

War and famine. Peace and milk. —Somali proverb

TRANSATLANTIC DEFENSE PARTNERSHIP AT STAKE?

Geostrategic
Changes,
Economic Trends,
and Mutual Defense

BRUSSELS, BELGIUM

June 21, 2017

Keynote: Peter Chase



I want to touch briefly on four points, with the main goal of stimulating discussion. The four points are the role of economics in peace and security; the new security threat; the technology front; and China.

As an economist and a diplomat, I believe economic policy has a huge role in peace and security; although it's not one that my political officer colleagues in the State Department often saw. Even today I think too many European ministries of foreign affairs are extremely weak in economic policy to the detriment of their ability to conduct diplomacy and achieve the missions that they undertake.

It's actually really timely to have this discussion in this place for a couple of reasons: First, this happens to be the 70th anniversary of the Marshall Plan. In fact, right now in Berlin, Chancellor Merkel and Dr. Kissinger are at a GMF event talking about this 70th anniversary. If you don't want to listen to me, we can probably boot up a computer and watch a live stream of them instead.

It's also the 60th anniversary of the Treaty of Rome and the creation of what would become the European Union, which, as I like to remind everyone, was created to end war.

Both of these are economic policy projects. Their purpose is to promote growth

and to end war through economic integration. The underlying principle behind both is the belief in the dignity of the individual and the political and economic systems that derive from that: democracy and a market-based economy.

To me, they've been resounding successes. Both of those economic policies have brought peace and security, as the Soviet economy imploded and the Berlin Wall fell.

In the 1990s, the application of these US and European economic policies was expanded to the Warsaw Pact countries, and there were efforts even then to further expand their application to Russia. Those were the right responses, I think, exemplifying the use of economic policy as an instrument for peace and security.

But this path ended, more or less, in the early years of this century for two main reasons: one, security, and two, economics. On the security front, 9/11, our response to it, the ensuing wars, and the rifts that developed within Europe and between Europe and the United States, have taken time to patch up.

And then, after the blows our economies took in the wake of the 2008 financial crisis, there has remained a sense of questioning of some of the principles that actually led to our resounding success. This can be seen in the vote on Brexit and the election of Mr. Trump, which set the stage for today's security issues.

What are our current security issues? There's Russia, China, North Korea. and the nuclear threat; there's counter-terrorism; there are cyber attacks. All these threats are real and they're important. But I'd like to propose the possibility that the biggest security threat is us and a weakening belief in ourselves.

The Russians have done a very good job of projecting soft power. But that they should have an impact on our broader political system exposes an insecurity within it. This insecurity feeds policies, and in that way may

TABLE OF CONTENTS

Keynote: Peter Chase	1
Participants Bios	2
Panel I: Why Do We Invest in Military Expenditures?	4
Panel II: What Future for the Defense Industrial Base?.....	8
Co-sponsors	12

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Tomáš Valášek is the director of Carnegie Europe, where his research focuses on security and defense, transatlantic relations, and Europe's Eastern neighborhood. Previously, Valášek served as the permanent representative of the Slovak Republic to NATO for nearly four years. Before that, he was president of the Central European Policy Institute in Bratislava (2012-2013), director of foreign policy and defense at the Centre for European Reform in London (2007-2012), and founder and director of the Brussels office of the World Security Institute (2002-2006). In 2006-2007, he served as acting political director and head of the security and defense policy division at the Slovak Ministry of Defense. He advised the Slovak defense and foreign ministers, the UK House of Lords, and the Group of Experts on the new NATO Strategic Concept.

become a bigger threat. There's a broad underlying sense that the United States has been taken advantage of over the last 70 years. But if we've been "taken advantage of," it's because we've wanted to be. It was in our interests. It was in our economic interest and our national security interest to be open to the world, to take in imports, to help others grow, to encourage the growth of Europe.

This insecurity stemming from a misunderstanding is leading to economic policy that is more about building walls than opening doors. When the administration uses national security as the underlying reason to protect our steel industry, this is an own-goal. Like the own-goal of withdrawing our signature from the Trans-Pacific Partnership, it gives the Chinese and every other country the legitimacy to do precisely the same. This issue is dividing the United States and Europe, including the UK, right now.

Similarly, Mr. Trump's insistence on each member of NATO contributing 2 percent of GDP also is based in the belief that we've been taken advantage of.; that the US has been spending all this money on our military and our capabilities, and no one else is spending their money, and by God, we're not going to have this anymore; it's going to change. I think that's a direct quote. Which has led Angela Merkel to question whether or not the United States is going to be a reliable ally. And that, I think, is a tremendous cost to our security.

Moreover, I would argue, getting to my third point, that it does not take into account the changing nature of what you would call Transatlantic defense and the Transatlantic defense industries. The Third Offset Strategy, which was announced by Chuck Hegel, then Secretary of Defense, and carried forward by Ash Carter, is based on the idea that you need to have superior technology in order to overcome the numerical advantages of your opponents. In talking about it, the DoD people understood that this strategy would change the nature of what they were meant to do. They could no longer just rely on the traditional defense contractors who make the big tanks, anti-tank missiles, and aircraft carriers. All those are still important; but more important is technology. Understanding the importance of technology, whether it's Artificial Intelligence, Big Data analytics, or autonomous guidance,

led DoD to understand that it needed to have relations not just with new companies in the United States, technology companies that they hadn't really known before at DoD; but also that they had to have a different relationship with our international partners. If you pass a procurement act that says only buy American technology, you're not going to get the best technology, and you're not going to be able to achieve your objective of technological leadership.

