



VOL.10
ISSUE.78

CENJOWS
ISSUE BRIEF

LIBERALISATION, GLOBALISATION, AND THE SEARCH FOR CAPABILITY (1991-2014)

MR DEEPAK TIWARI

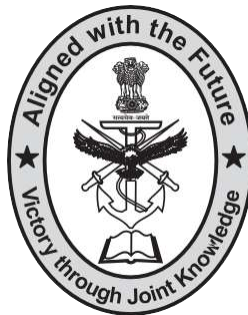
www.cenjows.in



CENJOWS ISSUE BRIEF

Volume 10 Issue 78

OCT 2026



CENJOWS
(Established: 2007)

Room No 301, B-2 Wing, 3rd Floor
Pt Deendayal Antyodaya Bhawan,

CGO Complex, Lodhi Road
New Delhi –110003 (INDIA)
Telephone Nos: 011-24364881,
24366485

Fax: 011-24366484

Website: www.cenjows.in

E-mail: cenjows@cenjows.in

ABOUT US

CENJOWS was raised in 2007 as an independent think tank, registered under the Societies Registration Act, 1860. This aims to promote Jointness as a synergistic enabler for the growth of Comprehensive National Power and provide alternatives in all dimensions of its applications through focused research and debate.

Starting Year : 2017

Year of Publication : 2026

Frequency : Weekly

Language : English

Publisher : Maj Gen (Dr) Ashok Kumar, VSM (Retd) Director General,
CENJOWS
301, B-2 Wing, 3rd Floor
Pt. Deendayal Antyodaya Bhawan CGO Complex, Lodhi
Road
New Delhi-110003

Editor : Maj Gen (Dr) Ashok Kumar, VSM (Retd) (dg@cenjows.in)

Deputy Editor : Dr Ulupi Borah, Distinguished Fellow
(distinguishedfellow1@cenjows.in)

Editorial Board :

Brig K Ranjeev Singh, VSM (ddg@cenjows.in)
Col Ajay Kumar Rajak, SM
(secy@cenjows.in)

Gp Capt Ashish Kumar Gupta (Retd)
(seniorfellow2@cenjows.in)

Dr Ulupi Borah, Distinguished Fellow
(distinguishedfellow1@cenjows.in)

Dr Monojit Das, Senior Fellow, PRO
(monojit.das@cenjows.in)

301, B-2 Wing, 3rd Floor
Pt. Deendayal Antyodaya Bhawan
CGO Complex, Lodhi Road
New Delhi-110003

Publication Head : Ms Vaibhavi Katal

All correspondence may be addressed to:
Editor
Centre for Joint Warfare Studies (CENJOWS) 301, B-2 Wing, 3rd Floor
Pt Deendayal Antyodaya Bhawan CGO Complex, Lodhi
Road
New Delhi-110003
Telephone: (91-11) 24366485/Telefax: (91-11) 24366484 e-mails:
cenjows@cenjows.in / cenjows@yahoo.com Website: <http://cenjows.in>

© Centre for Joint Warfare Studies

Price: Rs 300/- INR

All rights reserved. No part of this publication may be reproduced or transmitted in any form or by any means, electronic or mechanical, including photocopying, recording or by any information storage and retrieval system without permission from the DG, CENJOWS, New Delhi.

**LIBERALISATION, GLOBALISATION, AND THE
SEARCH FOR CAPABILITY (1991-2014)**

CONTENTS

Title	Page No
Introduction	5
Opening the Gates: Private Entry, Foreign Investment and the State of Defence R&D	7
Rebuilding the Procurement Architecture	9
Capability in the Making	10
The Persistence of Old Problems	11
Reading the Record Differently: The Case for Incremental Success	13
Lesson Learned from the Period and the Way Ahead	15
Conclusion	16
References	18

CENTRE FOR JOINT WARFARE STUDIES



CENJOWS

**Liberalisation, Globalisation,
and the Search for Capability
(1991-2014)**



**Mr Deepak Tiawari is a
Technical Research
Assistant at CENJOWS**

"It does not matter whether the cat is black or white, as long as it catches mice."

- Deng Xiaoping

Introduction

The end of the Cold War with the dissolution of the Soviet Union came with a deep respite for many states, but for India, it came with a profound realisation and steep vulnerability owed to the overdependencies on one state. In the summer of 1991, India's foreign exchange reserves fell to a level that could cover barely three weeks of imports. The government of P.V. Narasimha Rao, with Manmohan Singh at the finance ministry, dismantled the licence-permit regime that had governed Indian industry since independence. This move made in desperation made the Indian economy open to trade, collaborate, invest, and compete in the global market for the first time.¹ The story of that

reform is well told in the context of consumer goods, banking, and information technology. However, what this first wave of liberalization meant for the one sector the state had always treated as untouchable, i.e., the manufacture of weapons, has been scarcely discussed.

For over four decades, India had built its defence-industrial base almost entirely within the public sector, which included the ordnance factories, the defence public sector undertakings such as Hindustan Aeronautics Limited (HAL) and Bharat Electronics, and the Defence Research and Development Organisation (DRDO)². Private firms were formally barred from producing arms and developing defence technologies. This was not simply bureaucratic caution, but it reflected a Nehruvian conviction that strategic industries belonged to the state, reinforced by non-alignment's discomfort. The result, by 1991, was a defence sector insulated from the same market discipline that liberalization was about to unleash everywhere else.

