional arrangements are available to Congress in considering possible legislation?
- What considerations require further analysis?

ASSESSMENT FINDINGS

Findings Regarding Current or Anticipated Materials Problems

There is a real potential for shortages of materials critical to the U. S. economy to occur suddenly and unexpectedly. This stems largely from the increasing degree of U. S. dependence upon imported materials, as well as from the increasing international competition for materials. Shortages could occur as a result of one or more of the following:

- cartel or unilateral political actions affecting price or supply,
- non-political import disruptions,
- dwindling U. S. sources of scarce materials,
- fluctuating domestic markets, and
- fluctuating international markets.

The nature of these materials problems requires that the U. S. government evaluate several policies which might compliment normal industry operations.

Findings Regarding the Feasibility of Economic Stockpiling as a Response to Materials Supply or Price Problems

Economic stockpiling can be considered one means of responding quickly over the short-term to the materials problem identified above, but it should not be considered a means of effecting long-term solutions to those problems. On the other hand, an economic stockpile could have value in providing the time required for the U. S. to implement such long-term solutions as substitution, conservation, or the development of alternative supply sources.

Economic stockpiling is inherently a process of market intervention and will create economic impacts (i.e., benefits and costs) which are distributed unequally throughout the U. S. economy. These economic benefits and costs (i.e., gains or losses in domestic economic welfare) must be estimated for the economy in general, as well as for specifically impacted groups. An economic model (Economic Welfare Model) developed in the assessment (Vol. II, Chs. 4-5) permits the stockpile managers to estimate economic benefits and costs in terms of an assumed future which includes probabilities of supply interruptions and elasticities of supply and demand.

The Economic Welfare Model was used to estimate the economic impacts of implementing five selected stockpiling policies. These estimates indicate that some policies will have positive economic net benefits and some will have negative economic net benefits. It should be emphasized that the estimates apply only to the specific materials examined and within the scenario assumptions described, and should therefore not be taken to indicate that precise quantities of specific materials should or should not be stockpiled. Nevertheless, the nature and magnitude of the estimates are sufficient to indicate that an economic stockpile should be given detailed consideration as one component of a more comprehensive national materials policy and that measuring the benefits or costs of a supply disruption in terms of its probability, rather than its certainty, will significantly reduce the quantity of material to be stockpiled.

Economic stockpiling will create social, political, and environmental impacts which need to be considered together with the strictly economic impacts. The implementation of an economic stockpile will also create legal and institutional impacts which are contingent upon the nature of any stockpiling agency that might be established and the oversight mechanisms exercised by Congress.

Because a U. S. economic stockpile can have strong impacts on other countries, and because several foreign countries are either planning or have already established economic stockpiles, the U. S. should consider economic stockpiling in terms of foreign policy as well as domestic affairs. The policy objectives of a particular stockpile should be clearly delineated. Analysis of the Strategic and Critical Materials

Stockpile indicates, for example, that it has been used in a limited manner to achieve selected economic purposes. Further, the operation of an economic stockpile will create enough problems and pressures to warrant its being sufficiently insulated from the political process that it may act in the public interest, yet remain responsive to Congressional scrutiny.

The benefits and costs of an economic stockpile depend upon specific future actions outside the control of the United States. If undertaken, economic stockpiling should therefore be done on the basis of forecasts of trends and possible events, but in a manner flexible enough to permit adjustments to changes. The decisions relating to the establishment and operation of a stockpile -- specifically, the acquisition and disposal of materials -- should be systematically made and documented using an approach similar to the decision-making process developed in this assessment (Decision Criteria Model). (See Vol. II, Ch. 9) Specific materials which should be considered prime candidates for an economic stockpile have been identified with a set of materials selection criteria which directly relate to the supply or price problem the stockpiling policy is designed to alleviate.

Two or more stockpiling policies could be implemented simultaneously in order to solve more than one materials problem. In fact, such a program could provide a high degree of commonality of purpose and operation. Similarly, an economic stockpile containing more than one material could be operated in conjunction with other existing stockpiles, either domestic or international.

Findings Regarding Alternatives to Economic Stockpiling

Alternatives exist which may offer equal or greater benefits than economic stockpiling. (See Vol. II, Ch. 7) These alternatives may require either more or less intervention in the market place than economic stockpiling. Many of these alternatives have been utilized for some time, and this experience should be drawn upon in assessing their possible usefulness. Several of the alternatives to economic stockpiling are long-term solutions to materials problems, and as such could be implemented in conjunction with a short-term economic stockpile as an overall strategy of combating such problems. In any case, alternatives to economic stockpiling should be considered, and the Economic Welfare Model can be used to determine whether or not the alternatives would provide benefits equal to or greater than economic stockpiling.

Findings Regarding Economic Stockpiling in the Context of a Developing National Materials Strategy

Economic stockpiling could have value as a response to certain materials problems; however, it should be considered as one component of a more comprehensive national materials strategy which is developing from its present ad hoc status. Further, such an economic stockpile policy should be developed in coordination with appropriate government, industrial and public agencies.

OPTIONS FOR CONSIDERING ECONOMIC STOCKPILE LEGISLATION

Listed below are the options for considering economic stockpile legislation; these options are discussed in Vol. II, Ch. 9 of the March 16, 1976 Draft Report.

Evolution of Current Public and Private Systems Without Enacting New Legislation

The first option is for the Congress and the President to forego establishing an economic stockpile, letting the current market system, with its existing support mechanisms, attempt to prevent or correct the impacts of supply disruptions and price increases.

Congressional Options Without Enacting New Legislation

The second option is for the Congress to act without drafting new legislation. It could initiate such action by providing information regrading economic stockpiling within the legislative branch, the executive branch, or the private sector.

Executive Options Without Enacting New Legislation

The third option is for the President to take action, within the limits of his existing authority, without proposing new legislation. Such action could be accomplished in several ways: (a) issue a Presidential proclamation to set overall policy direction, (b) issue an executive or agency order, or (c) make research and development grants available for analysis of materials problems.

Options Through Enacting New Legislation

The fourth option presumes that, for one or more reasons, the first three options will not be sufficiently effective in dealing with current or anticipated materials supply and price problems and that authorizing legislation is required. Such legislation, if required, should entail consideration of the 10 components listed below:

- Definition and distribution of authority,
- Acquisition of information,
- Stockpile management,
- Control of domestic distribution, and
- Control of exports.
- Control of imports and access to foreign supplies,
- International trade,
- Domestic economic impact,

- Fiscal incentives, and
- Public access and participation.

INSTITUTIONAL ARRANGEMENTS FOR ESTABLISHING AN ECONOMIC STOCKPILE

Listed below are the institutional arrangements for establishing an economic stockpile; these arrangements are discussed in Vol. II, Ch. 9 of the March 16, 1976 Draft Report.

Arrangement 1: Economic Stockpile Controlled and Operated by the the United States Government

A unilateral United States economic stockpile might be established as another component of the present strategic stockpile, or it could be established as an independent stockpile whose operations are carefully coordinated with those of the strategic stockpile.

Arrangement 2: Economic Stockpile Controlled by the United States Government, but Operated by United States Industry

The advantage of this arrangement would be twofold: first, it would forego some of the acquisition and initialization costs required for the Federal government to establish and operate its own economic stockpile; and second, it would strengthen the working relations between the Federal government and United States industry, thereby demonstrating that an economic stockpile is intended to be an adjunct to, not a replacement of, normal industry operations. A disadvantage of such a policy might be that its operations would give preference to the interests of powerful industry groups.

Arrangement 3: Establish Unilateral Economic Stockpile Controlled and Operated by a Public-Private Corporation

Such a corporation could be funded by the Federal Government, vested by Congress with a mandate and guidelines on United States stockpile purposes, and given independent authority to acquire and maintain national stockpiles without direct Executive control but with provisions for Executive consultation. Since annual appropriations for operating expenses and the stockpile corporation requests for any needed additions to the revolving capital fund would be reviewed only once a year by the President and Congress, the corporation would be able to maintain a certain degree of political independence comparable to the Federal Reserve System on monetary matters.

