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COMPAS—Commercial Policy Analysis System

Documentation Version 1.4: May 1993

Developed by Joseph Francois and Keith Hall

U.S. International Trade Commission

NOTE: This documentation describes the contents of the
archive COMPAS_LL.ZIP

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Commercial Policy Analysis System

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BACKGROUND:

COMPAS is a package of standardized spreadsheets developed for trade policy analysis. The spreadsheets are specialized for the analysis of trade-related injury (or gains) to specific domestic industries and the overall domestic economy as a result of industry-specific trade policy changes. These include the following:

Unfair Trade Remedies

- o dumping;
- o subsidies;

Tariff Rate Changes

- o general duty changes
- o duty changes that target specific countries.

SYSTEM REQUIREMENTS, SETUP, and OPERATION:

COMPAS requires QUATTRO or QUATTRO PRO, and is designed to run on IBM-compatible machines that support MS-DOS. However, if you work with a different operating system, we encourage you to copy the structure of the spreadsheets. This COMPAS spreadsheets constitute shareware. They can be freely distributed.

TO INSTALL: COMPAS is designed to operate from your C drive. To install place the installation disk in drive A, and type INSTALL.

TO RUN, simply type "COMPAS" from the directory c:\compas

!!!!!!!!! NOTE: Either QUATTRO, or QUATTRO PRO
!!!!!!!!! must be on your path, as COMPAS calls on these
!!!!!!!!! programs directly.

SAVING FILES

To save specific spreadsheets, simply save files from the basic QUATTRO or QUATTRO PRO menu. We suggest using the subdirectory C:\COMPAS\SPREADS (which is created at installation). These files can then be called up later from the COMPAS menu. Try to avoid saving over the COMPAS templates.

COMPAS MODEL STRUCTURE:

The COMPAS spreadsheets are specialized for the analysis of specific trade policy changes. However, the spreadsheets are all based on a common model structure. The underlying model structure is a general imperfect substitutes model, also known as an Armington model. Such models are relatively standard in applied trade policy analysis, and are used extensively for the analysis of trade policy

changes both in partial and general equilibrium. (For references, see [5], [6], and [7]). Essentially, the model combines general information about product similarity, industry demand and supply conditions, and market shares, with information specific to a given type of analysis.

GENERAL INSTRUCTIONS:

Each spreadsheet requires certain user-provided data. This data is a section of the spreadsheet titled "INPUTS." Once these data have been provided, you can then view the results of the analysis in the section of the spreadsheet titled "RESULTS." Each spreadsheet accommodates up to eight different analyses. Users may find this useful if they would like to consider the implications of different parameter/elasticity estimates.

TO PRINT: simply follow the usual QUATTRO or QUATTRO PRO procedures for printing data from a spreadsheet.

COST AND PRICE DUMPING:

USES:

Assessing the injury caused to a competing domestic industry by dumped imports.

DESCRIPTION:

Spreadsheets for assessing the effect of dumped imports on the domestic industry under partial and full passthrough assumptions. The full passthrough analysis is appropriate for cases of cost dumping, and can also be viewed as an upper bound in price discrimination cases. The partial passthrough analysis provides a more precise assessment in cases of international price discrimination. The partial passthrough analysis is based on Boltuck's analysis of the economic effects of dumping. (See references [1] and [2]). They employ the same model structure found in the CADIC model.

SUBSIDIES:

USES:

Assessing the injury caused to a competing domestic industry by subsidized imports.

DESCRIPTION:

A spreadsheet for assessing the effect of subsidized imports on the domestic industry. It assesses, explicitly,

the increase in the supply of the subsidized import to the importing market that results from production or export subsidies. The analysis is based on Francois' analysis of the trade effects of subsidized imports. (See references [3] and [4]).

GENERAL DUTY CHANGES

USES:

Assessing general duty changes or escape clause cases.

DESCRIPTION:

A spreadsheet for analysis of general duty changes. It assesses the effect of such duty changes on the competing domestic industry and on the overall economy. This includes downstream consumer/producer effects and national income effects. The analysis of downstream consumer/producer effects and national income effects is based, in part, on Rousslang and Suomela (See reference [6]).

DUTY CHANGES THAT TARGET SPECIFIC COUNTRIES.

USES:

Assessing country-specific duty changes, as under GSP treatment or duties imposed as retaliation.

DESCRIPTION:

A spreadsheet for analysis of duty changes that target specific countries assesses the effect of such duty changes on the competing domestic industry and on the overall economy. This includes downstream consumer/producer effects and national income effects. The analysis of downstream consumer/producer effects and national income effects is based, in part, on Rousslang and Suomela (See reference [7]). Uses for this model include assessment of retaliation duties, and the assessment of the effects of extending GSP treatment to a product.

