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INCENTIVES MATTER: MILITARY PROCUREMENT PROBLEMS IN INDIA, MALAYSIA, AND THE UNITED STATES

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Controversies rage over military procurement around the world. Few are ever fully satisfied. Taxpayers and politicians who fund it are often displeased with the cost overruns, performance shortfalls, and sheer waste that seem to go hand in hand with it. Government professionals are no less frustrated. They include members of the armed forces, who may go into battle not as well prepared as they could be, and procurement specialists, who feel that their attempts to manage the military procurement process are constantly being undermined. Even defense companies are frustrated by military procurement's seemingly needless complexity that impedes them from more efficiently delivering innovative products and services.

Here we will examine some of the common reasons why democratic societies have had trouble efficiently managing military procurement. Some are evident; others are less so. We will also broadly look at how the histories and political cultures of India, Malaysia, and the United States have shaped their military procurement practices in different ways.¹

COMMONALITIES

From the outside, the government departments and ministries that are responsible for national defense can seem like monoliths. But they are not. They harbor a host of bureaucratic interests. These can create incentives that complicate military procurement programs, such as one for a new jet fighter. Unlike the private sector where a company's units may vie for resources to expand future revenues, government units are locked in a constant struggle against one another for resources that have little or no future revenue generation potential. That is especially true in the case of military procurement, whose output are combat capabilities that most governments hope never to use. The intense competition for limited resources (particularly in times of budgetary constraint) naturally incentivizes military organizations to overestimate capabilities that can be acquired and underestimate the cost of acquiring them at the programmatic level.

¹ We will avoid the military procurement practices of autocratic countries, because they tend to have idiosyncratic priorities that are driven by factors other than national defense.

Such tendencies can result in “program creep,” the incremental expansion of procurement programs over time. Sometimes it happens when an initially underestimated program’s budget is reflat. At other times, it occurs when requirements for new capabilities are added to a program. The reasons for that can vary: a program’s originally optimistic requirements may have needed to be expanded in order to reach its desired capabilities; or new intelligence about an adversary’s capabilities may have prompted a reappraisal of a program’s requirements; or a military organization may have reckoned that it could gradually turn “nice to have” options into real requirements after its base program is funded. Whatever the case, new requirements not only increase costs, but also delay (sometimes for lengthy periods) the completion of procurement programs.

Of course, military organizations must manage many procurement programs in a given year. At the same time, they are encouraged to spend all of their budgeted resources each year, because much of their budget is allocated annually. The combination of these two factors incentivizes military organizations to “over program,” contract for more than their allotted budget. Realizing that some of their programs might be delayed or derailed (causing the resources devoted to them to go unspent), military organizations are motivated to order more capabilities than they can afford in order to ensure that as much as possible of their budget is spent. Ironically, if too many of their programs are efficiently managed, military organizations may run short of resources or be forced to rein in successful programs.

Like other government organizations, military ones, if left to their own devices, tend to seek greater procurement, unless constraints are placed around what capabilities they really need. Regular strategic and doctrinal reviews can help do that. If done properly, they can clearly define what military organizations should (and should not) be designed to do.² But military organizations need not view such reviews as necessarily restrictive. The U.S. Army and Air Force certainly benefited from their development of the Air-Land Battle doctrine in the 1980s. It clearly laid out how American ground and air forces would cooperate to defend Western Europe from a Soviet attack and focused resources on that effort. Stealing a page (if not the name) from that, the U.S. Navy and Air Force recently developed the Air-Sea Battle doctrine to help them not only conduct joint operations in the event of a Pacific conflict, but also support their budgetary requests.

A second set of misaligned incentives can be created by how government units that oversee the military procurement process are organized, even in the absence of inter-service rivalry. For example, natural conflicts can emerge when a unit that is responsible for evaluating acquisition costs is separated from another that is charged with managing the costs of operations and maintenance. The former may seek to optimize immediate acquisition costs without serious consideration of long-term costs. The latter may do precisely the opposite (if they are properly staffed to do so at all). Whichever unit exercises greater influence over the procurement process is likely to skew the results. If the former is favored, procurement of inexpensive equipment could eventually prove to be exorbitant if it is costly to operate and maintain. And if budgets are constrained, those higher operations and maintenance costs will gradually crowd out funding for new kit in the future. On the other hand, if the latter is favored, military organizations may receive equipment that fails to meet their capability requirements.