Arrangement 4: United States Participation in Multinational or International Economic Stockpile

An economic stockpile operated by two or more nations, either multinational or international in nature, could be formed along such existing political or organizational lines as the Organization of American States (OAS), the European Economic Community (Common Market), the United Nations, or just with friendly nations having materials requirements similar to

those of the United States. At present the United States is conducting several discussions/negotiations which do consider this arrangement: the United Nations Conference Trade and Development discussions within the United Nations and the International Energy Agency. The cost of establishing and maintaining such a collective stockpile would be spread among the participants and would thus be less for any one government. The stockpile would not take as much material out of the world supply as would separate national economic stockpiles. The stockpile might have less effect upon specific materials prices than separate unilateral actions. And, finally, the participating nations would have to work closely together in order to make the stockpile work successfully. The greatest disadvantage would be the possible loss of control and sovereignty over United States resources and actions.

Arrangement 5: United States Participation in Producer/Consumer Council Economic Stockpile

Another form of collective stockpiling could be achieved by the creation or expansion of producer/consumer councils like the International Tin Council which is run by both producers and consumers and maintains its own buffer stock to help stabilize the supply and price of tin. The benefits and costs of arrangement 5 are the same as for arrangement 4, but in addition to these there is another important benefit; an economic stockpile operated by a producer consumer council attacks the basic cause of the materials availability problem and thereby could provide a long-term solution to specific materials problems by developing policies which are acceptable to producers and consumers, exporters and importers, developed countries and lesser developed countries. In this sense, arrangement 5 requires even stronger cooperation among international participants than arrangement 4. Also like arrangement 4, though, such agreements will take a considerable amount of time to implement.

Arrangement 6: Economic Stockpile Controlled by United States Government, but Operated According to International Guidelines

This arrangement could combine the advantages of the first three arrangements. As with arrangement 1, the only time constraints in implementing this fifth option would be those required to create the legislation and acquire the optimal quantity of materials. Moreover, certain elements of arrangement 2 and 4 could be introduced by specifically defining the use of the economic stockpile in the form of an "international code of operations for economic stockpiles." This code could be introduced as the announced policy of the U.S. and expanded on an international basis as needed. Arrangement 6 would recognize the fact that some national economic stockpiles are being created, but that some countries like Germany have not implemented them because of serious concern regarding their impact on domestic and world market systems. An international code of operations might help reduce this concern, as well as develop effective mechanisms for alleviating U.S. supply problems without increasing the world shortage.

PUBLIC POLICY ISSUES RELATED TO ECONOMIC STOCKPILING

The public policy issues summarized below, which either have been or should be studied, suggest both the diversity and the intensity of conflict which could be aroused and which would have to be considered if an economic stockpile were implemented, established, and operated. (See Vol. II, Ch. 9)

1. Should an economic stockpile be implemented in concert or in conflict with other United States materials policies? For example, how should the planning for an economic stockpile be coordinated with the current discussions regarding whether or not the United States should join the International Tin Council, or with the long-term grain agreements with the U. S. S. R., or with the UNCTAD discussions now underway with the less developing nations regarding materials supply and prices?

2. What agreements with other industralized, as well as less developed nations, will be required in order for an economic stockpile to provide the greatest benefit to United States citizens?

3. How can an economic stockpile be designed and operated so that it will not be misused for financial advantage by special interest groups? How can it be sufficiently insulated from the political process to obviate its misuse, yet ensure that it will achieve the public benefits for which it was established?

4. What measures can be taken to ensure that an economic stockpile will not be used to accomplish public policy objectives other than those for which it was established?

5. Under what conditions, and to what degree, is it justifiable for the Federal government to intervene in the market place in the form of an economic stockpile? Should such intervention be used to require that industry disclose private, proprietary information to the Federal stockpile managers? And if so, what assurances will be taken to protect the confidentiality of such information?

6. What is the real potential for future supply disruptions and price increases? What is the expected impact (i.e., benefits and costs) of such economic dislocations upon the United States economy in general and sectors of United States society in particular? What is the cost of insuring against such dislocations? For example, will the acquisition of large amounts of materials like petroleum or chromium reduce such shortages and produce a more healthy economy, or will it stimulate the already spiraling inflationary rate? Second, are the expected benefits of an economic stockpile sufficiently greater than the costs to warrant the expenditure of large amounts of public money, and if so, how will this money be obtained?

7. What measures will be taken to ensure public participation in the planning of an economic stockpile? Is such involvement necessary? Further, if the public is involved, what measures will be taken to maintain the confidentiality of United States strategic economic information?

8. What is the long-term outlook for growth in the U.S.? For example, will the United States maintain, increase, or decrease its present consumption patterns? How will future supply disruptions affect these consumption patterns, and vice versa? How will they affect the environment?

# United States Department of the Interior

OFFICE OF THE SECRETARY
WASHINGTON, D.C. 20240

JUL 8 1976

Dear Mrs. Sullivan:

Your letter of May 12, 1976, invited us to submit for the record a statement on "Economic Stockpiling."

The Department of the Interior has long been concerned with the adequacy of materials and energy supplies stemming not only from its involvement in defense minerals supply expansion and allocation activities in World Wars I and II and in the Korean War and in more recent defense planning, but also from its continuing concern over the years for the maintenance and growth of the normal U.S. economy. The Department's specific responsibilities stem from a wide variety of legislation including the Strategic and Critical Materials Stock Piling Act of 1946, as amended, the Defense Production Act of 1950, as amended, the Mining and Minerals Policy Act of 1970, and numerous other acts dealing with our various bureaus and the public lands.

Considerations of "Economic Stockpiles" should be differentiated from "Strategic Stockpiles." Moreover, "stockpiles" in themselves must not be considered as the only, or always even the best, possible solution to actual or potential shortage situations. Instead, consideration must be given to a wide variety of possible measures, including maintenance of standby productive capacity, encouragement of increased domestic production, substitution, increased recycling, and conservation.

With respect to "Strategic stockpiles" the Department of the Interior has long believed that strategic stockpiles maintained by the U.S. Government should be of adequate size to make reasonable provision for foreseeable contingencies and, over the years, the Department has worked closely with the Federal Preparedness Agency and its predecessors toward this objective. Detailed information on a wide variety of mineral commodities under the primary purview of this Department has been supplied regularly as required.

With respect to "Economic Stockpiles," in recent years there have been a variety of proposals for "Economic Stockpiles," envisioned

by some as being under national control for the purpose of covering politico-economic contingencies not primarily defense-related and by others as under international control for the purpose of averaging out the highs and lows of world commodity prices. Consequently any discussion of "Economic Stockpiles" should be careful to clearly define the jurisdiction and purposes contemplated.

Mere U.S. dependence upon imports is not a sufficient condition for justifying the creation of an economic stockpile of a commodity. Other conditions must also exist for the justification of such a stockpile, including: existing and potential world supplies must be highly concentrated; it must be very difficult or expensive or impossible to substitute other more secure materials for the imported commodity in a significant proportion of the end uses; the loss of imported supplies of the particular commodity would have to result in great cost to the U.S. economy or the probability of such losses of supplies must be rather high; and there must be reason to believe that the producing or consuming industries will not hold the proper amounts of stockpile to protect against such emergencies.

Moreover, any economic stockpile program should be implemented on a commodity-by-commodity basis rather than as a general rule to be applied to all commodities. The need for an economic stockpile of a particular commodity can only be determined after a thorough and extensive analysis of the market structure within which the particular commodity is bought and sold.

