

PRIVATE PARTICIPATION IN THE DEFENSE INDUSTRY

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The 21st century would no longer be industrial, natural resource intensive but knowledge intensive economy.

High powered human resources and rapid advances in technology would mark the progress in the 21st Century and only those countries which are prepared to cope with the challenges of assimilation, absorption, adaptation, and application of technology to their problems would move ahead. The Defense Industry in both advanced as well as emerging countries have provided a major vehicle for technology transfer and application. High tech, precision engineering advanced electronics and avionics, nanotechnology, laser technology, robotics, development of new materials and synthetics, fibre optics have characterized the transformation of weapon systems, aircrafts and carriers, submarines, etc.

The problem in the emerging countries has to do with non-defense goods and their efficient utilization. A number of non-economic considerations determine the allocation for defense expenditure. It is conceptually difficult to assess the cost benefit ratio for production of military goods in the traditional framework of market mechanism. The value of hypothetical future contingencies, that one hopes will never arise, cannot be estimated through the tools and techniques of economic analysis. The Defense spending is aimed at averting and tackling these unknown, uncertain, imponderable contingencies in the future.

For example, the military planners in Pakistan until early 2000s had not anticipated the duration, intensity, ferocity, preparedness, and spillover effects of the actions of non-state actors in challenging the law enforcing agencies and attempting to carve out territories for themselves.

The kind of terrorism and insurgency Pakistan Army had to face during the War against Terror in Afghanistan did not form the main stream training of the Armed Forces. The equipment and the arms they required for meeting these challenges were simply not available on time or in quantities required.

Economists can fumble and stumble in their calculations under these uncertainties and their analysis can be misleading as the underlying assumptions are flawed. Sound military intuition would be the guiding force and that may also not be right in different contingencies. So a defense production program has to be judged in analytical and conjectural terms rather than by the test of performance. The efficiency of allocation can be somewhat improved if defense goods are produced either by the private firms or in partnership with them. Why is this alternative preferable to the existing monopolistic control by the public sector entities under the control of the Defense production Ministry?

International experience particularly in the US provides convincing evidence that the economy has improved because of the research and development and defense goods production in the private sector and linkages with research and academic institutions. Technology developed through these institutions and Department of Defence DOD's own establishments was successfully applied by the private contracting firms such as McDonnell Douglas, Lockheed, Martin Marietta, General Dynamics, Northrop and other industrial enterprises. The DOD funding of scientific research at MIT, Caltech, RAND, Applied

Physics lab etc. and hundreds of university laboratories was a critical factor in the US establishing its leadership in the latest weapon technology.

The benefits of this research did not remain confined to the corridors of the Armed Forces but were gradually disseminated and spread throughout the economy. The diffusion, adaptation and product development for commercial purposes were, of course, taken up by the industrial R&D establishment but the initial surge took place because of the defense spending on research at the universities. The universities, in turn, became the magnet for the highly trained and the brightest scientists from all over the world that had a collateral benefit i .e. enhancing the quality of education and training at these universities.

What are the implications of the above experience for countries such as Pakistan which are mired in difficult economic conditions but also face an equally difficult challenge of protecting its national borders situated as they are in a rough neighbourhood. Of course the comparison with the US in the literal sense would be like comparing apples and oranges as the conditions in the two countries are totally different but there are some broad lessons which can be drawn.

It should be conceded at the very outset that there is no mechanical formula or received wisdom which can provide the answer as to what the appropriate level of defense spending should be. This will be determined on a case to case basis depending on a number of variables such as the level of per capita income, overall availability of resources and the actual or perceived threat to the security of the country. In case of Pakistan, the share of national income devoted to defense has already been cut back by almost one half i.e. from 7.7 percent in 1989-90 to about 3 percent in 2014-15. But still, defense expenditure preempts about 20 percent of the tax revenues. As the security needs of the country are unlikely to change in the near future while the economic conditions would continue to remain quite tough for several years to come it is safe to assume that there is very little prospect for increasing defense spending without adversely impacting macroeconomic stability. As we have to remain content with the current level of defense spending the only viable option is to explore a win-win situation whereby the demands of both the defense and economy are adequately met without one hurting the other.