A third set of misaligned incentives is sometimes created by those charged with improving the military procurement process. In their attempts to correct past problems with the process or simply make it more efficient, they naturally favor some solutions over others. Since military organizations want to maximize the likelihood that their procurement requests are approved, they are incentivized to shoehorn their requests to fit those favored solutions. One area where that can be seen is in the preference toward certain contract types.³ Sometimes fixed-price contracts are favored and at other times time-and-materials contracts are in vogue. Since it may be easier to get contracts approved using a favored contract type, military organizations are incentivized to maximize the use of that contract type to speed up the procurement process. But the sheer diversity of military procurement programs invariably leaves many of them with ill-suited contracts, making their execution more burdensome.

Finally, sometimes even well-aligned incentives can lead to public controversy. For example, procurement

² To be a truly useful guide for military procurement, a strategic review should sharpen a military organization’s goals, rather than stretch them to justify its existing programs. Unfortunately for the United States, its Quadrennial Defense Review sometimes veers in the latter direction.

³ In the United States, there are at times favored “contract vehicles.” These are methods under which a vendor can sell its products or services to the government, and can include GSA contract schedules, public procurement contracts, sole source contracts, etc.

specialists seeking to obtain the best value for the government may knowingly incur periodic cost overruns in the military procurement process. That might sound contradictory. But when funding a new program, procurement specialists have several options. They could allocate an amount that they are certain will accomplish the task. But in doing so, they forfeit possible savings that defense companies could have implemented to reduce costs. On the other hand, they could try to maximize savings by allocating an amount that they are certain will *not* accomplish the task. That surely pushes defense companies to cut costs, but perhaps so much so that it causes performance shortfalls. Moreover, since only a small number of defense companies can actually do particular tasks (like build a jet fighter), an overly tight budget might prompt them to either try to recoup any financial losses on future contracts or merge with other companies to further reduce costs (and, in doing so, reduce future industry competition). Procurement specialists have a third option: allocate an amount between the two extremes. By accepting some uncertainty in the ultimate procurement cost, they can pressure defense companies to devise new ways to deliver products and services at lower cost. However, they must accept that the ultimate procurement cost could be higher than their initial allocation—in other words a cost overrun.

Past the executive branch of government, there are ways the legislative branch can impact military procurement too. A few are obvious. Legislators might short-circuit the military procurement process and choose less expensive options or those with lower capabilities in order to shift resources to non-military programs, even though the options they choose may cost more in the long run and the acquired capabilities may not meet military needs. Conversely, legislators have been known to procure products and services for the military, which the military did not request. But in doing so, they could benefit their local constituents or districts with defense contracts.⁴ By the same token, defense companies also use such “pork” to entice legislators to fund their products and services.

There are also less obvious ways legislators can impact military procurement efficiency. For example, when legislators cut a procurement program, they can do so in two different ways. They could entirely eliminate a program. But they dislike doing so, because of the harmful impact that might have on local defense employment. Instead, they would rather slow the rate at which a program is carried out or trim its output (perhaps reduce the number of jet fighters). Unfortunately, choosing the former raises overhead costs, which must be funded for a longer period, and opting for the latter loads a program’s full development costs onto a smaller number of, say, jet fighters. No wonder then that in both cases the cost of a jet fighter can soar.

Issues entirely apart from the government can also impinge on efficient military procurement. One of the biggest is the structure of a country’s defense industry (and increasingly the global defense industry). Competition among defense companies generally contains costs. But since the end of the Cold War, the number of defense companies has declined. Companies around the world have consolidated in response to the lower rates of military procurement and the rising sophistication of military technology that demands bigger financial investments and a wider array of technical expertise. Given further specialization within the defense industry, near monopolies have been created in some weapon system categories. Even the United States, which has a larger number of defense companies than most other countries, has struggled to keep military procurement costs from growing faster than inflation. Government policies that it put in place to promote competition and second sourcing can only do so much when there are only one or two potential vendors. That is particularly true for high-complexity, low-volume procurement programs, such as nuclear-powered aircraft carriers or strategic bombers.