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That understanding created an opening for more collaboration across the Atlantic with our NATO and European allies. I personally think that this makes sense. I've not heard this administration use the words, but I have a funny feeling that, even as they're increasing their budget for typical armaments, the importance of technology and the Third Offset Strategy is also accounted for. Whether or not the administration will be able to follow through, in particular in terms of collaboration with the private sector in Europe as well as the private sector in the United States, I don't know. At the same time I feel that the NATO industry forum and other initiatives designed to foster better collaboration between NATO and industry are too concentrated still on traditional industries. I'm not sure they're succeeding in building out from there sufficiently.

Additionally, with too much emphasis on 2 percent spending on weapons systems, the Trump administration is distracting people from an analysis of the actual threats we're facing and a response to them. The actual threats are more related to cyber security and terrorism than they are to an invasion across the Suwalki Gap [where Russia might invade Poland]. A lot of the Third Offset Strategy was directed at Russian activities in the

Ukraine and the need to have better, shall we say, intelligence and reconnaissance. Those are more important than some of the other issues. Whether or not the administration will allow money spent on cyber security and cyber defense to be counted toward the 2 percent goal, I don't know.

This brings me to my last point: China is a significant military defense issue for the United States, for the Japanese, and for our other allies in Asia. People that I know and like, like Chas Freeman, a former ambassador for whom I worked when I was in the State Department, say that we're overstating the Chinese threat because the Chinese tend to project themselves just so far and not beyond that. However you interpret the Chinese intentions, there's no question that the Chinese are in fact exercising the Third Offset Strategy in the sense that they are trying to acquire commercially available, private sector technologies, and they're doing a very good job of it.

A detailed review of Chinese acquisitions of American technologies through state-owned enterprises was commissioned by the previous Secretary of Defense and actually delivered in March of 2017. The Japanese embassy here in Brussels brought this to my attention, saying, "We are seeing European technologies on PLA [the People's Liberation Army] ships and on PLA planes, and we're concerned." They're concerned that the Europeans don't have something like CFIUS [The Committee on Foreign Investment in the United States] to guard against the export of high technologies. There is a big policy debate on the question of whether or not the Europeans, or the United States and Europe working together, need to address the issue of Chinese acquisition of technologies in the private sector.

I'm concerned, too. It is too easy for it to turn into a competitive, reciprocity-based thing that can be directed against foreigners generally, not just against potential threats. There are a lot of people in Europe who consider GAFA--Google, Apple, Facebook, and Amazon-- a potential threat. The European Commission's move to adjust the way large US firms, especially tech companies, report their taxes within the EU addresses competitiveness more than security, and I think that's an issue that needs to be discussed.

Panel I: *Why Do We Invest in Military Expenditures?*

Thomas Valasek:



For the past four years until April, I was the permanent representative of the Slovak Republic to NATO. There are many thankless, unrewarding, impossible-to-succeed-at things you're asked to do as an ambassador—seating arrangements at dinner tables, the schedule for visiting ministers or prime ministers; but few were as impossible and unrewarding as explaining to prime ministers and finance ministers why we need to invest in defense.

I've developed quite a good pitch because I've had to deliver it over and over. In the next few minutes I'm going to lay out essentially what I used to tell my bosses about the need for investing in defense and holding onto the 2 percent target, imperfect as it is:

We as allies—EU member states and any NATO ally—have set out for ourselves certain ambitions for military capability: one major regional conflict, or two major regional conflicts plus six smaller ones, etc. These ambitions were not pulled out of a hat. They're neither frivolous nor over-ambitious. We spent considerable time debating them. They have to do with defending our own borders and managing our immediate neighbors.

We know that we don't have what it takes actually to fulfill those ambitions. We know that because of the way things work at

NATO. We asked the defense partners and the military commanders what capabilities they actually need to fulfill those ambitions. They told us, and when we compared what they told us to what we had, we found quite a long list of capability shortfalls. These are not cheap kit sets, but things like transport aircraft, precision munitions, electronic warfare jammers, and so forth. To put it simply, over the past couple of decades we 29 allies have not resourced the ambitions that collectively we have set up for ourselves.

This may prove the need to invest more in defense, but it doesn't prove the need to invest 2 percent of our GDP in defense; that's quite a different thing. In one sense 2 percent—let's be honest—is a somewhat arbitrary figure. As the Americans like to say, it's a ballpark estimate. The cost of acquiring the capabilities we know we need and we haven't currently got could be more, could be less. This of course depends hugely on how we invest and how efficiently we spend our investment.

But the fact that we do not know accurately whether 2 percent is the right number should not be an argument against investing in defense capabilities. The reality is that, even at home, in national procurement, the cost estimates for weapons purchases are ballpark ranges at best. Think of how much the cost of the J-35 has fluctuated in both directions. We accept a high level of price uncertainty as a fact of life in defense procurement, and it doesn't keep us from investing in defense; nor should the question mark attached to the accuracy of 2 percent keep us from aspiring to that figure.

I sometimes hear that better spending negates the need for more spending. In other words, there's so much efficiency waiting to be unlocked in procurement in Europe that if we only did everything right, no additional money would be needed, much less 2 percent of GDP. This is at best partly true. I contributed to the original European Parliament's 2013 Study on the Cost of Non-European Defense, which came up with 26 billion a year in potential savings. That amount would, I suspect, be more than enough to acquire all of the capabilities we need. But between us, the study is based

on outdated assumptions. It was written in 2013 and assumes no collective defense tasks, only Petersburg tasks¹, which, after the war in Ukraine, are simply inconsistent and incompatible with NATO ambitions. It also assumes an integration of the European armies, which may be an admirable and desirable goal in the long run, but one that, I think we'll agree, is unlikely to happen in the next one or two planning cycles.