This win-win situation is possible only if Pakistan's defense priorities are mingled with the efficiency of the private industrial sector and the promotion of indigenous scientific and technological capability. This is not to argue for self-sufficiency in defense production as it would be foolish and myopic to shut ourselves from the acquisition of latest technical know-how available in the rest of the world or likely to become available in the future. But it is the mode of acquisition which has to change – from import of completely built up or finished products to import of knowledge about the design, process and fabrication, and import of essential components and materials not available in the country at competitive prices. The private industrial firms should then be asked to build up the final goods in the country tailored and adapted to the local conditions and requirements.

A logical question that may arise is: How can the private firms be entrusted with such a sensitive task dealing with national security? The reason is very compelling. As the existing defense research and production establishments will remain constrained by the given public sector salary structures they will not be able to attract the best and the brightest scientists to work for them. Technology transfer, assimilation and adaptation, on the other hand, can successfully take place only if the recipient organizations have the

sophisticated expertise and competence along with an environment which encourages innovations . Private sector can pay market-based salaries, bonuses and premiums to those who perform and deliver. They also do provide a more conducive environment for innovation and risk taking than the Ministries of Defense or Defense Production. The military would continue to have enormous influence on the contracting firms through control on designs, specifications, standards, delivery schedules, quality assurance and costs. The contractual arrangements can be drawn in a way that the military works are ring fenced from the civilian production. As a start, the Government should consider a phased program of divesting of defense industries currently in the public sector. The funds realized from the sale proceeds of these industries may be utilized to finance high technology weapon platforms like fighter aircrafts and naval ships.

With communication costs plummeting and powerful tools of information technology becoming easily accessible the acquisition of knowledge has become cheaper than before. Licensing agreements and collaboration with foreign partners can also help the acquisition and absorption process. In other words, it is the substitution of physical capital by human capital and intellectual capital which will generate the most cost effective use of the limited defense spending. At the same time we all know that human capital, skill development and knowledge are now the most important factors for the overall economic development of the low-income countries. Thus investment in the revived scientific and research institutions, and making good use of efficient private industrial firms will go a long way in building a strong defense capability as well as a viable economy in the future. Both the universities and research institutions will have to be reorganized differently and provided incentives to do quality work while the private industrial sector will have to develop "R&D" capacity in-house, attracting the best available scientific talent. In order to encourage R&D the military should support the universities and research institutions by financing research projects which can be used by the industry for dual purposes. Additionally, the Armed Forces can encourage development and training of technical manpower by providing financial support to private sector in establishment of technical training facilities. The manpower trained in these institutes can serve in the Armed Forces for limited period of time thus enhancing the technical capacity of the Forces while upgrading the skill base in the country.

The demand spillovers from defense production by the private firms to other sectors of the economy will expand employment, create new investment opportunities to provide materials and components which are not available locally at the present, and improve the utilization of the existing capacity in some industries. On a limited scale this prescription has been successfully applied in Pakistan but the need is to replicate this model on a more systematic and broader basis. If we allow the status quo to prevail we may end up with either a weak defense and a stable economy or a strong defense and a stagnant economy. None of these two options should be acceptable to any right thinking Pakistani. What we need is a strong defense and a stable and growing economy.

This alternative is not free of problems that have to be carefully thought through. One of the major problems the private firm will face is that the number which must be produced to constitute a new technological change will initially be small when compared with civilian item like automobile. A learning curve will apply for this reason and the unit costs will decline in a fairly predictable pattern as production expands. So who bears the losses for the initial production period? Competitive bidding in such cases will not be feasible as the economies of scale and concentration of supply would not permit many firms to

exist in that space. Small production runs and great technical complexity combine to create concentration. Can the public sector provide subsidies in this formative phase until the production scale reaches a level where the losses would disappear.