Some countries have created state-owned or state-subsidized arms manufacturers in an effort to produce world-class military technology at reasonable cost and improve their national security by ensuring domestic sources of military hardware. Sadly, these efforts have generally disappointed. In fact, their costs are often higher and their technological sophistication lower than those of international defense companies. But given their status as national champions, these entities are typically favored in domestic military procurement tenders. As a result, they do not have as great an incentive to be as cost conscious or operate as efficiently as their competitors. Indeed, some become harbors of political patronage. Only a handful of countries have successfully created internationally-competitive defense companies, like Russia’s Sukhoi and Singapore’s ST Kinetics, from formerly state-owned arms manufacturers.

⁴ While modern armaments often have lives measured in decades, legislators face election far more frequently. The difference in time horizons can misalign incentives and distort military procurement decisions.

Another major military procurement issue, especially for countries that import most of their armaments revolves around exchange rates. Since countries must pay for imported arms, like any other imported goods, with local currency that is converted into a foreign one, the rate at which that exchange takes place is very important. A stronger local currency means a country can buy more from abroad; a weaker one means it can buy less. To see the impact exchange rates can have on military procurement, one need only to recall India's experience in the early 1990s when a balance-of-payments crisis caused the value of the Indian rupee to precipitously fall. Higher import costs for new weapon systems, spare parts, and fuel not only wrecked India's military modernization at the time, but also dented the operational readiness of its existing forces. More recently, the Bank of Japan's aggressive monetary expansion has caused the value of the Japanese yen to plummet in 2013. That has undermined Japan's Air Self-Defence Force, whose future rests on the American F-35 Joint Strike Fighter. Under a June 2012 foreign military sales agreement with the United States, Japan purchased its first four F-35 fighters for ¥10.2 billion each, at the then-prevailing exchange rate of 82 yen to the dollar. But since then the Japanese yen depreciated to an exchange rate of 105 yen to the dollar. As a result, each new fighter now costs ¥12.9 billion, over 25 percent more. Worried about rising costs, Japan has begun to consider stretching out its total purchase of 42 fighters from 2021 to 2023.⁵

There are no easy solutions for these military procurement problems. And the particular histories and political cultures of individual countries complicate them further. We will briefly survey some aspects of these in India, Malaysia, and the United States to see how they can influence their military procurement practices.

INDIA

India is the world's largest democracy. It is also one of its most socially fragmented with a population divided along religious lines and by scores of different languages. To promote greater national cohesion and economic development, Indian leaders chose to concentrate political and economic power in a strong central government soon after their country's independence. Eventually that central government grew into a sprawling bureaucracy with a predilection for heavy-handed regulations. By the early 1990s, India began to implement reforms to free itself from some of those government controls, which had become a maze of laws and licenses.

As part of that effort in 2002, India revised its military procurement process and set up its streamlined Defence Procurement Procedure, which aimed to bring greater consistency and transparency to the country's military procurement practices. But the Indian government did not give up on its ambition to create a domestic defense industry. To do so, it shifted its policy from one of import substitution to one of offset obligations—requiring foreign defense companies to source a percentage of their contracts from Indian defense suppliers. Such reforms have met with some success. One example was Hindustan Aeronautics Limited's licensed manufacture of Su-30MKI fighters from designs and subsystems shipped from Russia.

However, cases like the Arjun main battle tank program still linger. In 1972, the Indian army sought to replace its aging inventory of Vijayanta and T-55 tanks. The Ministry of Defence turned to the state-owned Defence Research and Development Organisation (DRDO). But DRDO took so long to develop its Arjun tank that the army was forced to repeatedly update its capability requirements to match advances in global technology. But every change to the tank's requirements complicated DRDO's development process and led to rework that further delayed the program. Finally, 37 years after its inception, the program began to deliver its first batch of 124 tanks in 2009. And although a second batch of 124 tanks was ordered the next year, the total is still far short of the several hundred tanks that the army originally envisioned.