REFERENCES

- [1] Boltuck, R., "An Economic Analysis of Dumping," SWISS REVIEW OF INTERNATIONAL COMPETITION LAW, 1, 1987, reprinted in JOURNAL OF WORLD TRADE LAW, 21(5), October 1987, 45-54.
- [2] Boltuck, R., "Assessing the Effects on the Domestic Industry of Price Dumping," in P.K.M. Tharakan ed., POLICY IMPLICATIONS OF ANTIDUMPING MEASURES, Elsevier Science Publishers (North Holland), 1991.

- [3] Francois, J.F., "Countervailing the Effects of Subsidies: An Economic Analysis," JOURNAL OF WORLD TRADE, 26(1), February 1992, 5-13.
- [4] Francois, J.F., "Economic Analysis of the Effects of Subsidies," U.S. International Trade Commission, Office of Economics, Memorandum EC-P-038, from the Acting Director of Economics to the Commission, June 23 1992.
- [5] Reinert, K.A. and Roland-Holst, D.W., "An Introduction to the ITC Computable General Equilibrium Model," U.S. International Trade Commission Publication 2423, September 1991.
- [6] Rousslang, D.J. and Suomela, J.W., "Calculating the Consumer and Net Welfare Costs of Import Relief," U.S. International Trade Commission Staff Research Study #15, 1985.
- [7] U.S. International Trade Commission, "The Economic Effects of Significant U.S. Import Restraints, Phase I: Manufacturing," U.S. International Trade Commission Publication 2222, October 1989.

COMMENTS:

COMPAS has been developed by Joseph Francois and Keith Hall. We welcome comments, suggestions, and inquiries. Please address correspondence regarding technical aspects of COMPAS to: Office of Economics, U.S. International Trade Commission, 500 E Street S.W., Washington DC 20436, USA.

UPDATES: To receive future updates of COMPAS, write to: The Secretary, U.S. International Trade Commission 500 E Street S.W., Washington DC 20436, USA.

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SOME ADVICE:

THE HENNING CONUNDRUM CONSTRAINT

In the COMPAS models, products are treated as gross complements. This means, that, viewed in isolation, the products in a given market are in effect substitutes for each other. The degree of substitutability is measured by the elasticity of substitution. When combined with information about market shares and the composite demand elasticity for the entire product category, the substitution elasticity can be used to determine cross-price elasticities.

While products may be gross substitutes, this does not guarantee that they are net substitutes. REMEMBER -- demand for the competing domestic and imported products, as a group, depends on the general level of prices within the category. A drop in the price of an import thus has two effects (i) a direct negative impact on demand for competing products in the category, and (ii) an indirect positive impact through a lowered general price level, that increases the total level of expenditures in the category. For products to be net substitutes (i.e. for a fall in import prices to hurt competing producers), the first of these effects must dominate. This will be true if the following condition is met.

$$\text{Substitution Elasticity} > \text{Composite Demand Elasticity}$$

This condition is referred to, for reasons that shall remain cryptic, as the Henning Conundrum Constraint Condition. The constraint is that, if products are net substitutes, the substitution elasticity is bounded from below by the composite demand elasticity.

ADDITIONAL INFORMATION ON SUBSIDIES

The subsidy spreadsheet uses a generalization of the same approach used in the original CADIC program (you may, in fact, use the program to imitate CADIC estimations of the effects of unfair pricing of imports with the proper parameter inputs describing the unfair imports production and non-U.S. markets). Assuming a production subsidy, there are two additional pieces of information needed for input beyond what is used in an anti-dumping case. They are:

- 1) the proportion of the unfair product's output that is sold in the U.S. market (as opposed to the home country and other export markets).
- 2) the price elasticity of demand for the product in non-U.S. markets.

The program may also be used to estimate the effects of a subsidy targeting the U.S. export market. Since only that output destined for the U.S. market is subsidized, simply make 1) equal to 100%.

ADDITIONAL PARAMETERS IN SOME OF THE SPREADSHEETS

Transportation Ratio

This input represents the cost of transportation of the subject product(s) between the factory and U.S. port of entry as a percent of the Customs

Value of the subject products. This partially takes into account the fact that the DOC margin is based on ex-factory import prices.

Domestic Content

In instances where the subject imports do not compete with U.S. like products until some U.S. value is added, this represents the proportion of the value of the product that is domestically produced (and therefore not unfairly priced at the level of competition with FV and domestic products).

Average U.S. Tariff Rate

This represents the average U.S. tariff rate applied to the subject imports. This helps take into account the fact that the DOC margin is based on ex-factory import prices.