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DEPARTMENT OF DEFENSE FISCAL YEAR 2021 BUDGET

HEARING

BEFORE THE

COMMITTEE ON THE BUDGET HOUSE OF REPRESENTATIVES

ONE HUNDRED SIXTEENTH CONGRESS

SECOND SESSION

HEARING HELD IN WASHINGTON, D.C., MARCH 10, 2020

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DEPARTMENT OF DEFENSE FISCAL YEAR 2021 BUDGET

TUESDAY, MARCH 10, 2020

HOUSE OF REPRESENTATIVES,
COMMITTEE ON THE BUDGET,
Washington, DC.

The Committee met, pursuant to notice, at 10 a.m., in room 210, Cannon House Office Building, Hon. John A. Yarmuth, [Chairman of the Committee] presiding.

Present: Representatives Yarmuth, Moulton, Doggett, Schakowsky, Panetta, Morelle, Horsford, Scott, Jackson Lee, Jayapal, Omar, Peters; Womack, Woodall, Johnson, Smith, Holding, Stewart, Norman, Hern, Roy, Meuser, Crenshaw, and Burchett.

Chairman YARMUTH. This hearing will come to order.

Good morning. I want to welcome everyone to this hearing on the Department of Defense's Fiscal Year 2021 Budget.

And I certainly welcome Deputy Secretary for DoD David Norquist. Thank you for being here today.

I will now yield myself five minutes for an opening statement.

Chairman YARMUTH. Defense spending makes up more than half of all discretionary spending, so it is critical that the Budget Committee fully understand the Department's budget proposal and what it means for the future.

While we already have a budget in place for Fiscal Year 2021, we owe it to the taxpayers and our men and women in uniform to take a comprehensive look at our security needs and provide oversight of the defense budget.

To that end, I would like to welcome back Deputy Secretary Norquist.

I am glad to have DoD back before our Committee for a second year in a row, after a long hiatus.

We have a responsibility to provide the necessary resources to defend this country, and that includes maintaining a military that is second to none. However, our national security involves more than our military. Our country has long understood that an effective national security strategy requires a whole-of-government approach, including diplomacy and foreign aid to prevent war and broker peace in times of conflict; law enforcement to keep our communities safe; oversight to protect our food supply, our air, and our water; innovations in science and technology to keep our edge over competitors; programs to mitigate the destabilizing effects of climate change and prepare against pandemics; and investments in education and infrastructure to keep the economy, the source of our strength, growing.

If we are to truly commit to strong national security, the conversation needs to include all of the agencies and programs that keep us safe. The budget levels we agreed to last year under the Bipartisan Budget Act of 2019 embody the undeniable connection between non-defense and defense investments.

I thought the President finally understood this as well, considering he signed the bill into law. Instead, he reneged on the bipartisan, bicameral deal and once again proposed destructive and irrational cuts to investments critical to our national and economic security.

As a prime example, this budget cuts the funding for the State Department by nearly one-quarter compared with the 2020 enacted level. This is irresponsible and shortsighted. And you do not have to take it from me. The President's own former Secretary of Defense, James Mattis, famously said, "If you do not fund the State Department fully, then I need to buy more ammunition."

Diplomatic operations, international narcotics control and law enforcement, humanitarian aid, disease prevention and control, and education, all face destructive and reckless cuts.

While the coronavirus spreads around the world and here in the United States, we clearly see how human health is interconnected and a global concern. Despite this reality, the President's budget cuts funding for global health programs by $3 billion, or 34 percent below the 2020 enacted level.

The Department of Defense has consistently identified climate change as a national security challenge and threat multiplier. But the President's budget not only fails to take the scale of the threat seriously; it does not even incorporate the cost of climate change into the budget. At home, U.S. military facilities, operations and equipment are vulnerable to storms, sea level rise, flooding, wildfires, and drought. And abroad, climate change exacerbates international instability and stands to increase the frequency, scale, complexity, and cost of future DoD missions. We must be ready.

Moreover, the President's budget includes major gaps between funding and plans. This shows a lack of strategy that will result in inefficient military spending and a less effective military if not corrected.

To be clear, I do not support all of the provisions of the Pentagon's national defense strategy, but setting our military up to fail is not only wasteful, it is potentially dangerous.

Finally, this proposal defaults on the budget agreement and sets the stage for funding battles with Congress and more continuing resolutions. We ask our troops to perform a very difficult job, but it is made harder if we fail to come through on time with the proper resources in the right accounts.

Thankfully, the Senate Majority Leader indicated that he believes in the budget we already have in place and will stick to it.

Deputy Secretary Norquist, I realize the tremendous responsibility shouldered by you and your Department. Securing the safety of the American people and maintaining the best interest of our service members is no easy job, especially when you are operating under the direction of a President who often gets his security brief-

ings from cable news and puts his personal whims above our national security.

We are all concerned by the President's politically motivated and brazen reprogramming of military funds for the border, for his border wall pet project. I have no doubt this not only makes your job harder, but it makes it harder for those who put on the uniform and sacrifice for this country every day.

Once again, I thank you for being here today and I look forward to your testimony.

[The prepared statement of Chairman Yarmuth follows:]

Chairman John A. Yarmuth
Hearing on the Department of Defense FY 2021 Budget
Opening Statement
March 10, 2020

Defense spending makes up more than half of all discretionary spending, so it is critical that the Budget Committee fully understand the department's budget proposal and what it means for the future. While we already have a budget in place for Fiscal Year 2021, we owe it to the taxpayers and our men and women in uniform to take a comprehensive look at our security needs and provide oversight of the defense budget. To that end, I'd like to welcome back Deputy Secretary Norquist. I am glad to have DoD back before our Committee for a second year in a row after a long hiatus.

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If we are to truly commit to strong national security, the conversation needs to include all the agencies and programs that keep us safe. The budget levels we all agreed to last year – under the Bipartisan Budget Act of 2019 – embody the undeniable connection between non-defense and defense investments. I thought the President finally understood this as well, considering he signed the bill into law. Instead, he reneged on the bipartisan, bicameral deal and, once again, proposes destructive and irrational cuts to investments critical to our national and economic security.

As a prime example, this budget cuts funding for the State Department by nearly one-quarter compared with the 2020 enacted level.

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drought. And abroad, climate change exacerbates international instability and stands to increase the frequency, scale, complexity, and cost of future DoD missions. We must be ready.

Moreover, the President's budget includes major gaps between funding and plans. This shows a lack of strategy that will result in inefficient military spending and a less effective military if not corrected. To be clear, I do not support all of the provisions of the Pentagon's National Defense Strategy but setting our military up to fail is not only wasteful, it's potentially dangerous.

Finally, this proposal defaults on the budget agreement, and sets the stage for funding battles with Congress and more continuing resolutions. We ask our troops to perform a very difficult job, but it is made harder if we fail to come through on time with the proper resources in the right accounts. Thankfully, the Senate Majority Leader indicated that he believes in the budget we already have in place and will stick to it.

Deputy Secretary Norquist, I realize the tremendous responsibility shouldered by you and your department. Securing the safety of the American people and maintaining the best interests of our servicemembers is no easy job – especially when you are operating under the direction of a President who often gets his security briefings from cable news and puts his personal whims above our national security. We are all concerned by the President's politically motivated and brazen reprogramming of military funds for his border wall pet project. I have no doubt this makes not only your job harder, but it makes it harder for those who put on the uniform and sacrifice for this country every day.

Once again, I thank you for being here today. I look forward to your testimony.

Chairman YARMUTH. I now yield five minutes to the Ranking Member for his opening statement.

Mr. WOMACK. Thank you, Mr. Chairman, for this hearing.

Thank you, Deputy Secretary Norquist, for being here today.

We are here to discuss the President's budget request for the DoD for Fiscal Year 2021. This is the agency tasked with defending our values, keeping America strong, free, and safe. Providing for the common defense is, in my judgment, our highest constitutional duty. It is a responsibility so great that it is enshrined in the Preamble of our founding document.

Congress plays an essential role in ensuring full spectrum military readiness and the security of the American people. We hold the power of the purse, and it is this authority that funds the federal government, including DoD. While we do everything possible to work with the Department, and we take their views and concerns seriously, it is ultimately up to the Congress to determine how taxpayer dollars are spent on national priorities.

This congressional will is expressed through our annual appropriations bills, and those are the law.

As the Ranking Member of this Committee and a Member of the Appropriations Subcommittee on Defense, I was disappointed that the Executive Branch chose to substitute its judgment for that of Congress last month when it announced that it would be transferring funds out of DoD accounts.

I expect we will hear more about that decision later today, but let me be clear—according to the Constitution, Congress alone is responsible for determining funding for the national defense.

With that said, I am now going to turn to the President's request for the national defense budget, which is why we are here today. After several years of funding instability, this Administration has taken the steps to restore the readiness of our military and provide our troops with the tools and training they need.

With President Trump's support, Congress passed legislation providing $685 billion for the Department of Defense in Fiscal Year 2019, $718 billion in Fiscal Year 2020.

As a result of these increases, the Department of Defense has been able to rebuild key areas that were neglected under the previous administrations, such as procuring new equipment and ensuring military readiness, critical components of a strong national defense.

The President's 2021 request continues to prioritize funding for key defense needs while adhering to the spending caps called for in the Bipartisan Budget Act of 2019.

The Department continues to improve readiness and invest in modernizing our military for the future. This budget makes important investments in nuclear weapons, space and cyber. It advances the development of critical technologies like hypersonics, artificial intelligence, and microelectronics.

This budget also prioritizes our service members with a 3 percent pay raise, making sure we are not just investing in weapons and technology, but also in our men and women in uniform.

While it is critical to fully fund the needs of the Department of Defense, we must also ensure taxpayer dollars are well spent, and I commend you, Mr. Norquist, and this Administration for com-

pleting its first full financial statement audit in Fiscal Year 2018 and recently completing its Fiscal Year 2019 audit.

Both audits are strong steps in the right direction, ensuring transparency and fiscal responsibility within the nation's largest agency.

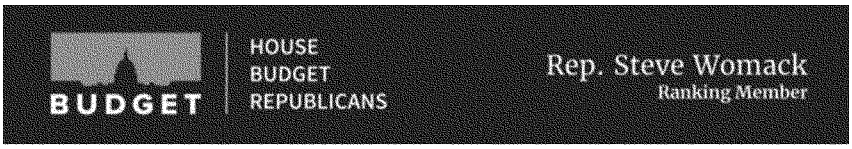
Past administrations have made commitments to conduct this type of review, but the Trump Administration is the first to fulfill that promise.

I further applaud you, Mr. Secretary, for conducting a comprehensive review of Defense-wide organizations we commonly know as the "Fourth eState," where you identified nearly $6 billion in savings for Fiscal Year 2021. Every single federal agency should mirror your efforts to eradicate waste and inefficiency.

I look forward to hearing how you were able to successfully find these savings and your plans to continue such reviews going forward, as well as how Congress can support these efforts.

And with that, Mr. Chairman, I yield back my time.

[The prepared statement of Steve Womack follows:]



Ranking Member Steve Womack (R-AR)
Opening Remarks at Hearing Entitled:
Department of Defense FY 2021 Budget

Remarks as prepared for delivery:

Thank you, Chairman Yarmuth, for holding this hearing, and thank you, Deputy Secretary Norquist, for being here today.

We are here to discuss the President's budget request for the Department of Defense for fiscal year 2021. This is the agency tasked with defending our values and keeping America strong, free, and safe.

Providing for the common defense is one of our highest constitutional duties. It's a responsibility so great, that it is enshrined in the preamble of our founding document.

Congress plays an essential role in ensuring full-spectrum military readiness and the security of the American people. We hold the power of the purse – and it's this authority that funds the federal government, including the Department of Defense.

While we do everything possible to work with the Department – and we take their views and concerns seriously – it is ultimately up to

Congress to determine how taxpayer dollars are spent on national priorities. This congressional will is expressed through our annual appropriation bills — and those are the law.

As the Ranking Member of the Budget Committee and a member of the Appropriations Subcommittee on Defense, I was disappointed that the Executive Branch chose to substitute its judgment for that of Congress last month when it announced it will be transferring funds out of DoD accounts. I expect we will hear more about that decision later today, but let me be clear – according to the Constitution, Congress alone is responsible for determining funding for the national defense.

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While it is critical to fully fund the needs of the Defense Department, we must also ensure taxpayer dollars are well spent. I commend this administration for completing its first full financial statement audit in fiscal year 2018 and recently completing its fiscal year 2019 audit.

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With that, Mr. Chairman, thank you again, and I yield back.

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Chairman YARMUTH. I thank the Ranking Member for his statement.

In the interest of time, if any other Members have opening statements, you may submit those statements in writing for the record.

And now once again, I introduce Deputy Secretary of the Department of Defense, David Norquist.

You have five minutes to present your opening statement.

STATEMENT OF HON. DAVID L. NORQUIST, DEPUTY SECRETARY OF DEFENSE, U.S. DEPARTMENT OF DEFENSE

Mr. NORQUIST. Thank you, Mr. Chairman.

Chairman Yarmuth, Ranking Member Womack, distinguished Members of the Committee, I appreciate the opportunity to testify in support of the President's Fiscal Year 2021 budget request for the Department of Defense.

Before I do, I would like to take a moment to recognize the two Marines killed Sunday in combat in Iraq. Please keep these men and their families in your thoughts and prayers.

The men and women of the Department of Defense put their lives on the line every day for the safety and security of the nation. We are humbled and grateful for their sacrifice.

To begin, let's consider the state of defense at the beginning of this Administration. DoD had been operating for five years under destructive spending caps which left the Department with significant funding shortfalls and resulted in the smallest military force since 1940, key munition shortages, low readiness ratings in key combat units, and an urgent need to rebuild our nuclear deterrent.

At the same time, we were grappling with the new warfighting environment, given the reemergence of great power competition from Russia and China and the rapidly changing character of warfare. Future wars will be waged not just in the air, on the land, and at sea, but also in space and cyberspace, dramatically increasing the complexity of warfare.

To address this we developed a new national defense strategy that shifted the Department's focus to the high-end fight. Thanks to President Trump's commitment to rebuild the military and a bipartisan effort in Congress, over the past three years, the Department received a significant funding increase it needed to implement the national defense strategy.

As a result, the Department made important progress along the NDS' three lines of effort. For example, regarding readiness and lethality, the Department of Defense has increased the number of ready brigade combat teams by 33 percent and raised the readiness of the Air Force's lead pacing squadron by 35 percent.

We also restructured the Department around the new character of warfare. Working with Congress, we established the Space Force, elevated U.S. Cyber Command, and created the Joint Artificial Intelligence Center.

Regarding our alliances, our NATO allies have increased their contribution to our collective security by $130 billion since Fiscal Year 2016.

Finally, along the third line of effort, reform, the Secretary of Defense led a Defense-wide review that has identified aggressive re-

form opportunities that would result in over $5.7 billion in Fiscal Year 2021 savings.

The Fiscal Year 2021 budget request is the next step in implementing the national defense strategy, and the focus is on all domain operations. It addresses the challenges of today by, first, sustaining readiness and keeping faith with our 2.2 million military members and their families and, second, preparing for the challenges of tomorrow by recapitalizing our nuclear deterrence, strengthening homeland missile defense, and expanding our investment in critical emerging technologies, such as hypersonic weapons, directed energy, 5G, microelectronics, artificial intelligence, and autonomous platforms.

At $740.5 billion for the national defense, of which $705 billion is for the Department of Defense, this budget is different from the previous few years because the DoD top line if flat, with no growth for inflation. This meant that we had to make additional tough choices and major cuts in some areas in order to free up money to continue to invest in preparing for the high-end fight.

In closing, although defense spending is sizable, it is at near record lows as a percentage of the economy and federal spending. Defense spending is now at 3.1 percent of GDP, down from 11 percent in 1953 and four and a half percent in 2010, and at 15 percent of federal spending, down from 57 percent in 1952 and about 20 percent in 2008.

This foundation of security, however, is what makes everything else possible. I appreciate this Committee's support for the men and women of our Armed Forces, and I look forward to answering your questions.

[The prepared statement of David Norquist follows:]

House Budget Committee
Written Statement for the Record
David L. Norquist
Deputy Secretary of Defense
10 March 2020

Chairman Yarmuth, Ranking Member Womack, distinguished Members of the Committee, I appreciate the opportunity to testify in support of the President's FY 2021 budget request for the Department of Defense.

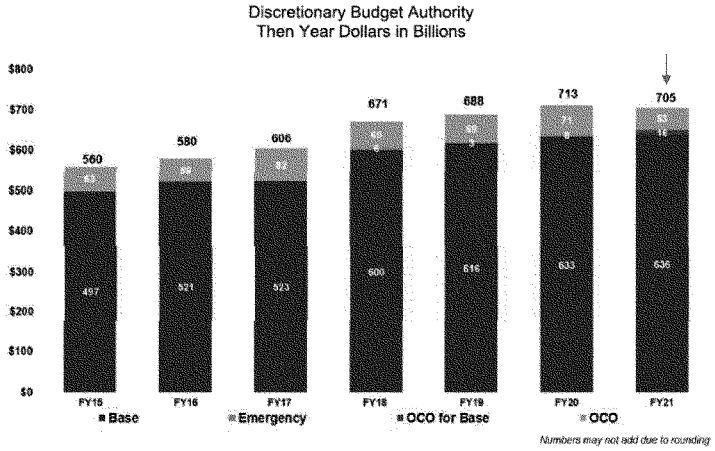
Thank you all for your support for the Department of Defense. I look forward to working with you to ensure the men and women of the Armed Forces have the resources they need to execute the mission.

I'd like to begin by providing an overview of where we have come from and where we are going. Consider the state of defense at the beginning of this administration: DoD had been operating for five years under destructive spending caps which left the Department with a significant funding shortfall—and resulted in the smallest military force since 1940, key munitions shortages, low readiness ratings in key combat units, and an urgent need to rebuild our nuclear deterrent.

At the same time, we were grappling with a new warfighting environment given the re-emergence of great power competition from Russia and China and the rapidly changing character of warfare. One thing had become evident—wars of the future were going to be radically different from the short conventional wars and protracted counterterrorism operations we've fought since the collapse of the Soviet Union. Future wars will be waged not just in the air, on the land, and at sea, but also in space and cyberspace, dramatically increasing the complexity of warfare.

To address this, we developed a new National Defense Strategy that shifted the Department's focus to the high-end fight and reflected the changing character of warfare. Thanks to President Trump's commitment to rebuilding the military—and a bipartisan effort in Congress—over the past three years, the Department received the significant funding increase it needed to implement the National Defense Strategy.

Figure 2. DoD Topline Funding FY 2015 – 2021



As a result, the Department made important progress along the National Defense Strategy's three lines of effort. For example, along the first line of effort, increasing the readiness and lethality of our warfighters, the DoD has increased the number of ready brigade combat teams by 33%, raised readiness for the Air Force's Lead Pacing Squadrons by 35%, and increased the quantity of key munitions and equipment. We also restructured the Department around the new character of warfare. Working with Congress, we established the Space Force, elevated U.S. Cyber Command to be a unified combatant command, re-designated the Under Secretary of Defense for Intelligence to be the Under Secretary for Intelligence and Security, and created the Joint Artificial Intelligence Center. Along the second line of effort, strengthening our alliances and partnerships, our NATO allies have increased their contributions to our collective security by $130 billion since FY 2016. Finally, along the third line of effort, reforming the Department's way of doing business, the SecDef-led Defense-Wide Review (DWR), a comprehensive review of all DoD organizations, programs, functions, and activities outside of the Military Departments, has identified aggressive reform opportunities that would result in over $5.7 billion in FY 2021 savings for reinvestment in lethality and readiness, and an additional $2.1 billion in activities and functions to realign to the Military Departments. We look forward to Congress's support in implementing the reforms in this budget request.

The FY2021 budget request is the next step in implementing the National Defense Strategy—and the focus is on all-domain operations. It addresses the challenges of today by first sustaining readiness and keeping faith with our 2.2 million military members and their families, and second, preparing for the challenges of tomorrow by recapitalizing our nuclear deterrence, strengthening homeland missile defense, and expanding our investments in critical emerging technologies—such as hypersonic weapons, directed energy, 5G, microelectronics, artificial intelligence, and autonomous platforms.

At $740.5 billion for national defense of which $705.4 billion is for the Department of Defense, this budget is different from the previous few years because the DoD topline is flat with no growth for inflation. This meant that we had to make additional tough choices and major cuts in some areas in order to free up money to continue to invest in preparing for the high-end fight.

Consistent with the Congressional budget deal, of the $705.4 billion, $636.4 billion would go towards base funding and $69.0 billion to amounts designated for Overseas Contingency Operations funds.

Figure 1. Department of Defense Budget

$ in billions	FY 2018 Actuals	FY 2019 Actuals	FY 2020 Enacted	FY 2021 Request
Base	599.6	616.4	633.3	636.4
Overseas Contingency Operations	65.2	68.6	66.4	53.0
OCO for Base	--	--	4.9	16.0
Emergency	5.8	2.8	8.0	--
Total	**670.6**	**687.8**	**712.6**	**705.4**

The budget is also broken down into five categories based on use—military personnel, operation and maintenance, procurement, research and development, and military construction.

With respect to military personnel, this budget would fund the salaries of 1.4 million active duty military members and 800,000 Reserve and National Guard members, while supporting a 3% pay raise.

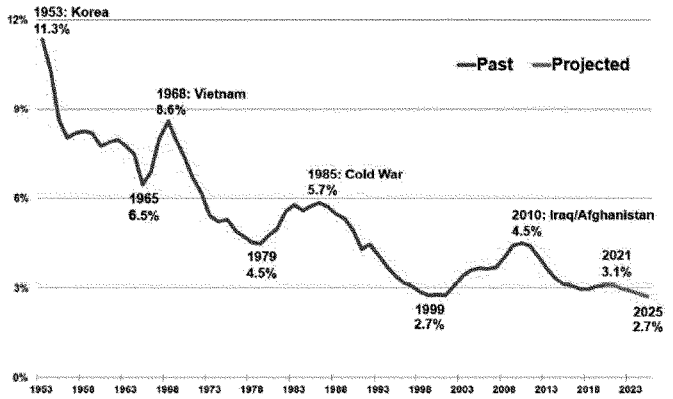
With respect to operation and maintenance, the FY 2021 budget funds the operation and training of military forces including a combat force structure of 58 Army Brigade Combat Teams (BCTs) and 23 Combat Aviation Brigades (CABs); 306 ships with 10 Carrier Strike Groups and 9 Carrier Air Wings; 3 Marine Expeditionary Forces (MEFs) and 32 Infantry Battalions; and 65 Air Force Squadrons and an Air Force Total Aircraft Inventory (TAI) of 5,485. This year's budget also realigns $15.4 billion to a separate space budget in support of our newest service the U.S. Space Force.

With respect to procurement, the FY 2021 budget invests in next generation aircraft, shipbuilding, and ground systems. For example, the FY2021 budget includes 79 new F-35s, the latest generation of fighter jets; 8 new battle force ships, including 2 DDG-51 ARLEIGH BURKE Class Destroyers; and new ground systems to include 4,247 Joint Light Tactical Vehicles. The FY2021 budget also funds new purchases in missile defense such as 40 new Sea-Based Interceptors; and the revitalization of our nuclear triad, including 1 COLUMBIA Class Ballistic Missile Submarine, the first of its class, the B-21 bomber, and the Ground Based Strategic Deterrent missile system.

It is not enough to be ready for the challenges of today. We must also invest in the technologies that will provide security for the next generation. With respect to research and development, the FY 2021 budget is the largest RDT&E request <u>ever</u> at $106.6 billion, and includes investments in long-range hypersonic weapons; autonomy and unmanned systems; and artificial intelligence (AI). We have been investing in these emerging technologies, many are now being prototyped and tested and as they are ready, we are poised to move them into production. In short, this budget invests in bringing the capabilities of tomorrow to life.

Although defense spending is sizeable, it is at near record lows as a percentage of the economy and federal spending. Defense spending is now at 3.1% of GDP, down from 11.3% in 1953 and 4.5% in 2010—and at 15% of federal spending, down from 57.2% in 1952 and 19.9% in 2008. This foundation of security is what makes everything else possible.

Figure 3. DoD Outlays as a Percent of Gross Domestic Product (GDP) FY 1953 – FY 2025



Source: DoD spending as a percent of GDP compares DoD outlays, both discretionary and mandatory, from the National Defense Budget Estimates for FY 2020 (Table 7-7) and projected GDP from OMB's Economic Assumptions for the FY 2021 Budget.

In closing, the President's FY 2021 budget request puts us on the path to develop a future force that can prevail in each and every domain—air, land, and sea; space and cyber; leveraging the capabilities of each in a synchronized fashion while fighting seamlessly across them all. This is the force we need for this new era of great power competition—one capable of all-domain operations to deter our adversaries, by being prepared to fight and win today and in the future.

I appreciate your support for the men and women of the Armed Forces and look forward to answering your questions.

Thank you.

Chairman YARMUTH. I thank you for your statement.

We will now begin our question and answer period.

As a reminder, our Members can submit written questions to be answered later in writing. Those questions and Deputy Secretary Norquist's answers will be made part of the formal hearing record. Any Members who wish to submit questions for the record may do so within seven days.

As we usually do, the Ranking Member and I will defer our questions until the end.

I now recognize the gentleman from Texas, Mr. Doggett, for five minutes.

Mr. DOGGETT. Thank you very much.

And thank you, Mr. Secretary, for your service.

I advised your office in advance last night of concerns I have about coronavirus.

I represent Military City USA, San Antonio, Texas. My district is adjacent to Joint Base San Antonio at Lackland, where we have two planeloads of Americans evacuated from exposure to coronavirus.

This afternoon or tomorrow the Trump Administration is apparently flying additional planeloads to San Antonio of people that have never been tested that are on the Grand Princess cruise ship, without a very clear plan of what happens to those who test positive once they get to San Antonio.

While I certainly want to assist all Americans, my concern is protecting my civilian population neighbors in San Antonio, and of course, every one of our military service members.

I realize that it is not the Defense Department's decision, though it is, indeed, an incredible decision that the Trump Administration has chosen not to test any of these people before they leave California.

I realize that it is not the Defense Department's decision but the Trump Administration's failure to get San Antonio more than 75 lab tests as of today.

I realize it is not the Department of Defense decision but a Trump Administration failure to provide San Antonio additional protective medical equipment for our professional medical people.

But my understanding is that it is within your jurisdiction to decide whether those individuals who test positive for coronavirus must immediately leave any Defense Department property.

Is that the position of the Defense Department this morning?

Mr. NORQUIST. So, I appreciate the question.

And, again, I understand and appreciate your support. It is our responsibility to help bring Americans safely home and quarantine them.

So far what the Department of Defense has been is we function in support of HHS. We provide the rooms to their specifications that allow us to quarantine individuals. We work with HHS on where they go.

I know the Secretary is in discussions with HHS about the concern that you have raised. The challenge that we face on the Department's side is severalfold. One is we have a very large force that we have to have prepared to fight tonight and a very relatively small medical community upon which to rely. And so——

Mr. DOGGETT. And I understand all of that and certainly appreciate and agree with you. My only question is: is it the Defense Department policy as of this morning that if anyone who I think should have been tested before they ever came to San Antonio gets there and they test positive but are otherwise asymptomatic and do not need treatment, are they being compelled to leave Defense Department property immediately upon result of positive test?

Mr. NORQUIST. That is my understanding of our current policy.

Mr. DOGGETT. And you made reference to discussions between different parts of the Trump Administration. Has Health and Human Services, has Secretary Azar and his people with CDC, have they requested that the Defense Department make an exception to this policy for these evacuees who are positive but not symptomatic?