In recent years, higher interest rates have tended to cause industry to limit the size of industrial inventories. Certainly it would be desirable for individual firms in U.S. industry to hold larger than normal working inventories of those critical materials which are potentially subject to serious supply disruptions, thus helping to maintain continuity of industrial production as mandated by the Employment Act of 1946 and the Mining and Minerals Policy Act of 1970. However, proposals for government-maintained "Economic Stockpiles" must give proper consideration to the potentially large and undetermined amounts of capital required, and the inevitable need for detailed quantitative company-by-company restrictions on producing industries that would be required to limit production if available capital were to run out. Government intervention in normal commodity markets could well lead to disorganization and discourage investment in future mineral development. Moreover, normal scrap markets and use of substitute and alternate materials would no doubt be disrupted. Further, with respect to "Economic Stockpiles" managed on an international basis, such management could well require not only extensive control of U.S. industry at home, but also in all producing and consuming nations, further aggravating the trends toward nationalization of industry.

Appropriate consideration must also be given to the diversity of forms and specifications involved in commercial buying and selling

of materials. For example, while chromium is often discussed as a likely candidate for U.S. economic stockpiling because the U.S. is wholly dependent upon imports for primary supplies, chromium is bought and sold in at least three major ore forms: metallurgical, chemical, and refractory, and within each of these categories there are varying specifications dependent upon the country of origin and the intended use. Moreover, chromium is bought and sold not only as ores but also as charge chrome, high-carbon ferrochromium, low-carbon ferrochromium, ferrochromium-silicon, chromium metal, chromium master alloys, sodium dichromate, foundry sands, and a variety of other forms. Another example of the diversity of forms and specifications is provided in the case of copper, a material for which the U.S. is largely self-sufficient, but which has been proposed by some as a likely candidate for international economic stockpiling because of the role in the economies of developing nations. Copper is bought and sold as blister copper, anode copper, matte, and refined copper - either as electrolytic or fire-refined--and in refinery shapes such as wirebars, ingots and ingot bars, billets, cakes and slabs, also copper sulphate and a very wide variety of alloys including brasses, bronzes, and other materials. Moreover, there is a large and important trade in a wide spectrum of recognized classes of copper-bearing scrap materials as shown by the fact that our Bureau of Mines receives reports on 35 different types of scrap.

Other questions to be answered if an economic stockpile is judged to be necessary are:

1. What are the respective roles of Government and the private sector in purchasing, holding, and releasing the stockpiles?

2. What are the optimum sizes of the stockpiles?

3. What are the optimum methods of financing the cost of the stockpiles?

4. What are the specific signals that tell when the stockpile releases should begin? What are the signals to buy the stockpiles?

5. If industry holds the stockpile, how can the Government assure that industry is:

   (a) Holding the proper amount of stockpile,

   (b) Will release the stockpile quantities at the proper time in the proper amounts,

      1) What is the definition of "proper"?

   (c) How do we know that the Government induced increases

in stockpile sizes are not simply offset by corresponding reductions in the "normal" private sector stocks?

Our Office of Minerals Policy and Research Analysis (OMPRA, previously the Office of Minerals Policy Development) is engaged in major studies which attempt to answer many of the above questions. Meanwhile, we have directed our Bureau of Mines to monitor closely the supply/demand situation for all mineral materials. The Bureau issues frequent detailed reports as listed in Table 1 (enclosed) on mineral materials so that producers and consumers are alerted to changing relationships. Also a year ago, the Department directed the Bureau to initiate a new monthly summary publication "Minerals & Materials" (copy attached) for use by policymaking executives in government and industry. This publication highlights the supply/demand situation for those mineral materials identified by the Council on International Economic Policy as being among those considered more critical for a variety of reasons. If governments and industry have timely and reliable information, the possibility of either surprise shortages or embarrassing surpluses developing should be diminished.

Sincerely yours,

Rolland R. Reid

Rolland R. Reid
Deputy Assistant Secretary of the Interior

Honorable Leonor K. Sullivan
Chairman, Subcommittee on
Materials Availability
Joint Committee on Defense Production
U.S. House of Representatives
Washington, D.C. 20515

NATIONAL COMMISSION ON SUPPLIES AND SHORTAGES
1750 K Street, N.W., Suite 800
Washington, D.C. 20006

May 25, 1976

Mrs. John B. Sullivan
Chairman
Subcommittee on Materials Availability
Congress of the United States
Joint Committee on Defense Production
Washington, D.C. 20510

Dear Mrs. Sullivan:

Thank you for your letter of May 12 inviting me to submit a statement describing the work of the National Commission on Supplies and Shortages in dealing with the topic of economic stockpiling. As you no doubt know, the legislation establishing the Commission (PL 93-426) requires it, among other things, to report to the President and to the Congress with respect to "...necessary legislative and administrative actions to develop a comprehensive strategic and economic stockpiling and inventory polic(y) which facilitates the availability of essential resources." Our report is due to be submitted to the President and to the Congress on or before December 31 of this year. I am pleased to be able to inform you that we appear to be meeting that schedule.

To enable the Commission to fulfill this mandate, the staff has spent a considerable portion of its time reviewing and evaluating the large number of studies that exist on the subject of economic stockpiling, has studied the experience with strategic stockpiling to determine what lessons this experience holds for us, and has commissioned two studies of its own to fill in needed gaps in our knowledge.

The first of these studies has been completed. It is a short-term effort by Richard Barber Associates which attempts to lay out clearly for the Commission the degree of specificity required in the way of objectives and operating rules if any economic stockpiling program is to be able to operate successfully. The report points out that, to date, much of the discussion of economic stockpiling has been of a highly theoretical nature. Grand objectives like "stockpiling to stabilize prices" have been proposed without any consideration being given to how such a program, if enacted, might operate in practice.

The second study, being undertaken for us by Charles River Associates and due to be complete by June 30, is designed to address another critical gap in the existing work on economic stockpiling and its likely effects.

All studies which we have thus far seen have assumed, again usually only implicitly, that private decisions on stockholding are invariant to public stockpiling policies. This cannot be true. We know that private companies have built up their own stockpiles of key materials, stockpiles that they would not have established if the government was holding stocks that might be made available in case of emergency. We also know that, at least at certain times in the past, government stockpile purchases have served to exacerbate domestic shortages. Finally, it is clear that a belief by industry that the government might force firms to share their carefully built-up stocks with firms showing less foresight would act as a powerful deterrent to private stock accumulation.

These two studies reveal a great deal about the Commission's approach to the issue of economic stockpiling. We want to consider all realistic alternatives, but we want to make quite sure that anything we eventually do recommend contributes to the solution of a problem, not creates problems of its own. We are well aware of the theoretical benefits of economic stockpiling. But we are also aware that any such program, if established, would have to be operated by ordinary human beings possessing limited information who would inevitably be subject to strong economic and political pressures.

The hearings you will be holding on this important subject will assist the Commission in fulfilling its mandate. We will follow them with great interest.

Sincerely,

George C. Eads
Executive Director

Submission of Guy F. Erb
Senior Fellow, Overseas Development Council, Washington, D.C.

## A Note on Economic Stockpiling

I appreciate the request by the Chairman of the Subcommittee on Materials Availability of the Joint Committee on Defense Production that I submit a note on economic stockpiling of raw materials. In the following paragraphs I will cover some issues posed by national, that is governmental, stockpiles; private stockpiles; and international stockpiles.

National economic stockpiles aim to safeguard a country's producing and consuming interests through the prudent accumulation of needed goods. In addition to their role in sustaining economic activity in periods of temporary scarcity of the goods in question, such national stocks could also serve as bargaining counters in negotiations with foreign suppliers over the prices and the quantities to be made available of specific products. A national stockpile could also support the price stabilization objectives of an international commodity arrangement if purchases for sales from the stock were coordinated with the operation of an international buffer stock or were subject to internationally agreed guidelines.