A more realistic estimate came from a McKinsey study prepared for the Munich Security Conference last year. It produced an \$11-billion-a-year figure of potential efficiencies and savings if we pooled procurement, storage, and maintenance costs—much more politically achievable goals in the medium run. But even the McKinsey figure assumes that we can consolidate all procurement in Europe roughly to the extent that the United States does; and therefore the average size of any batch of defense equipment ordered would increase 570 percent, nearly six-fold. I leave it to you to gauge how realistic that is in the next one or two planning cycles.

I'm not arguing against seeking efficiencies. I used to write extensively on the need to pool and share, and on the right approaches to pooling and sharing. But the savings are probably going to be more limited than the most optimistic estimates assume and, most importantly, they'll be achievable only in the medium to long run; whereas the ambitions we have set up for ourselves are applicable now, and the shortfalls are immediate. Therefore we'll need to spend both better and more at the same time.

For my last point, let's get into the politics. Let me acknowledge here that the manner in which the US president makes the argument for higher defense spending is at best only partly helpful. The 2 percent is not debt. It is not owed to the United States. This is European money for European militaries to boost the security of Europe. And every time the president says otherwise,

¹ Petersburg tasks are the military tasks of a humanitarian, disarming, peacekeeping, and peacemaking nature that the European Union (EU) is, and the Western European Union (WEU) was, empowered to perform by the Petersburg Declaration of 19 June 1992

frankly, more Europeans turn against increases in defense spending. There has been some Trump effect, I concede. The recent defense spending increases in Canada and Denmark can be attributed to President Trump being so insistent that it became impossible not to increase defense spending. But a vast majority of increases that have occurred predate his taking office and are the result of a Russia effect rather than a Trump effect.

If anything, there has been an emotional reaction to Trump in Europe, particularly in Germany. Germany spent the least on defense and has the largest economy in Europe, and therefore has the most potential to contribute to an increase in collective European defense capabilities. If I were advising President Trump on the most effective way to get more out of Europe as a whole, I would start with Germany; it holds the most potential to make a meaningful difference in collective European defense capabilities.

But it is particularly in Germany that you have seen an emotional reaction to the rhetoric that the US president has chosen, which has made it less likely that we will see the pace of defense increases that we would like. While it is emotionally understandable why not meeting President Trump's demands might be popular, on a rational level it amounts to cutting off the nose to spite the face. We only hurt ourselves in Europe by not investing in defense. It's the scenarios involving Europe and its neighbors that are chronically under-resourced. It's the precision bombs, the transporter aircraft to reinforce

the Eastern border. At the end of the day, the 2 percent is not a favor to the United States, but an investment in our ability, our stability, and security. And I suspect, if anything, because of the decreased reliability and predictability of the US reaction in relation to NATO's Article 5, addressing common defense, the need for investing in those capabilities has only increased. I think any rational security analysis would tell you the same thing.

Edward Hunter Christie:



I work with the international staff at the NATO offices here in Brussels. My activities are essentially to produce analyses, reports, and briefings on economic questions that are relevant to either defense policy of the states or international security more broadly, and that are of interest to the Allies.

The unit I work for does not create policy; we basically try to raise awareness. A lot of the work is focused on Russia, the Russian economy, and Russian defense spending, answering questions such as, Is Russian defense spending sustainable given their economic trajectory?

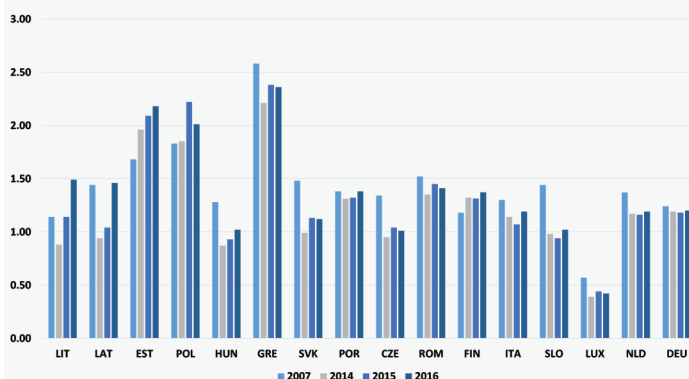
There are two main forces that have been driving European defense spending levels in the last seven, eight, nine years. One is what I call physical capacity available to European governments in the aftermath of the 2008 crisis. The other is the new security environment since 2014 and Russia's aggression against the Ukraine.

Lithuania has made the biggest change in defense spending as a share of GDP between 2014 and 2016, from 0.1 to 0.5 to 1.5 in the space of just two years. Estonia, Poland, and Hungary have had similar growth. So you can already deduce one point: Those countries that are very rapidly increasing their defense spending are close to Russia.

In a number of cases defense spending fell between 2007 and 2014, clearly as a result of the financial crisis. Of course the US has remained at consistently high though also decreasing levels in recent years, until a very small uptick from 2015 to 2016.

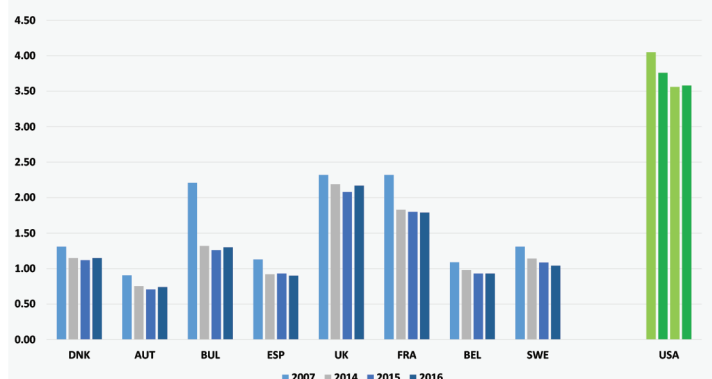
So what are the facts we want to extract from that? I looked at 24 EU States, excluding Ireland, Malta, Cyprus, and Croatia. The standing effort was below 2 percent of GDP in all but four of these countries, the exceptions being Bulgaria, France, Greece, and the UK. In 2016, the spending effort is still below 2 percent in all but four, the exceptions