Mr. NORQUIST. So I do not know in terms of in the last 24 hours if there has been a request with regard to these.

Mr. DOGGETT. I was told they did it on earlier planeloads, and I have not gotten any results of that. That is why I am inquiring this morning.

Mr. DOGGETT. I do not know that on this plane request.

Mr. DOGGETT. As you know, in San Antonio we are proud of the fact that we have some of the best military medical facilities in the world at Brooke Army Medical Center, that we refer to as BAMC; at Wilford Hall at Lackland. Is the Defense Department declining to permit anyone who has coronavirus from being treated in isolation in those military hospitals?

Mr. NORQUIST. I do not know about those particular hospitals. In general, we have treatment facilities for if a DoD person is infected, but our hospitals are generally not set up and there are congressional laws that restrict and affect our ability to bring private citizens in, and so I would have to defer in terms of those.

Mr. DOGGETT. If there is any law that you think stands in the way of treating these evacuees that have been forced on the city of San Antonio without good plans, without protective equipment, without the test having been done, I would really appreciate your office telling me what it is today.

My understanding is it is Defense Department policy, and I respect that because I want to protect every service member so that they are ready to defend our country.

But the problem is that moving evacuees who have coronavirus across San Antonio to the local hospitals and other unknown destinations, since they do not know where they are even going to put these people once they are forced off the military reservation, is something that risks community spread in our community.

And none of these evacuees have been previously tested. They may be asymptomatic, but they could well be, as has been true of some of the earlier flights, they could be positive and transmit this virus to others.

I would really appreciate your going back. I know our city has appealed. I believe that our Governor as well has raised this concern, to see if there is not a way to contain these people in the same hotels they have been sitting in.

You have got some people that will be there today or tomorrow who probably are positive for coronavirus if the Administration had

bothered to test them in California. They will be there already posing whatever danger they pose.

The problem is when we start moving them all across Bexar County from one side of town to another and the danger that poses, and that is our great concern.

I appreciate your leadership, and I would just appeal to you to go back and see if there is not a way to keep those individuals there without posing any real danger to our forces.

Thank you, and thank you, Mr. Chairman.

Chairman YARMUTH. The gentleman's time has expired.

I now recognize the gentleman from Ohio, Mr. Johnson, for five minutes.

Mr. JOHNSON. Thank you, Mr. Chairman.

And, Deputy Secretary Norquist, I appreciate you coming to talk to us today about the President's Fiscal Year 2021 Defense budget request.

You know, as an Air Force veteran of nearly 27 active years, I applaud DoD's efforts to identify $5.7 billion in savings for Fiscal Year 2021 and to reinvest these savings in critical national defense strategy priorities, including nuclear deterrence, cyber and space, and technological developments.

However, even though I applaud and support border security and the building of a border wall, I am concerned about the Administration pulling funds from DoD weapons programs to fund the construction of the wall.

In Fiscal Year 2019, the Administration used reprogramming authority and a national emergency declaration, which I supported, to reapportion $6.7 billion to fund the border wall.

Last month we learned that the Pentagon would be reprogramming $3.8 billion in Fiscal Year 2020 appropriations from various DoD weapons programs to fund the border wall.

Having traveled to the El Paso sector of the U.S. Border Patrol, I wholeheartedly support strengthening our southern border, including building the border wall. However, I do have serious concerns with pulling funding from DoD weapons programs for its construction.

I was particularly disappointed to see $360 million reprogrammed that was to be used for additional C–130J aircraft. The Fiscal Year 2020 National Defense Authorization Act specifically authorized funding for four additional C–130Js.

These additional aircraft would be invaluable in supporting missions such as the 910th Airlift Wing at Youngstown Air Reserve Station, which operates DoD's only large area fixed wing aerial spray mission, forcing the 910th to simultaneously support dual primary missions with only eight primary aircraft.

There is no question that my colleagues and I are concerned about the diversion of military funds from these various weapons programs to fund the border wall, but there is a solution. We must not forget that Congress has a constitutional duty to appropriate funding, and it is Congress' failure to approve the necessary funding to secure our borders that has forced President Trump to divert funding from DoD to build a wall.

Therefore, Congress must provide adequate funding for the border wall so that the Administration is not forced to pull these and other valuable DoD funds.

So, Deputy Secretary Norquist, can you tell me how much funding for DoD's budget is geared toward future conflicts?

You and I talked about that a little bit before we began the hearing.

Mr. NORQUIST. So we invested significantly in future conflicts. When you think about our budget, you sort of divide procurement, which is readiness O&M, which is sort of the near-term readiness, and the investment in today. You have the procurement, which is systems in field over the next several years.

And then you have RDT&E, which is research, development, test, and evaluation, in this budget about $106.6 billion.

Those are really the next generation of technologies. In nominal dollars, it is the largest RDT&E budget we have had, but I think what it reflects is even in a time of a lower top line, a tight top line, it is still a priority for the Department to be ready, not just for the challenges of today, but the important challenges of the future.

Mr. JOHNSON. Yes, I agree.

Trying to drill down just a little bit more, what are we doing to ensure funding for nontangibles, such as software, interconnected networks, artificial intelligence, and other critical weapon systems and platforms that you cannot necessarily touch and feel?

Mr. NORQUIST. Right. This is a challenging area because everyone notices the ships, the planes, but behind it you have software, and software can have cybersecurity vulnerabilities. It also can make the biggest difference between two planes that look identical in terms of which one wins in the fight.

So we have significant investments both in developing our work force, the capability to produce those types of technologies, as well as ensuring the cybersecurity aspects of those platforms and, in addition, working with the supply chain.

One of the issues is helping secure the businesses that are suppliers to DoD so their technology is not stolen.

Mr. JOHNSON. OK. You know, since Fiscal Year 2002, 2002, DoD has operated under a continuing resolution 14 times. Shame on Congress. Shame on my colleagues for not being willing to put forth a budget proposal so that we can fix this broken budget process and appropriate the money to DoD to provide our national security.

So can you elaborate just a little bit? How do CRs affect the Department's ability to plan in the short and long term?

Mr. NORQUIST. CRs are a significant problem. Let me walk just through a couple of issues.

The first is they prevent new starts. So if we have a technology that the Department recommends and the House and Senate both agree and Republicans and Democrats think are valuable, we cannot start it on 1 October. I have to wait.

So each year you give the other team three to four months' head start every time you are under a CR because you are delaying these new technologies.

The same thing with production increases. There is a factory that is scaled to go from 50 to 100, but it has to operate at 50 inefficiently at extra cost to the taxpayer until the budget passes and allows them to go up to the 100 that the Congress authorized and appropriated and the Department supported.

The real risk to this over time is the Department gets so used to it, it just moves its contracts to the spring and builds a 6-month in delay because it just assumes it will not get the budget on time.

So in a government where speed and efficiency are always a challenge and you are trying to push, the CR pushes things to be slower and more inefficient and wasteful.

Mr. JOHNSON. Sure. And we do not run families that way, and we do not run businesses that way. We should not run our nation that way.

Thank you, Mr. Secretary.

Chairman YARMUTH. The gentleman's time has expired.

I now recognize the gentleman from Massachusetts, the Vice Chairman of the Committee, Mr. Moulton, for five minutes.

Mr. MOULTON. Deputy Secretary, thank you very much for the critical work that you do to keep our nation safe and to serve our men and women in uniform. It is incredibly important.

And I also want to commend two fellow veterans on this Committee, the Ranking Member, Mr. Womack, and my friend, Mr. Johnson, for really having the political courage, which is difficult these days, to raise the constitutional issues with what Mr. Trump has done to reprogram congressionally appropriated funds to pay for his border wall.

I want to get into that a bit. Now, some Republicans have said that it is the Congress' failure to adequately fund the boarder wall that has forced President Trump to move funds to build his wall.

Mr. Norquist, DoD has not identified building a southern border wall as a national security priority, although it has identified climate change as a national security priority.

Now, I am a Democrat. I believe Congress has failed to appropriate funds to deal with climate change and climate security. If President Obama had unilaterally moved money from building Navy ships and C–130's and other defense priorities to address climate change, would that be an action that you would support?

Mr. NORQUIST. Sir, you know,So I think that each President and each Congress has to work through these issues. The question for the climate change is under what authority. The thing that created this unusual situation is the Department of Defense has actually been given direct authority by Congress under Section 284 to build barriers along the wall.

Typically we would not have legal authority to be involved in this business. It is normally a DHS mission.

I do not know with regard to climate change. We certainly make our bases more resilient against——

Mr. MOULTON. So I can agree that you have the authority to build the wall if those funds are appropriated by Congress. But do you believe you have the constitutional authority to move appropriated funds from one account to another against the wishes of Congress?

Mr. NORQUIST. So we have the authority under reprogramming laws passed by Congress that allows the Department of Defense to move money from one account to another.

Now, traditionally we have done this with the consent of the Committees, and this is the issue that you are highlighting, which is legally it is only a notification, and so therefore, the Presidents have always had the ability to move this.

But in practice we have done this as a notification, and so that is what creates the challenge.

Mr. MOULTON. And I would definitely agree with you that it is a challenge, a constitutional challenge, which is significant, and you agree.

Mr. NORQUIST. It can be, yes.

Mr. MOULTON. The President has clearly identified construction of the southern border wall as a significant national security concern.

How would you rank the construction of the border wall against DoD national security priorities, Mr. Norquist?

Mr. NORQUIST. So homeland security has always been a part of our concern, and border security is part of national security. So when we get asked——

Mr. MOULTON. Do you rank it higher than building a 355-ship Navy?

Mr. NORQUIST. We have to balance across a series of requirements, and so in this case we were asked and directed to support the Department of Homeland Security.

Mr. MOULTON. Right. But you are the Deputy Secretary. Would you rank it higher than building a 355-ship Navy?

Mr. NORQUIST. Let me put it to you. When I was at the Department of Homeland Security, I would have. When I am at the Department of Defense, I tend to balance within the Department of Defense.

But this is why the President and others who look across set priorities that we support.

Mr. MOULTON. Well, I serve on the Armed Services Committee as well, and Acting Secretary Thomas Modly told us that this reprogramming plan is, quote, "not helpful."

Mr. NORQUIST. Yes.

Mr. MOULTON. Not helpful. So is President Trump or the Secretary of the Navy correct?

Mr. NORQUIST. So the key here, and I think this is something that I should start by making clear to everyone. This is not how we would have asked to do this. It is not how the President asked to fund the wall. The President asked directly for funds. We, the Department, had supported that.

What happened was in the law that was enacted in December, it left the authorities with the President to make the move, but only if it were done within DoD accounts. And so while some people supported the wall and some did not, the compromise left this mechanism in place.

So when it came to use, the question was to try and find sources that supported that.

Mr. MOULTON. I understand the President put you in a difficult position, but the bottom line is that we are supposed to follow the Constitution, and I think that should be important.

You know, China began construction of its Great Wall in the 7th century BCE. More recently, Chinese National local government spending has been focused on artificial intelligence and other advanced capabilities, some of the same things that you mentioned in your change in the focus of our budget.

You know, it looks to me that about 6 percent of the total funding that you have dedicated to the border wall is what we are investing in AI, and that compares to tens of billions of dollars that China is investing in artificial intelligence.

Who is right?

Mr. NORQUIST. So, the Chinese have put a significant investment. The Department is trying to grow its capability.

One of the issues is we have been investing there, but we have to build out the capacity and the skill set to make sure we use that money wisely.

I would certainly like to invest more over time as we grow the skill of the work force and the projects that would sustain those initiatives.

Mr. MOULTON. Well, I would just point out that while we are waiting for that to grow over time, China is beating us, and we need to catch up.

Mr. NORQUIST. China a major challenge on these.

Mr. MOULTON. Thank you, Mr. Secretary.

Chairman YARMUTH. The gentleman's time has expired.

I now recognize the gentleman from Oklahoma, Mr. Hern, for five minutes.

Mr. HERN. Thank you, Mr. Chairman, Ranking Member Womack, and Deputy Secretary Norquist for being here today.

It is an important hearing that we are having, and I would like to find it says the House Budget Committee's third meeting where the Democrats insult the President's budget to no end without offering their own budget, as they are required to do by law.

And I just want to read this because the Vice Chairman made a comment about the Constitution. This is what is really defined in the Constitution. Article I, Section 8 gives the power of Congress to lay and collect taxes, duties, and imports, and excises. The Constitution allows Congress to tax.

So we are sitting here talking about a budget that the President put forth his constitutional duty that the House has not done, and we just need to remind ourselves what the Constitution actually says.

So let's establish a timeline here. Before President Trump's election, the Department of Defense has never performed a full financial audit. Trump was elected, delivered on his campaign promise, and the largest audit ever undertaken by the federal government was completed.

In fact, you all recently completed a Fiscal Year 2019 audit as well, and President Trump likes to call this the promises-plus. Both audits are proven steps in the right direction ensuring transparency and fiscal responsibility within the nation's largest agency.

The Department closed more than 500 notices of findings and recommendations issued in 2018 audit, cleaning up our books, and ensuring that we have a lean, transparent, and robust Department of Defense is exactly how we achieve peace through strength.

My questions are and I think we can all agree that the Pentagon conducting financial audits is a positive move for a country. So, Deputy Secretary Norquist, can you explain to the Committee how the audit findings are driving change at the Pentagon and provide some specific examples?

Mr. NORQUIST. I would be delighted to.

And, again, thank you and thank this Committee for your emphasis and support of the audit.

So the audit has driven change in a number of ways. The first is just in savings, right? When we did the audit, we discovered where we do inventory. The audit is not just a paperwork train. They go and they open warehouses. They look at supplies. They pull out samples, and they test them.

And so we found places where there were items in inventory, many times known to the local but not across the services because it wasn't in the data base.

That freed up $167 million worth of supplies. Put those back into inventory; able to close that requirement. Some of these were items people were waiting on back order for. They did not know that a different base already had it, and they could have had access to it. Immediate savings there.

We have had other places where we have been able to automate using BOTs to save manual labor as we go through this process.

But I think part of the addition to those savings, which are substantial as we go through the reforms, is the long-term benefit, which is private sector firms have access to timely and accurate data, and they use it to drive decisionmaking.

In the Department of Defense we are building out our data analytics capability as we have this, and this lets us run Defense Logistics Agency more efficiently, allows to make better use of this in decisionmaking on property and other items. So a significant benefit to the Department.

I appreciate the Committee's support. It is driving both near-term savings and long-term reform.

Mr. HERN. Thank you.

In recent years, Iran and other enemies of the United States have been investing heavily in building cyber defenses and cyber attack capabilities. I saw that the President's budget calls for almost $10 billion for offensive and defensive cyber capabilities, which obviously is great for our nation.

In a global, interconnected world, it is becoming ever more important to invest in safeguarding our DoD networks and information systems. How does this budget build on the progress made in the military cyber operations?

Mr. NORQUIST. So it does three things. First of all, it strengthens Cyber Command, both their offensive and defensive capability, and they are certainly the lead for this.

The second is it gives us visibility over our networks and allows us to be stronger in defending.

In addition, we are working with our companies and to the supply chain through what we call CMMC to help the vendors who work with the Department protect the technology that they have from China stealing it or from cyberattacks.

Mr. HERN. Thank you.

And just in my remaining minute here, could you compare the President's budget to the current Democrat budget for this fiscal year?

Mr. NORQUIST. I am not familiar with the Democrats' budget.

Mr. HERN. What?

So you know, as we go forward, I hope that my colleagues will be as ever critical of the fact that we have not produced a budget as they are about the President's budget that he has produced.

There is a lot of talk about constitutionality here, as I read Article 1, Section 8, Clause 1, the very first power we are supposed to be doing in Congress, and we are woefully failing at that job.

I appreciate you being here. I appreciate all of the hard work that you have done since you have been at DoD, and it is what Americans want. They want good use of taxpayer dollars.

And thank you so much for all that you do.

Mr. NORQUIST. Thank you.

Mr. HERN. I yield back, Mr. Chairman.

Chairman YARMUTH. The gentleman yields back.

I now recognize the gentleman from New York, Mr. Morelle, for five minutes.

Mr. MORELLE. Yes, thank you, Mr. Chairman and the Ranking Member, for holding this hearing today.

I certainly thank you, Deputy Secretary Norquist, for being here today.

As I think we have identified, the Defense budget is 15 percent of all federal spending, and that encompasses a vast array of programs that the nation depends on for stability, resiliency, and to continue to be a leader on the world stage.

So with that much of our federal spending, obviously there is a great deal to talk about, but I would like to spend my few moments on a topic both critical to the nation and, frankly, important and significant to my district in Rochester, New York, and that is the industrial base or our nation and whether or not we can continue to meet our defense needs.

DoD relies on a wide ranging and complex industrial base for the products and service-enabled warfighting capabilities. The U.S. military is respected worldwide, but I am concerned the industrial base is beginning to fall behind in the United States, and we need to make significant investments to ensure that the industrial base and our supply chain are prepared to meet the nation's challenges.

I have worked with a number of DoD officials who are focusing on this effort, and I appreciate that, and I want to make sure we continue looking forward to meet that need.

So could you just briefly, because I do have a few questions and I know we are short on time, but if you could just comment on the industry base supply chain, what work you think needs to be done to ensure we are preparing our nation's defense capabilities.

Mr. NORQUIST. I think as you highlight, the industrial base is absolutely essential. We do not build the airplanes, ships, tanks, and

planes. Private citizens and private companies assemble those and build those for the American taxpayer. They are essential to our success. Their quality is what makes our force competitive on the battlefield.

We work very closely with industry parties to signal where we are heading so they can invest in the right future technologies. Part is helping them, as I mentioned before, secure themselves so their technology is not stolen by competitors.

But these investments are essential to our long-term success and their health. And, again, competition is essential to our long-term success.

Mr. MORELLE. So are you concerned at all with the supply chain interruptions?

Have you seen potential threats to the supply chain in the industrial sites?

What steps is the Department taking to address those?

Mr. NORQUIST. So Ellen Ward from Acquisition and Sustainment is a lead for this. They are focused on following the supply chain, understanding both the potential for foreign technologies or equipment, such as Huawei, to make sure that that does not enter the supply chain.

We are also worried about the security of the companies, making sure their information is not disrupted, but making sure we can follow and secure our supply chain is a key part, and we have a number of initiatives they are working on to do that.

Mr. MORELLE. And I would like to continue that to partner with folks to make sure that we continue to support that.

I also wanted to talk just a little bit about the longevity of the skilled work force. I am blessed in Rochester, a long history with Kodak, Xerox, Bausch and Lomb and dozens and dozens of other innovative technology companies for decades have prepared a high skilled work force.

But obviously, the nation's technical work force is shrinking, particularly with retirements due to Baby Boomers hitting retirement age.

Can you tell me about the steps you are taking along with regard to work force development so it sort of aligns with the supply chain and industrial base?

But it is a little different, and do you have specific initiatives within the Department to address that?

Mr. NORQUIST. So we do, and let me highlight one of them within the science and technology areas. We have a $100 million investment in STEM because when you look at the areas where technology is heading and the type of investments we need, we have work force education and outreach programs to help develop that work force, recruit that work force and keep it in the Department of Defense because we will continue to depend on those technologies and those skilled people.

Mr. MORELLE. Finally, I know that while sensitive materials are all made in the United States, there are some commoditized products, I think, that come overseas in the Defense supply chain.

Could you just comment on what impact, if any, the COVID–19 is having and what steps you are taking to address that?

Mr. NORQUIST. So we are looking at that. Luckily, we do not depend on very much that comes directly out of China because of the way the Department of Defense is structured, but we are concerned as it spreads to other countries, allies and partners, and what the effect of technology and production disruptions would be.

For example, there is an F–35 facility in Europe, and so the question is: do those production schedules stay on time?

Mr. MORELLE. Yes. Do you have a task force? Have you developed something to look at those?

Mr. NORQUIST. So again, Ellen Ward, Command S, she is the one who is looking at those. She and I talked about this the other day.

So far in most places there has been very little disruption to date, but if this thing continues and expands, then we will potentially see some issues, and we need to stay on top of those.

Mr. MORELLE. Thank you, Mr. Secretary.

I yield back my time, Mr. Chairman.

Chairman YARMUTH. The gentleman yields back.

I now recognize the gentleman from Missouri, Mr. Smith, for five minutes.

Mr. SMITH. Thank you, Mr. Chairman.

Thank you, Deputy Secretary, for being here today.

Today marks 36 days until this Committee needs to pass a budget. I have always thought for some time that the thought of this Committee doing their job and preparing a budget and passing it was a bipartisan issue.

Last week, Mr. Chairman, it was proven that it is a bipartisan issue, and I was very pleased to see that 17 of your Democrat colleagues and my colleagues sent you a letter requesting that the Budget Committee does their job and presents a budget, passes a budget.

And I would like to offer that into the record, Mr. Chairman.

Mr. Chairman?

Chairman YARMUTH. Yes?

Mr. SMITH. I would like to offer this letter that was submitted to you by 17 Democrat Members in regard to passing a budget.

Chairman YARMUTH. Without objection.

[The information referred to follows:]

Congress of the United States
Washington, DC 20515

March 5, 2020

The Honorable John Yarmuth
Chairman
House Budget Committee
Washington, D.C. 20515

Dear Chairman Yarmuth:

We are writing to express our concerns regarding your statement that the House Budget Committee is unlikely to consider a Budget Resolution for the upcoming fiscal year.

Congress has not passed a broadly bipartisan budget resolution since the 1990s, when our nation was on the path to producing a budget surplus. However, since that time, both parties have been guilty of passing budgets—or producing no budgets at all—that have contributed to rising budget deficits. In order to achieve a budget surplus again, we believe both parties need to work together. At a time when our country faces a $1 trillion annual deficit and an unprecedented $23 trillion national debt, the American people cannot afford for the Budget Committee to abandon its responsibility to produce a budget.

Even though Congress passed the *Bipartisan Budget Act of 2019*, which establishes spending limits through Fiscal Year 2021, it is still necessary to produce an annual budget in order to reduce our skyrocketing budget deficit. A lack of fiscal discipline has resulted in greater payments on interest incurred on the national debt than investments in our kids. As our country continues to face challenges, from fixing our crumbling infrastructure to addressing climate change, skyrocketing interest payments on the debt will limit our ability to make those necessary investments if we do not address this problem. Not only is that fiscally irresponsible, it is morally reprehensible to saddle our children and grandchildren with those interest bills and debt.

The budget provides an important framework for Congress to review our nation's fiscal state and lays out the necessary, tough decisions to put us on the path toward a balanced budget while investing in our future. In addition to providing the Appropriations Committee with topline discretionary spending limits, the budget can also provide important mechanisms to ensure fiscal discipline, such as directing committees to recommend changes to existing law that can result in deficit reduction.

Although the budget process has not worked as intended under both Republican and Democratic majorities over the past two decades, we firmly believe that now is the time for Democrats to lead an effort to get our fiscal house in order. We urge you to bring forward a budget this year to spur important bipartisan conversations about how we can get out of this fiscal mess. Thank you for your consideration, and we welcome the opportunity to work with you going forward.

Sincerely,

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Rep. Ben McAdams (UT-04)
Co- Chair, Task Force on Fiscal Responsibility
and Government Reform
Blue Dog Coalition

Rep. Ed Case (HI-01)
Co-Chair, Task Force on Fiscal Responsibility
and Government Reform
Blue Dog Coalition

Rep. Stephanie Murphy (FL-07)
Co-Chair for Administration, Blue Dog Coalition

Rep. Kurt Schrader (OR-05)
Co-Chair, Blue Dog Coalition

Rep. J. Luis Correa (CA-46)
Co-Chair for Communications, Blue Dog Coalition

Rep. Tom O'Halleran (AZ-01)
Co-Chair for Policy, Blue Dog Coalition

Rep. Anthony Brindisi (NY-22)
Co-Chair for Whip, Blue Dog Coalition

Mr. SMITH. Thank you, Mr. Chairman.

I do want to highlight a couple provisions within this letter. I think it is pretty important.

It says, "Producing an annual budget is a necessary first step toward reducing the skyrocketing deficit, and that the American people cannot afford for the Budget Committee to abandon its responsibility to product a budget," end quote.

They added the American people need more than just spending limits, that a budget provides a framework for Congress to review our country's fiscal state.

I could not have said it better myself. This is a time that I agree wholeheartedly with these 17 Democrats. It is unfortunate that the last few weeks we have heard so much criticism of the President's budget, when various cabinet Secretaries and Deputy Secretaries have come into this room. They have criticized the President's budget, but yet they have not even prepared a budget for themselves.

We have the President's budget, which the President has filed every year according to his obligation. The Democrat majority has yet to file one budget since they have been in power, last year or this year.

The Republicans, even though we are not in the majority, we have a budget. So if you do not like the President's budget, feel free to use Republican Study Committee budget. It is just an option.

Nancy Pelosi has said it numerous times, that a budget is a statement of your values. Show us your values.

I just repeat that same comment to Speaker Pelosi and the House Democrats. Let's see your budget. Show us your values.

Unfortunately, I think they would probably bankrupt the country if they showed us their values, and that is why they are not doing a budget.

A budget also leads where an uncertain appropriations process, where it is more likely that there will be a continued resolution in September.

Deputy Secretary, what does a continued resolution do to the military?

Mr. NORQUIST. A continuing resolution is very disruptive to the military, and I will just use an example of a depot where you have got a work force. They can see that there is a demand signal coming, but they do not know whether to hire more people and increase their capacity for the work that is coming or whether to wait because there may be a CR, and that work may wait three or four months.

And so the effect for the Department is disruptive, but the disruption to the men and women out there who work in these companies and who respond to these demands in those, they are the ones who are not getting their jobs. And then the Department has a delay in the maintenance of our equipment because of that disruption in those companies.

Mr. SMITH. I totally agree. By not planning ahead, it clearly hurts our troops, and it is because Congress is not doing their job in passing a budget, going through the regular appropriations process.

Hopefully we can get our act together.

Now, correct me if I am wrong, but since President Trump was elected, he has invested in rebuilding our military. He has secured nearly $2.2 trillion in funding in his first three years in office, destroyed the ISIS caliphate bringing down its leader and saving countless American lives in the process, and he has stood up for freedom across the world.

Taking that into consideration, would you say that our troops have the resources they and their families need more so than they did four years ago?

Mr. NORQUIST. We are in a very different place than we were in four years ago. The readiness of our forces is up. The quantity of munitions they have is up. The training level is up.

And on top of all of that, the investment and preparedness for future conflicts are also being taken care of and addressed.

Mr. SMITH. Thank you, Deputy Secretary.

Chairman YARMUTH. The gentleman's time has expired.

I now recognize the gentleman from California, Mr. Peters, for five minutes.

Mr. PETERS. Thank you, Mr. Chairman.

I did want to make some comments about this budget proposal, but I do want to say that one shining light in this is the funding for the congressionally directed fix for military survivors suffering from the widow's tax.

I have worked on this for years, and I would like to offer a note of gratitude to Chairman Yarmuth for his leadership on this issue, which was very important to him and a priority.

Two things. One is, you know, I get this notion that my colleagues on the other side are concerned about us not having a budget. I would note that we went through an appropriations process, and we came up with a deal, and the House approved it. The Senate approved it. The President signed it, and he went based on a phony emergency declaration and reprogrammed $6 billion on his own to a wall.

I hope my Republican colleagues will join me and will take that outrage they have over the congressional purview over the budget and join me and make sure that that kind of stuff does not happen again.

This is not a kingdom. It is a divided government. Congress has its role, and the appropriations that we made deserve to be honored, and I hope that next time this happens that my colleagues who express such concern about Congress' power will stand with me to make sure that those are observed.

And then, Mr. Secretary, I also did want to note, too, that I, too, appreciate the role of the private sector in providing us the equipment that is so important to our mission and to our warfighters.