In response to concerns over real or contrived shortages of essential minerals and other materials, governments of some countries which are heavily dependent on imported raw materials, for example, France and Japan, have begun to build up economic stockpiles of certain non-fuel minerals. The United

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The views expressed herein are those of the author, and do not necessarily represent those of the Overseas Development Council, its directors, officers, or staff.

States has for some time held large strategic stockpiles, and is re-assessing the economic importance of the materials it holds. Of course, strategic stockpiling operations have significant economic implications: in the 1950s, U.S. purchases of tin for its strategic stockpile served to support the price of tin and, subsequently, the existence of the U.S. stockpile exercised considerable influence over the world tin market.[1/]

Governments of countries which produce raw materials may stockpile certain items which their own economies produce. To illustrate, the new International Coffee Agreement provides for retention stocks to be held by coffee producers. Use of such stocks is to be governed by guidelines set in the Agreement.

Producing-country governments may also try to influence prices of the goods they export through unilateral stockpiling policies or through attempts to co-ordinate policies within a producer association. I have dealt with the latter possibility and appropriate policy responses to producer groups in recent testimony elsewhere.[2/]

Private stockpiles. One aspect of the current U.S. debate on economic stockpiles of essential materials concerns the possibility of providing incentives to private firms to stock the materials they require in excess of normal inventories. Tax write-offs or certain methods of inventory valuation are examples of such incentives. Sweden has introduced such tax provisions to encourage private stockpiling.[3/]

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1/ See William Fox, Tin: The Working of a Commodity Agreement, Mining Journal Books (London, 1974), pp. 281 and Chapter IV.

2/ See testimony of Guy F. Erb before the Subcommittees on International Resoures, Food, and Energy; International Economic Policy; International Organizations; and International Trade and Commerce of the Committee on International Relations, U.S. House of Representatives, 27 April 1976.

3/ Skandinaviska Enskilda Banken, "The Tax System in Sweden," Stockholm, February 1972, Section 4.2 - Inventory Valuation.

There are already some instances of private stockpiling policies. Producing firms in some metals industries, for example, have attempted to influence prices through use of stocks. In these industries the objectives of price support and price stability have on occasion provided considerable incentives to producing companies to build up economic stockpiles. The carrying costs of stocks can also be justified as an investment, if production costs are rising, and as a way to "bank" high priced energy and other required inputs.[4/]

The major European producers of aluminum set up a financial institution, known as Alufinance and Trade, Ltd., to "take a certain tonnage of primary aluminum off the market so as to halt the steady fall in prices" which threatened in 1971.[5/] This body complemented a "gentlemen's agreement," instituted in 1963, designed to deal with conditions of oversupply in Western countries, particularly those caused by the export of aluminum from some Eastern European countries.[6/] In addition, American and Canadian aluminum producers agreed in 1965 to purchase all excess U.S. stocks at list prices.[7/] In the United States, producing companies set the price of aluminum according to demand and production costs. In contrast to such minerals as copper, characterized by wide price fluctuations, the price of aluminum has shown a steady upward movement since 1973.

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4/ Fortune, May 1976, p. 195.

5/ See Problems and Prospects of the Primary Aluminum Industry, Organization for Economic Co-Operation and Development, Paris, 1973, p. 26.

6/ See, for example, Isaiah A. Litvak and Christopher J. Maule, "Cartel Strategies in the International Aluminum Industry", The Antitrust Bulletin, Vol. II, Number 3 (Federation Legal Publications, Inc., 1976), pp. 657-661.

7/ Problems and Prospects of the Primary Aluminun Industry, op. cit., p. 659.

Another example of private stockpiling policies is provided by European zinc producing companies which have attempted to isolate their zinc transactions from the price fluctuations on the London Metal Exchange (LME). A "European producer price" has been set by the producing companies and supported by means of stock accumulation and production cutbacks. These producer prices are used in direct supply contracts and also guide prices of ore concentrates. Outside North America about 90 per cent of zinc is sold at the producer price. To avoid price cuts in 1975, zinc producing companies agreed to cut back production, and after "unofficial consultations," they also set aside funds which were used to purchase excess supplies on the LME which would otherwise put downward pressure on the producer price. Zinc producers agreed to an increase in the European producer price in November 1975, following the October announcement of the price rise by a major producer. 8/

As can be seen from the zinc example, maintaining a producer price through use of stocks and controls requires producer/consumer relationships that can survive the temptations that downward price fluctuations on metals exchanges present to consumers who might divert their purchases away from the producing firms to merchant companies which trade in, but don't produce metals. There must also be a willingness on the part of producers to cut back production and employ financial reserves that are sufficient to support extensive buying of excess supplies, if necessary. The relative stability of the producer price, which may remain below metal exchange quotations for considerable periods, provides an incentive to consumers to go along with such a system.

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8/ The Financial Times, "Lead and Zinc," 21 October 1975; "LME Urges Clampdown on Speculative Zinc Trading," 14 May 1976; and The Wall Street Journal, "Prices of Zinc Are Under Study in Antitrust Case," 18 May 1976.

Technical factors, such as the extraction of more than one metal from a particular ore, may also induce private firms to produce a metal in excess of demand and stock the surplus production.

Producing companies have generally borne the costs of stockpiling, brought about, in part, by the market destabilization that can result from the inventory cycles of firms which consume materials. Incentives to users of materials to increase and stabilize their stocks could dampen fluctuations in inventories. Such incentives might contribute to price stability for the materials in question but not necessarily to price declines. Facing demand from users of materials for inventory maintenance at a time when consuming company inventories might otherwise be drawn down, producing companies would probably reduce their own stocks, but not prices. Moreover, incentives for private stockpiling might not address successfully the issue of potential shortages. Recent experience indicates that for most materials temporary scarcities can be caused by speculative purchases. If only modest increments to inventories resulted from an incentive system, drawing on the stocks available could probably not counter the impact on prices of buying of the magnitude that occurred during the commodities boom of 1973-1974.

International stocks are intended to stabilize prices as well as regularize supplies reaching consuming countries. Their creation depends upon inter-governmental decisions to fund purchases of a raw material when prices are low, or falling, and to sell when prices move above agreed ceilings. The four Tin Agreements which have been in effect since 1956 illustrate the functioning of an international stockpile. (The recently concluded Fifth Tin Agreement incorporates similar buffer stock provisions.) The price of tin is largely determined by

transactions on the London Metal Exchange and has been greatly influenced by the policies of the International Tin Council (ITC) and of the General Services Administration (GSA), which administers the U.S. stockpile. The tin buffer stock manager intervenes in the market in an effort to stabilize prices according to guidelines set by the ITC. Tin floor and ceiling prices are determined by the ITC with the price range divided into three sectors: as prices decline, the buffer stock manager is authorized to operate in two stages ("must buy" and "may buy") in order to prevent steep falls in the price of tin; as prices rise, the manager is authorized to operate in two stages ("must sell" and "may sell") to prevent steep rises in the price; in the middle sector, the manager may operate only on special authority of the Council.

Three issues emerge from the experience of the tin agreements. They relate to the size of stocks required, the financing of stocks, and the relation of a buffer stock to export and production controls. Large stocks, or significant financial resources with which to build up stocks through purchases of the material during periods of price declines, are needed to offset effectively upswings in prices. During the period 1956-1975, the average annual price of tin exceeded the ITC's ceiling frequently, in spite of adjustments in the price range and of large sales from the U.S. national stockpile. The inadequate levels of the tin stock were due in part to the fact that major producing countries --all developing nations--had to bear nearly the entire cost of funding the stock. Without substantial contributions from consuming countries--which are to be voluntary under the Fifth Tin Agreement--a sufficient stock may not be built up. Thus far, resources of producing countries and those available from the Buffer Stock Facility of the International Monetary Fund have not been sufficient to provide the funds necessary to build up an adequate stock. Actions by producing countries to limit production and/or exports may therefore be necessary complements to buffer stock operations. The tin floor price was held

from 1956 to 1975 with one brief exception. Thus, in the absence of an adequately funded stockpile, price floors can be maintained by means of controls on production or export, but price ceilings cannot be held. Nevertheless, the evident interests of consumers in seeing that stocks are adequately financed has not overcome the reluctance of developed-country governments to agree to make mandatory contributions to a buffer stock fund, even though stocks, if properly managed, could provide a return on funds invested.