Figure 1: defence as % of GDP – 16 EU Member States with *increases* since 2014



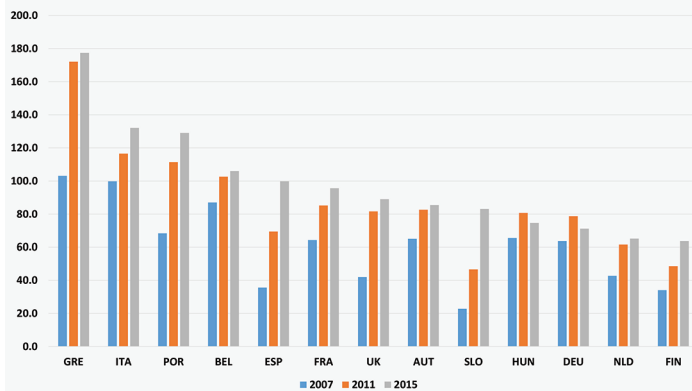
Source: NATO (public); SIPRI (excl. Ireland, Malta, Cyprus, Croatia)

Figure 2: defence as % of GDP – 8 EU Member States with *decreases* since 2014



Source: NATO (public); SIPRI (excl. Ireland, Malta, Cyprus, Croatia)

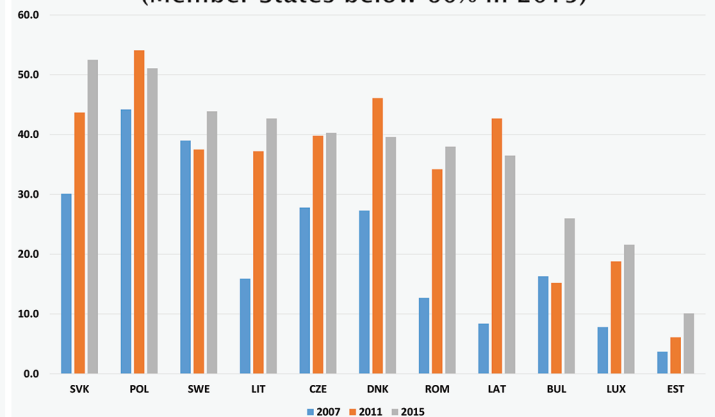
Figure 3a: public debt, % GDP
(Member States above 60% in 2015)



Source: Eurostat (excl. Ireland, Malta, Cyprus, Croatia)

8

Figure 3b: public debt, % GDP
(Member States below 60% in 2015)



Source: Eurostat (excl. Ireland, Malta, Cyprus, Croatia)

9

now being Estonia, Greece, Poland, and the UK. Spending efforts fell in all but three between 2007 and 2014. The three where they didn't fall: Estonia, Poland, and Finland. These falls are largely driven by macroeconomic and fiscal conditions, and there are multiple lines of evidence for this, including statements by policymakers themselves.

We see a trend reversal starting in 2015. The strongest increases, as mentioned, are in the Baltic states and Poland. Further strong increases as a share of GDP are expected in Lithuania, Latvia, and Romania for 2017; whereas, in Western Europe, it's a little bit more mixed and the increases are more moderate.

Now about fiscal capacity: Public debt as a share of GDP increased very significantly in the aftermath of the financial crisis. We see large increases in most cases, with a number of countries coming in above 60 percent. Bear in mind that the United States is legally obligated to keep its public debt ratios below 16 percent.

At the same time as all these fiscal pressures, the security environment has changed. The crises in Crimea and the Ukraine were relatively brutal awakenings for governments that still had a number of unresolved economic and fiscal problems.

In early 2014, Russia deployed a relatively substantial conventional force to the border between Russia and Ukraine. It was feared at the time that the Russian Federation would actually carry out a conventional invasion, at least of Eastern Ukraine and possibly more than that. This deployment of Russian forces to the border region was

extremely rapid and created enormous stress and fear among government allies.

Russian defense procurements from 2011 to 2016 equaled the estimated equivalent of 404 billion international dollars; whereas NATO Europe, including Turkey, spent 291 billion. Russia's defense procurements in the last five years have been larger than those of all Europe put together.

But it's not just about buying equipment or annexing Crimea. Russia's exercises have been increasingly massive, with a steady rise in both size and scope, including simulating aspects of interstate warfare. Also we're very impressed with logistics. I have two quotes from an article by Keir Giles. In "Assessing Russia's Reorganized and Rearmed Military," Giles writes: "A significant proportion of Russia's ground forces and air forces have now been exposed to operational conditions over an extended period, if not to actual combat." This is due to the fact that Russians deliberately rotate their international forces in Ukraine and Syria so that they get more exposure to operational combat conditions. They're really trying to become good at combat.

Giles continues: "Russia has developed its equipment base for high-end war fighting, whilst some western allies have focused instead on low-intensity and counter-insurgency warfare, allowing their capability for high-intensity conflict to atrophy." So that's a warning. The Russians are becoming good at things that we've been doing less of, and they've been spending a lot, and they are quite formidable..