I have to say that in that light, it is disappointing to see how some of these cuts have been proposed: a Navy TAO oiler that we need to sustain the operational tempo and have our sailors meet their missions in the Pacific and elsewhere; a cut cutting unmanned systems, like the MQ–9 or MQ–1, without notice to the company, by the way.

At the same time the Army is trying to develop the future of our capabilities, but we do not have that yet, and so today we need to continue that continuity, and it does a great disservice to the part-

ners we have in the private sector that these continuities are not maintained.

And as far as I know, the 12th century technology of a wall is not reflected in the quadrennial defense review or any other military priorities.

I did want to ask a question though about ships. I agree with the President and others that we need to obtain a 355-ship Navy, but it is not just getting to 355. It is about getting the 355 with the right ships, ones that combat our adversaries with new technology and lethality.

How do the cuts in this budget assure success and assure that efficiency is driving the process instead of what appear to be politics?

Mr. NORQUIST. So, first of all, there are two sets of trades going on within the shipbuilding budget. The first is the Navy leadership, both military and civilian, looked at the challenges with getting the current fleet to sea and realigned additional money on O&M and to maintenance and repair so that the fleet they have is ready to go.

That required them to make some tradeoffs with regard to ship construction, as did the fact that because we do not have inflation in the budget, we are down about $13 billion. That has created some tight tradeoffs.

What we are looking at going forward with the Navy, and the Secretary has directed me to lead a study working with the Navy and others, is as you point out, what is the right shipment.

Is it necessarily the case that we keep building the exact same designs we have today or as technology evolves and the ships of the future and changes evolve, how do we survive in an Anti Access/Area Denial that we may see in the Pacific?

So we will be doing that analysis. We will run them through war games and simulations between several different designs and be able to present that and go through that in the spring or early summer.

Mr. PETERS. I look forward to that. It is nice to have dreams of new technology being used for the national security.

In the meantime, we have actual missions to complete, and I think the abruptness with which some of these changes are made is not of best service to the nation and to our warfighters.

Mr. Chairman, I yield back.

Chairman YARMUTH. The gentleman yields back.

I now recognize the gentleman from Tennessee, Mr. Burchett, for five minutes.

Mr. BURCHETT. Thank you, Mr. Chairman and Ranking Member.

Thank you, sir, for being here.

I know you have already answered this, but if you could just break it down a little further, how does the instability of the budget process affect the DoD?

We have done 14 continued resolutions.

Mr. NORQUIST. So I think one of the things to look at is it is maybe a way to understand it. When I have meetings, we had one year where we had the appropriation on time, and I had a meeting, and people said, "You do not need to tell us what to do under CR.

You have to tell us what to do if it actually happens on time because so few of them had exposure to it."

In fact, I looked over my work force, and a number of them have never really got the exposure to what a normal process looks like, that you and I and others who have been in this business used to take for granted.

The challenge then becomes the system builds that delay into its process, and think about it. We bring on 270,000 or some new people each year to the Department of Defense who require training. This disruption on when the training is going to occur, on the funding levels, those all create effects throughout the organization.

And you want to make sure that the Department is keeping pace with the challenges. So when there is an increase in production for a system, we do not want it to wait three, four, five months.

And so those types of disruptions to our planning are bad. Those are disruptions to the depots and the work forces out there are disruptive, and again, also it just consumes time and energy of people focusing on the incremental contracting when we could have more efficiently contracted in one single step for the entire year.

Mr. BURCHETT. I am wondering how that would affect my folks back home, our Reservists at McGhee Tyson Airfield in weighing what they have there.

Mr. NORQUIST. Well, one of the things that I think happens to the Guard and Reserve that is particularly destructive is we often do not get a CR for the whole time. We get it for a few months, and then another month, and then another week.

Well, on those Saturdays is a Guard mobilization training, and it is Friday afternoon, and we have to tell the Guard do you show up on Saturday or not. We do not know if there is going to be a shutdown.

Well, for those who drive any length or distance, they are driving while the government is not knowing whether it is going to be open and may drive several hours to their training and then be told to turn around and drive back home.

So the multiple CRs in a given year has a really disruptive effect on the Guard and the Reserve when they are trying to show up for mobilization dates.

Mr. BURCHETT. OK. How could we as Congress be more helpful in ensuring that the Department is successful in their financial transparency?

Mr. NORQUIST. So I think with regard to the funding, the CRs getting to regular appropriations on time.

With regard to transparency and the audit, there are a couple of things that really make a difference.

First of all, it has been the vocal support of the Congress for the audit. I came back to the Department of Defense in part because the President had committed to audit the Pentagon for the first time, and I wanted to be part of that.

We would not have been there without you and other Members of this Committee who have emphasized the importance of that.

The second thing is there are investments in the budget, and they are not in the dramatic areas. They are in business systems, to get rid of all the older business systems and replace them with modern, compliant ones.

Often those do not fare as well in a budget process because they are not dramatically or interesting, but they are important to the efficient operations of the budget.

So those sorts of factors matter as well. Any of those areas is a big step forward, and again, as always, timely and robust funding is helpful.

Mr. BURCHETT. Thank you, sir.

Mr. Chairman, I yield back the remainder of my time.

Chairman YARMUTH. The gentleman yields back.

I now recognize the gentleman from Virginia, Mr. Scott, for five minutes.

Mr. SCOTT. Thank you, Mr. Chairman.

Mr. Chairman, can I ask you a question? Last year did we pass a 2-year budget?

Chairman YARMUTH. We did pass the Bipartisan Budget Act of 2019, which provided for two years of budgeting.

Mr. SCOTT. And are we in the second year of that budget?

Chairman YARMUTH. We are considering the second year of that budget right now.

Mr. SCOTT. We have already passed the budget.

Chairman YARMUTH. That is correct.

Mr. SCOTT. Thank you.

Mr. Secretary, thank you for being with us today.

I have a strong interest in shipbuilding, obviously from being from Southeast Virginia. The Virginia class submarines, we expect to build two this year. The budget only includes enough money for one.

How are we going to get to a 355-ship Navy if we are cutting the budget for shipbuilding?

Mr. NORQUIST. So the challenge we have, as I discussed before, is twofold. One is the Navy invested in the operating maintenance to keep their fleet going, and we have the flat top line which drives it down.

So that creates some initial challenges. The Virginia class submarine, let me just be clear, is a very valuable submarine. It is the type of system that we have invested in in the past and intend to continue to buy well into the future as a key platform for the Pacific fight.

But as we start to head to 355, we need to look at not necessarily the submarines, but in other areas. What is the right mix of platforms to be ready for that future challenge?

Mr. SCOTT. Well, one of the ways we save money is to make multiple ship purchases so you can save money. Have contracts been signed for two ships this year?

Mr. NORQUIST. I believe there is a contract signed, and it is like a nine-plus one. I forget the mechanics of it that sets up the multi-year.

Mr. SCOTT. And the shipyards are acquiring materials and parts and things like that on a multi-ship basis. Are they not assuming that there will be two ships?

Mr. NORQUIST. I am not familiar with the use of the contract. My understanding was there was an expectation there was an option in one year and the other years were two a year, but I would have to defer to our acquisition experts in the Navy.

Mr. SCOTT. In terms of the infrastructure at our public yards, about three years ago we developed a shipyard infrastructure optimization plan. Maybe I missed something, but I did not see any major projects as part of that plan in the budget.

What is the plan to actually fulfill the optimization plan?

Mr. NORQUIST. Let me check with the Navy and get you the answer on that for the record.

There is one thing I would like to highlight though if you could. I understand the importance of how do you get to where we want to go in the Navy.

One of the reforms that we have introduced in the budget is normally when you spend money in the Navy, you obligate it, and not all of it is disbursed. You may have a contract, not necessarily a shipbuilding contract but one that you get under price. You were able to end it early. You are not happy with the vendor's performance. You cancel it. That money just normally goes back to Treasury.

What we have proposed for the Navy is that money goes into ship construction, Navy, so that the Congress can authorize it for additional ships.

Our view is twofold. One is it is an important future for the nation, but the other is it encourages better behavior of individuals in their spending, in the Navy, if they can understand that the dollars they save are going to the Navy of the future.

So I would ask you to look at that provision. We would appreciate your support, but we think it is going to help strengthen and expand the capacity of the shipbuilding yards.

Mr. SCOTT. Thank you.

You are aware that Norfolk, Virginia is vulnerable to sea level rise.

Mr. NORQUIST. Yes.

Mr. SCOTT. What is the DoD's latest assessment of the challenge of sea level rise to Norfolk?

And what are we doing about it?

Mr. NORQUIST. So, again, I do not have the specifics of Norfolk, but we have looked along the East Coast and other areas at what resilience we have to put in for bases so when there is high water and storms we do not lose many of our bases, particularly the Naval ones, which are right along the waterfront, and being able to make sure they survive storms and high water areas.

And so we have worked on those, and each of the new construction efforts has to meet the standards, the enhanced standards, for that resilience.

Mr. SCOTT. Are you doing something about the present infrastructure?

Mr. NORQUIST. I understand that we are in those areas.

Mr. SCOTT. OK. And you asked the question on budget challenges that you talked about because of the coronavirus. You talked about the soft supply chain. Are there other challenges that may be occurring because of the virus?

Mr. NORQUIST. We will have to see in terms of—we have taken appropriate measures at the Department of Defense. A lot of this is basic hygiene. It is hand sanitation. It is keeping distances. It is teleworking if you need to have that set up.

We are going to have to look and see if it begins to expand and spread, what we need to do to keep those production facilities up and running and what measures are additional ones we need to take.

Mr. SCOTT. And how that will affect the budget?

Mr. NORQUIST. And how that will affect the expenditures in the budget, right.

Mr. SCOTT. OK. Thank you, Mr. Chairman.

Chairman YARMUTH. The gentleman yields back.

I now recognize the gentleman from Pennsylvania, Mr. Meuser, for five minutes.

Mr. MEUSER. Thank you, Mr. Chairman.

Thank you, Deputy Secretary.

I will yield 30 seconds or as much time as he needs to Ranking Member Johnson.

Mr. JOHNSON. Thank you.

I appreciate the gentleman yielding.

I just want to make a point of clarification. I might have misunderstood. Mr. Chairman, we have not passed a budget resolution out of this Committee. We have not passed a budget out of Congress. We did not pass one last year, and there is no plan to pass one this year.

Out of desperation we passed a spending plan, but we have not passed a budget. I just want to make sure that members and those across America that might be looking at this understand. This Committee has not passed a budget.

I yield back.

Mr. MEUSER. Thank you.

Deputy Secretary, a colleague seemed to insinuate a little earlier that we are sacrificing our Navy for border security. Are we sacrificing our Navy for border security?

Is it one or the other?

Mr. NORQUIST. It is not one or the other. We are investing in both. We have a responsibility as Department of Defense to support and protect the nation across a range of threats.

DHS has the lead, and we are in support on border security, but we support on homeland, and we are making investments in shipbuilding. Both of these are our priority.

Mr. MEUSER. Has the size of the Navy grown under the current Administration versus the previous Administration?

Mr. NORQUIST. Yes. The size of the Navy has grown. I think it started on 275. It is up to 290. It is on its way to 306.

Mr. MEUSER. While we are also increasing border security.

Mr. NORQUIST. Correct.

Mr. MEUSER. You were CFO at Department of Homeland Security under Tom Ridge. And would you say that 100,000 undocumented people entering our country illegally every month is a threat to our country?

Mr. NORQUIST. The migration waves that they saw before they started the construction of the wall in this Administration were dwarfing the numbers that we had seen. Even bipartisan Republicans and Democrats who had worked at Homeland were commenting on the fact that, yes, it is a tangible emergency.

I went down to the Rio Grande Valley, met with the border patrol agents there. Their comment to me with regard to the wall was, "It works." They see the manifestation and its effect, and they are very appreciative both for that, as well as for the men and women of the National Guard who have deployed down there and supported them. They referred to them as a game changer.

Mr. MEUSER. Even though the illegals and the number of undocumented people that were crossing our border back when you were the CFO was far less, a very bipartisan bill passed known as the Secure Fence Act, which seemed to make a lot of sense to both Democrats and Republicans at the time.

Yet any sort of fencing or border security today seems to catch the wrath in a very partisan manner.

Mr. NORQUIST. Correct. During the previous time, we had significant interest from Congress, bipartisan votes for the Secure Fence Act, expecting the Department of Defense to continue and invest in hundreds of miles of border fencing and barriers along the Southwest border.

Mr. MEUSER. The American people or anybody with a memory gets very confused over that.

So I have got this question for you please. How does this budget request ensure that U.S. maintains its competitive edge over China and Russia, particularly in space and cybersecurity?

Mr. NORQUIST. So this budget does a significant investment in space and cyber. One of the things we have to realize is the emphasis China is placing on technology. They are looking into these two new demands.

So one of the things we talk about is everyone used to think the military fights on the air, land, and sea. You have the Army, Navy, and the Air Force.

And what we have seen from our adversaries and rivals is an emphasis on space and cyber as a way to break down our capabilities.

The standing up of the Space Force was an essential step in not just increasing the funding, but providing the training, the doctrine, and the structure behind understanding what the conflict will look like in space and how to prepare, as was the elevation of Cyber Command.

We have invested in both of those. Some of the space stuff is on the classified side, but these have been priority areas for this Administration throughout its tenure because of the shift to the new domains and the ability to make sure we can function across all domains.

Mr. MEUSER. Excellent. The President recently signed with the Afghanistani a peace deal which will phase down troops in Afghanistan, as you know, after two decades of strong U.S. presence. How much will this peace process, and perhaps other drawdowns, save Department of Defense?

The Administration targeted diplomatic reforms that would help to strengthen certain areas, and all the while drawing down in the Middle East and areas where we feel we no longer need that presence.

What sort of savings can you anticipate?

Mr. NORQUIST. So it depends on how far the process goes. I think that what we have seen is what we have going on, is the best path to a lasting peace in Afghanistan is a negotiated political settlement among the Afghans. This makes that possible.

If that continues to go well, you know, we are headed down to 8,600. We could go further below that if this goes further.

There are potentially billions of dollars' worth of savings that we would achieve through reduced need for operations, reduced need for a presence. That all depends on how this plays out properly.

And you know, we are using a condition-based process, but this Administration has put an emphasis on being able to emphasize and reprioritize to the China front and to Russia, and these are supportive of that vision.

Mr. MEUSER. Thank you.

Chairman, I yield.

Chairman YARMUTH. The gentleman's time has expired.

I now recognize the gentlewoman from Illinois, Ms. Schakowsky, for five minutes.

Ms. SCHAKOWSKY. Thank you, Mr. Chairman.

And thank you, Deputy Secretary Norquist.

I have been long interested in the cost of private military contractors, and in a 2017 report by the Department's Cost Assessment and Program Evaluation Office, it found that DoD's civilian employees usually cost less than private military contractors.

An additional study by the Sustainable Defense Task Force estimated that the Department could save over $20 billion per year by scaling its contractor work force by just 15 percent.

So I am just wondering your view of this and what steps, if any, that the Department is taking to assess contractors and cost savings.

Mr. NORQUIST. So this is an important area to look at, the balance between what we have in terms of federal employees and contracted support, and it depends, again, on the mix of skills that you need.

I will just use a simple example, one from my previous job, which is in the audit. Originally in the federal government we had very little in DoD audit experience. All of the experience was on the contractor side. So we relied heavily on vendors who understood the accounting standards and experience.

Over time we have reduced that dependence on them and increased the number of federal employees.

Ms. SCHAKOWSKY. Is that a goal?

Mr. NORQUIST. The end of the shift is not a goal. The goal is to make sure that if it is a function best done by the federal government, a perennial function that is something you need stability in, we then do it with federal employees.

If it is a specialized skill, something that rotates in and out, you do not have constant demand, we tend to look to contractors because under those formulas, they are less expensive.

Ms. SCHAKOWSKY. Do you think you have the balance right now?

Mr. NORQUIST. On the audit side, I think we still have a bit to go. In the others, it depends on each program. It is something we always have to relook because you cannot assume that the balance

you had last year or two years ago or five years ago is the right one going forward.

Ms. SCHAKOWSKY. Well, on another subject, according to the Department's 2019 report on effects of change in climate, the Department of Defense said this, quote, "The effects of changing climate are a national security issue with potential impact to the Department of Defense mission, operations, plans, and installation."

And the National Security, Military, and Intelligence Panel, a second time, on Climate Change, which is made up of current and former defense and intelligence officers, released a report last month that found, quote, "Each region of the world will face severe risk to national and global security in the next three decades,'" unquote as a result of global climate change.

So I want to ask you what the Department is doing to adapt current and future operations to address the impact of climate. If you could just give me even just one example of what the Department is doing to address this.

Mr. NORQUIST. Sure. So I will give you two. The first is on the systems we field, on weapon systems, we have to be able to operate in everything from the desert to the arctic. So with temperature swings, we have to build systems that have that range of capabilities, deploy them and function in Alaska and bring them down into a desert area.

The second is the facilities and the bases. And so when we have bases, they get affected, you know, by hurricanes or other storms. We need to make sure that they have the level of resilience necessary to survive the storms that they are facing. That minimizes the damage and the repair on the other end.

So there has been a significant focus on those standards and bringing facilities up to those standards.

Ms. SCHAKOWSKY. And what can Congress do to support the Department's effort to combat and adapt to climate change?

Mr. NORQUIST. I think when you look at the investments we make in our facilities, those are always valuable, and when you look at the range of technologies that we are trying to build to be able to operate in this, it is important for those investments as well.

Thank you.

Ms. SCHAKOWSKY. So are you seeing a decrease in the amount of carbon emissions within the Department of Defense?

And what kinds of things can you do to actually help reduce global warming?

Mr. NORQUIST. So the Department looks at a range of energy sources and tries to develop a breadth of them, and again, we tend to focus on the resilience, which is what is our ability to keep the facility up and running when it needs it. How do I have those power supplies?

Now, some of them if you use natural gas, then of course you had a very different amount of carbon or zero that you are producing compared with other sources.

We look at those ranges of technologies and we attempt to adopt them in the way most heavily we focus on the facilities.

Ms. SCHAKOWSKY. I thank you.

And I yield back.

Chairman YARMUTH. The gentlewoman yields back.

I now recognize the gentleman from South Carolina, Mr. Norman, for five minutes.

Mr. NORMAN. Thank you, Mr. Chairman.

Thank you, Deputy Secretary, for coming and for testifying.

I would just like to emphasize what Congressman Johnson mentioned earlier. This Committee has not passed a budget, has not even come close. Here we are asking questions and some criticizing what the President's budget is when we have not had anything to put on paper to compare it to.

Whether it is a family unit, a business, you have a budget. You have numbers. We just have failed to do that. So I hate that that is the case.

Second, we are in the middle of a coronavirus. I have heard criticism about funding for a wall. My friends on the left continue to want to let everybody, anybody anytime in this country, which is really hard for me to believe with the things we are facing on the health crisis in this country, particularly now, but they still hold the opinion, let everybody in regardless of any type of security problem, which they think really falls way under our climate crisis that they say is above everything.

So thank you for coming today, and let me ask you. You know, the congressional budget process is broken. Since Fiscal Year 2002, the Defense Department has operated under 14 CRs. This is terribly unstable, and it is unsustainable.

You elaborated on it some. Can you go into further detail on how tragic this is for what you are trying to do, not the least, the leases that the military signs that are having to be completely redone and recalculated?

Mr. NORQUIST. Sure. So I talked originally about you cannot do new-starts. So let me give an example of a system called iVATS, which is a set of goggles the Army has developed which uses modern technology and greatly enhances the ability to both train and to perform their mission.

The Army did this under an accelerated plan using authorities Congress gave us because Congress said, "We want you to innovate. We want you to move quickly. We do not want long, bureaucratic processes." And so they acted on that.

And they have gone through very rapid prototyping. They put it the hands of the soldiers. They have gotten the feedback. They are set to move those into the next stage where there is some procurement that is involved in this production.

But if there is a CR, they are going to need to wait, and they are going to need to wait until we get to the other side of the CR, even with the capability that the men and women of the Army find tremendously valuable and would like to be able to expand on.

And you have that when you have the Columbia class submarine, which would also be a new start. You have got factories waiting on increases in production for things that the Department thinks they need, the Congress thinks they need. We are trying to increase the production.

That factory is going to be told to wait. Well, anyone knows if you have built a factory to go from 50 to 100 in production and you hold it at 50, you have absorbed overhead cost. You have poten-

tially hired people that are not able to work on the lines. You are wasting money.

And so the challenge we have is these are very disruptive and disruptive effects on the Department of Defense. They are disruptive to the men and women of the Armed Forces. And it is disruptive to the men and women in the private sector who are working in support of the Department and trying to do so efficiently but cannot get a clear business signal from us of whether we are moving or not moving.

And that sort of stop and go creates tremendous disruptions throughout the organization.

Mr. NORMAN. So even though the Department of Defense is affected, it is a chain supply of those supplying the necessary weapons and materials. They cannot plan because they do not have a timeline. Nor do they have the dollars to try to figure out what they are to produce.

Mr. NORQUIST. I went down to the Anniston Depot, and I asked them about their workload and the fact that we had things headed into maintenance. We had a backlog. We needed them to ramp up.

And in all seriousness the person there looked at me and said, "Well, when will you have an enacted budget? And when you get it, how much will it be for?"

And the answer is I do not know.

Then he says, "Then what do you want me to ramp up to?"

Because it is not just the fact you are under a CR. You are under a CR, and you do not know what your next number is going to be.

Now, the Department may have a top line and there may be some clear agreement, but the funding level for that program is unknown to everybody involved, and so, therefore, they live in ignorance until the time of enactment, and that is disruptive, right?

Those are the sorts of things that the clear signal, these are costs that we impose on ourselves through the process that we use.

Mr. NORMAN. And I think we all can agree China is our No. 1 threat. This just puts us further behind, if we are behind, than we already are?

Mr. NORQUIST. To the best of my knowledge, they do not have CRs in China.

Mr. NORMAN. Correct. Well, thank you for your service. Thank you for appearing today.

And I yield back, Mr. Chairman.

Chairman YARMUTH. The gentleman yields back.

I now recognize the gentleman from Nevada, Mr. Horsford, for five minutes.

Mr. HORSFORD. Thank you very much, Mr. Chairman, for holding this hearing to discuss the President's 2021 Defense budget.

And thank you, Deputy Secretary, for being here.

I have four military installations in my district, Nellis and Creech Air Force Bases, the Nevada Test and Training Range, and the Hawthorne Army Depot. President Trump has rerouted billions of dollars in congressionally approved funding for military projects throughout the country to build his unnecessary and ineffective border wall.

Can you guarantee that none of the military installations in my district will have its funding stripped to pay for the border wall?

Mr. NORQUIST. So my understanding, I do not know if any of them were affected by last year's. There is nothing to say on the 2808 for this year. So we are still awaiting clarity on what is going to happen there.

Mr. HORSFORD. I would appreciate any advanced notice as it impacts the mission critical objectives that each of these installations play.

Additionally, the Defense Department identified 401 sites as having a known or suspected discharge of toxic chemicals known as PFAS in drinking water or groundwater. Creech Air force Base was included in that list because firefighting foam that was being used had seeped into the water contaminating it with its chemicals.

This particular issue impacts my constituents and so many other veterans that have served our country.

Deputy Secretary, let me tell you about one of my constituents. His name is Kelly Charles. Kelly is 55 years old and was stationed at Camp LeJeune in North Carolina between September 1984 through May 1986, serving as a Marine.

The reason that location and timeframe will never be forgotten by Kelly is because it is the origin for his development of thyroid cancer as a result of being exposed to contaminated waters.

I frequently see Kelly and his wife when I am back home meeting with veterans that reside in my district. Kelly told me the day he was diagnosed with thyroid cancer was a gut check. It was on his 27th wedding anniversary with his wife and the day they were going to drive to Colorado to be with family for the Christmas season. Kelly was saddened by the news because he knew he would have to tell his children as well.

He went to see his endocrinologist the next month after being diagnosed with thyroid cancer and discovered it had been spread to his lymph nodes. When he went to get his thyroid removed, he also had to get a surgical procedure to remove 50 lymph nodes and a 2.5 centimeter tumor that has spread tentacles down to some of his shoulder nerves.

As a result of these health complications and surgeries, Kelly has constantly had to monitor his health. He has had to take a pill that takes the place of his thyroid gland. He has daily brain fog. He is experiencing anxiety issues, and that is just to name a few.

So as I am sure you are aware, in 2012, the Caring for Camp LeJeune Families Act was signed into law so that veterans who served at Camp LeJeune for at least 30 days between January 1st, 1957 and January 31st, 1987 can have all of their health care expenses, excluding dental, taken care of by the federal government.

But we must make sure that we are taking the necessary actions to prevent our service members, like Kelly Charles, from being exposed to contaminated waters. Protecting our military men and women abroad is extremely important, and protecting them here at home is equally as important.

So, Deputy Secretary, what is the Defense Department doing today to address issues of contaminated water on military bases throughout the country?

And how does your budget reflect the commitment to end the exposure of dangerous chemicals to our servicemen and women?

Mr. NORQUIST. So thank you, Congressman, for bringing up this very important issue and the attention on the health and serious consequences.

This is a matter of great importance to the Secretary of Defense, Mark Esper. When he came in and was sworn in as Secretary of Defense, his first act was to stand up the task force to deal with the PFAS/PFOA. He did that when he first came in. He recognized and shared your concern about the importance and it is his reliance and his emphasis on we need to take care of our military members and their families.

As a Department we are doing several things. First and foremost is we are stopping the non-emergency use of these chemicals. We want to make sure we protect the water supply. We are restricting those uses.

We are making sure we are treating and testing wells around the installations. We are treating the water so that other people do not drink unsafe water. We are investing in new technologies to let us get past this.

But as you point out, this is a serious issue. The Department takes it very seriously, and it is a high priority for the Secretary of Defense to address this.

Mr. HORSFORD. Thank you.

I look forward to continuing to work with you on this issue.

Thank you, Mr. Chairman. I yield back.

Chairman YARMUTH. The gentleman's time has expired.

I now recognize the gentleman from North Carolina, Mr. Holding, for five minutes.

Mr. HOLDING. Thank you, Mr. Chairman.

Secretary Norquist, good to see you.

As you may know, North Carolina considers itself the most friendly state to the military, and we have the third largest military presence in the country. Our state is home to Fort Bragg, which is the largest installation by population.

We also have Camp LeJeune, New River Air Station, Cherry Point, Pope Air Base, Seymour Johnson Air Base, and Sunny Point Munitions Facility, which I believe is the largest munitions facility in the country.

At Fort Bragg, we have the 18th Airborne Corps and the 82d Airborne Division and the U.S. Army Special Operations Command. So when the President calls 911, he is calling North Carolina.

And like you, I never want our men and women to be in a fair fight. I want them to have the best training, the best intelligence, and the best equipment in order to overwhelm any enemy at any time on any battlefield.

And a key to this success is their readiness. So if you could speak a bit about readiness and this budget's impact on military readiness.

Mr. NORQUIST. So I appreciate the question, and the readiness is essential. When you talked about the units you have there, many of those are units that have to be able to go on very short notice, and so their readiness levels need to be at the highest level.

And so one of the things that we have emphasized over the last several years as we have turned this around is, one, the training, making sure these units have training on schedule at the high level

that they need to achieve a level of proficiency, which is unlike what any other force in the world is going to get so when they walk on the battlefield, everybody knows that they are the best.

The other part is to make sure they have the most up-to-date equipment and they are trained on it. So as you point out, so there is never a fair fight. That is not what we are interested in. We are making sure they have it right.

This also gets to making sure that we have the proper numbers. So as I pointed out before, the end strength of the military had gone down dramatically. I think we were the lowest we had been since 1940. We added 38,000 people.