International discussion of buffer stocks took a new turn in 1974-1975 when the Secretariat of the United Nations Conference on Trade and Development (UNCTAD) proposed that an international fund be used to finance the operation of stocks for ten commodities of major importance for developing-country primary product exporters. This "common fund" for buffer stock finance, a central part of the UNCTAD proposals for an Integrated Commodity Program, has been vigorously supported by developing countries and opposed by some developed countries, including the United States. The common fund was one of the more contentious issues at the Fourth UNCTAD, held at Nairobi, in May 1976. At this point it is difficult to assess the full implications of the Nairobi deliberations which concluded with a consensus resolution directing the UNCTAD Secretary General to call for further negotiations on the proposed common fund. The UNCTAD approach, which considerably broadens the scope of possible international buffer stock operations, will certainly be a significant component of the commodity negotiations which will take place over the next eighteen months to two years.

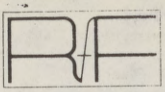
Recommendations

National economic stockpiles should be funded for selected commodities only after a careful analysis of the political and economic factors, such as investment shortfalls, which might contribute to temporary shortages. In my judgment, the problems of temporary scarcities will be shown to be substantial in only a few instances.

It should be recognized that stockpiles, whether national, private, or international, or a combination of them, may have limited impact on major market trends. Therefore, the cost of a stock intended to offset any foreseeable market fluctuations would be excessive. Realistic targets for stock size should be set with foreknowledge that meeting all contingencies would probably not be possible.

A program of incentives for private stockpiling would probably be of some benefit to individual firms. Since there is no certainty that all firms would participate, or would stock sufficient amounts to tide them over periods of temporary scarcities, a private program would not absolve the government from holding economic stocks in those cases where critical risks were present.

U.S. approaches to international stockpiling have been burdened by a reliance on ideological concepts which overestimate the role of perfectly free markets in commodities trade. U.S. policy should free itself from this constraint and take a more positive approach to international buffer stocks as well as the production and export controls which might be necessary to operate international stockpiles successfully.



**Resources for the Future**
*1755 Massachusetts Avenue, N.W.*
*Washington, D.C. 20036*

May 27, 1976

Hon. Leonor K. Sullivan
Chairman
Subcommittee on Materials Availability
Joint Committee on Defense Production
Congress of the United States
Washington, D. C. 20410

Dear Mrs. Sullivan:

Mr. Kent Price, who is Information Officer for Resources for the Future, suggested that I might wish to respond to the invitation addressed to him in your letter of May 10 to offer views on the subject of economic stockpiling. I am happy to do so, on the basis of some amount of familiarity with the subject, gained in particular as consultant on a recent study sponsored by the Office of Technology Assessment. I must emphasize, however, that what follows are purely my personal views, to be attributed neither to the OTA study's authors nor to RfF. RfF as an organization endeavors to foster objective research on issues pertaining to resources and the environment, but does not take policy positions.

Briefly stated, I think that economic stockpiling offers useful potential as a policy instrument, while at the same time it entails some costs and risks. Also, among the policy objectives for which it has been considered, there are some for which it does not seem well adapted.

One objective for which it appears not well adapted is that of discouraging or counteracting the activities of a possible commodity cartel. When world demand for a U.S.-imported material is weak, release of stockpiled materials would add little to the factors already tending to undermine cartel-enforced high prices. When world demand is strong for commodities for which the United States is heavily dependent on imports, it would take an inordinately large stockpile to break a cartel group's resolution. It is unlikely that the price gains achievable by a unilateral U.S. shift from current purchases to stockpiled

materials would repay the higher costs of commodity acquisition during the stockpile accumulation period, in addition to the costs of carrying and storing the inventory.

Where stockpiles can probably be effective, however, is as a means of dealing with short-term supply interruptions. Such interruptions have the potential not merely of increasing the prices of materials, but of disrupting the total economy to an extent which might far exceed the costs of stockpiling the needed supplies. There are many potential causes of such supply interruptions, including not only deliberate political interruptions, but strikes in key parts of the production, processing, and transportation chain. However, we are a long way from having developed the analytical base which will tell us how much damage would result from varying sizes of interruption for varying periods for varying materials, and until we have better sorted this out, we cannot know how much of an economic stockpile of any particular material it is worth accumulating.

Stockpiles can also be effective as production-support and price stabilization measures. This is particularly true in circumstances either where a substantial share of the production of a material is domestic or where the stockpiling is part of an international cooperative effort, acceded to by the bulk of the commodity's producers and consumers. I find it hard to believe that there would not be net gains in economic efficiency from greater stability in raw material demand and hence output. It will be argued that stockpile managers cannot be so adroit as not to commit major blunders, including running out of inventory at the most crucial moments, and that essentially the same results may be obtained by the operation of commodity futures markets. The record of the latter does not bear out the thesis of a net contribution to stabilization, however, and it is at least reasonable to suppose that a government (or international) stockpile manager can possess himself of enough analytical resources not only to ameliorate fluctuations, but to produce enough capital gain in the process to support some or all of the stabilization operation. It is legitimately argued, on the other hand, that such an operation is unlikely to succeed if the manager is bound by strict limits on his trading options, while other speculators are free to out-wait him with superior financial resources. It is also legitimately argued that there is risk that political influences will be brought to bear on a stockpile manager to an extent which makes it impossible for him to follow the dictates of sound economic judgment.

Another application for economic stockpiling has to do with long-term objectives for which the commercial perspective differs from the social perspective (a difference sometimes referred to in terms of differential "discount rates"). An example is the current recovery of material which

will some day be valuable enough to have been worth saving but which under commercial considerations might be dissipated in waste streams, abandoned in mines or dumps which are very costly to reenter, etc. (Helium is an example.) Another example is the production of currently used materials, for research and development purposes, from high-cost alternative sources or the production of materials for which immediate uses are not apparent but for which the development of uses presents a "chicken or egg" problem. (Titanium was an example.) Subsidization of such non-commercial output is a possible alternative to economic stockpiling, but not necessarily a superior one, since there may be no actual current market or the marketing of subsidized material may disrupt commercially viable operations.

These examples are not meant to be exhaustive, although they probably comprehend the more important applications. To arrive at more decisive conclusions requires research and analysis that has not yet been satisfactorily accomplished, despite rather large outlays on the subject. Much of such research, however, would have ancillary benefits in terms of still other uses for a better understanding of the short-term and long-term dynamics of materials utilization in the U.S. economy.

Sincerely yours,

Leonard L. Fischman
Fellow

LLF:cmm

MATERIALS ASSOCIATES

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June 4, 1976

The Honorable Leonor K. Sullivan
Chairman
Subcommittee on Materials Availability
Joint Committee on Defense Production
U.S. Congress
Washington, D.C. 20510

Dear Madam Chairman:

Thank you for inviting me to submit for the record my views on "The Purpose and Organization of Economic Stockpiling." The following is a brief summary of those views.

Related Experience

In inviting me to participate I am sure that you are aware that I have been involved in all sides of the question since 1941: in the debate over the creation of a strategic stockpile; in guiding the use of the available basic raw materials during mobilization for World War II; in the pre-Korean War stockpile accumulations (as a member of the Interdepartmental Stockpile Committee); as Defense Minerals Administrator during the Korean War; in industry during the post-Korean era struggling with the impact of disposal programs; as a member of the Resources Board Advisory Committee considering the need for stockpiles in the face of Nuclear War; as Executive Director of the National Commission on Materials Policy; and finally as Chairman of the Office of Technology Assessment's Materials Advisory Committee which helped with the report now emerging on the alternatives available for Economic Stockpiling. All of the documents dealing with these eras are available to you and your staff. The synthesis of all of these experiences may be of value to you.