The argument in support of these subsidies that are essential is the positive externalities that emanate from defense goods production and are ultimately captured by civilian population for their use.

The most important factor in adopting this model is that the institutional structures, policies, procedures and capabilities have to be altered to bring about the proposed change. The contract to the private sector firms should be evaluated on the basis of certain criteria. There can be a discussion as to what these criteria ought to be but it is suggested that at least three variables should certainly be taken into consideration (a) the capability of the Contractor i.e. stock of the plant and skills (b) its reputation, past record and efficiency of quality and efficiency of performance (c) the technical merits of the proposal. The competing firms can then be prequalified on the basis of these criteria for the future awards of contracts.

The second issue would be that of pricing which is quite sensitive and is subject to abuse as the pricing would remain shrouded in opacity. This problem can be circumvented by using cost plus fixed fee contract (CPFFC). The contracting process should be based on certain principles (a) Equity – ensure equal access for all qualified suppliers (b) Integrity – prevent all Government employees and contractor fraud (c) Efficiency – get lowest cost for acceptable performance.

In this event, the estimation of costs and its validation becomes the most important question. The Defense Procurement Agency must have the expertise to prepare realistic estimates. The prequalifying firms can then be asked to bid on the basis of the fee margin. Care should be taken that the cost estimates and the fee margins provide incentives to the winning firm to supply the goods and services on time and without substantial cost overruns.

The third issue that would confront the private sector would be that of financing. Investment by the private firms would require long term financing, sponsors and equity investors. Moreover, this would be non-recourse financing secured by the project assets and paid entirely from project cash flows rather than from the stakeholders assets. The commercial banks would be reluctant to provide such long term financing because of the asset-liability mismatch as well as elevated risks in ventures that have no established track record or proven technology. At the initial stages, the Government has to set up a dedicated Defense Technology support fund with its own resources which would provide the seed capital. This fund can then be opened up to private equity providers and other financiers. The management and governance of this fund should be in the hands of professionals and experts with impeccable credentials. As the profitability of the private firms improves the demand on this fund is likely to decline and retained earnings and new investor funds can keep the momentum going. But the startup venture risks have to be recognized and steps taken proactively to manage and mitigate these risks.

In order to bring about this paradigm shift and make it a success the existing institutional structure in the Ministries of Defense and Defense Production has to undergo transformation. The capacity of the procuring agencies has to be realigned to plan, to prepare the specifications, cost estimates, quantities required, to evaluate the bids, to monitor the progress and minimize deviations, time and cost overruns, to ensure quality of the goods under production and to certify that the goods received conform to the award made. In case of delays or deviations penalties have to be made and rewards if the delivery is

accelerated, costs are saved or quality is improved. As can be noted this would require greater discretion rather than rules based decision making and involves a lot of subjective determination. The opportunities for misuse of these powers by individuals who are assigned the task, are quite high. Therefore various checks and balances have to be put in place. In Turkey, a hierarchy of Government bodies exists at various levels to perform, review, verify, approve and audit. Starting from High Coordination Council, Executive Committee to under secretariat for Defense Industry each tier has well defined mandate and functions. The decision making by these bodies will have to be quick to keep pace with the private sector response capacity as their efficiency and turnaround time would be impaired.

It must be realized that the proposed institutional structure and processes are radically different from the traditional governmental setup and the normal procurement rules and procedures. This is an encompassing structure with broader mandate and adequate powers and resources for planning and coordination and execution. The various functions of modernization, research and development, production quality assurance and monitoring, legal, finance and logistics – all would fall under one umbrella. The present fragmented and silo like structures won't work.

We may, in our enthusiasm, think that private participation or co-production or co-development would solve our problems, neglect to pay attention to the institutional restructuring and process engineering. This would be a fatal mistake.

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