Some of those people went into units to fill them out so they were closer to the 100 percent they need to be. Others like the Air Force went to be maintainers. Part of their challenge in readiness was keeping their planes up and running because they did not have maintenance personnel. So they added 4,000 maintainers to try and drive it.

Those are some of the key elements because readiness is really a series of things, as you understand, and we have invested in each and every one of those across the service to make sure that our military is capable of fighting tonight and goes to the battlefield with the better force and the better training at the field.

Mr. HOLDING. Thank you.

And I would just like to mention that as you look at our military installations and presence around the country and you consider any realignments, we in North Carolina would welcome more military.

Mr. NORQUIST. Thank you.

Mr. HOLDING. Thank you.

Mr. Chairman, I yield back.

Chairman YARMUTH. The gentleman yields back.

I now recognize the gentlewoman from Washington, Ms. Jayapal, for five minutes.

Ms. JAYAPAL. Thank you, Mr. Chairman.

And welcome, Deputy Secretary, back to the Committee to speak on the President's $740.5 billion military budget.

The sheer size of the budget demands a level of accountability, I think, that we have to take very seriously. Our nation's defense budget is already larger than that of the next seven countries combined and comprises nearly 35 percent of the world's total military spending.

When you came before this Committee last year, we had a conversation about the audit, and I think we agreed on the need for fiscal responsibility, and I appreciate your efforts around this.

As you know, in 2010, Congress passed a requirement within the NDAA that gave the military essentially an extra seven years to comply with the requirement that every federal agency has to conduct an audit. But we gave the military an extra seven years to clean up the books and get ready, is how it was described by I think it was Grassley, and we set a deadline of September 2017.

In December 2017, your Department began the audit process, and when you came before the Committee last year, the Defense Department had failed that first ever agency-wide audit with only

five of the 21 individual audits receiving a passing grade, even after seven years of preparation.

This year only seven came back clean, a figure that you actually predicted during last year's hearing.

Is it acceptable for two-thirds of a $740 billion agency to fail an audit?

Mr. NORQUIST. So it is not where we want to be, and I think you and I share both a passion for this issue and a frustration with how long it took to get here.

One of the things that I agree with you on is this notion of getting ready for an audit without actually having the audit, I do not know about you, but I have never understood. I have never been able to say to GAO, "Please wait to do your audit until we are ready." Right?

In addition to which you do not have the ability to know if you are ready without the auditors there. So my prior experience in Homeland Security had been when the auditors came every year. We knew our problems, and we knew whether or not we had fixed them.

So I think the biggest change we did was move from this notion of we are going to keep spending money to get ready, and the answer is bring on the auditors. Bring on the bad news, and the truth is a lot of times people are averse to the bad news. And my answer is, no, we are not going to get better until you bring the bad news.

Let us know who is good. DeCA got a clean opinion, our commissary, this year. That is a great step forward. We have other agencies that need to keep going.

Now we have got a list of those weaknesses, and we can continue to work through them.

So I think it is unacceptable to be here. Part of that is the nature of the systems that we built that were never designed for the audit standards. We are now switching over to ones that are.

You do not want to pour a ton of money into one-time efforts that potentially get you there for one year and follow that. We need to be able to have sustainable solutions, better systems, more reliable processes.

So, again, thank you and the other Members for your support of this, but that is what we are driving toward.

Ms. JAYAPAL. No, I really appreciate that.

What is your prediction for how many individual agencies are going to pass their audits this year?

You were right last time. What is the prediction?

Mr. NORQUIST. So I look for one to two every year to keep moving forward. I think we should in five to seven years see the vast majority of them with clean opinions.

Ms. JAYAPAL. You think it is going to take seven years to get a clean audit for a $740 billion agency?

Mr. NORQUIST. So it took 10 years for the Department of Homeland Security. Now, each year you saw the number of agencies with a clean opinion come down, but the Coast Guard held up the process for, I think, just five years on the Coast Guard alone.

So the Department does not get a clean opinion until everybody gets a clean opinion.

Ms. JAYAPAL. And let me just say I know you share the goal here, but I am frustrated by the idea that we would only get two more individual agencies every year, which you said one to two.

Mr. NORQUIST. Right.

Ms. JAYAPAL. That seems unacceptable to me. If a major corporation that was worth $740 billion was not able to tell its shareholders where the money was going, that CEO would be out immediately. We would not give them seven years to get ready and then another seven years to, you know, actually come back and be able to say how they are spending the money.

This is taxpayer dollars that are going into an agency that continues to either not be audited or to fail audits, and it feels like there should be an urgency, especially from somebody like you, who I do believe we share this, and urgency and a push from your level to say, "You know what? Two agencies every year is not sufficient. We have to ramp this up, and we need to get a clean audit for the entire Department within, say, two years."

Mr. NORQUIST. Right.

Ms. JAYAPAL. It just feels unacceptable.

And so I am just asking you to please be more aggressive and to tell me how you are going to get us better than one or two, and you are somebody who agrees with us.

Mr. NORQUIST. Right.

Ms. JAYAPAL. So I just need to hear something more from you on that, Deputy Secretary, and how you are going to push for more agencies.

Mr. NORQUIST. So trust me. This is something I always keep an emphasis on and push on because of our shared concern here.

Do keep in mind we are different than companies. First of all, they were built from the beginning to pass an audit and we were not.

The second is——

Ms. JAYAPAL. Which is an issue in itself.

Mr. NORQUIST. Which is an issue, but the other part is because of the way we get provided money, our audit goes back and can touch 2015 contracts because those contract—in fact, they can go back almost 10 years because if you think of a construction project, the money is available for five years for award and then available for five years, and that is legally separate money from this year's appropriation.

So the auditors can pull that and say, "I want to see the invoice from 2011," and we have to provide it, and so some of the questions these agencies have are, "How much time do you want me to spend finding documents from 2011 or should I just accept the fact that that year is going to be a irrelevant year and focus on getting 2020 correct?"

So some of this is we have got to get the legacy documentation issues have to flow out, and I am trying to be a little judicious in taxpayer's money, not to launch people on futile efforts if the answer is and I tell them, "Are you going to be able to get it cleaned up then year after year? OK. That is what I want."

How can you do it so you can sustain it. We will worry about the history part later, but I think this is an area I share. Do not worry. I will keep focusing on it.

And let me just highlight for the Members here every time you bring this up, it is valuable, was the opening of our hearing with the Armed Services Committee. The Chairman opened by mentioning the audit. I do not forget to tell that when I talk to people inside the Department to make sure they understand your interest and their support.

Ms. JAYAPAL. That is good. Well, we will keep being helpful in that way.

Mr. NORQUIST. Thank you.

Ms. JAYAPAL. And I would just say that perhaps the best way to really respect the taxpayers' dollars is to not continue to increase our defense spending until we can show that we are using this money properly and have a full clean audit.

Thank you for your work, Deputy Secretary.

I yield back.

Chairman YARMUTH. The gentlewoman's time has expired.

I now recognize the gentleman from Utah, Mr. Stewart, for five minutes.

Mr. STEWART. Thank you, Chairman.

And, Deputy Secretary, thank you.

I am going to followup very quickly on the previous line of questioning. I agree with that. I think most of us do, and I appreciated your response about you all are not designed to pass an audit. I think that is a partial explanation.

I have got to say, you know, the bad news and good news. The bad news is you are bad at audits. The good news is you are good at protecting national security, killing bad guys, and bringing the world stability, and I think that is important to recognize.

But, again, we have to get a little better on that.

I think one of the challenges that I would imagine sitting in your chair is the range of issues that anyone of us might ask. We put you in the hot seat.

I am going to do that a little bit today, and I mean many times they are technical or local oriented, and I am going to do that as well. There are 1,000 questions I could ask you, but I think this one is, again, important to my district, important actually to our national security.

And that is the Dugway Proving Ground, which is a national asset. It is in my district. It is designated as a major range and test facility base, and it is the home of the West during Desert Test Center.

The team at Dugway are really, really good at what they do. They provide that critical capability to test a wide variety of defensive and protective equipment, and for those of us in the military who had relied on that equipment to protect us in a biological or chemical attack, I think you understand, or even radiologic or even explosive, you understand the importance of that.

It is uniquely qualified. If you have never been there, it is one of the most isolated, frankly, kind of lonely places in the United States, but that is what makes it perfect.

It is enormous. It is varied landscape. You know, you can test in desert. You can test in mountains. It is very realistic training.

Now to my concern. I am very concerned that your budget eliminates all funding for the readiness level of technology upgrades to

West Desert Test Facility, and particularly to the Biological Test Division.

What it comes down to is this. The Department's rationale for cutting the funding seems to be that this program does not directly support an advanced national defense strategy, and you are turning it over essentially to the Army, which is not equipped or budgeted to do that.

Again, share your thoughts with me on this. Why are these concerns misdirected?

And if they are, why?

And if they are not, how can we address it?

Mr. NORQUIST. So I will need to look into this particular realignment. I think when we have met with the services, they have all emphasized the importance and the value of our test ranges and the need to be able to conduct testing and when we have some programs that allow each service to test on others' ranges and make sure they are able to take advantage of the technology.

I am not familiar with this particular realignment from one group to the Army. I will look into this one.

But in the end of the day, we understand the role that test ranges play and the importance of making sure the equipment we have delivers and performs as we need it do so.

Mr. STEWART. Well, let me add just a little bit of detail that I think will maybe help you as you look into that.

Again, as in MRTFB, as I have described, public law, which I could go into and tell you the number, but I am sure you will be able to find that, it provides direct stewardship for this national treasure to be supported by OSD.

And yet, again, the budget request seems to place an onus on the Army, which is by law a DoD responsibility.

So would you look at that and get back with us? We would appreciate it.

We are concerned that this misalignment is going to have negative impacts on our ability to defend our soldiers.

Mr. NORQUIST. Congressman, I would be happy to look into that and get back to you.

Mr. STEWART. OK. Thank you.

And with that, Chairman, I will yield back.

Chairman YARMUTH. The gentleman yields back.

I now recognize the gentlewoman from Minnesota, Ms. Omar, for five minutes.

Ms. OMAR. Thank you, Chairman.

Good morning, Mr. Norquist.

Mr. NORQUIST. Good morning.

Ms. OMAR. I had an amendment in last year's NDAA inquiring for a report on the process of overseas bases and operations. It was due on February 15th, but I have not received it from your Department.

I am wondering if you know when we should expect to see that.

Mr. NORQUIST. So I will go look and find out what the status of that is, Congresswoman.

Ms. OMAR. I appreciate that.

I want to continue discussing the high costs found in your DoD budget proposal. I am sure you are quite aware that the United States outspends the rest of the world in military spending.

Mr. NORQUIST. Yes.

Ms. OMAR. Under this Administration, the military spending has increased to near historic highs with the majority of funding being used to modernize our nuclear weapons and missile system.

At what cost? You will see in the first figure that the lack of federal investment in our infrastructure has continued, has contributed to the United States failing behind other nations.

The other graphic is a recent headline that shows how health and education outcomes have declined in the United States compared to our global peers as well.

Mr. Chairman, I would like to submit the University of Washington study and this article into the record.

Chairman YARMUTH. Without objection.

[The information referred to follows:]

Measuring human capital: a systematic analysis of 195 countries and territories, 1990–2016

Stephen S Lim, Rachel L Updike, Alexander S Kaldjian, Ryan M Barber, Krycia Cowling, Hunter York, Joseph Friedman, R Xu, Joanna L Whisnant, Heather J Taylor, Andrew T Leever, Yesenia Roman, Miranda F Bryant, Joseph Dieleman, Emmanuela Gakidou, Christopher J L Murray

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Summary

Background Human capital is recognised as the level of education and health in a population and is considered an important determinant of economic growth. The World Bank has called for measurement and annual reporting of human capital to track and motivate investments in health and education and enhance productivity. We aim to provide a new comprehensive measure of human capital across countries globally.

Methods We generated a period measure of expected human capital, defined for each birth cohort as the expected years lived from age 20 to 64 years and adjusted for educational attainment, learning or education quality, and functional health status using rates specific to each time period, age, and sex for 195 countries from 1990 to 2016. We estimated educational attainment using 2522 censuses and household surveys; we based learning estimates on 1894 tests among school-aged children; and we based functional health status on the prevalence of seven health conditions, which were taken from the Global Burden of Diseases, Injuries, and Risk Factors Study 2016 (GBD 2016). Mortality rates specific to location, age, and sex were also taken from GBD 2016.

Findings In 2016, Finland had the highest level of expected human capital of 28·4 health, education, and learning-adjusted expected years lived between age 20 and 64 years (95% uncertainty interval 27·5–29·2); Niger had the lowest expected human capital of less than 1·6 years (0·98–2·6). In 2016, 44 countries had already achieved more than 20 years of expected human capital; 68 countries had expected human capital of less than 10 years. Of 195 countries, the ten most populous countries in 2016 for expected human capital were ranked: China at 44, India at 158, USA at 27, Indonesia at 131, Brazil at 71, Pakistan at 164, Nigeria at 171, Bangladesh at 161, Russia at 49, and Mexico at 104. Assessment of change in expected human capital from 1990 to 2016 shows marked variation from less than 2 years of progress in 18 countries to more than 5 years of progress in 35 countries. Larger improvements in expected human capital appear to be associated with faster economic growth. The top quartile of countries in terms of absolute change in human capital from 1990 to 2016 had a median annualised growth in gross domestic product of 2·60% (IQR 1·85–3·69) compared with 1·45% (0·18–2·19) for countries in the bottom quartile.

Interpretation Countries vary widely in the rate of human capital formation. Monitoring the production of human capital can facilitate a mechanism to hold governments and donors accountable for investments in health and education.

Funding Institute for Health Metrics and Evaluation.

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Introduction

Human capital refers to the attributes of a population that, along with physical capital such as buildings, equipment, and other tangible assets, contribute to economic productivity.[1] Human capital is characterised as the aggregate levels of education, training, skills, and health in a population,[2] affecting the rate at which technologies can be developed, adopted, and employed to increase productivity.[3] The World Bank has brought new attention to this topic through its recently introduced Human Capital Project,[4] which aims to "understand the link between investing in people and economic growth, and to accelerate financing for human capital investments." A basic input needed for this aim to be fulfilled is an internationally comparable index of human capital, which currently does not exist. This study seeks to fill this global measurement gap.[3]

Although evidence supports human capital as a driver of growth, the World Bank has argued that investments in human capital are too low in low-income and middle-income countries.[5] Much of the World Bank's investments focus on physical rather than human capital.[5] Only 1·5% of the World Bank International Development Association concessional grants are for health and 1·9% are for education.[6] As countries graduate to borrowing from the non-concessional International Bank for Reconstruction and Development framework, the shares for health increase to 4·2% and to 5·2% for education.[6] A focus on building physical assets might also be driven by time horizons; such projects can yield

Research in context

Evidence before this study

Previous studies have examined the association between a range of dimensions of human capital and economic growth. These studies have shown that the average number of years of completed schooling is associated with subsequent economic growth and that incorporation of measures of the distribution of education might explain more of this variation. More recent analyses from the past 5–10 years that use performance on international student assessments as a measure of educational quality or learning find it to be a more predictive measure of economic growth than attainment alone. Far fewer efforts have been made to expand the measurement of human capital so that it also encompasses health; however, these studies suggest that an expanded measurement might also be important for understanding economic growth. Despite the accumulated evidence of the associations between the core dimensions of human capital—education and health—and economic growth, no comprehensive measure presently exists for all countries globally.

Added value of this study

This study provides a new measure of expected human capital for 195 countries, consisting of four components: educational attainment, learning, health, and survival, based on a systematic analysis of all available data. This measure, in units of health, education, and learning-adjusted expected years lived between age 20 and 64 years, is estimated each year from 1990 to 2016 and can be updated annually. Compared with existing metrics of human capital, this more comprehensive measure provides a detailed characterisation of these differences across countries and over time, revealing marked variations in expected human capital for children born in different countries and differential progress in the improvement of expected human capital over the past 25 years. An inconsistent gender differential exists—for countries below approximately 10 years of expected human capital, this tends to be higher in males; for countries above this level, it is higher in females.

Implications of all the available evidence

Human capital is an important factor in economic development that requires improved metrics and regular monitoring. The systematic analysis of data on four components—educational attainment, learning, health, and survival—establishes the feasibility of an annual measurement of expected human capital, providing a means to monitor and assess investments in health and education. This more comprehensive measure of human capital has revealed variability across countries in building human capital that is independent of baseline levels of health and education, suggesting that building human capital is amenable to policy intervention.

returns sooner than investing in children's health and education, and the political process in many nations might reward short-run returns.[6]

Despite the inclusive scope of the theory of human capital, much of the initial research has focused on the average number of years of completed schooling,[7] found to be associated with subsequent economic growth,[8,9] although the association is not consistent.[3] Research that uses the distribution of education has found that it might explain more variation in economic growth than a simple average.[10] In the past 5–10 years, analyses of around 50 countries[11–13] that further take into account the quality of education or learning, with the use of performance on international student assessments, find this measure is even more predictive of economic growth. Efforts to expand the measurement of human capital to also encompass functional health have been far fewer[14,15] but suggest that health could also be important for understanding economic growth.[3]

Underinvestment in people might also be driven by a paucity of data; presently, regular and comparable reports on the rates of formation of human capital across all countries do not exist.[5] Monitoring the expected formation of human capital in the next generation, as a measure of the effect of near-term investments in health and education, could facilitate a mechanism to hold countries and donors accountable to their populations for these investments.[5]

Building on past efforts, we have produced a measure of human capital that incorporates educational attainment, education quality or learning, functional health, and survival for 195 countries, by age and sex, from 1990 to 2016. For each country, we estimated the expected years of human capital, defined for each birth cohort as the expected years lived from 20 to 64 years of age and adjusted for educational attainment, learning, and functional health, if exposed to period-specific, age-specific, and sex-specific rates of mortality, educational attainment, learning, and functional health status.

Methods

Overview

We did a systematic analysis of available data for 195 countries from 1990 to 2016 to measure educational attainment, by sex and 5-year age groups (from 5 to 64 years) for the in-school and working-age population, and learning, as measured by performance on standardised tests of mathematics, reading, and science by 5-year age groups (from 5 to 19 years) for school-aged children. We constructed a measure of functional health status using the prevalence, by 5-year age groups, of seven health conditions for which evidence suggests a link to economic productivity using estimates from the Global Burden of Diseases, Injuries, and Risk Factors Study (GBD) 2016.[16] We also used mortality rates specific to location, age, sex, and year from GBD 2016.[17]

Using these four dimensions—educational attainment, learning, functional health, and survival—we constructed an indicator of expected human capital that is sensitive to recent investments in health and education. Expected human capital is defined as the expected years lived from age 20 to 64 years and adjusted for educational attainment, learning, and functional health, measured in units of health, education, and learning-adjusted expected years lived between age 20 and 64 years. Expected human capital is calculated by exposing a hypothetical birth cohort to educational attainment, learning, functional health status, and mortality rates specific to time period, age, and sex. The measure is analogous to health-adjusted life expectancy. Expected human capital was calculated as follows:

$$\left(\frac{\sum_{x=20}^{64} nL_{xt} FH_{xt}}{l_0}\right)\left(\frac{\sum_{x=5}^{24} Edu_{xt} Learn_{xt}}{18}\right)$$

where nL_{xt} is the expected years lived in an age group x, for year t, in which age groups are defined as birth–6 days, 7–27 days, 28 days–1 year, 1–4 years, and 5-year age groups thereafter; FH_{xt} is the functional health status in an age group x, in year t, transformed to a 0–1 scale; l_0 is the starting birth cohort; Edu_{xt} is the years of education attained during an age group x, for year t; and $Learn_{xt}$ is the average standardised test score in an age group x, for year t, transformed to a 0–1 scale.

In other words, for a birth cohort born, for example, in the year 2000, we exposed the birth cohort to age and sex-specific mortality rates for the year 2000 from birth to 64 years. For each 5-year group from 20 to 64 years, we adjusted years lived by the cohort in each interval for age-specific and sex-specific functional health status and calculated the number of adjusted years lived from 20 to 64 years. From 5 to 24 years, we computed the expected number of learning-adjusted years of education by exposing the cohort to age-specific and sex-specific educational attainment rates adjusted for learning estimated for the year 2000. We summed and divided these estimates by the maximum possible learning-adjusted years of education; we used 18 years, which is the commonly used maximum for educational attainment data.[39] We used the subsequent ratio to adjust the health-adjusted years lived from 20 to 64 years to produce the measure of expected human capital.

We did a sensitivity analysis (appendix) in which we took the mean instead of the product of learning-adjusted educational attainment and functional health when computing expected human capital.

Educational attainment

Estimates of average years of education were based on a compilation of 2522 censuses and household surveys. These data and the methods hereafter build on an approach used to produce a previously published dataset of international educational attainment.[39] All data were top-coded to 18 years of education based on the practices of a common data provider.[38] Each data source included information on the distribution of educational attainment by country, year, sex, and 5-year or 10-year age group. When years of schooling data were available only for multiyear bins—eg, the fraction of the population with between 6 and 9 years of completed education—we used a database of 1792 sources reporting single years of completed schooling to split these binned data into single-year distributions from 0 to 18 years on the basis of the average of the 12 closest distributions in terms of geographical proximity and year. From each of the subsequent data sources, we calculated the mean years of schooling by age and sex.

In the next step, we used age–cohort imputation to project observed cohorts through time, exploiting the relative constancy of education levels after 25 years of age. For any datapoint representing a cohort aged 25 years or older, we extrapolated the data forward and backward so that it was represented in all year–age combinations for that cohort. For example, a datapoint reflecting a cohort aged 35–39 years in 2000 was projected forward for people aged 40–44 years in 2005, aged 45–49 years in 2010, and so on. It was also projected backward for people aged 30–34 years in 1995 and people aged 25–29 years in 1990. After imputation, we fitted age–period models on all original input data and the imputed cohort data to estimate a complete single-year series of educational attainment from 1950 through to 2016 by age, sex, and location. We separately calculated for each sex and GBD region the mean level of educational attainment of the country, age, sex, and year-specific population ($Edu_{c,a,s,t}$), which was estimated as:

$$logit\left(\frac{Edu_{c,a,s,t}}{Edu_{max_a}}\right) = \beta_{s,r}\,\text{Year} + \delta_{s,r}\,\text{Age} + l_{s,r} + \alpha_{c,s}$$

where Edu_{max_a} is the maximum mean educational attainment for each age group, defined as three for ages 5–9 years, eight for ages 10–14 years, 13 for ages 15–19 years, and 18 for all age groups 20–24 years and older; $\beta_{s,r}$ is a sex-specific and region-specific intercept; $\delta_{s,r}$ captures the linear secular trend for each sex and region; $l_{s,r}$ is a natural spline on age to capture the non-linear age pattern by sex and region, with knots at 15 and 25 years; and $\alpha_{c,s}$ is a country-sex-specific random intercept.

See Online for appendix

Finally, we used Gaussian process regression (GPR) to smooth the residuals from the age–period model, accounting for uncertainty in each datapoint. GPR also synthesises both data and model uncertainty to estimate uncertainty intervals.

Learning

Our estimates of learning or education quality are based on a systematic analysis of student testing data from major international assessments and national continuing

assessments of education progress. These data comprise 1894 tests, covering 4345 location–subjects (mathematics, science, and reading) across 295 unique locations (132 countries and 163 subnational locations).

Our testing database contains a comprehensive record of learning scores for school-aged children aged 5–19 years. Four major programmes provide extensive data: the Programme for International Student Assessment, which began in 2000 and now tests students in 73 countries on a 3-year cycle;[20] the Progress in International Reading Literacy Study (PIRLS), which covered 50 countries in the 2016 iteration;[21] the Trends in International Mathematics and Science Study (TIMSS), of which the latest round in 2015 covered 57 countries;[22] and several tests from the International Association for the Evaluation of Educational Achievement.[23,24,25] In addition to these programmes, we also used regional testing programmes, including the Southern and Eastern Africa Consortium for Monitoring Educational Quality,[26] the Latin American Laboratory for Assessment of the Quality of Education,[27] and the Programme d'Analyse des Systèmes Educatifs de la Confem;[28] national standardised testing programmes, such as the US National Assessment of Education Progress,[29] and the India National Achievement Survey;[30] and representative studies measuring intelligence quotient (IQ) in school-aged children that largely included the Wechsler Intelligence Scale for Children,[31] the Raven's Standard Progressive Matrices,[32] and the Peabody Picture Vocabulary test.[33] This database provides the most extensive geographical distribution and compilation of long-term temporal trends to date. Unlike several other studies,[34–38] which used similar data, we kept scores in different school subjects (ie, mathematics, reading, and science) separate. We also maintained data on the year the tests were done to understand trends through time and included demographic information such as grade level (for implied age) and sex.

To generate comparable measures from these different tests, we rescaled subject-specific test scores to a common reference test scale using linear regression, building on previous approaches.[39] We used TIMSS mathematics and science tests and PIRLS reading tests as the reference scale because they are large, international tests that cover most geographical regions and all three major testing subjects, and are already standardised to each other.[40] We implemented the rescale using all available data matched by country and approximate year for the reference tests and alternative tests.

To estimate test scores for all countries, years, and ages (5-year age groups from 5 to 19 years), we used spatiotemporal Gaussian process regression[41] using per capita mean years of education as a predictor (β=5·7, p=0 for boys; β=5·8, p=0 for girls), and with maths, science and reading test scores given equal weight to generate a combined learning measure ranging from 0 to 1000. This method draws strength across space, time, and age, incorporates both data and model uncertainty, and produces a full-time series of estimates for all geographies with the use of covariate relationships and spatial and temporal patterns in residuals.

Finally, we rescaled this measure to a 0–1 scale, with 1 set to one SD above the mean score (a score of 600) on the original TIMSS exam,[40] approximately the highest estimated average test score in any country.

Functional health status

For functional health status relevant to economic productivity, we used the prevalence of seven diseases and impairments identified in policy trials or observational studies to be related to learning or productivity (appendix). These include wasting, measured as the proportion of the population younger than 5 years below two SDs of the reference mean weight for height;[42] stunting, measured as the proportion of the population younger than 5 years below two SDs of the reference height for age;[42] anaemia, measured as the proportion of each age–sex group with a haemoglobin concentration defined by WHO as mild, moderate, or severe anaemia;[43] cognitive impairment, measured as the proportion of the population with moderate, severe, or profound developmental delay;[44] vision loss, defined as the proportion of the population with moderate or severe vision impairment or blindness;[45] hearing loss, defined by WHO as the proportion of the population with hearing loss greater than 40 dB in the better-hearing ear (30 dB in children);[46] and infectious disease prevalence, with the use of three infectious disease aggregations from GBD 2016 classification, which includes HIV/AIDS, tuberculosis, malaria, neglected tropical diseases, diarrhoea, and several other common infectious diseases.[47]

We combined these seven functional health status outcomes into a single measure using principal components analysis (PCA). In the first step, we used country-specific prevalence rates of anaemia, vision loss, hearing loss, intellectual disability, and years lived with disability per capita from infectious disease for 5-year age groups (20–64 years), from 1990 to 2016. Because stunting and wasting are measured only in children younger than 5 years, we used the time-period measure of prevalence in children for these two conditions. We rescaled each of the seven conditions such that 0 represented the first percentile and 1 represented the 99th percentile observed across all age, sex, and country groups. We then applied PCA on the age-standardised value of the rescaled health conditions for the ages 20–64 years. Following standard practice, we selected the first n components of the PCA such that the sum of the variance explained by the components was greater than 80%.[48] In this case, the first component explained more than 85% of the variance. We determined weights for each condition by taking the average loading across factors, weighted by the explained variance. We rescaled this vector of weights so that it was equal to one. We then calculated the health component score for each

observation specific to age, sex, country, and year by applying these PCA-generated weights to the seven component prevalence values.