Goals

I will therefore crystallize my views in the light of what I take to be the best National Goals we should be seeking to reach. The National Commission on Materials Policy (NCMP) in 1973 recommended, in its letter of transmittal, five policy objectives. The first two are germain to your discussions:

"1. Provide adequate energy and materials supplies to satisfy not only the basic needs of nutrition, shelter, and health, but a dynamic economy, without indulgence in waste.

2. Rely on market forces as a prime determinate of the mix of imports and domestic production in the field of materials but at the same time decrease and prevent wherever necessary a dangerous or costly dependence on imports."

This report dealt only briefly with the question of economic stockpiling. The issues, however, are encompassed in reaching for these two objectives.

Basic Considerations

Economic stockpiles are being considered for the purpose of assuring the economy the continuing supply of basic raw materials in the face of potential interruptions. The need for specific materials is dynamic; technology and strategic conditions change almost from day to day. We should frequently remind ourselves that we use materials for the properties they exhibit to perform the functions of society, and that these functions can be satisfied by more than one commodity or process, depending on availability, economics, and technology. It is virtually impossible to predict accurately what path these requirements will take even with the most sophisticated systems. But the broad changes are usually quite slow and the solutions time dependent.

The day-to-day changes in the market place are not only difficult to predict, but also they frequently happen too quickly for governmental processes to react in time. Sophisticated mathematical modelling systems under which governmental reactions would be automatic sound attractive in principle. However, we are not sufficiently advanced in that art to depend on mathematical models. In fact, we may never be able to depend on machines for such guidance. We are dealing with human reactions and must have systems that are more than mechanistic, systems based on trained human judgments.

Strategic Considerations

National mobilization demands a broad material base to meet mixes of materials requirements which are vastly different from those required under normal economic conditions. This is

a distinctly separate consideration. I know of no means of meeting the excessive demands of mobilization other than strategic stockpiles. Unfortunately the accumulation of stockpiles even for strategic purposes may also require disposal as strategic and technological changes evolve. Therefore, they operate to modify the market place. The stimulation of the copper, lead, zinc, aluminum and other industries to meet both the stockpile accumulations, and the above normal demands of post-war recovery, inevitably threw many of these industries into serious retrenchments when both stimulations declined at the same time. The preparation for necessary long time growth under these conditions was difficult for these industries. Because of the long lead times required to find the reserves and equip them for production, such facilities were not available to meet the peaks of the over-stimulated economy of the last half decade. We should be able to draw some lessons from these experiences.

Experience

One of the first recorded attempts of governments to engage in economic stockpiling was Joseph's stockpiling of grain in Egypt. We are not privy to the economic and financial mechanisms to handle this, only that it appeared to be successful. Modern attempts through wheat agreements and particularly the International Tin Agreement have had differing degrees of success. Those that have been attempted have been relatively simple to comprehend with either one all pervasive commodity like wheat or a generally used commodity but limited source like tin. When conditions get extreme such as prolonged oversupply or shortage, these agreement mechanisms break down.

Basic resource commodities other than food tend to exaggerate the swings in economic conditions world wide. The most volatile in terms of price--such as copper, lead, and zinc--are particularly sensitive to the purchasing policies of the consuming entities who tend to build inventories when they face potential shortages or reduce them when supply is adequate. The effect on the basic materials producers whose productive systems are relatively inflexible is obvious. To my mind, this is one of the principal causes of the magnitude of the shortages that have appeared in recent years. The others indirectly apply to the consideration of an economic stockpile, and include the impacts of societal corrective measures such as environmental, energy, safety, employment equalization, etc. All of the latter when considered independently, fail to take into account the cumulative impacts they generate on the supply of the essential ingredients to the economy; many times they are counterproductive

to the very objective of the action itself. When a government tries to correct, by direct action, the ills of an economy item by item, it necessarily becomes so large that it is unmanageable.

The Choices

You and your staff have the alternatives presented to you by the Office of Technology Assessment. As I had a hand in the development of that report, I believe that these alternatives have been objectively examined. I assume that you asked for my personal view concerning which of these alternatives will best achieve the goals of a national Materials Policy.

First of all, I do not agree that any form of governmental economic action can respond quickly enough to meet the varying short term economic situations in the market place. Putting up with normal economic disruptions here and there may be irritating, but that is a small price to pay for freedom. Temporary disruptions due to inadequate supply of specific commodities usually result from failure in individual foresight. That is one of the disciplines that a free economy imposes on its participants, for it first punishes the offender. Thus, just because the market place does not deliver all of our desires on time and perfectly is no reason to abandon it for a system which has proven itself inherently inadequate and dangerous.

True the market place must have influences imposed on it to assure the common good. Environmental, safety, and a minimum of societal questions are examples. The question for us then remains: how do we best accomplish our goals? Let us find the weaknesses in the market place in order to strengthen it. From all the alternatives suggested I would prefer that we adopt two:

1. If the needs of security demand it, we should make that stockpile inviolate from use for any other purpose either in accumulation or disposal. Pressures to violate this come from administrators, politicians and industry. All of this interferes with the normal operations of the market.

2. Stocks held by individual (or corporate) consumers are only those that they expect to use in response to their analysis of their part of the economic system. They are held at the point of consumption in the form and quality needed. The provision for energy in their production; alloying; semi-fabrication and transportation has already been made. The infinite variety of form and shape had been made in terms of the market needs. A government stockpile would require the material to be held in virgin form and then decisions made regarding to whom

and what form it should be released. This allocation process is obviously a herculean task subject to error of judgment and not necessarily responsive to the real need.

As European industry is at the end of a long supply chain, the maintenance of adequate stocks is essential to industrial health. The Swedish Government has shown the way. In our tax structure materials may be charged as an expense only after they have been incorporated into the final product. In the Swedish system the material is expensed for tax purposes on delivery, down to 70 percent of the lowest price during the past ten years. The balance is expensed at the time of final incorporation. The total expense for tax purposes is not altered, just the time that the tax is paid. The purchasing agent is encouraged to buy when prices are lowest--usually during oversupply--and to use his inventories when prices are high. He is indirectly penalized by market forces if he rushes in to buy materials on the expectation of shortages. If the U.S. would adopt a similar policy, instead of one which would be a massive tool, like economic stockpiling, in the hands of government, it would do much to stabilize prices, build inventories in the right form, assure steadier markets to the materials producers and therefore encourage decisions to expand in time to meet growing demand. The decisions would be made in the market place and the cost to the government minimal. The ultimate tax flow into the treasury would be steadier and probably higher.

For these various reasons, Madam Chairman, I would urge the Congress not to give in to the fears of shortages by creating another bureaucracy to handle economic stockpiles. Rather make changes in the climate within the market place which will better achieve the desired goals. For a loosely regulated market place remains the best economic tool so far devised by man to meet his needs.

Sincerely,

James Boyd

mgt

STATEMENT OF E. F. ANDREWS

ALLEGHENY LUDLUM INDUSTRIES, INC.

I welcome this opportunity to place in the record a statement on what I consider an urgent and extremely important matter. As one who has spent a good part of the last 30 years concerning himself with the materials supply problem of this country, it is my view that, for the balance of this century, access to the world's raw materials will be one of our major, continuing problems.