At other times, the Ministry of Defence's bureaucracy has seemed willing to paralyze its own military procurement process in order to shield itself from the taint of corruption. That certainly appeared to be true of the Indian army's 27-year struggle to acquire new artillery. In the late 1980s, then-Prime Minister Rajiv Gandhi and other senior officials were implicated in a corruption scandal in which they were alleged to have received kickbacks from Bofors, a Swedish defense company, in return for a government contract to procure its 155mm howitzers.⁶ Ever since the Ministry of Defence has been sensitive to any hint of corruption. But rather than find a way to maintain their

⁵ Paul Kallender-Umezu, "Japan Might Delay F-35 Purchases," *Defense News*, Jun. 10, 2013, <http://www.defensenews.com/article/20130610/DEFREG03/306100018/Japan-Might-Delay-F-35-Purchases>.

⁶ Ironically, the Indian army's best-performing artillery pieces in the Kargil War were Bofors' 155mm howitzers that India acquired in 1986.

vigilance while still meeting the army's need for artillery, the Ministry of Defence exhibited a "penchant for blacklisting foreign arms producers [suspected of corruption] without considering the negative effects it has on India's military preparedness," in the words of one Indian senior officer.⁷ Even after the Indian army's lack of modern artillery badly impaired its combat operations during the Kargil War, the Ministry of Defence dithered. A detailed review in 2000 put a spotlight on the army's artillery deficiencies and concluded that it needed to re-equip as many as 180 of its 220 artillery regiments. Still, the Ministry of Defense took ten more years to reach the point where it conducted artillery field trials. Then, it abruptly canceled one of the two trials and restarted its tender after corruption rumors surfaced about one of the vendors. Fortunately for the army, the government completed the other tender, selecting the American M777 155mm lightweight howitzer in 2011. But two years later, no contract has yet been signed.

These frustrations have not been lost on Indian officials. As a result, the Indian government has often resorted to an alternate military procurement channel, intergovernmental purchases, which are typically noncompetitive agreements between governments, to accelerate its military procurement. Between 2000 and 2010, these purchases accounted for as much as 70 percent of India's total military procurement. At various times when the Arjun program was unable to meet the army's timetable, the Indian government directly bought main battle tanks from Russia. The army purchased 310 T-90S tanks in 1999, ordered another 347 T-90S tanks in 2007, and has considered the licensed production of 1,000 more tanks.

MALAYSIA

Malaysia is a country of about 24 million people whose ethnic mix of Malays, Chinese, and Indians has been at the center of national politics. The Malaysian government's affirmative-action policies, which favored ethnic Malays, the *bumiputera*, have long fanned tensions among the ethnic groups. Ethnicity even played a role in the course of the only large-scale conflict in Malaysia's modern history, a long counterinsurgency against mainly ethnic Chinese communist guerrillas.⁸ With so much political energy focused on internal issues, the public has been generally indifferent to matters related to external defense and foreign affairs. That has had implications for the country's military procurement.

Given the lack of public attention, much of Malaysia's military policies rest in the hands of a small political elite that operates with relatively little transparency. Decisions about military procurement often fall to either those within the elite or those that support them. That creates the potential for priorities other than those dealing with the military to come to control the military procurement process. Hence, some have characterized Malaysia's military procurement as "rationalized decision rather than rational decision-making."⁹

Even under Malaysia's standard military procurement process, an organization other than its Ministry of Defence can wield decisive influence over military acquisitions. When capital expenditures are expected to be high, the Ministry of Finance can actually issue the military procurement tender. While the Ministry of Defence may contribute its technical requirements, it is the Ministry of Finance that ultimately decides on the acquisition, which is often the one with the lowest cost. As a result, the military sometimes receives equipment that does not meet its requirements. Indeed, there are a few instances when Ministry of Finance tenders are awarded without even informing the Ministry of Defence. One case occurred in 1996 when Malaysia awarded a contract for corvettes to a German shipbuilding consortium; the Ministry of Defence learned of the award from the consortium, rather than its own government.¹⁰

Another example where military requirements were subordinated to other priorities was the Malaysian government's decision to purchase 18 MiG-29N fighters from Russia. At about the same time, Malaysia ordered eight F/A-18D multirole fighters from the United States. While the decision to purchase the MiG-29Ns may have been designed to

⁷ Mrinal Suman, "Blacklisting Foreign Vendors," *eSamskriti*, Jul. 2011, <http://www.esamskriti.com/essay-chapters/Blacklisting-Foreign-Vendors-1.aspx>.