Survival

We estimated expected years lived between ages 20 and 64 years using sex-specific and age-specific mortality rates by country and year, produced for GBD 2016. This estimation procedure used a wide range of sources including, but not limited to, adjusted data from vital and sample registration systems and birth histories and sibling survival data collected in household surveys to populate abridged life tables and compute expected years lived by 5-year age groups. These methods are described in detail in a previous publication.[17]

Uncertainty analysis

We estimated uncertainty in the measure of expected human capital by computing 1000 estimates of expected human capital using 1000 draws from the posterior distribution of each of the four components (educational attainment, learning, functional health status, and survival). The posterior distribution of each of the four components reflects both the variance of the input data and predictors used in the estimation model of each component.

Associations between expected human capital and gross domestic product

We examined the association between GDP per capita and expected human capital in two ways, using GDP per capita data from a recently published health financing dataset.[18] First, we plotted the cross-sectional association between GDP per capita and expected human capital, by country, in 1990 and 2016, using GDP per capita in both log and level space. Second, for countries in each quartile of expected human capital in 1990 and 2016, we computed the median and IQR of GDP per capita in 1990 and 2016. For quartiles formed by the absolute change in expected human capital between 1990 and 2016, we also computed the median and IQR of the annualised rate of change in GDP per capita from 1990 to 2016.

Results

Levels and trends in expected human capital

After the effect of taking all four components of expected human capital into consideration for the 20 largest populations in the world (figure 1), Japan in 2016 had the highest expected human capital of 24·1 expected years lived (95% UI 23·2–25·0) from 20 to 64 years of age, adjusted for educational attainment, learning, and functional health. This value comes from Japan having 43·9 expected years lived (95% UI 43·8–43·9) from 20 to 64 years based on age-specific mortality rates in 2016, expected educational attainment of 12·4 years (12·0–12·8) out of a maximum possible of 18 years, a learning score of 0·95 (0·93–0·96), and a functional health score of 0·85 (0·84–0·85). On the low end in 2016 was Ethiopia, where expected human capital, despite substantial progress, was still less than 5 years: expected years lived from 20 to 64 years was 38·1 years (95% UI 37·4–38·9), educational attainment was only 7·3 years (6·0–8·6), the learning score was only 0·62 (0·61–0·63), and the functional health score was 0·49 (0·46–0·52). Differences in the change in expected human capital between 1990 and 2016 highlight large variations in

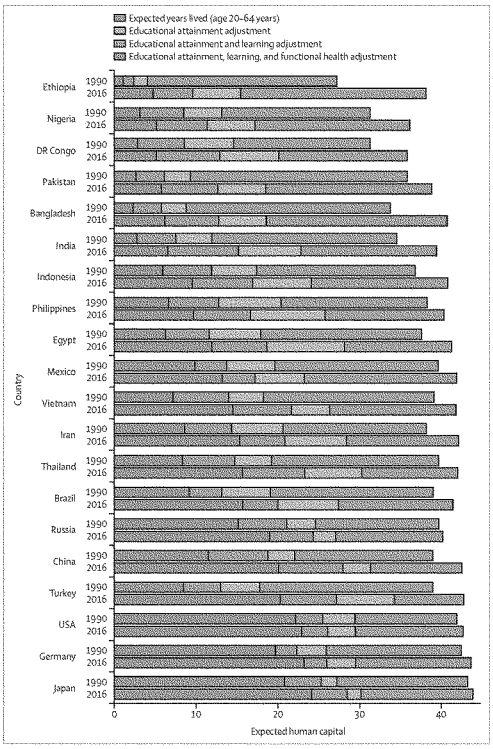

Figure 1: **Expected human capital in 1990 and 2016 for the 20 largest countries in the world, by 2016 total population**

The effect of progressively combining the four components of human capital—expected years lived from 20 to 64 years of age, mean years of education, learning, and functional health status—in the largest 20 countries in the world differs by country and year.

1990

	Expected human capital	Expected years lived (0–45 years)	Functional health status (0–100)	Educational attainment (0–18 years)	Learning (0–100)
Finland (1)	25	42	86	14	89
Iceland (2)	24	43	87	14	84
Denmark (3)	23	42	88	13	85
Canada (4)	23	43	89	13	87
Netherlands (5)	23	43	88	13	89
USA (6)	22	42	87	13	85
France (7)	22	42	87	13	86
Belgium (8)	22	42	87	13	87
Sweden (9)	22	43	87	13	87
Taiwan (province of China) (10)	21	42	76	15	93
Greece (11)	21	43	85	13	85
Japan (12)	21	43	82	13	93
Luxembourg (13)	21	42	87	13	85
Norway (14)	21	43	88	13	84
Andorra (15)	21	43	88	13	85
Ireland (16)	20	43	86	13	86
Switzerland (17)	20	43	86	13	88
South Korea (18)	20	43	84	13	93
Austria (19)	20	42	86	13	87
Czech Republic (20)	20	42	84	13	89
Germany (21)	20	42	88	13	86
Australia (22)	19	43	84	13	88
Estonia (23)	19	46	78	15	86
Croatia (24)	19	43	77	13	84
Italy (25)	19	43	86	13	83
Cyprus (26)	19	43	82	13	84
UK (27)	19	43	85	13	87
Israel (28)	19	43	86	13	85
New Zealand (29)	19	42	84	13	89
Slovakia (30)	18	43	78	13	87
Latvia (31)	18	46	75	13	84
Cuba (32)	18	40	78	13	86
Lithuania (33)	18	43	75	13	84
Slovenia (34)	18	42	77	13	86
Brunei (35)	18	42	76	13	87
Belarus (36)	18	40	73	13	81
Spain (37)	18	43	83	13	83
Hungary (38)	17	40	81	13	87
Malta (39)	17	43	85	13	83
Poland (40)	17	41	74	13	88
Montenegro (41)	17	42	77	13	80
Bulgaria (42)	17	41	73	13	83

2016

	Expected human capital	Expected years lived (0–45 years)	Functional health status (0–100)	Educational attainment (0–18 years)	Learning (0–100)
Finland (1)	28	44	89	15	91
Iceland (2)	27	44	89	14	86
Denmark (3)	27	44	89	14	88
Netherlands (4)	27	44	90	14	89
Taiwan (province of China) (5)	26	43	82	14	95
South Korea (6)	26	43	84	13	96
Norway (7)	25	44	90	13	86
Luxembourg (8)	25	44	89	13	91
France (9)	25	43	89	13	87
Belgium (10)	25	44	88	13	88
Canada (11)	25	44	88	13	89
Switzerland (12)	25	44	87	13	88
Singapore (13)	24	44	82	13	98
Japan (14)	24	44	85	13	94
Sweden (15)	24	44	89	13	87
Ireland (16)	24	44	89	13	88
Estonia (17)	24	43	83	14	90
Andorra (18)	24	44	89	13	86
Austria (19)	24	44	88	13	87
Cyprus (20)	24	44	88	13	83
Latvia (21)	23	42	80	14	86
Belarus (22)	23	42	82	15	84
Slovenia (23)	23	44	81	14	88
Germany (24)	23	44	89	13	88
Greece (25)	23	44	88	13	83
Australia (26)	23	44	87	13	87
USA (27)	23	43	88	13	89
Czech Republic (28)	23	43	83	13	87
Brunei (29)	22	43	81	13	92
Poland (30)	23	43	75	14	87
UK (31)	22	44	87	13	88
Croatia (32)	22	43	79	14	85
New Zealand (33)	22	43	86	13	88
Hungary (34)	22	43	82	13	87
Italy (35)	22	44	88	13	86
Slovakia (36)	22	43	75	13	85
Israel (37)	22	44	87	13	85
Malta (38)	22	44	88	13	82
Lithuania (39)	22	42	81	13	86
Portugal (40)	22	43	86	13	86
Cuba (41)	22	43	79	13	87
Spain (42)	22	44	85	13	86

(Figure 2 continues on next page)

1990

	Expected human capital	Expected years lived (0–45 years)	Functional health status (0–100)	Educational attainment (0–18 years)	Learning (0–100)
Singapore (43)	17	43	82	10	94
Guam (44)	17	43	72	13	79
Ukraine (45)	17	46	77	11	80
Serbia (46)	17	42	76	12	81
Virgin Islands (47)	16	43	78	12	74
Puerto Rico (48)	16	41	77	12	71
Georgia (49)	15	40	74	13	72
Armenia (50)	15	40	71	13	76
Russia (51)	15	40	72	11	80
Macedonia (52)	15	41	78	11	75
Barbados (53)	15	42	75	12	72
Northern Mariana Islands (54)	15	42	73	12	73
Portugal (55)	15	42	81	9	82
Romania (56)	15	40	72	11	80
Chile (57)	15	44	82	11	72
Bosnia and Herzegovina (58)	14	42	70	11	80
Lebanon (59)	14	39	69	11	69
Kazakhstan (60)	13	39	67	11	82
Moldova (61)	13	39	70	11	78
American Samoa (62)	13	43	66	12	73
Argentina (63)	12	41	76	10	71
Greenland (64)	12	37	85	8	83
Uruguay (65)	12	41	77	9	75
The Bahamas (66)	12	40	76	10	72
Dominica (67)	12	41	71	10	73
Jordan (68)	12	41	64	11	73
China (69)	11	39	61	10	81
Bermuda (70)	11	41	76	9	70
Samoa (71)	11	40	71	9	76
Panama (72)	11	41	74	10	68
Kyrgyzstan (73)	11	38	63	11	68
Uzbekistan (74)	11	39	57	11	76
Albania (75)	11	41	63	10	76
Costa Rica (76)	11	42	75	8	74
Azerbaijan (77)	11	38	63	11	75
Tonga (78)	11	39	68	10	76
Qatar (79)	10	42	71	10	64
Seychelles (80)	10	40	74	10	65
Jamaica (81)	10	41	72	9	72
Venezuela (82)	10	41	72	9	66
Antigua and Barbuda (83)	10	42	74	9	70
United Arab Emirates (84)	10	41	59	11	77

2016

	Expected human capital	Expected years lived (0–45 years)	Functional health status (0–100)	Educational attainment (0–18 years)	Learning (0–100)
Turkey (43)	20	45	73	14	79
China (44)	19	43	72	13	86
Ukraine (45)	19	41	74	14	82
Serbia (46)	19	41	76	13	82
Bulgaria (47)	19	42	77	13	83
Montenegro (48)	18	42	77	13	79
Russia (49)	19	40	78	12	90
Chile (50)	19	43	88	11	78
Macedonia (51)	18	43	7	13	75
Lebanon (52)	18	43	77	15	72
Virgin Islands (53)	18	42	80	13	74
Puerto Rico (54)	18	43	80	13	73
Moldova (55)	18	41	75	13	80
Romania (56)	18	42	73	13	79
Barbados (57)	18	42	76	14	74
Kazakhstan (58)	18	41	74	13	84
Georgia (59)	18	42	76	13	75
Northern Mariana Islands (60)	18	42	73	14	76
Armenia (61)	17	42	72	13	78
Kuwait (62)	17	43	82	13	65
Guam (63)	17	42	74	13	80
Bosnia and Herzegovina (64)	17	43	73	13	80
Saudi Arabia (65)	17	43	73	14	68
Argentina (66)	16	44	81	13	72
Jordan (67)	16	42	72	13	73
Libya (68)	16	42	68	14	74
Greenland (69)	16	43	86	10	84
United Arab Emirates (70)	16	42	68	13	77
Brazil (71)	16	41	78	12	73
Thailand (72)	16	42	67	13	77
American Samoa (73)	16	41	70	13	76
Costa Rica (74)	16	43	73	11	76
Tunisia (75)	15	43	75	13	68
Palestine (76)	15	42	71	14	69
Uruguay (77)	15	42	78	11	76
Iran (78)	15	42	73	12	73
Malaysia (79)	15	43	66	12	78
Dominica (80)	15	41	76	13	74
Samoa (81)	15	41	75	11	78
Venezuela (82)	15	41	76	12	71
Qatar (83)	15	43	77	11	70
Panama (84)	15	42	75	13	69

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1990

	Expected human capital	Expected years lived (0–45 years)	Functional health status (0–100)	Educational attainment (0–18 years)	Learning (0–100)
Turkmenistan (85)	10	37	63	11	75
Trinidad and Tobago (86)	10	40	77	8	75
Mexico (87)	10	40	72	9	70
Tajikistan (88)	10	37	56	11	76
Fiji (89)	10	38	65	9	76
Palestine (90)	10	41	65	10	68
Brazil (91)	9	39	70	9	69
Colombia (92)	9	40	71	9	66
Peru (93)	9	38	65	10	66
Ecuador (94)	9	39	67	9	66
Kuwait (95)	9	42	70	8	65
Mongolia (96)	9	36	60	10	73
Iran (97)	9	38	60	10	69
Bahrain (98)	9	41	67	8	69
Marshall Islands (99)	9	38	60	9	73
Paraguay (100)	9	41	73	8	64
Federated States of Micronesia (101)	8	37	58	10	73
Turkey (102)	8	39	65	8	73
Thailand (103)	8	40	57	9	76
Algeria (104)	8	40	61	10	69
Mauritius (105)	8	41	56	10	66
Malaysia (106)	8	41	54	8	78
Dominican Republic (107)	8	39	71	9	65
Tunisia (108)	8	40	63	9	64
Libya (109)	8	41	65	8	68
North Korea (110)	8	41	50	9	78
Suriname (111)	8	39	66	8	68
Gabon (112)	7	35	54	9	78
Saint Lucia (113)	7	41	69	7	70
Belize (114)	7	40	69	8	66
Grenada (115)	7	41	67	7	68
Vietnam (116)	7	39	57	8	77
Saudi Arabia (117)	7	40	63	8	63
Guyana (118)	7	37	60	8	71
Nicaragua (119)	7	39	76	7	66
Syria (120)	7	40	53	9	64
El Salvador (121)	7	38	65	8	65
Bolivia (122)	7	35	62	9	64
Saint Vincent and the Grenadines (123)	7	40	69	8	68
Philippines (124)	7	38	52	10	63
Sri Lanka (125)	7	40	49	9	70
Iraq (126)	7	38	55	8	65

2016

	Expected human capital	Expected years lived (0–45 years)	Functional health status (0–100)	Educational attainment (0–18 years)	Learning (0–100)
Vietnam (85)	14	46	67	11	82
Bahrain (86)	14	43	77	11	74
Uzbekistan (87)	14	46	67	12	78
Jamaica (88)	14	42	72	11	73
Colombia (89)	14	42	76	11	72
Oman (90)	14	43	68	12	74
Albania (91)	14	45	69	11	78
The Bahamas (92)	14	43	77	11	73
Saint Lucia (93)	14	42	75	11	72
Fiji (94)	14	38	72	12	78
Seychelles (95)	14	45	74	11	72
Paraguay (96)	14	42	78	11	67
Antigua and Barbuda (97)	14	46	76	11	70
Kyrgyzstan (98)	14	41	69	13	70
Algeria (99)	14	42	70	12	68
Azerbaijan (100)	14	41	69	11	76
Tonga (101)	14	46	71	11	77
Sri Lanka (102)	13	42	59	13	75
Peru (103)	13	43	71	11	70
Mexico (104)	13	42	77	10	74
Turkmenistan (105)	13	40	72	10	77
El Salvador (106)	12	41	74	11	68
Trinidad and Tobago (107)	12	43	80	9	76
Bermuda (108)	12	43	71	9	68
Mongolia (109)	12	39	71	11	74
Mauritius (110)	12	46	64	11	73
Grenada (111)	12	45	76	10	71
Bolivia (112)	12	41	68	12	67
Ecuador (113)	12	43	72	10	69
North Korea (114)	12	40	57	11	83
Egypt (115)	12	41	64	12	66
Maldives (116)	12	43	58	11	74
Federated States of Micronesia (117)	12	39	65	11	76
Marshall Islands (118)	12	38	64	11	76
Syria (119)	12	37	62	12	69
Gabon (120)	12	38	58	11	83
Tajikistan (121)	11	40	59	11	76
Nicaragua (122)	11	42	72	9	68
Belize (123)	11	43	71	10	65
Suriname (124)	11	40	72	10	70
Saint Vincent and the Grenadines (125)	11	41	74	9	71
Dominican Republic (126)	11	45	76	10	62

(Figure 2 continues on next page)

1990

	Expected human capital	Expected years lived (0–45 years)	Functional health status (0–100)	Educational attainment (0–18 years)	Learning (0–100)
Egypt (127)	4	38	54	9	65
Oman (128)	4	40	54	8	67
South Africa (129)	4	36	60	10	53
Indonesia (130)	4	37	50	9	68
Botswana (131)	4	37	55	9	60
Honduras (132)	4	38	64	7	61
Vanuatu (133)	4	37	55	7	72
Swaziland (134)	4	37	59	9	54
Congo (Brazzaville) (135)	4	32	50	10	58
Zimbabwe (136)	4	35	50	9	54
Kenya (137)	4	35	49	8	70
Morocco (138)	4	38	60	6	58
Namibia (139)	4	36	51	8	51
São Tomé and Príncipe (140)	4	36	51	7	62
Cape Verde (141)	4	39	58	5	66
Bhutan (142)	4	34	42	7	57
Kiribati (143)	4	35	55	5	72
Guatemala (144)	4	36	54	6	63
Maldives (145)	4	36	53	7	68
Solomon Islands (146)	4	36	51	5	72
Timor-Leste (147)	4	31	39	7	69
Equatorial Guinea (148)	4	28	43	8	64
Cameroon (149)	4	34	43	6	78
Lesotho (150)	3	35	47	7	54
Djibouti (151)	3	35	51	6	64
Myanmar (152)	3	34	49	6	68
Madagascar (153)	3	32	42	7	80
Haiti (154)	3	32	51	7	66
Nigeria (155)	3	31	37	8	64
Mauritania (156)	3	35	41	5	69
Laos (157)	3	31	43	6	68
Cambodia (158)	3	34	42	6	62
DR Congo (159)	3	31	34	8	59
Zambia (160)	3	30	42	7	51
Ghana (161)	3	34	43	6	55
India (162)	3	35	36	6	63
Comoros (163)	3	34	45	5	59
The Gambia (164)	3	35	44	5	54
Sudan (165)	3	34	39	5	65
Pakistan (166)	3	36	41	5	61
Togo (167)	3	31	42	5	63
Papua New Guinea (168)	2	33	50	4	71

2016

	Expected human capital	Expected years lived (0–45 years)	Functional health status (0–100)	Educational attainment (0–18 years)	Learning (0–100)
Morocco (127)	10	42	66	11	72
Guyana (128)	10	39	65	10	72
Honduras (129)	10	41	69	9	67
Philippines (130)	10	40	58	11	64
Indonesia (131)	10	41	57	12	70
Equatorial Guinea (132)	9	37	57	12	68
Bhutan (133)	9	35	54	11	70
Cape Verde (134)	9	41	68	9	67
Iraq (135)	9	39	62	10	67
Vanuatu (136)	8	38	60	9	75
Guatemala (137)	8	40	64	9	69
Timor-Leste (138)	8	41	42	11	72
Kenya (139)	8	38	54	11	69
Myanmar (140)	8	40	56	9	72
Botswana (141)	8	37	40	11	63
Congo (Brazzaville) (142)	8	36	53	11	67
Solomon Islands (143)	7	37	61	8	75
South Africa (144)	7	35	58	12	58
São Tomé and Príncipe (145)	7	40	52	9	68
Mauritania (146)	7	40	53	9	71
Haiti (147)	7	37	59	9	68
Cameroon (148)	7	35	40	11	71
Laos (149)	7	39	54	9	71
Comoros (150)	7	39	53	10	64
Kiribati (151)	7	36	61	8	75
Angola (152)	7	37	40	10	68
Cambodia (153)	7	40	50	9	71
Eritrea (154)	7	37	51	10	64
Ghana (155)	7	38	54	11	53
Nepal (156)	7	40	42	9	69
Sudan (157)	7	38	40	10	67
India (158)	7	39	43	10	66
Namibia (159)	7	37	51	11	57
Djibouti (160)	6	38	50	9	66
Bangladesh (161)	6	42	48	8	69
Togo (162)	6	36	42	9	64
Rwanda (163)	6	40	56	8	62
Pakistan (164)	6	39	42	9	68
Tanzania (165)	6	37	42	9	64
Zimbabwe (166)	6	34	49	11	59
The Gambia (167)	6	38	45	9	65
Swaziland (168)	6	33	50	10	66

(Figure 2 continues on next page)

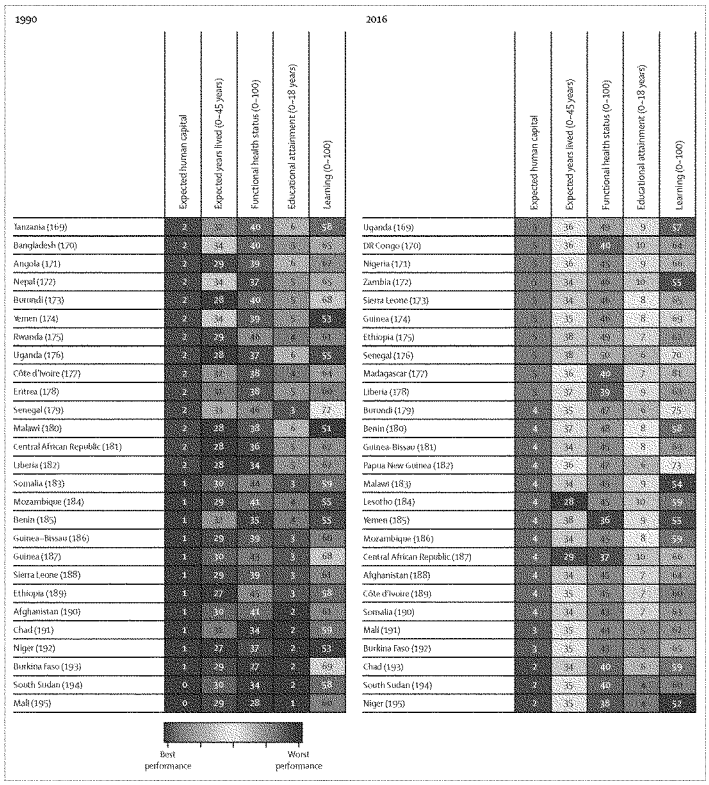

Figure 2: **Country rankings and values for expected human capital and for each of its four components, in 1990 and 2016**
195 countries are ranked by their expected human capital in 1990 and 2016.

progress in producing human capital across these countries. Showing the most dramatic increase, Turkey in 2016 had expected years lived from 20 to 64 years of 42·7 years (95% UI 42·4–43·1), expected years of schooling of 14·4 years (13·4–15·2), a learning score of 0·79 (0·78–0·80), and a functional health score of 0·75 (0·71–0·77), yielding expected human capital of 20·3 years (18·6–21·8) in 2016, up from 8·4 years (7·9–8·9) in 1990.

In 1990, expected human capital varied widely (figures 2, 3): 16 countries had already achieved more than 20 years of expected human capital, with Finland (24·8 years; 95% UI 24·0–25·6), Iceland (24·1 years; 23·5–24·7), Denmark (23·5 years; 22·9–24·3), Canada (23·1 years; 22·7–23·5), and the Netherlands (22·9 years; 22·4–23·4) being the top five performing countries. Conversely, 61 countries had expected human capital of less than 5 years, including many countries in sub-Saharan Africa and much of south Asia. All countries in Latin America were below 18·5 years of expected human capital. Within western Europe, expected human

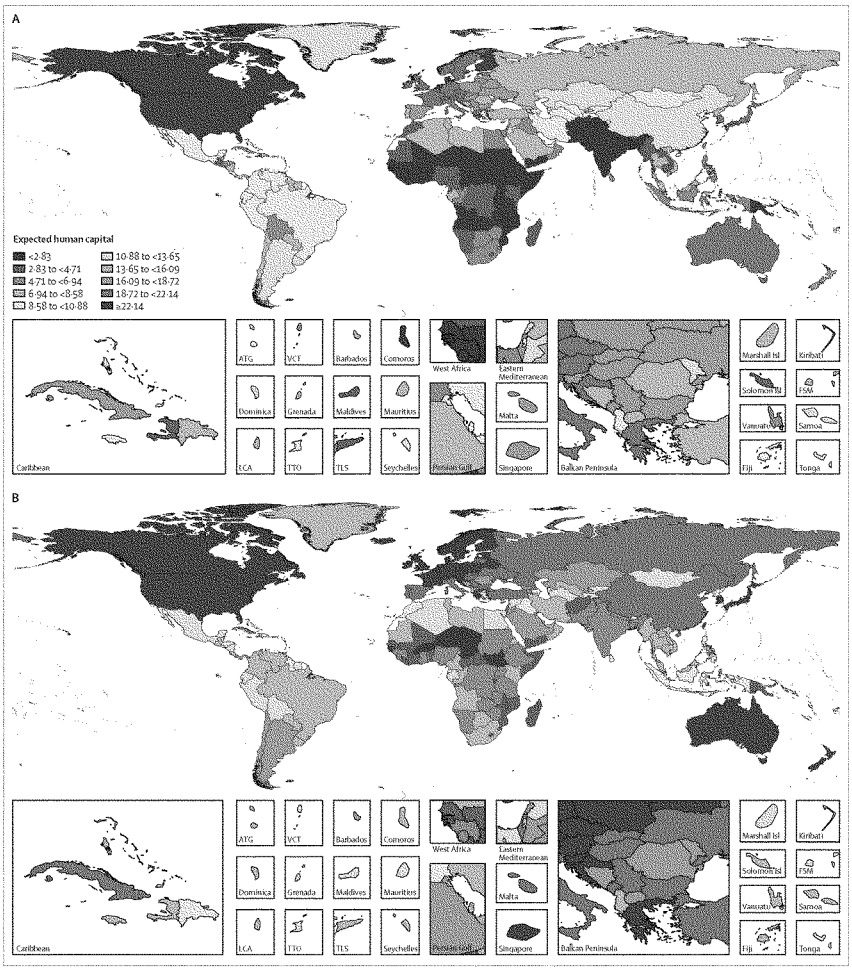

Figure 3: **Expected human capital by country in 1990 (A) and 2016 (B)**
ATG=Antigua and Barbuda. VCT=Saint Vincent and the Grenadines. FSM=Federated States of Micronesia. LCA=Saint Lucia. TTO=Trinidad and Tobago. TLS=Timor-Leste.

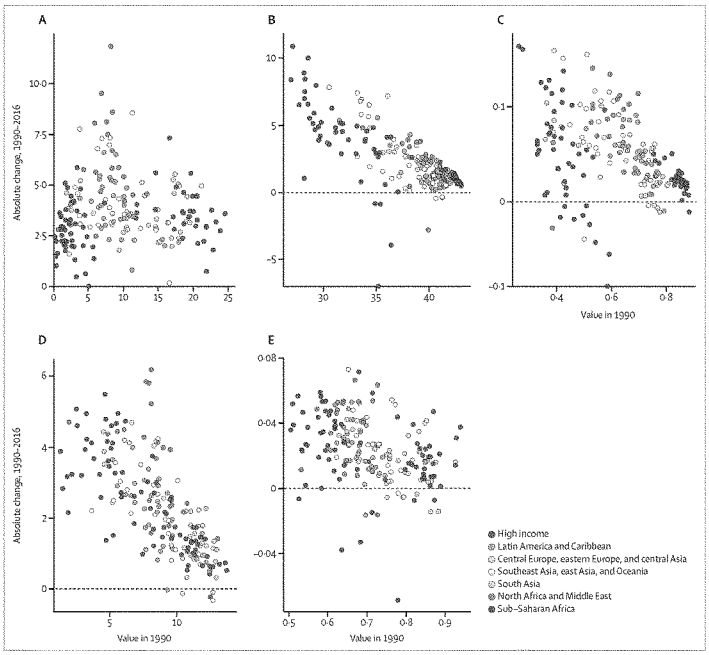

Figure 4: **Change in expected human capital and for each of its four components, from 1990 to 2016, compared to 1990 levels**
Countries categorised into regions according to the Global Burden of Disease super-regions. (A) Expected human capital. (B) Expected years lived, ages 20–64 years. (C) Functional health status. (D) Educational attainment. (E) Learning.

capital ranged considerably in 1990, from the highest level of 24·8 years (24·0–25·6) in Finland to 14·8 years (14·4–15·3) in Portugal.

