

Russian Economy, Technology and Military Power

This article is part of a debate between Alexander Lukin and myself that has been conducted on “The Asan Forum” internet site about Russia’s position in Eurasia.

See: http://www.theasanforum.org/category/alternative-scenarios/?post_id=9372#slide_header

Alexander Lukin, in his Positive Scenario 1, writes that “the course to transform Russia into an independent Eurasian center of power and world influence has today become the official policy of the Kremlin and the main direction of thought of the majority of Russian experts on foreign policy strategy”.^[1]

In my first essay I took quite a broad approach and now have little to add, except to reiterate several of my views by saying that Lukin is extremely optimistic when he talks of a “boost to the Shanghai Cooperation Organization” and the possibility of “a division of labor between the Eurasian Economic Union and the Silk Road Economic Belt or, more broadly, the Greater Eurasian project and the Belt and Road Initiative”.

In this essay I want to focus on Lukin’s argument that “Russia’s military might is fully in keeping” with its Eurasian ambitions, “but its economic development still noticeably falls short”. That is, they are dragging each other down.

In my view, Russia’s “military might” and “economic development” are related with efforts to boost the former presently adversely affecting the latter, and the latter adversely affecting the former.

Let’s consider the “military might” issue first.

Russia’s military could be used against another country in Eurasia, or to defend another country in Eurasia from a third country which may or may not be Eurasian. For example, sometime in the future Russia might decide that it needs to take military action against China or Afghanistan, or defend itself against either. Or, if Russia decides that it needs to defend Afghanistan against China or the US, the conflict - particularly if it involves the US - could partially take place outside of Eurasia. Moreover, the intensity and duration of any conflict is impossible to predict.

A country in Russia’s position, bordering on many countries, and facing multiple possible threats ranging from terrorism to nuclear conflict, needs to be prepared with a broad range of military capabilities.

The danger of focussing too much on a narrow range of anticipated threats is something that US policy makers have now re-learned, and is impacting their own planning. After the 11 September 2001 attacks in the US, its defense focus was on terrorism (and regime change) which led to military action in Afghanistan and Iraq. However, the US National Defense Strategy now says: “Inter-state strategic competition, not terrorism, is now the primary concern in U.S. national security.”^[2]

So, how real is Russia’s “military might” and how sustainable is it?

Earlier this year, General Valeriy Gerasimov, Chief of the Russian General Staff said: “As new realms of warfare appear, the methods used in contemporary conflicts are more and more often shifting toward fusion of political, economic, informational, and other non-military measures, backed by military force.”^[3] Gerasimov then added: “Nevertheless, the main content of military strategy is the preparation for war and its conduct, first and foremost using the Armed Forces.”

In this essay, I will concentrate on the “military force” aspect of “warfare”. Moreover, I will not attempt to look at issues of military doctrine or strategy. I will only consider the effect on Russian military capabilities of broader technology and economic issues, as well as the interplay between the two.

In my view, Russia is likely to remain comparatively weak in military technology and economics unless it adjusts many of its policy settings.

Russia can presently mobilise a very large number of armoured vehicles which could be used in the Central Asian part of the Eurasian land-mass, although the focus is on its Western periphery.^[4] Since the conflict with Georgia in 2008, Russia's ground combat capabilities have particularly benefited from reorganization,^[5] updated weapons and investments in electronic warfare.^[6] Russia can also clearly use its air-force to bomb weakly defended targets in a larger geographical area, and does have some powerful technically advanced offensive and defensive weapons.

Nevertheless, according to Aleksandr Golts, "the legacy of the Soviet Union is still very much present in the modern Russian army, as many of its cutting-edge systems "are the development of good, old Soviet systems and the modernization of that type of technology".^[7]

Having visited quite a few Russian companies (including factories) in the early/mid-1990s, I put the view in 2001 that one of the main reasons for the collapse of the Soviet Union was that "the industrially centrally managed economy was struggling to cope with the move toward advanced electronics, services (and "information") activities. The gigantic factory approach of Russian central planners, workable for an earlier simpler age, was incapable of taking the Russian economy further".^[8]

That is, the Soviet Union had trouble taking advantage of the Third Industrial Revolution, when production moved from "logic and functioning" that were generally "directly observable and understandable" to the beginning of the information age in which so much is unseen.^[9]

