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## Military support for Ukraine and the lessons for defence procurement

Ukraine's international supporters have shown commendable resolve since Russia launched its full-scale invasion of Ukraine on 24 February 2022. With few dissenting voices, they have willingly shouldered the burdens of finding alternative supplies of fossil fuels, caring for millions of refugees, and providing arms and munitions to help Ukraine defend itself and eject Russian forces from Ukrainian territory. But as the conflict grinds on, there are grave concerns about their ability to sustain military assistance to Ukraine.

The problem is not the expense or even a lack of will; stockpiles of key weapons and munitions are dwindling rapidly, and some nations are facing tough choices between supporting Ukraine and maintaining the readiness of their own armed forces. And with some key systems, manufacturers will be hard pressed to produce replacements soon enough and rapidly enough to replenish stockpiles and keep up with Ukraine's battlefield attrition and consumption. Not surprisingly, however, as the 45 or so nations providing military aid to Ukraine struggle to sustain Ukraine's armed forces, there are growing doubts about how they would cope with a larger conflict in which their own forces were directly involved.

These concerns are far from new. Numerous studies and reports have pointed to shortcomings in European defence capabilities, notably the lack of key strategic capabilities, woefully poor readiness, and lamentably poor ammunition stocks. The root causes of these problems – first identified well over forty years ago – remain as intractable as ever. In fact, they will never be truly solved, but if they were better understood, policy makers might at least act more urgently on measures that would reduce their effects.

### Defence inflation

One of the toughest problems is "defence inflation". Quite simply, costs in the defence sector rise more steeply than in the general economy. It is easy to understand why, particularly when considering major weapons platforms. Typically, each new generation of platform is packed with more advanced systems, delivering step increases in capabilities. But all that technology comes at a price, so the new systems cost far more in real terms than the older ones that they replace.

Of course, defence procurement is not all about one-for-one replacement. Technological progress can be a real "game changer", revolutionizing tactics, operational concepts and even the nature of certain weapons systems. But the general observation holds: the rising costs of weapons means that inventories of platforms and munitions decline from one generation to the next. It is almost a law of nature that air forces, armies, and navies shrink as each new generation of major equipment is introduced.

Alarm bells started ringing over forty years ago when the phenomenon was labelled variously as "structural disarmament", "the vicious circle of cost escalation" and even "the circle of doom". As far back as 1983, Norman Augustine, an industrialist with a gift for witty, insightful observations, illustrated the point with an absurd extrapolation of the costs of combat aircraft and increases in the defence budget:

"In the year 2054, the entire defence budget will purchase just one aircraft. This aircraft will have to be shared by the Air Force and Navy 3½ days each per week except for leap year, when it will be made available to the Marines for the extra day." [The Cost of Weapons. Defence Spending in a Time of Austerity. The Economist. 26 August 2010]



## Fragmented markets and armed forces

Making matters worse in the context of NATO and the European Union is the fragmentation of defence markets and the inevitable inefficiencies and duplication involved in operating 30 or so sets of national armed forces. For instance, new systems require research and development (R&D) that can easily cost hundreds of millions of dollars before one item is actually produced, and the cost of that R&D is not greatly affected whether the goal is to produce 100 aircraft or 1000, 5 submarines or 50.

The same applies to building the production lines, so if three nations each build their own fighter aircraft, they pay for three separate R&D programmes and three production lines. And, in all likelihood, one production line could meet their total demand, and running all three at less than optimum capacity creates further, needless expense. Put another way, the billions spent on two R&D programmes and two production lines could have been used to buy additional aircraft or used elsewhere in the defence budget.

To give an idea of the scale of the problem, in 2020, an EU report noted that European armed forces operate 29 different types of destroyers, 17 types of main battle tanks, and 20 types of fighter planes, as compared to four, one, and six, respectively, for the United States. Overall, the report noted, EU states operated 178 weapons systems compared with 30 in the United States.

As recently as 2018, speaking at the 54th Munich Security Conference, Jean-Claude Juncker stated that, “In budget terms alone, our American allies are spending twice as much as European defence efforts can drum up. Yet Europeans are only 15% as efficient as our American allies. We therefore need to simplify and improve procurement considerably.” Unfortunately, procurement is only part of the fragmentation problem: operating almost 30 sets of armed forces is inherently less cost-effective than operating one, much larger set. Each set of national armed forces involves a defence ministry, a command structure, military bases, and various support facilities and infrastructure. Viewed as a whole, there is duplication, overcapacity in certain areas, and an inability to enjoy many economies of scale.

Needless to say, the European allies are trying to rationalize their defence procurement programmes to reduce the number of different weapons systems in service, which would cut procurement and operations costs, and boost interoperability. But progress is slow due to factors such as difficulties in agreeing on common specifications and the understandable desire to protect national industries and jobs.

Great efforts are also being made to “pool” facilities and resources, and in certain cases – such as the maintenance of hi-tech aircraft – there is no alternative. It would be prohibitively expensive and wasteful for each operator of a small inventory of F-35s to install a complete maintenance and support infrastructure. But no amount of pooling and sharing can change the basic fact that operating 30 sets of armed forces is inevitably less cost-effective than operating one set with the same aggregate capacity.

## “Potemkin” Armed Forces

Where “like-for-like” comparisons are possible, the capabilities of individual weapons systems increase dramatically from one generation to another, and the growing ability to integrate their operations provides further leaps forward in effectiveness.