Despite 25 years of progress in many dimensions of human capital, in 2016 these levels were not universally high (figures 2, 3). The top five countries were unchanged from 1990 except for the replacement of Canada with Taiwan (province of China). In 2016, all countries in western Europe, and many in central and eastern Europe, had more than 20 years of expected human capital, as did South Korea, Japan, China, Singapore, Taiwan (province of China), Turkey, Brunei, Australia, New Zealand, USA, and Canada. Despite improvements, 24 countries in 2016 continued to have expected human capital below 5 years, with the five lowest-ranked countries being Niger (1·6 years; 95% UI 0·98–2·6), South Sudan (2·0 years; 1·2–3·0), Chad (2·7 years; 1·7–3·2), Burkina Faso (2·8 years; 1·8–4·2), and Mali (2·8 years; 2·0–3·8).

The change in expected human capital between 1990 and 2016 ranged from less than 2 years of progress in 18 countries to more than 5 years of progress in 35 countries (figure 4). For example, the USA, which was ranked sixth in terms of expected human capital in 1990, dropped to rank 27 in 2016 because of minimal progress, particularly on educational attainment. In east and southeast Asia, which have generally seen rapid economic growth, many countries had notable improvements. South Korea increased from rank 18 in 1990 to rank 6 in 2016; Singapore increased from rank 43 to 13; China increased from rank 69 to 44; Thailand increased from rank 103 to 72; and Vietnam increased from rank 116 to 85.

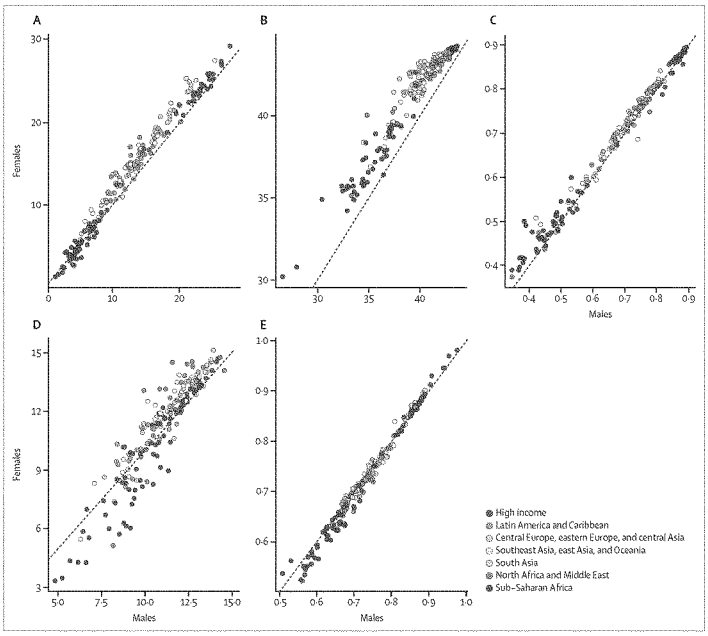

Figure 5: **Difference between men and women in expected human capital and for each of its four components, 2016**
Countries categorised into regions according to the Global Burden of Disease super-regions. (A) Expected human capital. (B) Expected years lived, ages 20–64 years. (C) Functional health status. (D) Educational attainment. (E) Learning.

Differential progress, however, was seen in many other regions. Within Latin America, Brazil had much faster improvements in expected human capital than other countries in the region (improving from rank 91 to 71). The most rapid absolute improvements were seen in several countries in the Middle East (led by Turkey, Saudi Arabia, and Kuwait), although some countries in the region, such as Yemen and Iraq, experienced much slower progress.

Countries had improved expected human capital from 1990 to 2016, and showed changes in each of the four components of expected human capital relative to 1990 levels (figure 4). Although there is a clearer association between improvements in educational attainment and years lived between 20 and 64 years and their respective levels in 1990, these highly differential rates of progress suggest that changes are driven by a combination of policy factors and not just baseline levels. Several countries in north Africa and the Middle East with substantial improvements in expected human capital had a combination of notable increases in educational attainment, learning, and functional health status and to a lesser degree reductions in mortality. A similar picture can be seen for Latin America but at a lower overall magnitude, with improvements driven particularly by increases in educational attainment. In sub-Saharan Africa and to a lesser degree south Asia, improvements in expected human capital are due to improvements in educational attainment and expected years lived in the 20–64 year age range.

Men and women had notable differences in expected human capital in 2016 (figure 5). Across the board, expected years lived between 20 and 64 years were greater in women than men. Similarly, functional health status

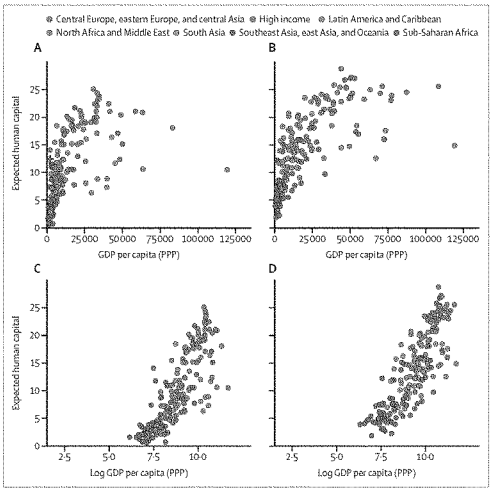

Figure 6: **Association between expected human capital and GDP per capita, 1990 and 2016**
Countries categorised into regions according to the Global Burden of Disease super-regions. General movement to the right and upwards shows global economic, health, and education development between 1990 and 2016. Expected human capital and GDP per capita in 1990 (A) and 2016 (B). Expected human capital and GDP per capita in log space in 1990 (C) and 2016 (D). GDP per capita is measured in 2017 US$ at PPP. GDP=gross domestic product. PPP=purchasing power parity.

was higher among women than men, with the exception of high-income countries. Conversely, learning was higher among men at lower and middle levels of learning—in regions such as sub-Saharan Africa, north Africa and the Middle East, south Asia, and Latin America—but this difference is minimal or non-existent at higher levels and among high-income countries. A clear regional pattern is present for educational attainment, with higher levels for males throughout sub-Saharan Africa and below 9 years of education. In terms of the overall measure of expected human capital, this measure translates into a clear separation at a threshold of 10 years of expected human capital: below this threshold, expected human capital tends to be higher in men whereas above this threshold, expected human capital tends to be higher in women.

Associations between expected human capital and gross domestic product

We examined the correlation between both levels and change in expected human capital and corresponding levels and change in gross domestic product (GDP) per capita, at the country level (figure 6, 7). Higher levels of expected human capital were associated with higher levels of GDP per capita in both 1990 (figure 6A, 6C, 7A) and 2016 (figure 6B, 6D, 7B). Larger improvements in expected human capital from 1990 to 2016 were also associated with greater GDP growth over the same time period. The top quartile of countries in terms of change in expected human capital from 1990 to 2016 had a median annualised GDP growth of 2·60% (IQR 1·85–3·69) compared with a median annualised GDP growth of 1·45% (0·18–2·19) among the bottom quartile of countries (figure 7C) in terms of change in expected human capital. Although not a formal causal analysis, these differences suggest that both levels of human capital are associated with economic performance and improvements in the production of human capital are associated with faster economic growth.

Discussion

Our study quantifies levels of human capital in 195 countries from 1990 to 2016, generating a ranking of countries and highlighting huge variations in the production of, and progress in building, human capital across countries. Human capital—educational attainment, learning, functional health, and survival—in 2016 was highest in Finland, Iceland, Denmark, the Netherlands, and Taiwan (province of China), and lowest in Mali, Burkina Faso, Chad, South Sudan, and Niger. Over the past 25 years, progress has been slow in selected countries that started at a high baseline, such as the USA, but perhaps most importantly progress has also been slow in countries with historically low human capital, such as the bottom five countries in 2016. At the macro level, countries that have improved the production of human capital tend to have been more successful in fostering economic growth.

In an article[5] by World Bank President Jim Y Kim, he states, "with the right measurements, an index ranking the human capital in countries will be hard to ignore, and it can help galvanize much more—and more effective—investments in people". As part of the Human Capital Project, the World Bank intends to support annual reporting on human capital to keep policy attention focused on investments in health and education that accelerate human capital formation and bring new emphasis to the importance of human capital for economic growth. This study fills this measurement gap by presenting the first ranking of countries by levels of human capital with the use of a comprehensive metric. Although health and education were prominent components of the Millennium Development Goals and remain a focus of the Sustainable Development Goals, the emphasis on human capital signals a shift toward greater consideration of the productive value of health and education, in addition to humanitarian objectives.

By providing an annual measurement of human capital, these rankings can also be used by credit rating agencies in making loan decisions. Agencies that provide independent assessments of risks for national bonds already take into account some measures related to

human capital, such as life expectancy.[50] The markets might incorporate better measures of human capital into borrowing schemes, recognising the challenge of economic growth in settings with low human capital. A virtuous cycle might ensue, in which financial markets reflect future human capital trajectories and create more timely incentives for ministries of finance and other development actors to invest in people today.

Despite wide variations in past rates of human capital accumulation, countries have many available strategies to accelerate progress. To improve average education levels, policy options include reducing or eliminating school fees, shown to increase enrolment and attendance rates in many countries,[51-53] and carefully targeting infrastructure investments in alignment with needs—eg, building schools in areas with limited access or building latrines, especially for girls. Policies that can improve learning and educational quality include ongoing teacher trainings that incorporate regular follow-up visits and support,[53,54] improving diagnostics to inform teaching tailored to students' levels,[55,56] and grouping students by ability.[57] To improve survival and the aspects of functional health status studied here, many effective interventions exist for the major infectious diseases: insecticide-treated mosquito nets and artemisinin combination therapy for protection from malaria,[58] antiretroviral therapy for HIV/AIDS,[59] directly observed treatment of tuberculosis,[60] rotavirus vaccine to prevent diarrhoea,[13] and pneumococcal vaccine and antibiotics for lower respiratory disease,[61] among many other cost-effective interventions.[62] For vision and hearing, effective interventions include vitamin A supplementation to combat childhood blindness,[64] corrective lenses, hearing aids, and more advanced technologies, such as cochlear implants. To address chronic malnutrition, available interventions include zinc supplementation and public provision of complementary food for children, and for iron-deficiency anaemia, antenatal micronutrient supplementation and staple food fortification.[65] Given the wide range of evidence-based policy options with proven effectiveness, the rate of human capital accumulation could accelerate dramatically; however, getting the priority for health and education in national budget discussions correct, might be the main challenge.[27]

Examination of countries with the most rapid improvements in human capital revealed specific policy reforms that probably contributed to observable growth in human capital. Starting in 1995, Brazil implemented a series of education reforms, which included ensuring equal funding across all localities, expanding student testing, and ensuring educational opportunities for poor families, leading to impressive increases in educational attainment. Improving learning is the current national priority, with the aim of achieving Organisation for Economic Co-operation and Development-level test scores by 2021.[66] The education system in Singapore, which has the highest student test scores in the world, has emphasised quality over the past 20 years, starting with the Thinking Schools, Learning Nation framework in 1997. This encompassed many initiatives to improve learning, including tailoring teaching to students' level of ability.[67] Poland's student performance on international tests dramatically improved after the country implemented educational reforms in 1999, incorporating additional hours of language training and delayed tracking into vocational training.[68] Thailand was one of

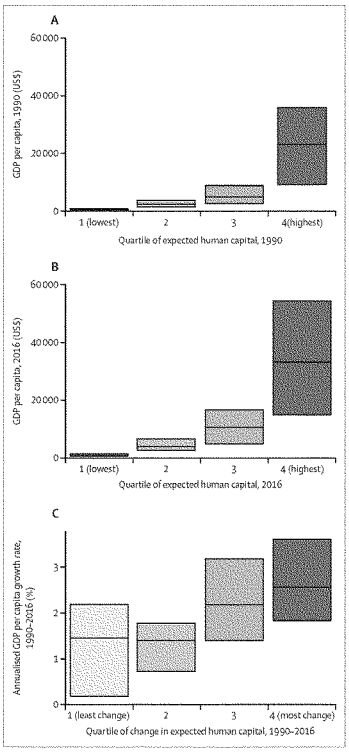

Figure 7: **Median and IQR of GDP per capita within each quartile of expected human capital in 1990 (A) and 2016 (B), and median and IQR of annual change in GDP per capita within each quartile of change in expected human capital from 1990 to 2016 (C)**
GDP=gross domestic product.

the first middle-income countries to achieve universal health coverage, facilitated by the creation of a new public insurance scheme in 2001 and a shift toward greater service provision through primary care centres.[69] Turkey initiated the Health Transformation Program in 2003, which entailed separating the purchasing and provision of health services, mandating insurance coverage, and reforming provider payment, leading to expanded access and improved patient satisfaction and health outcomes.[70]

Changes in the nature of the world economy, including the increased importance of digital technology, sometimes referred to as the fourth industrial revolution,[71] might make human capital even more important for future economic growth. The potentially rising role of highly skilled and healthy workers in the future puts a premium on investing in people now to accelerate human capital formation. This investment requires long-term planning to make major changes in the proportion of children who are healthy and spend up to 18 years attending high-quality educational institutions. Health investments can have a double effect on human capital: improved functional health can directly increase the productivity of workers at each age and can also facilitate children attending school and effectively learning. A review[72] of studies examining the association between early childhood stunting and cognitive development found that an increase of one SD in height-for-age of children younger than 2 years old is associated with an increase of 0·22 SD in cognition at ages 5–11 years. A meta-analysis[73] of 14 randomised clinical trials of iron supplementation suggested an association between haemoglobin concentration and intelligence, with anaemic premenopausal women experiencing a 2·5-point (95% CI 1·24–3·76) improvement in IQ following iron supplementation.

The estimates of educational attainment presented in this study are highly correlated with other widely used sources, particularly the well known Barro and Lee estimates;[74] however, the present dataset offers several important advantages over this source and other available sources. First, the data underlying these estimates are based on a systematic synthesis of censuses and household surveys, whereas most other estimates rely heavily on enrolment data, which are subject to a range of inaccuracies; for example, enrolment rates can be well over 100% due to students repeating levels and older learners returning to school. Second, the number of unique data sources informing these estimates is greater than that used in past studies.[75] Barro and Lee, for example, used 621 unique sources versus the 2522 underlying our estimates.[76] Third, in the estimation methods, no other study to our knowledge has attempted to parse binned education data—ie, by completed level—into individual years of completed schooling, thereby generating more precise estimates of average years of schooling. Finally, because of the data sources and modelling approach used, we were able to generate annual estimates for 5-year age groups—a level of detail that is not available from most other sources, which more often report estimates in 5-year increments or for more aggregated age groups. One limitation of this analysis to note, however, is that we have not produced estimates of the distribution of educational attainment in countries, only mean levels. The human capital value of educational attainment might not be a linear function of years of education.

The learning estimates presented here would be substantially strengthened through the expansion of international student assessments. Although these results represent the best estimates given all available data, 56 countries have not participated in any internationally similar tests, necessitating substantial reliance on adjusted national tests and covariates to generate a comparable estimate of learning for all countries. Given the importance of educational quality for economic growth, expanding participation in international student tests is a priority for new data collection. Estimates of learning could also be improved with an expansion into quality measures for both tertiary education and on-the-job skills training.

For health, we have used a simple PCA to reduce the complexity of information on several learning-related and productivity-related outcomes, but these PCA weights might not capture the potential for different health outcomes to have differential effects on economic productivity. We have, for example, included some outcomes that are related to cognitive performance, such as stunting, wasting, anaemia, and infectious diseases, but other health outcomes could also be important for productivity, such as mental health and substance abuse. For stunting and wasting, however, we were only able to incorporate period measures of these indicators and not cohort measures because of a paucity of historical data on the prevalence of these conditions. Future work should explore more health outcomes in greater detail and explore their interconnections to economic output.

Formal examination of the association between economic growth and expanded measures of human capital that incorporate broader dimensions, such as the measure presented in this study, is another area of future work. In this study, we examined associations between levels and trends in our measure of human capital and levels and trends in GDP. Although these simple analyses suggest a correlation, we do not make claims of causality because they are not causal analyses. Future work in this area will need to address the potential problem of reverse causality. In other words, do improvements in human capital lead to faster economic growth or does faster economic growth allow countries to better invest in human capital?

Our study focused on national levels of human capital, but geospatial analyses have shown disparities in average years of schooling.[76] In future work, we believe it will be a useful planning tool to measure human capital at this high spatial resolution. Within a geographical location, measurement of mean levels of human capital might not be enough; measurement of the full distribution will allow

testing of hypotheses about the comparative importance of secondary and tertiary education access and quality. Such granular information could be used to target communities that are the worst off and to assess efforts to reduce inequalities as part of the Sustainable Development Goals framework.

The World Bank argues that countries are not investing enough in health and education to benefit from the potential of their own human capital. We provide the first comprehensive assessment of expected human capital for 195 countries from 1990 to 2016. Countries have varied substantially in the pace of improving human capital, holding out the promise that wider implementation of targeted policies and funding focused on improving health and education can accelerate human and economic development.

Contributors

SSL and CJLM managed the estimation process. CJLM, KC, SSL, EG, RLU, and HY wrote the first draft of the manuscript. CJLM, SSL, RLU, ASK, HY, RMB, and JD developed the methods or computational machinery. RLU, ASK, HY, RMB, and JF applied analytical methods to produce estimates. ATL, YR, HJT, JLW, RX, RLU, and KC extracted, cleaned, or catalogued data, and designed or coded figures and tables. MFB, SSL, CJLM, and EG managed the overall process.

Declaration of interests

We declare no competing interests.

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Ms. OMAR. Given the Pentagon's constant funding increases, it seems clear to me that we do not need to spend more money on our overflowing arms stockpile. We instead need to start investing in our human capital for the benefits of both our national security and greater society.

Are you worried that the drastic cuts proposed to non-defense spending could affect our national security?

Mr. NORQUIST. Congresswoman, I am going to let the other Secretaries speak to their budgets because each of them was part of designing those.

Ms. OMAR. Should we be reinvesting in domestic programming that directly contribute to the health, education, and development of the American people in order to strengthen our security here and abroad?

Mr. NORQUIST. So we have programs inside Defense to make sure and protect our security. I leave it to this Committee and others to work on what the proper ranges of the domestic agencies are.

Ms. OMAR. Do you have any concerns that our long-term national security could be at risk if we do not invest in the physical, mental, and financial wellbeing of our youngest generation?

Mr. NORQUIST. So we always have the issue in the Department of Defense on recruiting, and so we emphasize trying to bring in the right skill sets and the right recruits, and we focus on doing that.

So making sure we have a well-prepared population to do that is always important to the Department of Defense.

Ms. OMAR. How do you expect a future leader will be able to fill your role one day without sufficient government support at home?

Mr. NORQUIST. So I think one of the things that we always continue to look at in the Department of Defense is making sure that we, as we bring in young men and women into the military, that we have the right programs to train them on the equipment and technologies they need to be able to perform.

One of the things you brought up is the difference between what we spend on the military and then other countries. What other countries like China predominantly use conscription, and so they do not have to pay their people very much to have them.

One of the values of our freedom though is that we believe a volunteer force is more effective. It is more expensive, but then the freedom of other individuals to not have to serve in a conscription is very important to our country as well.

So there are differences in how we fund, and we want to keep the fight as an away game, which means we pay and have the cost of the lift to keep it overseas.

Ms. OMAR. One of the great differences between the amount of money China is spending and the amount of money the United States is spending is China does not have to spend on the number of overseas bases like we do here in the United States.

And I know that our job here in this Committee is to look at our budget as a whole, and if we are to think about putting together a budget that has our values and principles intact, we should really think about what it means for us to fully invested in educating our population, in caring for their health, and investing in proper infra-

structure, and protecting ourselves here domestically as we do internationally.

So thank you so much for being here.

I yield back.

Chairman YARMUTH. The gentlewoman yields back.

I now recognize the gentleman from Texas, Mr. Roy, for five minutes.

Mr. ROY. I thank the Chairman.

I thank the Secretary for being here.

When you were here last year, I think I opened noting that we were approximately $22 trillion in debt, and we are mounting about $100 million of debt per hour.

Are you aware of what the debt is today?

Mr. NORQUIST. I think that the deficit is $23 and a half trillion.

Mr. ROY. Yes, total debt——

Mr. NORQUIST. I am sorry. Debt. The total is $23 and a half trillion.

Mr. ROY. Yes, about $23.4 trillion. We are racking up about $110 million of debt an hour.

You know, this quote has been used a number of times by a number of folks, but former Secretary, General Mattis, agreed that the national debt was one of our greatest national security threats.

Do you agree with that? Do you agree that the extent to which we are spending far more than we able to pay for is a potential negative impact to our national security in the future?

Mr. NORQUIST. Yes.

Mr. ROY. With respect to interest, for example, I think it is projected that we could have interest, and it depends on all of the assumptions, right, based on interest rates, based on growth, based on spending, but you know some projections have us at $819 billion by 2030. I think that is the CBO's projection. OMB's might be different based on its numbers.

But that puts us at getting close to one to one if we are spending as much interest as we are on national defense. And, you know, again, is this something that you believe that Congress needs to move up in terms of our readiness and our ability to defend the United States of America abroad to get our fiscal house in order?

Is that something that is front and center for national defense strategy?

Mr. NORQUIST. So when you think of national defense strategy, you need to think of both security and solvency, but you need the military to protect the country that allows for the investments in the economy and free navigation of the water, but you need the solvency to be able to continue to pay your bills and achieve your goals.

And so both of those have to be done in balance. It is one of the challenges. It is one of the reasons and focuses of this Committee is those exact types of those strategic tradeoffs.

Mr. ROY. Well, thank you for that.

And speaking of that, could you comment on what your perspective and the Defense Department's perspective is on the numbers put forward in the Democrat's proposed budget?

Mr. NORQUIST. Are you referring to something out of this Budget Committee?

Mr. ROY. Yes.

Mr. NORQUIST. OK. Again, I am not familiar with that document.

Mr. ROY. Right, because it does not exist, yet we are sitting here talking about the President's budget with some of my colleagues on the other side of the aisle making criticisms of that budget, but yet we have not taken up the work of doing that in this Committee or in this body, which strikes me as puzzling.

Now, I will say I do appreciate Congresswoman Jayapal's focus on the audit. And so you said it is helpful. So let me add to the helpfulness by suggesting that it would be very good for us to move the audit through more expeditiously and not just getting a couple more per year. So please pass that on as well, that that is uniformly agreed to in this body, which is not often something we can say.

But I think we definitely want to see that.

Mr. NORQUIST. I have appreciated the bipartisan support, and on more than one occasion when I have had someone who is less enthusiastic than I think they need to be, I offer to arrange a meeting with them with one of the Members of Congress so they can explain if they think this is not important. And it usually helps solve the problem.

Mr. ROY. Well, indeed, and I think it is critically important, and I do appreciate that, and I appreciate your attention to that, and anything we can do to push on that even further, just at the highest levels it is something that is critically important.

I do want to say something about this point on the 35 percent of the world's defense spending, seven times the next highest or, you know, more than seven times the most recent level of seven countries' spending.

Where are we though today relative to China, Russia, and some of our national threats in terms of our ability to deal with multiple threats around the world?

And how important is it that we have the level of defense spending that we are talking about to defend the interest of the United States at home and abroad?

Mr. NORQUIST. So I think what we have to look at is the behavior of those countries and the challenge and the risk they pose.

So what you have with China is while the U.S. supports a free and open Pacific that recognizes the rights of each country and promotes stability, the Chinese are continuing to harass Vietnam, Philippines, Indonesia and disrupt those rights.

They are investing in their navy. They are expanding the size of their force. They are investing in long-range missile strike technologies designed to create direct threats to the U.S. Navy.

And then in Russia, you have similar things. You have a country that has, you know, invaded the Crimea, has occupied parts of several neighboring countries.

Mr. ROY. Right.

Mr. NORQUIST. Each of them presents a very different threat, one more land-based, one more sea-based. Both of them away games, which is much preferable to having threats coming straight here, but they are extending the range of what they can do into the United States.

Mr. ROY. Well, thank you for that.

I think it is important for us to keep the defense spending, and as I note that the President's budget has defense spending going up modestly over the next 10, 15 years, and that is important.

The last point I will make, and I know I am winding down my time, Mr. Chairman, is that with respect to the coronavirus situation, I just want to note that we had sent letters to DoD that have not been responded to. We sent them two and a half weeks ago with respect to the people moving to San Antonio, to Lackland, to just ensure that San Antonio is being considered in how we are handling those who are being cared for at Lackland.

So I would appreciate a response on that, and that San Antonio be, you know, consulted in terms of how our medical facilities in the community are going to be used or assumed to be used when we have individuals who may be exposed and may exhibit symptoms at Lackland.

Mr. NORQUIST. Congressman, I will make sure that the letter is answered. I know we have done briefings to the Hill on a weekly basis, but we will make sure we answer the letter.

Mr. ROY. Thank you, sir.

Chairman YARMUTH. The gentleman's time has expired.

I now recognize the gentlewoman from Texas, Ms. Jackson Lee for five minutes.

Ms. JACKSON LEE. I thank the Chair.

I thank Deputy Secretary Norquist for his presence here.

Not wanting to take up all of my time, but give me a brief answer to the gentleman's question from Texas, and that is what are the Department of Defense's protocols for the medical care.

Is it military medical care that is being utilized for individuals at a quarantine or are you using civilian medical care?

And are you then intending to reimburse those civilian resources that are going to be used even though persons are quarantined on the bases?

Mr. NORQUIST. So the individuals that we are talking about in the quarantine are not DoD personnel, and they are not people who are employed or supported by the Department of Defense. They are American citizens.

Ms. JACKSON LEE. No, I am well aware of that.

Mr. NORQUIST. So we do not have legal authority to reimburse somebody for their medical care because they are not somebody we——

Ms. JACKSON LEE. So you just have accepted them as a non-involved host. Is that what you are saying?

Mr. NORQUIST. Correct. We get reimbursed by HHS to provide basically a housing arrangement where they can be quarantined that meets HHS' standards.

Ms. JACKSON LEE. And then so if there is need for medical care of these individuals, who is engaging with that on the base?

Mr. NORQUIST. So HHS works with either the local community or in some case they have been flown to other facilities based on what is the right place to provide them the appropriate level of medical care.

Sometimes it is local communities. Sometimes it is not, but I defer to HHS on how they make those decisions on the——

Ms. JACKSON LEE. So you are a landlord, if you will, and you are being paid by HHS.

Mr. NORQUIST. In this case, yes. We provide those facilities to house them while they are in quarantine.

Ms. JACKSON LEE. And secondarily, have you established a protocol for active duty military that may—we understand there is one and there may be another one—that may be infected by the coronavirus?

Mr. NORQUIST. Yes, we have processes that we deal with when somebody inside the Department of Defense is identified. We go through the proper quarantine, and we follow the CDC standards.

Ms. JACKSON LEE. I see that the budget has gone from about $738 billion to $740 billion. Where is the money? Has the money already been snatched as it relates to the building of the wall?