According to Gustav C. Gressel, the 1990s "provided a window of opportunity for the defense industry to catch up in sectors where the Soviet industry traditionally lagged behind. The computing revolution increased the availability of commercially available hardware, allowing Russia to modernise legacy systems with advanced electronics, sensors, and communication equipment. This has been the core of Russia's modernisation efforts of the last two decades."^[10] Indian analysts also believe that Russia, even to now, has maintained very significant defense technology proficiency in metallurgy.^[11]

Upgrading existing major hardware platforms with continuously improving bits and pieces is, of course, not exclusively a Russian issue. The US's B52 bomber produced in the 1950s is still in service and continues to be upgraded, perhaps for several more decades.^[12]

The more general problem for Russia is that modern weapons systems (along with technology generally) are rapidly growing in complexity. Russia lacks both a diverse commercial technology base and ready access to foreign technology that it could support the production of domestic high-tech modern weapons. One indication of this is the very low level of complex manufactured products in its exports, with "high-tech" export items being very rare.^[13] This is more than just a function of Russia's so-called "resources curse", as a country rich in resources such as Australia still manages to have a reasonably sized high-tech export sector (with much of it based on the SME sector).

US analysts say that its "defense leaders are increasingly aware that the impetus for innovation for much of the next generation of military equipment, both hardware and software, will come from the commercial sector and that this sector is increasingly globalized. This is particularly true with respect to information technologies, software development, artificial intelligence, robotics, and the biological sciences."^[14] Thus, the US is working to increase its access to and ability to use technologies being driven by the commercial sector,^[15] and the Chinese are doing the same.

However, it must be conceded here that there is some debate on just exactly how important such a commercial industrial base really is, and this may arguably be relevant to Russia.

Andrea Gilli and Mauro Gilli (writing mainly about China's efforts to imitate and steal foreign military technology) argue that modern weapons systems continue to become so

complex^[16] that simply possessing a generally high-standard commercial industrial and technology base is less sufficient than in the past for achieving specialized military innovation and production because of the many special requirements of the latter.^[17]

They say that “defense and civilian industries have come to differ dramatically, to the point that even realms such as defense and commercial shipbuilding or aviation have limited opportunities for synergy”, and say that “even the defense and commercial divisions of companies like Boeing enjoy limited opportunities for synergies”.^[18]

Yet, they also point out that the Aegis anti-missile defense system, “one of the most advanced military technologies of the U.S. Navy”, which was “fielded in 1983” - and which “remains unrivalled in the world” - “relies on dual-use technology for more than 75 per cent of its components”.^[19]

Whatever the exact situation with individual military items, the Gillis persuasively argue that a solid commercial industrial and technology base is not sufficient for modern military innovation and production.

However, in my view, it is still very necessary. There may not be horizontal synergies, but there will be many common vertical roots.

It is just unrealistic to believe that all such technological development occurs only in military factories and defense research centres. A lot of it, including the basic development of a broader labor force skilled enough for selected workers to be moved into specialized military production, will depend directly or indirectly on developments in the supply chains for production of consumer and other industrial goods.

Many of the best students entering technical universities will not be attracted to the production of military goods and services -just ask Google about Project Maven^[20] and its response to AI^[21] – but their commercial work will help build and country’s technology base, and ultimately military production capability. Even if the use of dual-technologies is as limited as the Gillis suggest, some of these innovations will then be further developed for specific military application.

It is unclear how future technology developments, particularly those associated with the so-called Fourth Industrial Revolution, will affect Russia, but some of the signs are not good. For example, according to a recent report by FOI, the Swedish Defense Research Agency, Russian machine tool builders “have so far overlooked the on-going paradigm shift, where especially high-end machine tool companies are transforming from being merely manufacturers to becoming ‘process solution partners’ that are more or less integrated into their customer’s entire business and manufacturing processes”.^[22]

According to Andrey Kolganov at the MGU, there is now only experimental production of “industrial robots”.^[23] Of course, this does not mean that the Russian military is uninterested in robots. In early 2019 General Gerasimov said that “the next direction of research is related to the large-scale of military robotic systems, starting with UAVs, to contribute to a wide range of missions”. Instead, it probably means that is insufficient appreciation in the Russian security-defence establishment of the role of commercial activities ultimately contributing to military capabilities.