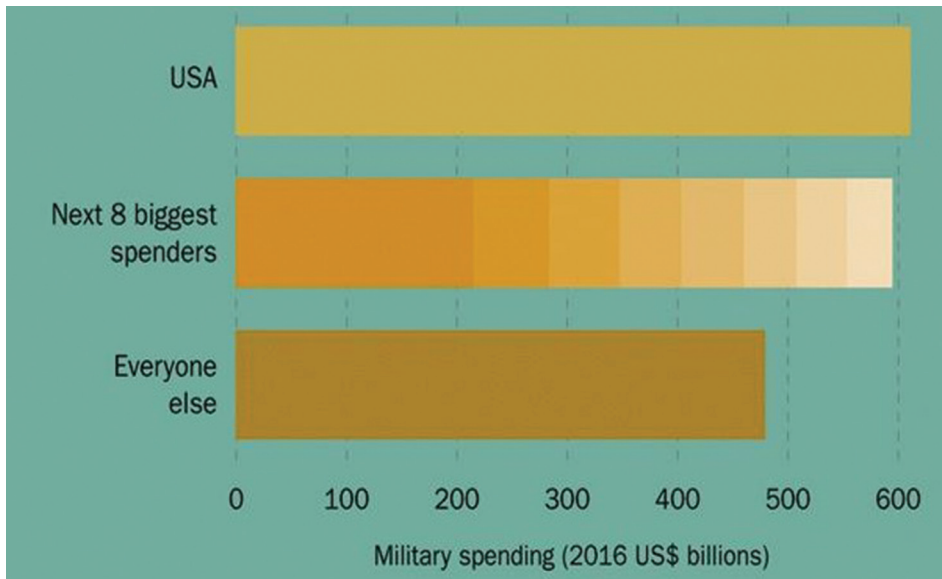
Binyam Salomon:

We know that world military expenditures are not trivial. In 2016, the countries of the world spent \$1.68 billion on their militaries. Did you know that's equal to the sum of the GDP of at least 114 countries?

But what we do know about the demand for military expenditures? Theoretically we know what the reasons behind the demand for military expenditures are; but what do economic theory and actual empirical data tell us? They alone should guide us in this debate.

A basic demand model of economics tells us that a (hopefully benevolent) unitary agent will optimize. Certain competing demands will add constraints. The standard of living is usually expressed as GDP as a proportion of the population, but it includes three ingredients: the number of people that are employed, or employment divided by population; the level of effort or hours per employed person; and productivity, which is GDP per hours.

The first two components of the standard of living have natural constraints. To create a larger population and a larger number of employable people, you could encourage immigration; but it's not going to solve your problem, because your population is aging, etc. You also can't push people to work many more hours. Last time I checked, people get cranky after working 10 hours or so, and after that their productivity declines. So all you're left with really is enhancing your productivity.



World Military Expenditures in 2016. (Source: SIPRI and author's calculation)

Left with few choices, policymakers seeking to enhance growth will sometimes use defense expenditures as a way of dealing with economic malaise, rather than actually worrying about the threats that should be the drivers of defense spending.

Of course, nations also face budget constraints, and they must take more than income or GDP into account. The price of items to be procured, providing security, various bilateral and multilateral security arrangements, how much your allies are spending on defense, and the actual threat must also be taken into account.

Let's look at Canada as an example. It has been mentioned that the liberal government changed its tune to say that they're now going to spend more money on defense. Canada cannot be a neutral nation considering that we have nine million square kilometers of space and 30 million people spread out to cover that area. Neutrality is not an option. We need to be part of bilateral and multilateral arrangements. We must also appease our number one trade partner to preserve the billion or a billion-and-a-half dollars in trade happening every day between the United States and Canada; so in fact, political parties don't have much actual influence on demand for military expenditure. We expect the liberals to be less defense-oriented in their rhetoric; but, whether you're conservative or liberal in Canada, defense expenditure is not the main issue. Mainly what's driving spending levels are our alliances.

Let's look at the threat variables. After the end of the Cold War, some NATO member nations basically stopped looking at what credible threats we're facing. After watching a lot of Viking shows on the History Channel, Canada might be a bit worried about the Danish invading them. Beyond that, though, we don't really have much of a threat to worry about. Our current threats are really spillover effects, such as transnational terrorist activities.

Then you have to ask, why was it very important for Canada to go to Afghanistan when they don't have foreign direct investment or trade there? So we come to this interesting economic principle that Canada is a member of an alliance, or has perhaps a compulsory club membership. That understanding will actually tell us a whole lot more about transatlantic defense expenditures and where we can or should go with them.

Alliance-based defense can be seen as a joint product, which I think has very beautiful implications. The joint product model is one of the best things to come out of defense economics; it can really enlighten us in terms of burden sharing. So pure deterrence and strategic weapons are pure public good; conventional weapons are partially excludable, like conventional ones; and search and rescue, or aid to civil power, could be private. This model points out that incentives matter. If there are some positive benefits for them, nations are more than willing to share the burden of costs. And this is not just a

theoretical curiosity. This actually started within NATO in 1968; and in 1975, it really ramped up, burden sharing improved, and free ridership diminished.

It remained balanced until about 1999. What happened in 1999? Well, NATO decided to stop singing "Kumbaya" and start worrying about regions outside of its NATO collective. They basically moved the public characteristics of defense expenditure very close to the pure public good. And when you are generating more pure public good, there is an incentive for other nations to follow. And the larger forces, the ones that actually do force projection, are going to take a disproportionate amount of the burden.

That's an insight that comes out of economic theory. If we're worried about transatlantic burden-sharing issues, we should go back to the old stuff that we studied in economics. We find there ample evidence of how to structure policies.

We tend to assume that marginal costs are equal for all countries. Eventually more marginal costs would be equal in NATO once we have our doctrine and everything sorted out. The last few countries that have joined are still ramping up to be fully participating members of the defense alliance. The only way that free ridership actually exists is if we make the assumption that marginal costs are equal. But of course they're not; some nations are able to produce defense much more cheaply than others. If, eventually, we start moving into a weighted sum type of aggregation, then the free ridership problem should diminish.

Other recent studies have shown that a driver of defense expenditure is that essentially defense expenditure can be a positional good, a status good for some nations; so it has both positive and negative implications.