Mr. NORQUIST. So the Fiscal Year 2021 budget request, it is not our expectation and we do not foresee that there will be a requirement to do border wall construction in 2021. We believe that what the President is planning to do will meet his requirement in 2020 and prior years. So we do not anticipate a need or foresee one to realign any of the funds and we are not asking for any in 2021.

Ms. JACKSON LEE. Well, in this instance, the President never asked anyone, as you well know. He just presumptively and willy nilly snatches money away from people.

But obviously this is a very big budget. So are you telling me that you have already expended dollars for the wall in the last fiscal year, 2020?

Mr. NORQUIST. So in 2019 we funded money for the wall under authorities 284 and 2808, and in Fiscal Year 2020, this year, we have realigned funding under the authority of Section 284, and that is the money that we are currently looking to execute this year in support of the border wall.

Ms. JACKSON LEE. It has not gone yet, but you are still in the——

Mr. NORQUIST. I do not know if it has started to be obligated yet, but it has been realigned.

Ms. JACKSON LEE. I am frustrated, Mr. Chairman, as to whether, just speaking into the record, frustrated by the fact that we cannot find a way to, in essence, withdraw that power for the Defense Department to reprogram those dollars without the authority of the U.S. Congress.

Let me ask. Is the spread of the coronavirus a national security risk in your perspective?

Would you say that the non-defense investment to combat the spread of such diseases and prevent a pandemics are part of our national security?

Do we look at it in that manner?

Mr. NORQUIST. So I think it is important for the security of the homeland that we properly address this. I think that the President and interagency team have taken strong steps with first limiting the flights, doing screening, establish quarantining.

We will have to see how this disease continues to spread as we try and buy time as they work on vaccines and therapeutics to address it.

But it is a serious issue, and we are taking it seriously.

Ms. JACKSON LEE. Would you put it in the category of a national security issue, particularly as it spreads so quickly? It can spread so quickly.

Mr. NORQUIST. It can become one if it continues to spread, yes.

Ms. JACKSON LEE. I have been working consistently on another matter, triple negative breast cancer, the number of women that you have in the United States military. Would you look into tracking the funding for that?

It obviously deals with treating active duty military women, and it is a more deadly form of cancer. I have been working on that for more than a decade. I would like a response back on working with me on funding of that area and working with women members of your military, active duty, in terms of triple negative breast cancer.

Mr. NORQUIST. Congresswoman, I would be happy to work with you on looking into that issue.

Ms. JACKSON LEE. And just as a followup, do you think it is a better investment in stopping the coronavirus or working on a wall that has shown no value?

Mr. NORQUIST. So when I talk to the border patrol agents on the southwest border and asked them about the value of the wall. They were very clear. The individual I talked with in the border patrol said it works, that it has made a significant difference in there.

We as a nation have to balance our ability both to secure our borders and secure the health of our people, and those are some of the tradeoffs that we make across the country.

Ms. JACKSON LEE. Chairman, just one question.

When OMB withheld Ukraine assistance funding last summer, did anyone at OMB or the White House tell you why they withheld these funds?

Mr. NORQUIST. I am not familiar with that. My understanding is that we received documents from OMB asking us to wait, and then we received documents telling us to go, and then we released the money accordingly.

Ms. JACKSON LEE. So they did——

Mr. NORQUIST. I don't have anything further to add in terms of the cause or what was being——

Ms. JACKSON LEE. No explanation at all.

Chairman YARMUTH. The gentlewoman's time has expired.

Ms. JACKSON LEE. Thank you.

Chairman YARMUTH. I now recognize the gentleman from Texas, Mr. Crenshaw, for five minutes.

Mr. CRENSHAW. Thank you, Mr. Chairman.

And thank you, Mr. Deputy Secretary, for being here.

Just a quick question. In the face of a global pandemic would you rather have less border security or more border security?

Mr. NORQUIST. You are always better off with more border security.

Mr. CRENSHAW. Do physical barriers contribute to border security?

Mr. NORQUIST. They very clearly support border security.

Mr. CRENSHAW. Going back to the audit we were talking about, I want to go into a little bit more detail on that. The DoD was able to complete the first ever audit, found about $5.7 billion of efficiencies present.

Can you talk a little bit more about what that process was? I have heard it called "the Night Court," where we are looking at unexecuted funds and seeing how we can reprogram those.

What does that process look like? How do you decide where to reprogram them?

Mr. NORQUIST. Sure. So what you are talking about, I believe for the $5.7 billion is called the Defense-wide review, a meeting the Secretary and I chaired, and what we did is we walked through the part of the defense budget that is not assigned to the Army, the Navy or the Air Force, what we call the fourth eState.

And what we looked for was not the sort of things that were bad or wasteful, but less important and something we would give up in order to be able to invest in the higher end fight, hypersonics, artificial intelligence, moves in the right direction.

So we looked at programs that had been started decades ago where the funding level was steady, and the answer is is it still necessary, and in some of those we brought those funding levels down.

We looked at foreign military sales. We charge other countries for the overhead cost, but we did not charge them for the full overhead cost. So the answer is, well, this is an area where, you know, if they are buying the weapon, they should pay the fully loaded cost. So we have come to Congress with an authority change to do that.

We finished some of the transfers that were to DLA that drive efficiency in the way they operate. We are rightsizing some of the medical treatments facillities.

Not easy choices, but you know, we have a flat topline, and we have got to find reforms internally, and this is what the taxpayers expect us to do in order to be able to meet the future challenges.

Mr. CRENSHAW. And then next year's budget, I understand, you aregoing to a zero-based budget review. What do you expect to see in that process?

Mr. NORQUIST. Sure. So what the Secretary did when he was in the Army was called Night Court, and he went through and he did a zero-based review of the Army budget.

He has asked for the Air Force and the Navy in this cycle to do the same thing, which really goes back to look at each of the items, even things that have been steady-state in the past, and ask are those still the highest priority, not are they useful, but are they the highest priority compared to the things you are not able to do now, and if they are not realign the money.

Mr. CRENSHAW. One concern I have, especially from my own time in the military, is frivolous end-of-the-year spending. What can we do to get a handle on the spending sprees that go on, not just in the DoD, of course, but throughout government at the end of the fiscal year?

What incentives can we put in place that commanders feel obligated to give that money back to the Treasury?

Mr. NORQUIST. Right. So what happens in the federal government and in Defense is when you get to year-end, you have this odd use it or lose it, which you have $100. If you spend it by 1 October, you get what you bought it for, but by 1 October if you have not, it goes away altogether.

This is not how you and I handle our salaries. We do not get to the end of a calendar year and take all of the money we earned and hand it back into our employer if we did not spend it.

This creates some very bad incentives for people to spend money at year-end. It adds to things being put in inventory that we do not have awareness.

We have a proposal in the budget, which is an authority that other federal agencies have, which say to someone if you do not spend it, your organization gets to have 50 cents on the dollar next year.

And our idea is if you are looking at year-end and what you are looking at is not as valuable to you as 50 cents on the dollar next year, we would rather you not buy it, and I think that sort of incentive which some of the other federal agencies have is a step in the right direction to drive down that wasteful spending.

Mr. CRENSHAW. Is that a new idea or have you implemented that yet?

Mr. NORQUIST. It is a new idea we have proposed in this year's budget to go into. We would ask for this Committee and others' Members to support that provision.

Mr. CRENSHAW. OK. Can you send us more details on that?

Mr. NORQUIST. I would be happy to, sir.

Mr. CRENSHAW. That would be great.

In my limited time, I want to talk about acquisition processes. And what have you guys done to improve acquisition processes and make them more efficient over the last couple of years?

And do you believe we are in a good place yet to really take advantage of the new cutting-edge innovation?

It is not often being done by the bigger defense contractors, but by smaller companies. Are we able to quickly take advantage of that?

Mr. NORQUIST. We are working on it. So let me get to your first question, which is we had in the past a long acquisition process, but Congress made some changes. They split our research office from our acquisition office. They gave us authorities to streamline some of these.

We in the last few months have issued the guidance to implement those. We have mid-tier acquisition, as an example, rapid prototyping. Those are some of the new processes that allow us to move in a more expedited manner.

Those were very successful. We appreciate it.

The Army's iVATS program is another example of doing this.

There is more to be done. You know, we need to do more and we continue to do outreach to smaller companies that do not have traditional experience, but we are still a hard partner to deal with, and we have a lot that we bring, and trying to reduce those and facilitate that transition is key.

Mr. CRENSHAW. Thank you.

Thank you, Mr. Chairman.

Chairman YARMUTH. The gentleman's time has expired.

I now recognize the gentleman from California, Mr. Panetta, for five minutes.

Mr. PANETTA. Thank you, Mr. Chairman. I appreciate this opportunity.

Deputy Secretary Norquist, welcome, and thank you for taking the time to come here.

As we talked briefly, I wanted to mention a little bit about my district on the central coast of California and many of the installations there, from the Navy postgraduate school, Defense Language Institute, Fleet Numerical Naval Research Lab, Camp Roberts, Fort Hunter Liggett, and a few others that are there.

Obviously, you know, very concerned with making sure that they continue to contribute to our national security and have the resources to do that.

But I have to say one of the ways that they do do that is with the Office of Economic Adjustment, OEA, which you have heard of quite a bit, which I do believe supports the readiness and resiliency of those types of military installations in defense communities around the country, not just on the central coast, by furthering the priorities of the national defense strategy.

The OEA has provided tremendous value to many local installations by responding to defense job losses, reductions in defense economic activity, tax base reductions, mission needs for increased public services and infrastructure, and local missions being impaired by civilian activity as well.

And some of the programs of interest include the Community Investment Program, Military Installations Sustainability Program, the Downsizing Program, that type of program which assists states and local governments in response to DoD force modernization, whether it be through BRAC or other processes.

And you know, recently, as you know, Secretary of Defense Esper recently completed the Defense-wide review, and he did that to obviously improve the alignment of time and money and people for the NDS priorities.

The DWR was a comprehensive examination of DoD organizations outside of the military departments, and one of those was the OEA.

Now, as you know well, in the Fiscal Year 2020 reenacted, the funding for OEA of almost $450 million; I think it was 449.6 million. Yet this President's budget cuts more than $418 million from OEA. Correct me if I am wrong.

Now, given the significance of OEA and how important it is not just to our districts, but clearly in Congress by allocating them as much as we did in Fiscal Year 2020, was that understanding accepted in this A, considering the significant amount of cuts for OEA?

Mr. NORQUIST. So, first of all, we do not normally request 450 million. I think we requested much smaller than that. Most of those are adds put in by Congress.

From the number we had, what we did in the Defense-wide review is we looked at the types of things we were funding, and I forget the exact number for OEA and brought that down in order to free up that money for artificial intelligence, hypersonics, and others.

But as you point out, this is an area of congressional interest. There are frequently adds put in on it to address concerns that Congress had. Those would still continue, of course, as Congress directs us to do those.

Mr. PANETTA. OK. So what you are saying is that even though Congress had that number, would you say a majority of that number was congressional interest?

Mr. NORQUIST. Yes.

Mr. PANETTA. OK.

Mr. NORQUIST. It was not in the President's budget. It was in the enacted budget.

Mr. PANETTA. Understood, understood. How much did the President want to cut OEA last year, not this year but last year?

Mr. NORQUIST. Most of these are initiatives and projects. So it is not like it is a steady state, you know, where you have a certain number of people over a certain number of years. We fund the small staff that runs it. These are particular initiatives to assist a particular base. So usually once the funding is done, my understanding is the initiative is done.

So each year you have to decide what you want to do separately for that year.

Mr. PANETTA. Understood, understood. Well, just know that we will continue to fight for OEA based on the importance to our district.

Mr. NORQUIST. Understood.

Mr. PANETTA. And look forward to funding it appropriately.

Thank you again for being here.

I yield back.

Chairman YARMUTH. The gentleman yields back.

I now recognize the gentleman from Georgia, Mr. Woodall, for five minutes or 10 minutes depending on whether Mr. Womack returns.

Mr. WOODALL. I thank the Chairman.

Deputy Secretary, thank you for being here, and thank you for taking all of our questions today.

I want to go back to some of the suggestions that the Defense Department spending has just been running amuck. I have only been in Congress for nine years. More often than not, spending has gone down in your Department as opposed to up. I do not want to conflate the DoD budget with the VA budget, of course. Veteran spending has gone up each and every year, and I think that is something that we share on both sides of the aisle.

Defense Department spending as a share of GDP is more likely to go down during the time I have been in Congress than to go up.

As a Budget Committee Member, I want to see that balanced budget. I appreciate you knowing right off the top of your head where our national debt is because that is also a national security issue, as we have discussed.

As we try to be good stewards of taxpayer dollars and certainly good supporters, great supporters of our men and women in uniform, talk to me about that balance between spending too little and spending too much.

I appreciated you making the point with Mr. Panetta that the President and DoD are setting what they believe are national security priorities. If the Congress wants to go a different direction, they are welcome to spend money——

Mr. NORQUIST. Right.

Mr. WOODALL [continuing]. any way the Congress wants to spend money, but the President's budget is focused on national security.

Tell me about that balance between spending too little and spending too much.

Mr. NORQUIST. So what we look for is we understand that the importance, fundamental importance, to the Department of Defense, everything else that the country does and the government does. What we do every day works under the assumption that you can safely ship things across the ocean, that you have access to that, that we have free trade, that we do not have threats immediately on our border, that we are able to work with a network of allies, that other countries are free and independent.

All of this depends on a strong military. The ability to deter other countries from engaging in conventional war provides us an unbelievable level of peace and stability. It drives them to, you know, either unconventional or terrorist operations. It drives them to cyberattacks, but that is because it is keeping them from a conventional war.

That ability drives the success of the U.S. economy. It makes everything else in the federal budget possible. It allows the government to have the revenue it does.

You want to size that right. You get it wrong, placing second in a war is bad. It is catastrophically bad. So you want to make sure you get that right. But it is not something that just automatically needs to be higher. So when we look at defense, what is necessary to meet the mission that we have been given?

Right now we are at 3.1 percent of GDP. That is incredibly low compared to where we have been in the past. We think in the future we need to be careful not to fall too far, that we keep that level up, but if we can provide the security, then we have done our mission properly, and what we have to do is look across the range of near-term and long-term threats to make sure that we do not fail the American people by providing the freedom and the security that they depend on.

Mr. WOODALL. Yes. It is much more likely that my constituents will identify with your terrorist mission than identify with keeping shipping lanes open. So much in the DoD budget that folks do not realize is there.

There was a time the Corps of Engineers would have been the only group large enough to do major construction projects. It may not be true in 2020.

We did not used to think about the DoD as a place for top-notch medical research, but now the congressionally directed medical research program is growing each and every year.

Tell me about those what I would call ancillary missions to the national security mission that you laid out.

Mr. NORQUIST. Right. So the Department of Defense, because of the range of things we do, we end up with a medical lead sometimes. Think about it. Our forces are deployed all around the world. There was a time in history where a disease killed more people in the military than combat or anything else. So we are used to what do we need to do to be able to safely deploy troops into the Middle East, into Africa, into parts of Asia to make sure they are protected.

And we do research on those, and we maintain the records, and in some cases, we have some of the best data bases, and we are working very closely with CDC and others to make sure that our research is available to them and our research individuals are available.

Likewise, we have large populations which we provide medical support. They get not on the same scale as private sector, but we have niche areas in which we have an expertise because of the types of injuries we are trying to solve, and that provides a benefit to other communities as well.

Mr. WOODALL. So as the President is going through trying to prioritize spending across those categories, whereas as it relates to OEA, the President might say, "I do not find this to be a core mission."

Mr. NORQUIST. Right.

Mr. WOODALL. "If Congress wants to fund it, Congress can fund it."

Now, when it comes to the Corps of Engineers, when it comes to nationally directed medical research, those have been places that I have seen the Administration place priority.

Mr. NORQUIST. Right.

Mr. WOODALL. That is a shared vision?

Mr. NORQUIST. Right. And the Secretary's view, to get this point, is you are better off with agencies that come forward and say, "I am willing to and believe these are lower priority to invest than something else," than someone who comes forward and says, "I have to have everything and then something." Right?

The answer is you expect us to do due diligence over our budget and to make prioritization choices. You may not agree. You may change them. That is fine. They may adjust OEA. That is fine.

But you expect us to scrub them, say these are the things we think we need to stop, these are systems that we need to retire, and this is what we need to invest in, and we can defend and explain why we are doing that.

Mr. WOODALL. I know that transparency is welcome on both sides of the aisle.

Thank you very much for that.

Mr. NORQUIST. Thank you, sir.

Mr. WOODALL. Mr. Chairman.

Chairman YARMUTH. The gentleman did not get 10 minutes today, only five. His time has expired.

I now recognize the Ranking Member for 10 minutes.

Mr. WOMACK. I thank the Chairman.

And thank you, Mr. Norquist. Sorry. I had to unplug. We had the SOUTHCOM Commander in his hearing over on the Appropriations side, and I felt obligated to spend some time with Admiral Fowler over there.

My principal question is in regard—and I think this has already come up today, and I apologize if it has—the reprogramming of dollars for the border wall, which I support building that wall.

I have been on record as saying that since the time I have been here in Congress. However, it looks like that this year the bill payer is the National Guard for the most part. You took all of the

NGREA money, the Humvee modernization money, C–130Js, and so on.

As I explained in a previous hearing, as a Guardsman I remember the days when I was an armor officer and jumping off the back of an M60A3 (TTS) tank, knowing that if I ever deployed to a combat theater and fell in on a tank, it was not going to be the M60A3; it was going to be the M1. And so I use that example to support my argument that we said around the turn of the new millennium to our National Guardsmen that we plugged into the war fight right after 9/11, my battalion being one of the first out, that they were no longer going to be treated as a hand-me-down force; that we were going to make sure that they were manned properly, that they were trained properly, they were equipped properly so that when they left their home station and went to pre-deployment training, that they were going to be falling in on the equipment that they had been training on, and that they would see in theater.

This is a step backward from that, in my strong opinion, and it's not just the fact the NGREA account has been zeroed out or that the Humvee modernization has been zeroed out. Maybe the most important issue at play here is the message that we are sending to our citizen soldiers.

I think it is a step backward, and I think if it is a 1-year issue, that may be one thing. I am concerned that it could become the bill payer for other things, and I want to make sure that there is somebody up here advocating for the men and women that are scattered across this country doing something else today, but this weekend will be training to go fight for their country.

And I think it is a terrible message that we are sending to our men and women in the Reserve component structure.

So I want to ask you really why, and let me just add to it.

As I understand the discussion, the question was put by the Chairman of the Joint Chiefs to the National Guard leader, General Lengyel, the question of whether there was a strategic issue with the transfer of these funds.

And I understand that General Lengyel looked at it and said there is not. It is not that we are going to lose a war by losing these funds.

But remember the National Guard has another mission as well, that sometimes we are too quick to forget, and that is they have got a state mission. And some of this equipment is extremely important and vital to the accomplishment of their state missions, which will happen every single year.

So to you, Mr. Norquist, can we get some assurance that we are not going to go back to the National Guard year over year and take these funds for other purposes and continue to make them a bill payer?

Mr. NORQUIST. So, first of all, we value the National Guard. It is not our intent or expectation that would happen with regard to the wall. We do not foresee that next year.

But I think the important thing is and let me address sort of the why because there was no intent to create any impression on the Guard. We value the Guard. We understand the role of their mission.

So let me just walk through a few of the items. So, for example, the Humvees, the Army is transitioning to the Joint Light Tactical Vehicle. So when asked about that funding, we went to the services.

Is this something that we asked for in the budget? Is this something that when you ask for money above and beyond the budget—and each of the services had—was it in there? Is there something that you need for the future?

The Army said, "We are moving away from the Humvee. We are headed to the Joint Light Tactical Vehicle."

With regard to the other National Guard equipment, we had put in the budget request for about four and a half billion for the National Guard for equipment. Congress funded it. We supported it. That is not affected.

There is a congressional add that has happened over the last several years, this one of about $1.3 billion. So we looked at that, and we said, "Is that urgent? Is that important?"

And what we saw was the congressional adds for the previous two years, there was still $1.5 billion that had not been spent yet. So there is still one and a half billion this year for additional Guard equipment.

So it was not more of the emphasis on the priority of the Guard. With some of the ship choices and others we said, "Is it money we need today and this year, or is it something that is going to follow later after this year's funding has been spent?"

Mr. WOMACK. Well, to be fair now, that NGREA spending is a 3-year obligation, correct?

Mr. NORQUIST. Correct. Normally, they normally spend mostly in the first year, but you have up to three, right.

Mr. WOMACK. So is it not unfair to take a snapshot in time and claim you have got all of this unfunded revenue sitting there that can be used for these other purposes?

And, again, I go back to what I have said in the beginning. If it is a 1-year anomaly that we are talking about here, I believe our Reserve component structure will salute smartly and charge the hill.

But I want to be on record for sure and I want somebody to be able to stand up and tell me that this is not anticipated in future years, i.e., when this Congress plugs in more money for NGREA in Fiscal Year 2021 and beyond, that it is not going to be looked as low hanging fruit to reprogram for other purposes.

And that is because our National Guard and Reserve component, as you have already admitted, is a vital part of our operational force today.

Mr. NORQUIST. So to answer you specifically, this is not anticipated in future years. I will make you that commitment.

I think what I would highlight is for any program that had an entire year's worth of funding unspent in a new year, we would be looking at that program. This is not a Guard-specific thing.

If I had other programs that had that large of a carryover balance, we would be looking at them as potential sources in a mid-year reprogramming or something else because it is atypical, right?

But I think your key point is is this a one-off because of obligation rates or something unusual, or is this a deemphasis on the

Guard. This is not a deemphasis on the Guard. The Guard is critical, valuable. The Secretary recognizes their importance, and we will make sure they are properly supported.

Mr. WOMACK. Very good. Thank you, Mr. Chairman. I yield back.

Chairman YARMUTH. The gentleman yields back.

I now yield myself 10 minutes for questions.

Once again, Deputy Secretary, thank you so much for being here.

I am kind of curious about some of the comments made by my Republican colleagues about criticisms of this budget. I really have not heard many criticisms of the budget. I have heard a lot of very good questions and serious questions, and you have treated them as legitimate and serious questions.

You mentioned in your statement, you referenced the 79 F–35s that are in this budget. That has been a project which has been controversial, to say the least, taken a long time, lots of revisions in cost and so forth.

Could you give us an update on how that project stands now, what we can expect the cost to be, and so forth?

Mr. NORQUIST. So the F–35 program is now on track to I think it is rolling off its 500th aircraft. So it is well into its production. It is producing one of the or probably the top aircraft in the world, and it provides us incredible capabilities.

The cost per aircraft is continuing to come down as we get further into the process, down to I think just under $80 million a copy.

And one of the things that we are focusing on in our team and working with them on is the sustainment cost, right? We have gotten the program. The quality is getting there. The price is coming down, but we need to make sure that the sustainment cost because this is going to be the core aircraft in our fleet is something we address.

And so that, I think, for exactly where we are going in the future and focusing on, keeping and driving down the maintenance and sustainment cost for the platform will be a focus area for us.

Chairman YARMUTH. Thank you for that.

Recently the courts ordered work stopped on the Joint Enterprise Defense Infrastructure Project, also known as JEDI, which is a $10 billion cloud computing contract for the Pentagon, and that was because of a legal challenge brought by Amazon.

As anybody who has read the news knows that the contract was originally awarded to Amazon, and then it was basically taken away from them and awarded to Microsoft after the President made comments about the Washington Post and Jeff Bezos, the owner and chief stockholder of Amazon and the owner of the Washington Post.

Now, I have no idea what went on within the Pentagon in that process, but I am concerned that the President's comments, tweets, and so forth that were aimed at Amazon creates questions in the public's mind as to the credibility of the process.

First of all, how important is that project for the Pentagon and the Pentagon operations?

Mr. NORQUIST. So first of all, let me say two things. The project is very important. When you think of what a cloud computing does, imagine if every time you wanted to add an electrical appliance you

had to put in extra power generation system beside your house, your building. That slows it down.

The artificial intelligence does the same thing. Instead of buying a server, I plug into the system, and the cloud ramps up the capability. So it acts like a power plant providing lower or higher electricity, lower or higher computing power.

And when you think about it, the demands of the future systems we are fielding are essential.

I would like to correct one thing though, which is in the press they acted as if there was already a winner and they thought a particular firm would win. That was never the case.

The evaluation process was done. Amazon was not selected. Microsoft was, but it was not as if there was a reversal in the decision. They were simply one of many competitors and in the downselect.

And I would emphasize so that the public understands we have a rigorous acquisition process. The people who evaluate these proposals are divided into separate groups. Each one only sees a segment of it. So they do not know how their scoring affects the overall winner.

Generally their names are not released so people do not know who to go and influence. They are held to strict criteria. In fact, the court case with the judge is over the particular application of an evaluation criterion. It was not about the President. It is about the criteria.

A fair comment. We are working through that, but we have professionals who do this, Uniform Military and career civilians. I would like to say I have confidence in the process, and when I was asked, I did not know who the winner was, but I was asked can we go forward with the award.

I met with the IG's Office because I had promised Congress I would, and I said, "Before we award, you have been doing an investigation. Have you seen anything that would cause you to advise me not to go forward with the award?"

And the IG said, "No, I have found no reason for you not to go forward with the award." And so we did.

And so I just want to reassure people. We followed a diligent process. It was rigorous. It was done appropriately, and we have confidence in it.

Chairman YARMUTH. Is there a DoD policy in place forbidding Pentagon officials from making public comments about bids for contract?

Mr. NORQUIST. I do not know what the official policy is in terms of commentary, but generally, we have a strict process in terms of how we receive and evaluate awards, and we segregate people from those who are allowed to work on the evaluation process and those who do not.

Chairman YARMUTH. Thank you for that.

I want to turn to South Korea for a minute. So South Korea has been paying us a billion dollars a year roughly to support 28,000-plus troops in that country, and that agreement has now expired. We do not have an agreement in place, and it has been reported that the President is asking for $5 billion compensation from South Korea as opposed to one billion, a fivefold increase.

Two questions. What would be the impact of and what would happen if the South Koreans refuse to pay the $5 billion?

I know that there are roughly 9,000 Korean employees working at our facilities to help support our troops over there. So it potentially could be very disruptive to that economy.

And does the President's budget contemplate a $5 billion payment from the South Koreans?

Mr. NORQUIST. Sure. The State Department is the lead on the negotiation, and I think we look forward to working with the South Koreans. The President has been very clear. He wants other countries to increase their investment in their own side, and we support that.

In terms of the negotiation, I defer to the State Department on the latest plans or what the backup plan would be if one of them was not enacted.

I will have to get you for the record what assumptions are built into our budget. I do not know that off the top of my head.

Chairman YARMUTH. I would appreciate that very much.

That is actually all I have. So once again, I thank you for your presence here, your responsiveness, as you have done two years in a row now. We appreciate that very much.

And if there is no further business, this hearing stands adjourned.

[Whereupon, at 12:20 p.m., the Committee was adjourned.]

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CONGRESSWOMAN SHEILA JACKSON LEE OF TEXAS

STATEMENT
HEARING:
"U.S. DEPARTMENT OF DEFENSE FISCAL YEAR 2021 BUDGET"

COMMITTEE ON THE BUDGET
210 CANNON
MARCH 10, 2020
10:00 A.M.

- Thank you Chairman Yarmuth and Ranking Member Womack for convening this hearing on the President's proposed FY2021 budget for the U.S. Department of Defense, and related agencies.

- Let me welcome our witness, David L. Norquist, Under Secretary of Defense (Comptroller) and Performing the Duties of Deputy Secretary of Defense.