Writing in early 2017, Andrey Frolov, Editor-in-Chief of “Arms Export” magazine, said that “if the sanctions against Russia persist for a long time, the Russian defense industry may again seek full autarky, which would have a negative impact on its innovative potential in the long term”.^[24]

Frolov, again writing in a late 2017 ISS report, says that “one of the main problems with import substitution is the lack of a modern machinery base for the production of goods to replace those previously acquired from abroad”. It says that “this is emerging as one of the most important issues, especially under the current restrictions on obtaining new machine tools suitable for the production of military products and dual-use goods”.^[25]

Fearing the effects of continued foreign sanctions, the Russian government has attempted to be pro-active and promote domestic production of machine tools. The FOI report says that “the government’s efforts to ban foreign-made machine tools in military-related production have turned out to be futile” as “most defense companies have either chosen to deliberately circumvent the import ban or to abstain from their planned capital investments”. The latter response obviously has long-term consequences that will often remain hidden in the short-term.

The FOI report adds that it “seems highly likely that production within Russia’s strategic industries - particularly within the defense industry - will rely, by and large, on foreign machine tools well into the 2030s”.^[26] Moreover, most imports are at the high-tech end of the machine tool market where, as notes by the Gillis, technical specifications for defense product output tend to be extremely precise.

Gressel says that the increasing cost and complexity of weapons is leading “medium sized powers” (such as France) to co-operate more with other countries. “But”, he says, “that is not the Russian way. So far Russia is prioritising independence over efficiency. Given the nature of the Kremlin’s foreign policy and its reluctance to engage in deepened cooperation with other states, Russia has failed to build a permanent and structural partnership with any other international player.”^[27]

In contrast, the US approach seems to be that “a 21st century” defense industrial base must be “international”. According to Daniel Goure, “the pace of globalization in the aerospace and defense industry is quickening. In part, this reflects the great expense involved in many large aerospace programs”, and “in part, this also reflects the reality that many foreign countries, particularly US allies in Europe and Asia, now possess critical design skills, production capabilities, and products.”^[28]

“In the case of the F-35 Joint Strike Fighter”, according to Goure, “eight foreign allies are part of the consortium to develop and build the aircraft.” Although in some cases, international politics rather than technical capacity may be a major consideration. For example, according to F-35 program manager Vice Adm. Mathias Winter around 6 or 7 percent of parts are made in Turkey.^[29]

Having said all this, the international open source nature of much advanced software^[30] means that Russia’s defense industries will always have an international input.

So, in the final analysis, is Vladimir Putin’s emphasis, in an early 2018 speech to Russia’s Federal Assembly, on a limited number of powerful hypersonic nuclear and a few super-punch weapons a sign of strength or weakness?

Some Russian policy makers seem to see such talk as a sign of strength. Former foreign minister Igor Ivanov said that Putin was really offering an “olive branch” and wanted to get the US to negotiate.^[31] But given the overall assertive Russian foreign policy stance outside of Eurasia and the present US perception of Russia, the reality is that it is likely to have the opposite effect.

Here it should be noted that General Gerasimov, when talking about the “new types of weapons”, says that “sufficient numbers will be deployed to ensure deterrence” and that “there is no doubt we are clear leaders in this field when compared to technologically advanced countries”.^[32]

But, as Andrea Gilli and Mauro Gilli note, “the history of military innovation is, in the end, the history of innovation, counter-innovation, and further innovation”.^[33] Or, between better swords and better shields.

It may be that technology is at such a stage that the shield has permanently lost the battle, but the US is clearly not prepared to accept this as it explores the possibility of using laser and micro-wave shields against hypersonic missiles.^[34] If the US cannot quickly develop such shields, it is likely to take advantage of the relative size of its economy, and simply produce

more swords than Russia. That is, more hypersonic weapons aimed to take-out Russian launch pads as soon as possible.[35]

China, despite present good relations with Russia, is likely to react in the same way as the US. Gerasimov's confidence that the "new types of weapons" will "allow Russia not to be drawn into an arm's race"[36] is very optimistic, to say the least.

Moreover, Russia is hardly likely to use such weapons in defense of another Eurasian country, so they do little to increase its attractiveness as an Eurasian pole.