When this country was founded 200 years ago, it was looked upon as the land of unlimited resource wealth. We had iron, coal, water and lumber -- who could ask for more? However, over the past 50 years, the growth rate of our economy has been one of the most rapid in the history of man and was accompanied by a tremendous increase in consumption of basic raw materials. Because of technology, our needs became far more sophisticated. The simple coal, iron, and lumber needs of a few years ago have now advanced to where we need chrome, nickel, cobalt, aluminum, tungsten, plastics, petrochemicals, etc.--items not in plentiful supply in the United States. During World War II, the supply situation was sufficiently alarming that the United States government established defense stockpiles of these vital resources. In 1952, the Paley Commission spotlighted this nation's ever-growing dependency on foreign countries for its vital raw materials. Finally, the Arab nations put it all on the front page with the oil embargo, and America's dependency for supply became well known.

There are those who would argue, with good cause, that raw materials supply is quite finite and that the world is running out. I happen to be one who believes that, while yes, the world supply is finite, we are a long way from the exhaustion point and that it is unreasonable at this time to overemphasize the lack of existence of supply. The real problem, however, is that this small piece of the earth known as the United States is indeed short of a growing number of items; and, in fact, we are 100% dependent on foreign sources for many of them.

The cold facts are that the resource base of the United States has been and is declining, and there are only a few ways to improve it. New resources could possibly be discovered. New processes or techniques could possibly be developed, permitting a reduction in the need for primary materials. Increased recycling will help. Research to find substitute materials could possibly bring relief. All of these offer rather limited surefire answers to the problem.

Therefore, it seems to me that assuring access to the available raw materials, wherever they are located, becomes of paramount importance to this country and should be of immediate concern to the Congress. We now know that some of the recent shortages had nothing to do with their lack of existence. For example, chrome was short for political reasons. Metallurgical coal was short for social or environmental reasons. Oil was short for political and economic reasons. Since we are now aware that shortages can exist beyond the control of the marketplace, and perhaps beyond the control of the United States government, it is my recommendation that serious consideration be given to the establishment of an economic stockpile of select materials that properly qualify for inclusion.

My comments concerning the stockpile will be directed to the metals and minerals area which is my field of expertise. I recognize that consideration should also be given to agricultural commodities, but the problems are quite different. In one case we are a "have" nation; and in the other, we are a "have-not" nation. We should also make it clear that economic stockpiling cannot and should not be considered in a vacuum. It is merely one of many facets that should be involved in a national materials policy. A national materials policy would encompass such other considerations as conservation programs, recycling, research for substitutes, a new data base, export policy, import duty policy, tax policy, and a total reexamination of the lack of international law and its conflict with domestic law that renders United States corporations uncompetitive when trying to obtain raw materials on the international market, particularly from less developed nations.

But for our purpose today, let us confine our remarks to economic stockpiling. The primary reason for an economic stockpile is as a time buffer when abrupt and unexpected interruptions of supply occur for political, social, or economic reasons. It would also serve (a) as insulation from international blackmail, (b) to discourage speculation and hoarding, (c) as protection for jobs in this country, (d) to lower national inventories and thus release needed funds for capital investment, and (e) to cool inflationary impact of unconscionable foreign pricing.

It is my judgment that the 90 some items presently in the defense stockpile could be reduced to some 20 items or less in an economic stockpile, if the following general criteria were used:

(a) We should determine the percentage of our self-sufficiency. In other words, a judgment should be made that any item on which we are 75% self-sufficient would not be considered for stockpiling. (I use the 75% merely as an example, not as a recommendation.)

(b) We should consider the geographic location of the supplying countries. The urgency to stockpile would be quite different on an item that comes from China than on an item that comes from Canada.

(c) The number of supplying countries would be taken into consideration. It there were only two or three supplying countries, it would be of more concern than if there were twenty.

(d) The ease of substitutability of the material would be an additional criteria, and the essentiality to the domestic economy and to our security would also be considered.

(e) An important consideration would be the economic or non-economic leverage that we might have on the supplying country -- are they more dependent upon us than we are upon them.

(f) The political stability of the supplying countries would be a major consideration.

(g) The potential for cartel would also be considered.

(h) The storability would be taken into account.

It is my judgment that the Congress would provide in the enabling legislation the parameters under which the stockpile would be managed once the items are selected and placed in the stockpile. Such enabling legislation, in my judgment, should provide parameters such as:

(a) We would never dispose of the stockpile for export.

(b) We would never dispose at a higher rate than the difference between consumption and production in this country.

(c) We would never sell from the stockpile when material is available through normal channels at acceptable prices.

(d) We would replace materials in the stockpile only at times of low market activity.

(e) Insofar as possible, we would sell only to domestic consumers.

(f) Sales from the stockpile would be triggered when actual interruptions occur or at times of threat of cartel against us.

(g) It could be triggered at times of very peak consumption when there is a generally acknowledged temporary shortage of supply.

Probably the most difficult part is providing for the management of the stockpile. There are several ways this can be done. One is a TVA or quasi government company. Another is a COMSAT or joint government-private ownership. The third is a national economic stockpile association. Fourth is a huge tax incentive program whereby the stockpile would be maintained by private industry as a set-aside. All of these have their advantages and their disadvantages. It is my judgment that the disadvantages far outweigh the advantages for reasons I will not go into because of time but will be glad to discuss if requested.

It is my judgment that an OEP - Office of Economic Preparedness - should be established. It should be much like a Federal Reserve Board that manages the money supply only this would manage the materials supply. The board could consist of members appointed by the President, confirmed by the Congress, with extended years of service to make it apolitical insofar as possible. This board would keep under constant review changing technologies and world availability,

keeping in mind that its primary function would be to give this country time to adjust to those unexpected and many times unilateral interruptions that are bound to become ever more frequent in the future.

I will be happy to expand upon these views if the committee so desires.

I do feel that we must move quickly and wisely if we are not to be virtually shut out from vital material resources. The trade off among the social, political, and economic categories will be sometimes agonizing; but if we are to survive, we must face realistically and answer the supply problems that are ahead. The rules, policies, and thinking that served us as a "have" nation will not serve us as a "have-not" nation. It is my judgment that the buffer zone of the stockpile can serve us well as we think through the problems that lie ahead.

Thank you very much.

THE FERROALLOYS ASSOCIATION
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June 2, 1976

The Honorable Leonor K. Sullivan, Chairman
Subcommittee on Materials Availability
Joint Committee on Defense Production
Congress of the United States
Washington, D. C. 20510

Dear Madame Chairman:

The Ferroalloys Association welcomes the opportunity to express its views on the subject of an economic stockpile and submits the following statement to the Subcommittee on Materials Availability for inclusion in its hearings.

Economic stockpiling represents an intervention by government into the marketplace to correct, or at least ameliorate, perceived shortcomings of the free-market system. We agree that the free market is not always perfect and that government has a role in correcting certain imbalances and in maintaining public confidence in the system. But we believe an economic stockpile is not the proper tool to prevent materials shortages from occurring from any cause or for any reason except one; an actual or threatened interruption of supply or discrimination in price by foreign countries. An economic stockpile should be restricted to only those materials that are critical and essential to our economy, that must be supplied totally or in large measure from foreign sources and that cannot be readily replaced by available substitute materials or their useful function supplanted by alternate systems using other materials.

Materials shortages arising from other causes, such as insufficient extractive or production capacity, temporary surges in demand, transportation bottlenecks, labor strifes or energy shortages should not be remedied by the release of material from an economic stockpile. When shortages are threatened or occur from causes other than actions by foreign powers, then the free price system should be allowed to be allocative of supply and restrictive on demand. The free price system will provide the incentive for the development of new sources of supply, the finding of substitutes for the materials and the use of different or new technologies to replace the functions performed by the material.

The organization of economic stockpiling within the government poses special questions regarding benefits to the economy and freedom from political manipulation. In the opinion of The Ferroalloys Association, the acquisitions and disposals of material from the stockpile has been adequately handled by the General Services Administration. If an economic stockpile is limited, as discussed in the foregoing, we see no real reason for any change in the administration of it provided, Congress prescribes appropriate guidelines and maintains oversight control.