⁸ The communist Malayan National Liberation Army gained popular Malay support among ethnic Chinese, in part because they were denied equal citizenship and land ownership rights.

⁹ Abdul Rahman Adam, "Dynamics of force planning: the Malaysian experience," SIPRI Arms Procurement Decision Making Project, Working Paper no. 77, revised version, Oct. 1997, p. 17.

¹⁰ Dagmar Hellmann-Rajanayagam, "Malaysia," in *Arms Procurement Decision Making Volume II: Chile, Greece, Malaysia, Poland, South Africa and Taiwan*, ed. Ravinder Pal Singh (New York: Oxford University Press, 2000), p. 97.

demonstrate Malaysia's continued geopolitical non-alignment or simply to economize over the more-expensive F/A-18Ds, it did overlook many of the MiG-29N's operational shortcomings. In later years, Malaysia's MiG-29N fleet was reported to have suffered from low operational readiness and higher-than-anticipated maintenance costs. Moreover, the Malaysia's air force was forced to maintain separate supply chains for its two sets of aircraft, reducing their flexibility to operate between airbases. Such examples do little to help engender trust between those responsible for procuring military capabilities and the military organizations that must use them.

UNITED STATES

Military procurement preferences in the United States would be difficult to discuss without noting Task Force Smith. In July 1950, the lead element of the U.S. 24th Infantry Division, a reinforced infantry battalion called Task Force Smith (named after its commander), was sent to delay North Korea's invasion of its southern neighbor. Equipped with materiel left over from World War II, it was decisively beaten by North Korean forces armed with more modern Soviet weapons. One-third of the American troops engaged were lost. While a number of reasons contributed to Task Force Smith's defeat, those concerned about American military preparedness have since used the phrase "No more Task Force Smiths" to urge the procurement of ever better equipment for U.S. forces.

For much of the Cold War and the decades that followed, most Americans have come to agree with the sentiment that their military should be better equipped than its adversaries, if not with the most advanced equipment possible. However, that kit has not always been efficiently procured. Many resources have been wasted in the process. Of course, there are good reasons why that waste occurs, the most prominent of which being that striving for the most advanced solutions occasionally misses its mark. Risk of failure is always present in the development of something new.

But there have been plenty of cases where the reasons for waste have not been so innocuous. Knowing how much risk to accept is tricky. It requires a clear-eyed assessment of not only the technology, but also the inner workings of the organizations that would use it. The latter is often less straightforward than it sounds, due to the bureaucratic struggles between government units within an organization and their incentives to either protect or gain more resources for themselves. That has been true of even mundane military procurement programs, like accounting systems. In 2003, the Pentagon attempted to procure an ambitious department-wide accounting system to unify hundreds of old and disparate systems. It was a bridge too far. The program was shelved in 2010, because of inter-governmental squabbles and constant demands for exceptions and changes to the new system's requirements. Similar efforts in each of the three armed services (consuming another \$2.1 billion to date), have failed or been delayed. Only one solution, the U.S. Army's, has come close to reaching its original capability goals.

A preference for the most advanced solutions can also lead to human hubris among military and civilian procurement specialists. One example from the 1980s was the very high-speed integrated chip (VHSIC) program. "The Pentagon bureaucracy said Silicon Valley could not be counted on to produce fast enough chips for the integrated circuits of the high-tech weapon systems then under development. So Washington taxed each service nearly \$2 billion a year and sank approximately \$12 billion overall into the VHSIC program. When the chip was finally produced in 1989, it was significantly slower and several generations behind the commercial counterpart produced by Silicon Valley companies."¹¹