So we have these pressing questions: What is the underlying game and strategy? Is Trump credible? Is this threat credible? Is this threat credible given the amount of defense expenditure that's going on in the United States? Economic theory tells us that if they're going to be spending more of the public good types of expenditures, the free ridership problem will not disappear. These are very interesting insights that come out of alliance theory and that we should discuss further.

Panel II: *What Future for the Defense Industrial Base?*

Ethan Corbin:



I'm the director of the Defense and Security Committee of the NATO Parliamentary Assembly, which means I work with NATO parliaments on NATO-related defense questions. Parliaments approve defense budgets and purchasing and often approve troop deployments, so there are reasons to have them looped in and sensitized to near- and long-term strategic environments.

I also work with member state governments on the future of the defense industrial base. I often think about ways and means and ask myself, what ends are we in fact seeking here? Do we have the means to achieve them? What are the ways in which we will be deploying those means?

The new threat environment has been calling attention to territorial defense. This does not mean assembling the static deterrent forces of the Cold War, nor marshalling the post-Cold War push for expeditionary capabilities. Rather, the current view is to have forces capable of projecting security at home; to create a more mobile, dynamic deterrent, but here in Europe, particularly in the wake of the Eastern and Southern flank threats.

This pullback to within national borders has led to a reduction in personnel and in the purchasing of and training in heavy equipment. It has had an interesting effect. While force structures were slimmed down,

the actual amount of spending per soldier dramatically increased, so that the effective capability of that soldier is now quite good.

The shock of the Russia-Ukraine crisis, however, has led to a new focus on increased spending for territorial defense. But this spending is still relatively small, and in many respects more a matter of halting the previous reductions in defense spending than increasing the budget.

The legacy of the 2008 economic crisis has revealed itself to have a long political shelf life. It is still very convenient to talk about domestic economic woes to avoid addressing the significant hurdles to overcome in Transatlantic defense investment and in gearing our industries to confront the new security environment.

From the expression of wants from any commander in the field to the actual launching of the capability now is, on average, about 16 years.

The Transatlantic community, particularly its European member states, are confronted with coming up with a common understanding of threat. The threat environment is far more nebulous than before. The lack of a monolithic threat confuses the security environment and makes it very complex. There's a divergence of perspective of where the threat is coming from—East, South, or even the North. There's a blurring between internal and external security. The need for new domestic conventional defense capabilities, as well as strong demands to develop new creative ways to counter asymmetrical means, requires significant focus on situational awareness, intelligence, surveillance, and reconnaissance (ISR), and new avenues for sharing information. Governments must adapt their defenses to a spectrum of capabilities, and they're being forced to do so within the desperately fragmented defense market here in Europe.

A quick overview of the European Union defense market versus that of the United States shows the degree of lack

of integration in the former. There are 37 types of armored personnel carriers among the E-28; there are nine in the US. There are about 12 types of tanker aircraft in the E-28, four in the United States; nineteen types of combat aircraft in the E-28, 11 in the US.

Another hurdle is the increasing costs and time dynamics of the larger defense platforms today. A great example of this is the Zumwalt destroyer. It was supposed to be the new destroyer for the United States. Unit costs are now at \$7.5 billion per unit; therefore, the US Navy decided to go back to the Aegis class destroyer at about 20 percent of the cost per unit and 10-15 percent of the operating costs. From the expression of wants from any commander in the field to the actual launching of the capability now is, on average, about 16 years.

This doesn't even touch on the problem of the decreasing ability to sustain the costs of operating. Parliamentarians throughout the NATO alliance have told me that, although they were able to find the means to buy a new platform, they soon realized that sustaining and operating it actually would be unaffordable.

So the fractionated market and advancing technology requirements have left very few countries in Europe—really only the United Kingdom, France, to a lesser extent Italy, Germany, and Sweden—capable of developing and launching new advanced platforms.

This begs the question, how has the increasing realization of the need for new secure environments spurred new thinking about breathing new life into a Transatlantic, and particularly a European, defense industrial base or defense industrial cooperation? International, intra-European cooperation is desperately needed. Eighty percent of procurements in Europe and 90 percent of research and technology projects are managed at the national level. The lack of defense cooperation likely costs about \$75 to \$100 billion per year. Joint planning of purchasing and acquisition would clearly bring enormous savings and allow for a richer environment for creative investment and development.

There are now concentrated efforts to mobilize NATO and EU cooperation. A significant component of the process involves rethinking and refocusing existing structures and incentivizing a more efficient and effective European defense industrial base.

We now have several foundations providing mechanisms for European cooperation in defense planning and spending. One of them is NATO's Defense Planning Process, NDPP, which is a voluntary initiative aimed at harmonizing national defense plans. Given Trump's focus on transactional international relations and burden sharing, we now have a demand for annual national plans coming out of NATO. NATO's NDPP is comparable to the EU's Capability Development Plan produced by the European Defense Agency. It tries to identify future capability needs and priorities for joint action and make recommendations for international planning by the EU member states. On June 7, 2017, the European Commission presented the details of the capability of the European Defense Fund, the EDF, which is part of the EDA. It will support defense-related programs encompassing design, definition of common technical specifications, prototyping, trials, qualification, material and material components, technologies, etc.

In response to the limited success of these measures, the EU has decided to develop a mechanism of Coordinated Annual Review of Defense, CARD, due to launch in 2018. CARD would facilitate a coordination of national defense spending and deliver critical capabilities on the basis of agreed upon priorities.

CARD's main aim is to facilitate national defense cooperation here in the European defense industrial base, essentially to make the idea of common capabilities a reality. To have access to the fund, any project would need prior funding by at least 3 companies established within the European Union. Any subsidiary contracting also needs to have headquarters in Europe. Initially CARD established a fund of about €500 million Euros. Even though the idea is right, 500 million towards a joint funding project is relatively small and disappointing.