- Thank you for being here and sharing your expertise with the this Committee.

- The President's defense budget matches the 2019 budget deal for 2021 but for 2022 and beyond it reflects a discrepancy between funding and plans.

- The Pentagon has stated in recent years that it needs 3 to 5 percent real growth to implement the National Defense Strategy.

- However, the President's defense budget remains relatively flat in inflation-adjusted dollars from 2021 to 2025, and in the second half of the ten-year window, the defense budget is frozen in nominal dollars.

- We must fund a military that is second to none, but it takes a whole-of-government approach to ensure strong national security.

- Mr. Chairman, the Republican penchant for making deep cuts to nondefense funding reveals an exceedingly narrow and shallow understanding of national security and reflects the false and naïve assumption that military spending is the only source of national strength and security.

- This ignores the critical components of national strength and greatness such as economic opportunity, vigorous diplomacy, international alliances, safe and healthy communities, an educated citizenry, shared prosperity, and equal justice for all Americans.

A growing economy is key to our national security.

- Foreign policy experts from both sides of the aisle agree that our national power begins with a strong national economy.

- To compete and win in today's global economy, we must have world-class education, transportation, research and development, and health care systems.

- As Michael Morell, the Former Acting Director and Deputy Director of the CIA, stated on February 28, 2016:

> "the health of a nation's economy is the single most im ortant determinant in its ability to protect itself, the single most important determinant in its ability to project power, the single most important determinant in its national security."

The Republican Budget vastly undervalues diplomacy and foreign aid.

- According to military experts, diplomacy and foreign aid are critical components of our national security.

- Both Trump's own former Secretary of Defense, James Mattis, and former Secretary of Defense Robert Gates have stressed the importance of diplomacy and foreign aid:

  > "If you don't fully fund the State Department, then I need to buy more ammunition." – then Commander of U.S. Central Command, General James Mattis, 2013

  > "...based on my experience serving seven presidents, as a former director of C.I.A. and now as secretary of defense, I am here to make the case for strengthening our capacity to use 'soft power' and for better integrating it with 'hard power.'" – Secretary of Defense Robert Gates, 2007

- Inadequate nondefense funding levels lead to State and Foreign Operations appropriations bills that:

  1. slash embassy security funding by more than 21 percent; and
  2. decrease assistance to multilateral organizations, including our UN contributions, signaling to the rest of the world that the U.S. no longer keeps its word.

Sequestration ignores other national security threats.

- Failure to lift the budget caps and leaves agencies that respond to public health threats and emergencies vulnerable to harmful cuts.

- The National Institutes of Health and the Centers for Disease Control, along with the State Department and U.S. Agency for International Development, play unique roles in preparing for and responding to threats domestically and abroad.

- At a time when there are numerous challenges – from outbreaks of Coronavirus, Ebola, and Zika, to the Flint water crisis, to chronic diseases like Alzheimer's and cancer, to the opioid epidemic – it is clear we cannot neglect these investments.

- Climate change threatens crop yields, infrastructure, water and energy supplies, and human health.

- Climate change poses risks to federal property and resources, increases potential outlays from flood and crop insurance, and creates looming disaster assistance needs.

- But congressional Republicans and the Trump Administration deny the problem exists, dramatically underfunding agencies dealing with this threat and removing resources for the public from government websites.

- Withdrawal of the U.S. from the Paris Climate Agreement undercuts the global commitment to reduce greenhouse gas emissions.

- The President's focus on his political goals are undermining our national security and the Constitution.

- Last year, the President held back important Ukraine security assistance funding, in violation of the Impoundment Control Act, to pressure Ukraine into announcing a faux investigation into his political opponent and pursuing a debunked conspiracy theory that Ukraine, not Russia, meddled in the 2016 election.

- He also is using the military as a piggybank to fund his border wall by reprogramming, without congressional approval, another $3.8

billion from weapons systems procurement, which, in effect, unilaterally reverses Congress' decision to deny a large portion of his border wall request last year – and this may just be the start of transfers for this purpose.

- Not only does this hurt our military, it is an assault on Congress' Article I powers under the Constitution.

- For nearly 75 years, since the end of World War II, the world has been impressed by *examples of American power*.

- But what has inspired people the world over is the *power of America's example*.

- Thank you.

House Budget Committee
Hearing on the Department of Defense's 2021 Budget
Witness: Deputy Secretary of Defense David L. Norquist
March 10, 2020
Questions for the Record
Chairman John Yarmuth

Question #1: Effective national security requires a whole-of-government approach, which includes many activities funded in the nondefense portion of the budget. These include diplomacy and foreign aid to prevent war and broker peace in times of conflict; law enforcement to keep our communities safe; oversight to protect our food supply, our air, and our water; innovation in science and technology to keep our edge over competitors; programs to mitigate the destabilizing effects of climate change and prepare against pandemics; and investments in education and infrastructure to keep the economy – the source of our strength – growing. Nevertheless, the President's 2021 budget cuts the nondefense budget by $45 billion below the 2019 budget agreement. After 2021, the President further assumes annual 2 percent reductions in NDD funding that compound over time, resulting in a 2030 level that is $138 billion below 2020 enacted amounts. Even before adjusting for inflation, this translates to a 2030 NDD funding cut of more than 20 percent. Are you concerned that the massive nondefense cuts in the President's budget will adversely affect a whole-of-government approach to national security, which also could make the job of our military harder? Do the Pentagon's defense plans consider these massive cuts to our nondefense agencies?

Question #2: Many in the Department have stated that DoD needs 3 to 5 percent real growth to implement the National Defense Strategy. However, the President's defense budget remains relatively flat in inflation-adjusted dollars from 2021 to 2025, and in the second half of the ten-year window, the defense budget is frozen in nominal dollars. In your view, can the Department carry out the current National Defense Strategy with the outyear path in the Budget? If not, what would change?

Question #3: Of the funding the Department reprogrammed last year for the President's border wall, how much has the Department obligated and spent so far?

Question #4: Including the recent $3.8 billion reprogramming, our military will have shouldered $10 billion of the cost of the President's border wall. Is it the Department's position that we no longer need funding for these programs it is cutting or does the Department expect Congress to appropriate more in the future to make these programs whole? Is it the Department's position that the difference can be made up within the President's projected ten-year topline for national defense, which is relatively flat over the ten-year budget window?

Question #5: Of the $250 million Congress appropriated for Ukraine security assistance for 2019, $35 million remained unobligated at the end of the fiscal year. If Congress didn't act and extend DoD's authority to spend that money through 2020, it would have expired. Was it the Pentagon's intent to spend all the $250 million in 2019? Please explain why DoD was unable to spend all the Ukraine funding by the end of the fiscal year.

Question #6: The budget reflects a nearly $9 billion, or 21 percent, reduction in "enduring requirements" funded in OCO. Enduring requirements are those OCO costs that will endure after combat operations end. This reduction suggests that the Department has changed what its longer-term defense plans are in the Middle East. Is this the case?

Question #7: The President's budget cuts OCO from $69 billion in 2021 to $20 billion for 2022. The budget continues at that level through 2023 and then reduces it to $10 billion a year for the remaining years of the budget window. What policy assumptions are behind the reduction in OCO? Does it assume enduring costs and OCO costs in support of base activities are transferred into the base budget topline for 2022 and beyond?

Question #8: Deputy Secretary, the Constitution vests the power of the purse with the Congress, and it is your responsibility to ensure that the Defense Department adheres to the Constitution and to budget and appropriations law, shares budgetary information with Congress, and provides transparency for the American people. The President's FY 2021 budget asks Congress to provide billions of dollars in new funding to the Department, even while the Administration circumvents our constitutional role by diverting billions of dollars Congress previously provided for other purposes to fund the President's border wall.

In February 2019, the President announced that the Administration would "reallocate up to $3.6 billion from Department of Defense military construction projects under the President's declaration of a national emergency (Title 10 United States Code, section 2808)," and more than a year later, Congress still has not been provided basic information about this funding and how the Department is using it. I have some specific questions about the Department's use of up to $3.6 billion in reallocated military construction funding to build a border wall pursuant to 10 U.S.C. 2808 and the President's declaration of a national emergency.

- How much of the $3.6 billion in funding has been reallocated? What amounts had been reallocated as of September 30, 2019, and what amounts have been reallocated as of today?
- What is the source of this funding? Please list the funding source(s) (including information on the appropriations act in which the funds were provided, the appropriation account, and the Treasury Appropriation Fund Symbol) and the amount reallocated from each such source.
- To what projects were these amounts reallocated?
- Were any transfer or reprogramming actions involved in the reallocation, obligation, or expenditure of any of these funds? Please provide a detailed explanation as to why or why not.
- Were any funds moved between accounts? If so, please describe the flow of funds.
- What components of the Defense Department and Department of Homeland Security are involved in carrying out these projects? In your response, please specifically describe any role of the Army Corps of Engineers in carrying out these projects, and please describe (and provide copy of) any interagency agreement in place, including an Economy Act agreement, with the Army Corps of Engineers or any other component of the Executive Branch to carry out work for these projects.
- Please provide a list of Treasury Appropriation Fund Symbols for which there is obligational or expenditure activity in carrying out these projects.

- Please provide the status of the reallocated amounts, in terms of obligations and expenditures by project. In the event of any interagency agreement, please detail separately any obligations incurred and expenditures made by the ordering agency or unit and any obligations incurred and expenditures made by the performing agency or unit.

Questions for the Record
Congresswoman Ilhan Omar
"Department of Defense FY2021 Budget"
House Budget Committee
March 10, 2020

Hon. David Norquist:

I wanted to follow-up on a question that I asked you at the DOD Budget hearing – I had an amendment in last year's NDAA requiring a report on the costs of bases and overseas operations. It was due on February 15th, 2020, and I have yet to receive a response from your department. ***Deputy Secretary Norquist, when can we expect to see this report?***

Hon. David Norquist:

The Pentagon is currently undertaking an analysis of alternatives for a new nuclear-armed-sea-launched cruise missile as proposed in the 2018 Nuclear Posture Review. ***Did the Navy support President Obama's decision to retire this kind of missile and warhead in 2010? Why or why not? If a decision is made to renuclearize the Navy's attack submarine fleet with a submarine-launched cruise missile (SLCM), can you tell me what doing so would entail? For example, besides just the costs to acquire or refine the missile and warhead, what other additional certification, security, storage, and operational costs would be required to maintain the capability?***

I only ask these clarifying questions since the National Nuclear Security Administration under DOE is receiving increased funding of over 20%, after just last year, when NNSA said that its FY20 budget plan was "fully consistent with the 2018 Nuclear Posture Review" and "affordable and executable." I know that energy spending and this Administration's across-the-board budget requests are out of your jurisdiction but I simply want to make sure all our military spending is accounted for and transparent, whether it's for maintenance, modernization, or weapon development purposes. ***To that end, I'm hoping you could work with your colleagues in DOE to inform us and expand upon any new weapons or nuclear systems being developed right now that may be adding to these higher costs warranting such large funding increases? For example, is the W93 warhead a new weapon? Can you explain in great detail where you are in the design phase and what the testing phase would include (e.g. offsite explosive testing)? Are there any other similar examples you'd be willing to share so Congress can make informed decisions on whether to fund and/or approve these projects?***

Responses to questions for the Record
Hearing Number: HBC-01-2020
Hearing Date: March 10, 2020
Deputy Secretary of Defense David L. Norquist before the
Committee: House Budget Committee

QFR Title: Non Defense Cuts
Requestors: Rep John A. Yarmuth
Witness: Norquist, David L
QFR ID: HBC-01-001 QFR
Question Number: 1
Question: Effective national security requires a whole-of-government approach, which includes many activities funded in the nondefense portion of the budget. These include diplomacy and foreign aid to prevent war and broker peace in times of conflict; law enforcement to keep our communities safe; oversight to protect our food supply, our air, and our water; innovation in science and technology to keep our edge over competitors; programs to mitigate the destabilizing effects of climate change and prepare against pandemics; and investments in education and infrastructure to keep the economy – the source of our strength – growing. Nevertheless, the President's 2021 budget cuts the nondefense budget by $45 billion below the 2019 budget agreement. After 2021, the President further assumes annual 2 percent reductions in NDD funding that compound over time, resulting in a 2030 level that is $138 billion below 2020 enacted amounts. Even before adjusting for inflation, this translates to a 2030 NDD funding cut of more than 20 percent. Are you concerned that the massive nondefense cuts in the President's budget will adversely affect a whole-of-government approach to national security, which also could make the job of our military harder? Do the Pentagon's defense plans consider these massive cuts to our nondefense agencies?

Answer: I defer to the other heads of Departments and Agencies within the Executive Branch to elaborate on appropriate funding levels for their respective responsibilities. The National Defense Strategy sets the objectives for the Department of Defense, which in turn informs its resourcing requests to the Office of Management and Budget. Key among those objectives is the strategic imperative to create favorable balances of power in key regions to support other U.S. interagency roles and instruments of power. As a general matter, the Department of Defense does not separately consider the detailed funding profiles of other parts of the Executive Branch when developing its defense plans.

QFR Title: Future Growth
Requestors: Rep John A. Yarmuth
Witness: Norquist, David L
QFR ID: HBC-01-002 QFR
Question Number: 2
Question: Many in the Department have stated that DoD needs 3 to 5 percent real growth to implement the National Defense Strategy. However, the President's defense budget remains relatively flat in inflation-adjusted dollars from 2021 to 2025, and in the second half of the ten-year window, the defense budget is frozen in nominal dollars. In your view, can the Department carry out the current National Defense Strategy with the outyear path in the Budget? If not, what would change?

Answer: The Department reviews the budget yearly in order to identify reforms and savings to fund the National Defense Strategy (NDS) within our current topline. Sustained and uninterrupted funding remains key to building on the NDS priorities. In order to maintain the Department's readiness and compete with near-peer adversaries, the Department will continually balance our resources against the threat.

QFR Title: Reprogrammed Money
Requestors: Rep John A. Yarmuth
Witness: Norquist, David L
QFR ID: HBC-01-003 QFR
Question Number: 3
Question: Of the funding the Department reprogrammed last year for the President's border wall, how much has the Department obligated and spent so far?

Answer: As of April 8, 2020, of the $2.5B in Section 284 project funding transferred in FY 2019, $2.5B has been obligated and $780M has been disbursed. Although not involving the reprogramming of funds, of the $3.6B of Section 2808 MILCON funding made available last year, $1.1B has been obligated and $169M has been disbursed.

QFR Title: Reprogrammed Offsets
Requestors: Rep John A. Yarmuth
Witness: Norquist, David L
QFR ID: HBC-01-004 QFR
Question Number: 4
Question: Including the recent $3.8 billion reprogramming, our military will have shouldered $10 billion of the cost of the President's border wall. Is it the Department's position that we no longer need funding for these programs it is cutting or does the Department expect Congress to appropriate more in the future to make these programs whole? Is it the Department's position that the difference can be made up within the President's projected ten-year topline for national defense, which is relatively flat over the ten-year budget window?

Answer: In his April 4, 2018, Presidential memorandum, "Securing the Southern Border of the United States," the President directed DoD to support the Department of Homeland Security (DHS) at the southern border. The ability of a nation to secure its borders is vital to its sovereignty, security, and safety – it is a national interest. DoD support to DHS is necessary to help stem the flow of illicit drugs by transnational criminal organizations. The border barrier construction support that DoD will provide to DHS this year will allow DHS to fulfill the President's border security policy promise. Aside from Corps of Engineers oversight, we do not foresee that DoD will be asked to support DHS border barrier construction next year.

QFR Title: Ukraine Security Assistance
Requestors: Rep John A. Yarmuth
Witness: Norquist, David L
QFR ID: HBC-01-005 QFR
Question Number: 5
Question: Of the $250 million Congress appropriated for Ukraine security assistance for 2019, $35 million remained unobligated at the end of the fiscal year. If Congress didn't act and extend DoD's authority to spend that money through 2020, it would have expired. Was it the Pentagon's intent to spend all the $250 million in 2019? Please explain why DoD was unable to spend all the Ukraine funding by the end of the fiscal year.

Answer: Each year, the Department of Defense (DoD) aims to obligate Ukraine Security Assistance Initiative (USAI) funding by the end of the fiscal year but typically does not obligate all funds by year's end. The process for obligating USAI funds is slower and more complicated than normal appropriations. In FY 2019, the DoD obligated $214.8 million (86 percent) by the end of the fiscal year. That amount is roughly consistent with average historical USAI obligation rates. The remaining USAI funds will be obligated by June 2020.

QFR Title: Reason for Reduction in OCO Funding
Requestors: Rep John A. Yarmuth
Witness: Norquist, David L
QFR ID: HBC-01-006 QFR
Question Number: 6
Question: The budget reflects a nearly $9 billion, or 21 percent, reduction in "enduring requirements" funded in OCO. Enduring requirements are those OCO costs that will endure after combat operations end. This reduction suggests that the Department has changed what its longer-term defense plans are in the Middle East. Is this the case?

Answer: The $8.8 billion decrease in "enduring requirements" from Fiscal Year 2020 to Fiscal Year 2021 is due to:
• The transfer non-Defense Department classified programs from Overseas Contingency Operations to the base budget ($5 billion);
• A reduction in the European Deterrence Initiative ($1.4 billion);
• Economy of Force savings ($1.3 billion);
• Miscellaneous Defense Wide Review savings ($0.9 billion); and
• A reduction in Security Cooperation/Coalition Support ($0.2 billion).

QFR Title: OCO Transferring into Base Budget
Requestors: Rep John A. Yarmuth
Witness: Norquist, David L
QFR ID: HBC-01-007 QFR
Question Number: 7
Question: The President's budget cuts OCO from $69 billion in 2021 to $20 billion for 2022. The budget continues at that level through 2023 and then reduces it to $10 billion a year for the remaining years of the budget window. What policy assumptions are behind the reduction in OCO? Does it assume enduring costs and OCO costs in support of base activities are transferred into the base budget topline for 2022 and beyond?

Answer: The Office of Management and Budget (OMB) directed the Department of Defense (DoD) to transition "enduring requirements" from the Overseas Contingency Operations (OCO) budget to the base budget starting in Fiscal Year (FY) 2022. Moreover, the OMB directed a decreasing out-year OCO funding profile to reflect the Administration's commitment to transitioning enduring costs into the defense base budget. The DoD will work with the OMB to ensure that OCO requirements are properly resourced in FY 2022 and beyond.

QFR Title: Reallocated Military Construction Funds
Requestors: Rep John A. Yarmuth
Witness: Norquist, David L
QFR ID: HBC-01-008 QFR
Question Number: 8
Question: Deputy Secretary, the Constitution vests the power of the purse with the Congress, and it is your responsibility to ensure that the Defense Department adheres to the Constitution and to budget and appropriations law, shares budgetary information with Congress, and provides transparency for the American people. The President's FY 2021 budget asks Congress to provide billions of dollars in new funding to the Department, even while the Administration circumvents our constitutional role by diverting billions of dollars Congress previously provided for other purposes to fund the President's border wall. In February 2019, the President announced that the Administration would "reallocate up to $3.6 billion from Department of Defense military construction projects under the President's declaration of a national emergency (Title 10 United States Code, section 2808)," and more than a year later, Congress still has not been provided basic information about this funding and how the Department is using it. I have some specific questions about the Department's use of up to $3.6 billion in reallocated military construction funding to build a border wall pursuant to 10 U.S.C. 2808 and the President's declaration of a national emergency.

• How much of the $3.6 billion in funding has been reallocated? What amounts had been reallocated as of September 30, 2019, and what amounts have been reallocated as of today?

• What is the source of this funding? Please list the funding source(s) (including information on the appropriations act in which the funds were provided, the appropriation account, and the Treasury Appropriation Fund Symbol) and the amount reallocated from each such source.

• To what projects were these amounts reallocated?

• Were any transfer or reprogramming actions involved in the reallocation, obligation, or expenditure of any of these funds? Please provide a detailed explanation as to why or why not.

• Were any funds moved between accounts? If so, please describe the flow of funds.

• What components of the Defense Department and Department of Homeland Security are involved in carrying out these projects? In your response, please specifically describe any role of the Army Corps of Engineers in carrying out these projects, and please describe (and provide copy of) any interagency agreement in place, including an Economy Act agreement, with the Army Corps of Engineers or any other component of the Executive Branch to carry out work for these projects.

• Please provide a list of Treasury Appropriation Fund Symbols for which there is obligational or expenditure activity in carrying out these projects.

• Please provide the status of the reallocated amounts, in terms of obligations and expenditures by project. In the event of any interagency agreement, please detail separately any obligations incurred and expenditures made by the ordering agency or unit and any obligations incurred and expenditures made by the performing agency or unit.

Answer: As of September 30, 2019, $1.8 billion associated with deferred military construction projects outside the United States has been provided to the Secretary of the Army for Section 2808 military construction project execution. No additional funds have been provided to the Department of the Army since that date.

The U.S. Army Corps of Engineers (USACE) has executed unobligated military construction funds that were made available for Section 2808 military construction projects directly from the Components' military construction accounts. Appropriation Act information is provided in detail below:

Public Law 114-223 "Continuing Appropriations and Military Construction, Veterans Affairs, and Related Agencies Appropriations Act, 2017, and Zika Response and Preparedness Act"
- Military Construction, Army (97-17/21-2050) - $2.7 million
- Military Construction, Air Force (97-17/21-3300) - $145.937 million
- Military Construction, Defense-Wide (97-17/21-0500) - $180.423 million

Public Law 115-141 "Consolidated Appropriations Act, 2018"
- Military Construction, Army (97-18/22-2050) - $53.0 million
- Military Construction, Air Force (97-18/22-3300) - $239.35 million
- Military Construction, Defense-Wide (97-18/22-0500) - $205.726 million

Public Law 115-244 "Energy and Water, Legislative Branch, and Military Construction and Veterans Affairs Appropriations Act, 2019"
- Military Construction, Army (97-19/23-2050) - $205.751 million
- Military Construction, Navy & Marine Corps (97-19/23-1205) - $205.78 million
- Military Construction, Air Force (97-19/23-3300) - $302.0 million
- Military Construction, Defense-Wide (97-19/23-0500) - $296.088 million

Funds are being used to execute the 11 military construction projects that the Secretary of Defense determined are necessary to support the use of the armed forces in connection with the national emergency along the international border with Mexico. As required by Section 2808, on September 3, 2019, the Secretary of Defense notified Congress of his decision to undertake these projects.

The USACE has executed unobligated military construction funds that were made available for Section 2808 military construction projects directly from the Components' military construction accounts. No transfer of funds was required or undertaken for this purpose.

The USACE is the engineering and construction agent for the Department of Defense in executing these Section 2808 military construction projects. USACE plans and executes all aspects of the Secretary of Defense's authorized work as specified in his September 3, 2019, order to the Secretary of the Army. USACE carries out all management, technical oversight, inspection, contracting, quality assurance/quality control, legal review, and real estate functions required for successful completion of each Section 2808 military construction project. Any inter-agency requirements, such as with the Department of Justice (DOJ) or the Department of Interior (DOI), are executed by USACE.

The following Treasury Appropriation Fund Symbols will be used for obligational and expenditure activity ($1.8 billion) in carrying out these projects:
- Military Construction, Army (97-17/21-2050; 97-18/22-2050; 97-19/23-2050)
- Military Construction, Navy (97-19/23-1205)
- Military Construction, Air Force (97-17/21-3300; 97-18/22-3300; 97-19/23-3300)
- Military Construction, Defense-Wide (97-17/21-0500; 97-18/22-0500; 97 19/23 0500)

Of the $1.8 billion provided to the Secretary of the Army for Section 2808 military construction to date, USACE has obligated $1.1 billion and dispersed $167.3 million.

QFR Title: Report on Costs of Basing and Overseas Operations
Requestors: Rep Ilhan Omar
Witness: Norquist, David L
QFR ID: HBC-01-009 QFR
Question Number: 9
Question: I wanted to follow-up on a question that I asked you at the DOD Budget hearing – I had an amendment in last year's NDAA requiring a report on the costs of bases and overseas

operations. It was due on February 15th, 2020, and I have yet to receive a response from your department. Deputy Secretary Norquist, when can we expect to see this report?

Answer:
The report is asking for an accounting of a number of distinct criteria that is not part of the budgetary data DOD regularly reports. Additionally it asks for budgetary data that the Department does not necessarily keep track of and will take more time to compile and report. While compiling this data is underway, the final report will not be delivered until later this year.

QFR Title: Nuclear Funding
Requestors: Rep Ilhan Omar
Witness: Norquist, David L
QFR ID: HBC-01-010 QFR
Question Number: 10
Question: The Pentagon is currently undertaking an analysis of alternatives for a new nuclear-armed-sea-launched cruise missile as proposed in the 2018 Nuclear Posture Review. Did the Navy support President Obama's decision to retire this kind of missile and warhead in 2010? Why or why not? If a decision is made to renuclearize the Navy's attack submarine fleet with a submarine-launched cruise missile (SLCM), can you tell me what doing so would entail? For example, besides just the costs to acquire or refine the missile and warhead, what other additional certification, security, storage, and operational costs would be required to maintain the capability? I only ask these clarifying questions since the National Nuclear Security Administration under DOE is receiving increased funding of over 20%, after just last year, when NNSA said that its FY20 budget plan was "fully consistent with the 2018 Nuclear Posture Review" and "affordable and executable." I know that energy spending and this Administration's across-the-board budget requests are out of your jurisdiction but I simply want to make sure all our military spending is accounted for and transparent, whether it's for maintenance, modernization, or weapon development purposes. To that end, I'm hoping you could work with your colleagues in DOE to inform us and expand upon any new weapons or nuclear systems being developed right now that may be adding to these higher costs warranting such large funding increases? For example, is the W93 warhead a new weapon? Can you explain in great detail where you are in the design phase and what the testing phase would include (e.g. offsite explosive testing)? Are there any other similar examples you'd be willing to share so Congress can make informed decisions on whether to fund and/or approve these projects?

Answer:
The Department of the Navy (DoN) supported the decision to retire the nuclear variant of the Tomahawk Land Attack Missile (TLAM-N). DoN support for this position was based on program Operation & Support (O&S) data.

TLAM-N O&S data showed decreasing levels of TLAM-N weapon system reliability and availability based upon missile component age/failure rates and the lack of spare/repair parts to support a viable, long-term nuclear deterrent capability.

The Department of Defense Director, Cost Analysis and Program Evaluation (CAPE) Analysis of Alternatives (AoA) "Study Guidance" directs the DoN to study a potential Submarine-launched Cruise Missile (Nuclear) (SLCM-N) capability that includes both Navy attack submarines and surface combatants. Beyond the development and production costs, any potential SLCM-N capability will require resources for all of the items listed in your question (e.g., certification, security, storage, and operational costs) - plus costs associated with a warhead-mating location, transportation, and demilitarization. All of these costs will be defined as part of the AoA process, including the ability to leverage the existing infrastructure to the maximum extent possible.

The Administration remains committed to reducing the threat of nuclear weapons to the American people and to our allies and partners around the globe. To that end, the President's budget request only includes those programs we believe are necessary for maintaining deterrence into the future.

The timelines for the W93 have been accelerated by a few years to address operational gaps identified by U.S. Strategic Command and to mitigate risks in the sea leg of the nuclear Triad, which represents our most survivable response capability. Given the extensive timelines for acquiring nuclear weapons, the Defense Department and the National Nuclear Security Administration (NNSA) agree that we must get started now in order to address these technical, geopolitical, and operational challenges effectively. If authorized and funded by Congress, the W93 would be a new warhead. The W93 will replace W76 and W86 warheads as they age out and will not increase the size of the strategic stockpile. Since it is based on previously tested nuclear designs and extensive stockpile component and material experience, this warhead will not require additional nuclear explosive testing to certify.

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