As mentioned, this capability – literally – comes at a price, so the size of armed forces and the number of their major weapons platforms consistently decline relative to the defence budget. But “headline” force levels provide an incomplete and often optimistic impression of the capabilities that are actually available. For instance, a static count of combat aircraft might give little or no indication of how many are ready to fly and fight, nor how long for.



But few people look deeper than those headline figures, and it is only when a crisis comes to a head or an investigation digs a little deeper that a sobering truth emerges: the proportion of platforms that are ready for action can be alarmingly low, and the shelves of warehouses containing basics such as ammunition can be surprisingly empty. The result is all too familiar: reports about “hollowed out” armed forces, shortfalls in stockpiles of weapons and munitions, and armed forces whose performance in battle seems destined to fall short of their promise on paper and on the parade ground. The difficulties in delivering assistance to Ukraine have shown that such reports are well founded, and that remedial action is long overdue.

## Technological Revolutions and Globalization

Unfortunately, these well-known problems are compounded by other trends which have had unintended consequences. While relentless technological progress has led to astoundingly effective weapons systems, the manufacturing process has become far more complex and time-consuming. Advanced materials and sophisticated components take time to produce and then assemble, so that lead times can be measured in years - even for essential munitions. Furthermore, globalization has meant that the West's manufacturing capacity has declined dramatically, limiting the scope for adapting and repurposing production facilities. National engineering skills and facilities are simply much scarcer than they used to be.

Hard data is difficult to come by, but it certainly seems reasonable to assume that the West's ability to step up the pace of manufacturing military systems and equipment has been adversely affected by outsourcing so much industrial production, notably to China.

## Moving ahead

Efforts are being made to reduce the fragmentation and duplication of defence establishments, particularly within Europe, but progress is slow, and there are limits on what can be achieved: there is simply no realistic prospect of 30 or so national efforts being integrated into a single entity. Even so, national defence planners and policy makers should be urged to make every effort to harmonize their system requirements with those of allies and to prioritize cooperative, international defence procurement solutions. “Going it alone” prolongs fragmentation for another generation and should be seen as a last resort. And efforts should be made to ensure that national sacrifices made on one project are balanced by rewards on others.

Regarding inadequate munitions stockpiles and poor readiness, numerous reports, investigations, and even materiel shortages revealed in operations seem to have had little effect, but the all-too-obvious difficulties in provisioning Ukraine's armed forces should be impossible to deny or ignore.

Here again, efficiencies should be sought through cooperative procurement and divisions of labour where possible, but there is no escaping the fact that building up inventories will be a major, ongoing budgetary challenge. Munitions have a finite shelf life, so stocks would have to be regularly replaced. And if Ukraine's experience is anything to go by, stocks of some munitions should be equivalent to several years of manufacturing output. To cite just one example, at one point, Ukrainian forces were using as many Javelin anti-tank missiles per day as would normally be manufactured in the United States in three months.



Realistically, therefore, even though a strong case can be made for increasing defence spending, particularly on those “behind the scenes” elements that would increase force readiness and sustainability, stockpiles are likely to remain problematic. But as well as throwing money at the problem, more emphasis should be placed on “usability” figures.

NATO’s famous Defence Investment Pledge sets 2 percent of GDP as a spending goal, with 20 percent of that to be devoted to major equipment, and it has been used to “name and shame” - well, certainly “name” - those not reaching the goals. But for defence planning, NATO also has metrics for assessing “outputs” - capabilities - although it does not make public how forces measure up on those metrics related to usability. (A detailed catalogue of armed forces’ weaknesses and shortcoming problems would be a gift to an adversary.)

Nevertheless, publishing some form of crude assessment – perhaps a ranking by country or a readiness/usability “pass” or “fail” – could have a motivational effect as a supplement to – and not a replacement for – the Defence Investment Pledge. In addition, the defence procurement “machinery” in some countries is in need of reform.

Volumes have been written about slow, cumbersome procurement procedures and practices, which are based on development cycles spanning decades. That might still be unavoidable for certain “big ticket” items, but the conflict in Ukraine has produced many instances where systems have gone from the drawing board to the battlefield in a matter of weeks. Certainly, there is scope for a more “agile”, streamlined process for certain categories of defence items.

At the same time, it would be worth taking a fresh look at the definition of “performance”. Western armed forces are – in general – prepared and equipped on the assumption that conflicts will be short and intense, and best waged using the most capable – and expensive – weapons systems. But in wars of attrition, “capability” is also a matter of production rates, cost-effectiveness, and sustainability. In other words, advanced Western military systems might well be the most effective in the world, but only while stocks last. Perhaps, therefore, ease and speed of production should be included in the capabilities mix, alongside more familiar measures such as speed, range, endurance, accuracy, and lethality.

Another consideration might be labelled “asymmetric leverage”. As the conflict in Ukraine has demonstrated, certain systems – various drones among them – can be remarkably inexpensive but nevertheless compel an adversary to incur disproportionate costs. Onslaughts with cheap drones, for instance, have compelled Ukraine and its supporters to invest more heavily in air defence systems, and Ukraine must also assign personnel and resources to national air defence, making them unavailable for tasks elsewhere. Put another way, if a \$20,000 attacking drone is intercepted by a million-dollar air-defence missile, the attacker will not see that as a failure.

In sum, the conflict in Ukraine has underlined well-understood shortcomings in Western provision for defence, from procurement right through to operations. Most of the solutions are equally well understood but were largely neglected when the end of the Cold War changed the defence funding environment and reduced the priority attached to defence matters.

Times have changed, and today’s policy makers should lose no time in addressing the structural impediments to a more streamlined, efficient approach to providing for collective defence and deterrence.

And for maintaining their support for Ukraine.