The establishment of a joint capabilities coordination framework is moving forward in Europe and within NATO, partly because

of this complex interactional security environment, where you see the need for high-powered territorial defense, and also for more soft power mechanisms, from policing to information sharing. These can be well articulated between NATO and the EU. I think we're getting there; we will see a positive impact and a permanent structure of cooperation. The EU Military Planning and Capability Center is a good idea that will allow us to unify the scattered defense cooperation needs in Europe.

We are seeing a drive towards better coordination, better capability, requesting, and cooperation arise in response to the complete inefficiency and the decline of capabilities of NATO member states in Europe. For instance, since the end of the Cold War, Germany's inventory of ships, aircraft, and armored vehicles was cut by up to 75 percent, and there have been significant reductions in both spending and readiness. This year Germany, the Czech Republic, and Romania announced the integration of their armed forces. German forces have declined so far that they are forced to seek brigades from other member states. In an ad hoc way the Bundeswehr is creating European joint forces that may be able to find a way to order common needs.

Challenges remain. Threat perception remains disparate, and that will continue to cause cleavages in strategic understanding of equipment needs and who is going to do what. Defense issues are always very much tied to national interests and national strategies, but they do not have to be divergent.

I find that the public understanding of why we spend on larger equipment and/or common platforms is declining rapidly. A means of sensitizing the public to why the public treasury should be put towards new defense spending and reinvestment needs to be found. I also think that, particularly at the governmental level in Europe, there's a common misunderstanding that joint economic cooperation means jobs will be lost locally. In fact, these larger joint projects can make national economies far more vibrant.

And a final hurdle that I'd like to mention is that CARD, Permanent Structured Cooperation (PESCO), and NATO DPP are voluntary, which means you have to try and find ways to motivate everyone to contribute to make these projects go forward.

Eugene Gholz:



We were asked to talk about the future of the defense industry. I'm not good at the future. I've tried many different things—crystal ball, tarot cards, tea leaves. I always get it wrong. None of these things work. Instead my talk is going to be about how to understand some of the dynamics of the defense industry, particularly in the US.

It is the defense budget cycle that really drives a lot of the defense industry in the United States, whether it's on an upswing or a downswing. On an upswing you get all kinds of pernicious effects that lead to inefficiencies, bad design processes, a whole bunch of problems; while the industry does okay. They race to start lots of projects in the couple of years they've got while things are good. The budget cycle is turning around again, and so in the next few years we're going to launch a bunch of projects, and it's going to make the industry very happy.

But what projects could they be? I really can't figure that out. The Trump administration doesn't really care about details; they just want the headline, the 350-ship navy. They want to have numbers, and that would suggest we're going to buy lots of current technology, like Aegis ships; but even Aegis ships are pretty expensive. The lowest end high-volume stuff they can buy to bulk up numbers is one possibility.

On the other hand, Trump talks about what a disaster the military is. We've got to inject money in it. We're getting killed on technology, and we really need to focus on all the high-tech parts.

So I don't know whether all the money is going to go into quantity-oriented buying of more equipment of current designs, or into some kind of perceived quality increase through lots of new programs. The industry will make money either way.

There have been a couple of surprises in recent years in the defense industry in the United States. The first is that some production lines have actually died out. For the first time since the end of the Cold War, major weapons systems assembly lines have closed even in the last year. The old McDonald-Douglas plant in Long Beach, California, has sold off its equipment at auction. It's gone. The Avondale Shipyard outside New Orleans, Louisiana, tried briefly to make a go of it selling equipment to fracking companies. They thought other heavy industrial equipment could be a market for them; but now they're gone, too. Everyone's been fired; the place is closed down.

That's a big change, because after the end of the Cold War we had a gentle defense budget decrease of half a percent per year on average over 10 years from peak to trough, and nothing went out of business. Even as demand dropped, you didn't see the industry shrink. That was because of the political dynamics.

No individual representative wants to vote to pay for defense; they just want to benefit from the spending of other representatives. They want other people to pay for defense because you can't fail to defend Kansas when you're defending the rest of the United States. There is a public goods/free rider problem with under-providing for defense. But a large assembly plant that employs, say, 5,000 workers and that dominates a district suddenly will make its representative a very strong advocate for continuing defense spending.

So, two cheers for the military-industrial complex (MIC). If you would have under-provided defense absent political pork barrel dynamics, the MIC is what gets you at

least some spending on this public good; you're creating private incentives by lobbying these factories. But it's only two cheers because this approach prevents rational adjustment. You get some defense spending; but as the threat changes, all of those pockets of employment continue to lobby, and you can't cut even those that have become irrelevant.

The other surprise, along with production lines dying out, is that a big increase in Trump's budget proposal was actually for R&D. R&D doesn't evoke the political logic of lots of employees in particular districts very well; R&D employs expensive, high-end scientists and engineers, but only a few hundred of them, as opposed to 5,000 assembly line workers. From that perspective, it's weird that the US fetishizes defense technology and wants to invest in it.

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In the past, there was another religion in US defense realms that surprisingly propped up spending. It was the readiness religion. People got freaked out by the hollow force debate of the 1970s, when some thought we weren't spending enough on training, fuel, munitions, etc., and our forces weren't ready to fight. This led to a very telling point in American politics when a politician could be criticized for not

supporting the readiness of the troops and we felt guilt if the troops had to get sent into battle and weren't perfectly trained and perfectly ready. Now the readiness religion is being outpaced by the technology religion. You see that especially in the famous Third Offset.

The Third Offset is nominally about some AI, sensing technologies in particular, and a real interest in contracting with high-end tech companies in Silicon Valley. But really the Third Offset is the technology religion coming up with a solution to the Chinese anti-access area denial problem. A huge fraction of new spending is going to very high-end technology directed at defending American ships and bases from Chinese missiles. Rather than adapting our strategy to changing Chinese technology, we're throwing lots of money into our confidence in American technology.