Alexander Lukin writes that "on the basis of its political and military prowess, Russia is having partial success in being recognized as an autonomous pole in Eurasia". Despite some claims that Russia can be a "security provider", it is hard to think of any Eurasian country that might view Russia in this way. China fully intends to be its own security provider, although it will be grateful if Russia can play a role in helping keep things quite in its Central Asian backyard.

And, other Eurasian countries should not expect support from Russia in any disputes with China!

Lukin wrote that "coverage of Russia's economy is beyond the scope of this scenario", but then he continually refers to Russia's actual and prospective economic performance.

The best that he can say is that "the economic system of today's Russia, to a large degree, corresponds to the Eurasian ideal" where "all transformative historical reforms were done with the help of the state, which played the most active role in the economy".

There is considerable truth in this statement when it comes to the initial industrial development of Japan, South Korea and China, and it is also the case that defense requirements were the basis for or pushed the development of many modern-day technologies. But, as noted earlier there is evidence of "radical change" with general technology innovation often outpacing military innovations in many areas.[37]

My own view is that Russia should concentrate on taking greater advantage of its natural resource base in a similar way to that done by Australia to maximise its total economic output and wealth. I set out in detail the reasons for this view in my 2016 report on Russia's National Technology Initiative.[38]

However, such a strategy is most effective if a country also has ready access to advanced foreign technology (and labor skills) which it can directly use or adapt to its own specific circumstances, and if the country can be acceptably integrated into international production supply chains.

The rapid advance of 5G illustrates Russia's predicament.[39] The hardware (and associated software) is so complex that pulling it apart and understanding it in order to ensure that it has no malicious capability is leading some countries to ban or severely restrict the use of Huawei products. (This is similar to the situation that the Gillis note with Chinese attempts to imitate US military technology.)

Russian "state" led efforts - corresponding to the Lukin "Eurasian ideal" - to develop a complete domestic 5G production (hardware and software) capacity would only lead to a second or third-rate product. China might be able to become self-sufficient in 5G because of the size of its market and its extensive manufacturing base, but the Russian funds can be better allocated to taking advantage of its natural resources.

All this does not mean that Russia should not aim to develop an advanced military-technology sector. What it does mean is that excessive efforts in this direction - particularly the "full autarky" mentioned by Andrey Frolov - will have an adverse effect on Russia's total wealth creation and, in the final analysis, on Russia's ability to spend money to defend itself in a sensible and measured way.

Taking the machine tools example further: "Is Russia prepared to cultivate sufficiently good relations with the West to get what it needs in high-end machine tools, or will it make do with

what it can find from wherever it can get it? Either of those choices might in their own way deny Russia from meeting its long-term geostrategic goals.”^[40]

Foreign sanctions on Russia and Russia’s own pride in its self-sufficiency are ultimately negative factors for both its total military prowess and its total economy. A more balanced policy approach is needed if Russian realistically wants to be an “independent Eurasian center of power and world influence”.

This does not mean that Russia should surrender its national security interests.

In my view, Russian had considerable justification for the annexation of Crimea given the actual and professed expansionist ideas of NATO. However, instead of logically offering some form of apology and compensation after the event, Russia clearly supported Ukraine separatist forces with extensive military support.

This great emotion with its mainly Soviet Union historical roots is Russia’s Achilles heel, and one of the reasons it cannot be a pole in Eurasia. Most of Eurasia was never part of the USSR, but the present Russian leadership cannot accept this fact nor the possibility that it may have been different.

Apart from the technology and natural resource aspects, the best way for Russia to have a stronger economy is to concentrate on building the rule of law and honest institutions. I first wrote about this in 1992 when, after my second visit to Russia, I said that there was “too little emphasis on the need for rapid and vital reforms in the accounting, banking and legal spheres, including anti-monopoly legislation” and it was “is almost as if this very important component of an effective market economic system will rise by itself”.^[41] Russia has been making progress in some areas, but very little in others.

A recent AT Kearney report on “Russia’s readiness for the Fourth Industrial Revolution” concludes that Russia’s “economy risks becoming less competitive over time if it does not make major improvements to its institutional framework, its technology and innovation”.^[42]

In conclusion, in this essay I have tried to demonstrate that Russia’s “military might” is not “fully in keeping” with its ambitions to be “an independent Eurasian center of power and world influence”, and that many of its official policies aimed at achieving this “military might” are adversely affecting its “economic development”. This, in turn, ultimately adversely affects “military might”.