Starting in the 1990s, procurement specialists hoped that by favoring customized-off-the-shelf (COTS) solutions—those that modify existing technologies rather than develop them from scratch—they could limit risk and reduce the number of failed programs.¹² But given the overriding incentive to gain approval for procurement requests, some in the Pentagon would push to use favored COTS solutions even though they might be unsuited to the tasks. Those COTS solutions can later become so laden with special requirements that they essentially turn into internal development projects. The U.S. Air Force's Expeditionary Combat Support System is one example. When the program was launched in 2005, it promised to replace over 400 older systems with one that could track all of the air force's hardware. The program planned to combine three off-the-shelf software products and then modify them

¹¹ Summers, Harry G., Jr., "Operations, Procurement, and Industrial Base," in *America the Vulnerable*, eds. John F. Lehman and Harvey Sicherman (Philadelphia: Foreign Policy Research Institute, 2000), p. 82.

¹² U.S. General Accounting Office, *Better Use of Limited DOD Acquisition Funding Would Reduce Costs* (Washington: U.S. General Accounting Office, Feb. 1997), p. 4.

only enough so that they could work together. Seven years and \$1 billion later, the U.S. Air Force cancelled the program, citing that it produced “negligible” value. It estimated that another \$1.1 billion (and eight years) would be needed just to enable the system to meet a quarter of its originally envisioned capabilities.¹³

Pursuing the most advanced solutions also does not come cheaply. New weapon systems usually cost more than the Pentagon initially predicts. Like other military bureaucracies, it overestimates capabilities and underestimates costs to acquire them. Army ground combat vehicles both tend to cost 70 percent more to develop and produce, than originally estimated. Navy ships typically cost about 16 percent more to develop than first projected, and 11 percent more to produce. Such cost overruns are so common that the Congressional Budget Office uses this data as a guide to create its cost forecasts for equipment that is still under development.¹⁴

Of course, the American preference for the most advanced solutions is not to blame for the underlying problems that vex military procurement in the United States. If done well, it can greatly benefit national defense. But it can exacerbate procurement problems, adding risks and making cost overruns and program failures more likely. When funding is plentiful, the United States can accept those inefficiencies and still procure what it wants. But in an era where budgets are more constrained, the United States will have to find a way to improve how it conducts military procurement or it will have to make even harder choices about what to procure.

CONCLUSION

Military procurement is critical for national defense. But it does come with controversies. One can find them in all democratic societies. They generally arise from poorly aligned incentives that are created by the interaction of cross-cutting interests within both the executive and legislative branches of government as well as the defense industry. Beyond those, there are special challenges formed by the particular histories and political cultures of each country. India’s penchant for a strong central government and a planned economy during its formative years still influences how its government bureaucracy approaches military procurement. Meanwhile, the enduring dominance of domestic issues in Malaysian politics has allowed priorities other than military ones to sometimes drive its military procurement decisions. And in the United States the preference for the most advanced solutions often creates the potential to exacerbate already existing military procurement problems.

Countries are unlikely to eliminate the controversies surrounding military procurement by simply trying to fence it off from bureaucratic or political processes. That would separate it from public oversight and may serve to only reinforce institutional biases. Greater transparency in military procurement could do a better job at curbing the excesses of existing procurement practices. But putting to rest some of the military procurement controversies that we have explored here would require realigning the incentives of the various actors. That is far easier said than done. Changing existing incentives would mean changing the power relationships among those involved in the procurement process. That is sure to meet stiff resistance. Such a realignment of incentives would demand a sustained commitment of political will and a clear understanding of how those incentives systemically interact. It would also require a multi-faceted campaign. Success on one front will not bring victory, only a multi-pronged strategy stands a chance.

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¹³ Scot J. Paltrow, “Why the Pentagon’s many campaigns to clean up its accounts are failing,” Reuters, Dec. 23, 2013; Gary R. Bliss, memorandum to Under Secretary of Defense for Acquisition, Technology, and Logistics, “Root Cause Analysis of the Expeditionary Combat Support System Program,” Aug. 28, 2013.

¹⁴ The basic concept is to look at previous weapon systems, take their performance characteristics for all these key attributes, run a regression to create a mathematical formula, and then plug in the expected performance features of the new weapon system to calculate expected costs. Lane Pierrot and Gregory T. Kiley, *The Long-Term Implications of Current Defense Plans* (Washington: Congressional Budget Office, Jan. 2003), p. 45.