We are attaching for the record a detailed position paper, prepared some time ago by The Ferroalloys Association, on economic stockpiling. We would welcome the opportunity to discuss our views at any time.

Very truly yours,

George A. Watson
Executive Director

CATERPILLAR TRACTOR CO.

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June 9, 1976

Mrs. Leonar K. Sullivan
Chairman, Subcommittee on Materials
Availability
Joint Committee on Defense Production
419 Senate Annex III
Washington, D.C. 20510

Dear Ms. Sullivan:

Thank you for your letter of May 12, in which you advised that the Subcommittee planned hearings on "The Purpose and Organization of Economic Stockpiling," and invited Caterpillar Tractor Co. to submit a statement or other pertinent material.

While we have taken no position on the desirability of governmental "economic stockpiling," we as a company have been quite concerned over the long-term availability of raw materials. This concern is reflected in the presentation of Mr. Robert Morrill before the National Commission on Supplies and Shortages earlier this year. A copy of Mr. Morrill's statement is attached.

In general, we would favor governmental incentives for maintenance of private stockpile over actual governmental stockpiling. We believe that private stockpiles are likely to be purchased more objectively and to result in materials specifically matched to the user's needs.

I hope this information will be useful.

Sincerely,

JPEdwards

Washington Manager
Governmental Affairs Division

JPEdwards
blm

Westinghouse Electric Corporation

Westinghouse Building
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Pittsburgh Pennsylvania 15222

May 28, 1976

The Honorable Leonor K. Sullivan, Chairman
Subcommittee of Materials Availability
Joint Committee on Defense Production
Washington, D. C. 20510

Dear Mrs. Sullivan:

Your letter of May 12, 1976 to Mr. D. C. Weisenstein invited Westinghouse Electric Corporation to submit a statement relative to the proposed economic stockpiling of certain materials. Our firm does not wish to take a definite stand for or against economic stockpiling; however, we make the following comments which we hope will be constructive:

1. The purpose of any stockpiling that may be authorized should be limited to protection against a domestic shortage of the material.

2. Quantities to be stockpiled, therefore, should be directly proportional to our overseas dependence. This would rule out such materials as copper, but might include petroleum, chromium, and tungsten.

3. Such stockpiling should not be used to attempt to manipulate prices or production levels, but solely as a backup supply in the event of a failure of our normal overseas supply. Our ineptness at doing the former was clearly illustrated a few years ago when the GSA auctioned off the balance of the defense stockpile of copper to the highest bidders at a time when industry was under Federal price control.

4. If stockpiling is authorized, it should be managed by competent representatives of domestic producers (if any), users of the material, and the public. Persons engaged in buying and selling the material who are neither primary producers nor physically use this material in an end product, should be excluded from membership. Tenure of the members should be totally independent of politics, as in the case of the Federal Reserve Board.

We trust that the above comments may be useful in your deliberation.

Sincerely,

S. E. Lauer, Jr.
Director of Purchases

cc: D. C. Weisenstein
Westinghouse Electric Corporation

UNITED STATES DEPARTMENT OF COMMERCE
The Assistant Secretary for Domestic
and International Business
Washington, D.C. 20230

Honorable Leonor K. Sullivan
Chairman
Subcommittee on Materials Availability
Joint Committee on Defense Production
Washington, D.C. 20510

Dear Madam Chairman:

This is in response to your request to the Secretary for the views of this Department with respect to, "The Purpose and Organization of Economic Stockpiling." I very much apologize for our delay in answering.

Considerable attention has been devoted to examining the desirability of the Federal Government accumulating and maintaining inventories of industrial raw materials for purposes other than national defense and security. Much of the interest in this matter was generated in the aftermath of the petroleum embargo and as a result of increases in commodity prices during the period 1972-74. The expressed desires of raw material-producing developing countries to improve their terms of trade and to stabilize, and perhaps increase, world commodity market prices stimulated fears that OPEC type cartels would be formed in other commodities with consequent supply and price impacts on consuming nations. However, such cartels have not in fact materialized.

I am encouraged that your subcommittee has launched a program of study in this area and has sought the views of so many diverse organizations and individuals. I believe that, because of the complexities of economic stockpiling, and the relationship of such stockpiling to our Nation's economic and industrial policies, a thorough exploration of this issue is needed prior to introduction of any legislation.

In this context, I feel we should distinguish between strategic and economic stockpiles. The Congress has stated in the Strategic and Critical Materials Stockpiling Act of 1946 (50 U.S.C. 98-98h) that the purposes of strategic stockpiles are (1) to provide for the acquisition and retention of stocks of certain critical and strategic materials within the United States, (2) to encourage the conservation and development of domestic sources of these materials, and (3) to decrease and

prevent U.S. dependency upon foreign nations for supplies of such materials in times of national emergency. (emphasis supplied).

Economic stockpiles, on the other hand, would involve the acquisition of commodities for other than defense related purposes to achieve national economic objectives. Economic stockpiles would be aimed at (1) reducing price instability; and (2) hedging against unpredictable supply interruptions resulting from natural disasters or the concerted actions of foreign producers.

I believe that, given the potential of economic stockpiling for disruptive impact on our market economy and the complexities of administering such a program, its desirability is open to question.

Federal stockpiles, particularly if managed so as to reduce cyclical shifts in supply and price, could contribute to instability. The mere existence of Federal inventories creates uncertainty in that private decisionmakers can never be sure as to when and how the Government will intervene in the marketplace. This uncertainty could lead to uneconomic decisions on operating levels or unnecessary investment in new capacity. Federal stockpiles might also simply displace normal private stockpiles, thus putting the burden of maintaining stocks for particular processes on the Government.

Further, administration of such stockpiles poses considerable problems. Decisions would be required as to the desirable degree of stability in prices or supplies; the timing of Federal acquisitions and purchases; and the stage of processing of the raw material that might be stored. Other problems include governmental influence on speculation and inventories and the question as to whether stockpiles interfere with market capability to achieve substitution of materials or processes or development of alternate sources.

During the 1972-74 period which generated much of the interest in the possibility of economic stockpiling, the "shortage" problem was more one of escalating prices for particular commodities than it was one of unavailability of such commodities. "Shortages" also reflected, in part, increased speculation, inventory accumulation, and lengthened delivery times.

Considerable debate has been generated over whether the 1972-74 situation reflected a unique combination of circumstances affecting both supply and demand, or whether it was the result of capacity limitations. A study conducted for the Department by Arthur D. Little[1/] points out:

- The shortages of the 1972-74 period resulted from the interaction of a series of unique events during the previous 5-10 years.

- The prime causal factors identified most often as contributing to the shortage situations experienced during 1972-74 were:

  - governmental regulations;

  - financial considerations

  - capacity limitations; and

  - domestic and international demand pressures.

It is, therefore, not at all clear that economic stockpiling would have contributed to solving the so-called 1972-74 "shortage" problems.

In general, I believe that long term solutions to these kinds of problems will lie in the Federal Government's overall responsibility to provide a suitable climate for new investment and an appropriate framework for international trade, along with the stimulation of research and development regarding substitutes for scarce or import dependent materials. In addition, a short term alternative exists in the authority to impose short supply export controls.

Effective implementation of these policies could avoid many of the "shortage" problems to which consideration of economic stockpiles is often addressed with much less interference with the marketplace.

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1/ Arthur D. Little, Inc. Materials Shortage Study: An Analysis of Selected Commodities and Identification of Causal Factors Contributing to Supply Shortfalls, Report to Domestic Business Policy Analysis Staff, Department of Commerce, December 20, 1974.

I trust you will find this letter responsive. If you or your staff wish to discuss these points in more detail, we remain available to meet with you at your convenience.

Sincerely,

L.S. Matthews
Assistant Secretary for
Domestic and International Business

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