It's ironic that we talk about this as an offset. In the Cold War, we decided to use technology to offset the quantitative superiority the Russians posed. Now we're allowing the Chinese to offset us by buying cheap coastal systems and short-range missile technologies; and in response we're spending lots on technology. We're not trying to go around their defenses, as we did with the Soviet numbers in the Cold War; we're using technology through a misnamed offset to fight our way into the teeth of it.

And why is that? I think it goes back to politics. It's foolish to think we're going to re-change US defense spending to contract with a bunch of small Silicon Valley and Austin, Texas-based startup companies that do AI and quantum computing. What we are going to do is buy weapons platforms that incorporate some of those technologies. We won't contract directly with Silicon Valley. We will contract with Lockheed to buy a weapon, and we leave it up to Lockheed to sub-contract for the technology. The politics are in the major weapons systems contracts. The "offset" strategy is about funneling technology money to major defense weapons system programs that are going to allow US aircraft carriers to approach the Chinese coast.

Renaud Bellais:



Within the desire for a robust defense industry which provides solutions that actually contribute to effective security, I want to discuss the way the technological base in Europe and North America could evolve and expand. We have many solutions to overcome the limited size of domestic markets. On the demand side, of course, exports are one solution. Exports work sometimes, but the export markets can be very uncertain and changing. We have also tried some cooperative programs that were not that successful. Those are demand-driven solutions.

If we look at the supply side, what are the solutions? The most conservative approach from the industry is to ask the Ministry of Defense for more money; but that money is not always easy to get.

Next, we could try to make some mergers and acquisitions. This has been done in Europe with some success. We created Thales in France and BAE Systems in Sweden; but most of the aggregation was actually within domestic production activities.

It's the same for transatlantic cooperation and mergers. We had some attempts and some big successes. BAE Systems, for instance, is a huge player in the US market. But BAE is not integrated transatlantically; there are few connections between the eastern and western sides of the Atlantic within BAE Systems. In fact, there have

been very few attempts by European companies to invest in the US, although among those that have there have been a few successes. Thales guidance systems worked for quite a long time; but then Thales was de-merged, shall we say. Airbus is a top ten defense contractor in the US, but among European companies in the US, it is more the exception than the rule.

The supply side seems to offer a twofold solution to save the defense system in that it looks at both the technological concerns of the industry and the way we are developing solutions for our armed forces.

So, how is the industry evolving? We still tend to think of the DTIB as the Cold War DTIB; but the context was quite different then. In the 1950s, most of the platforms we had in Western countries, even in Eastern countries, focused on the then-emerging technologies of electronics, computer science, and so forth. We needed to protect all this knowledge from the other side, so we created a DTIB that was segregated from the civilian economy.

In the 1980s and 90s, we talked about convergence between the civilian and military DTIB as a way to lower costs. When we look at the evolution of technologies, in fact the convergence of industries has been very strong due to the search for ways to use purely commercial content to develop military solutions. But if you speak, for instance, to economists from Dassault, they don't want to develop new airborne solutions; they just want to have a new aircraft, a new version of an old aircraft. This is true in the US, Sweden, and many other countries. Most of the largest suppliers of defense just want to keep their competencies and improve existing platforms. The question is, do those platforms correspond to the needs of our forces? And do we need to have a specific way of developing innovations of technologies to observe the armed forces' needs? In fact, here we do need a convergence, and to some extent the strategy is to try to lower the borders between the DTIB and commercial activities.

Even for the contractor and supplier companies, keeping this system operating is a mistake because if you don't change the way you are working on technologies, you're going to have very bad solutions and be uncompetitive. To convince the armed

forces to change their supplier, you must overcome a legacy of this attachment to the status quo, which is very difficult.

1996 was the lowest point for post-Cold War defense spending in Europe; and if you look at the purchasing power of the major arms-producing countries in Europe, they don't spend very much more today than in 1996. This is because we have had a revolution in production. The mistake in my view is that, even though you need large volumes, you need to have more flexible industrial manufacturing. This revolution with additive production, robotics, and all the systems you can imagine could change the way we are producing. But most companies are very conservative. They keep their own 20th-century approach of building and producing aircraft. A strong revolution is a way to be more relevant, to have shorter series. We don't want to be stuck in long-term series because of unit costs. And then we have less and less effective solutions for armed forces.

We face a big change, and we need to push on that. The environment has changed, needs have been changing and evolving quickly. The changes are not easy to accommodate because we have a very conservative industry and very conservative armed forces. To meet the future, we need our industry to meet the needs of our armed forces.

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This issue consists of edited transcripts of an event held Wednesday June 21, 2017 at the Royal Military Academy in Brussels, Belgium.

The conference sought to address pressing alliance issues, and answer some of the following questions:

While NATO has regularly reaffirmed the need to increase military spending to contribute to the Alliance's security, most countries face several budgetary constraints. Moreover political choices to come will be influenced by deep transformations in the political landscape on both shores of the Atlantic (Trump administration, general elections in France, the Netherlands, Germany...).

The end of ISAF posed a challenge for the future of NATO, since the alliance has to look for renewed goals and a reinforced pact of collective security. Despite several threats, notably from terrorist organizations, and a rising Russian power, it appears difficult to overcome tensions inside NATO that are amplified by a new political environment.

On which ground can we expect to reignite the transatlantic defense partnership? What can be the missions for NATO and other transatlantic initiatives after Afghanistan? How to increase the effectiveness of military spending while keeping fiscal pressure under control?

The conference was co-hosted by EPS, the Royal Military Academy, and the Free University of Brussels. It was made possible by the support of Airbus.

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