The period between 1991 and 2014 is therefore worth studying as a distinct chapter, not for the dramatic opening of 1991 or the assertive Atmanirbhar Bharat push that followed 2014, but for the two decades in between, when India tentatively extended liberalization's logic to defence production. This was a period of genuine institutional change where, for the first time, the private sector was invited to the exclusivity, foreign investment was permitted, procurement procedures were repeatedly rewritten, and Indian firms were drawn into global supply chains. It was also a period in which the oldest problems in Indian defence production, such as slow decision-making, a barrier between the laboratory and the factory floor, and chronic reliance on imported hardware, proved remarkably resistant to reform.³ Both things are true, and an honest account has to hold them together rather than choosing one. The fact of the matter is that India, lacking the ideological transformative leadership like Reagan, Thatcher or Deng Xiaoping, had to rely on the flow of geopolitics and geoeconomics of the time and align itself with the prevalence. It is quite a different process from the one where the leadership envisions a certain path and leads the nation towards it. The protruded resistance from hungover institutions and systems remained persistent until that leadership arrived and delivered the critically needed push in the right direction.

Opening the Gates: Private Entry, Foreign Investment and the State of Defence R&D

The formal opening came in May 2001, a full decade after the wider economy had been liberalized, and not by coincidence. It followed the Kargil conflict of 1999, which exposed serious gaps in ammunition stocks and equipment readiness.⁴ The government allowed 100 percent participation by Indian private companies in defence production, subject to licensing, and permitted foreign direct investment up to 26 percent, also through the licensing route. For the first time since independence, an Indian company did not need to be state-owned to manufacture arms.⁵

On paper this was a significant departure. In practice, the response was tepid. Licensing requirements remained heavy, and in the 14-years period between 2000 and 2014 only 214 licences were issued in comparison to 128 license issues in just the next 3 years post 2014.⁶ The 26 percent FDI cap gave foreign partners no meaningful control over intellectual property or management, which made it commercially unattractive for firms holding sensitive military technology to invest at all. A 2010 assessment by the Institute for Defence Studies and Analyses (IDSA) found that cumulative FDI inflows into Indian defence production had reached barely \$0.15 million by May of that year, a figure so small it barely registered against India's annual arms import bill of billions of dollars.⁷ The problem, as that assessment noted, was not the absence of interest but the absence of incentive worth engaging. A minority equity stake with no operational control offered foreign original equipment manufacturers (OEMs) little reason to part with proprietary technology.⁸

The government revisited the cap only once more within this period, raising it to 49 percent in August 2014 in the new administration's first budget. This reform, interestingly, added a provision that proposals seeking to go still higher could be considered case by case by the Cabinet Committee on Security (CCS) if they promised access to state-of-the-art technology.⁹ Although, as observed by industry voices over time, this reform came late and was of little interest for firms which wanted majority control before transferring

their most valuable technology. Also, the government had already decided, with clarity, that the majority stakes of such joint ventures (JVs) will remain in Indian hands.¹⁰

The major accomplishment of the 2001 and 2014 reforms can be read as the establishment of the notion, for the first time, that Indian defence production need not be a public-sector monopoly. Private conglomerates such as the Tata group and Larsen & Toubro (L&T) began building defence divisions in this period. Tata's aerospace and strategic electronics arms started producing structural components and subsystems for global primes, while L&T built up capacities in artillery systems, submarine equipment, and missile production infrastructure that would later mature into full platform manufacturing.¹¹ These firms were, in effect, learning the discipline of defence manufacturing quality certification, security clearances, and long-gestation contracting during a period when the policy environment gave them only a narrow opening. That apprenticeship mattered for what came after 2014, even if it did not show up in dramatic production numbers within the period itself. In essence, post 2000, India did work on scale with the help of private sector entry but could not achieve the depth of technology control needed to reach anywhere close to being self-reliant.

DRDO's performance was judged weak, rightfully so, because despite having 46 labs spread across the nation, it failed to deliver any independent indigenous critical system within the expected timeline. Moreover, its monopoly over defence R&D led to very little or negligible contribution from industries in defence R&D. In 2009-10, only 6.1% of defence R&D contribution came from the entire consortium of defence industries, including DPSUs and private sector. Because of that, India severely lacked the scientific manpower which could lead any independent defence research and development project. The Rama Rao Committee report of 2004 on the comprehensive review of DRDO revealed a shameful outlook of DRDO's research commitments. According to this report, the educational profiles of DRDO employees were extremely poor. Around 60% of its "scientists" were diploma holders and engineering and science graduates. Only 10% of the entire scientific cadre of DRDO in its 46 labs were PhD holder.¹² Because of these R&D discrepancies, the self-reliance goal set to reach 70% by 2005 from 30% in 1995,

based on the recommendations of a committee headed by APJ Abdul Kalam, still remained at 30% by 2010.¹³

Rebuilding the Procurement Architecture

Allowing the private sector into the defence industrial base (DIB) and reforming the FDI cap was only one strand of the story. The other was the machinery through which the Ministry of Defence bought equipment, and here the changes across 1991-2014 were more sustained. Following the Kargil review and the recommendations of the Group of Ministers on reforming the national security system, the ministry replaced its 1992 procurement procedure with the first Defence Procurement Procedure (DPP-2002), which came into effect in December of that year.¹⁴ It was revised almost every year that followed, in 2003, 2005, 2006, 2008, 2009, 2011, and again in 2013, where each iteration added a category of acquisition or closing a loophole exposed by the last.¹⁵

Two of these revisions deserve particular attention. DPP-2006 introduced the 'Make' procedure, allowing Indian industry, both public and private, to design and develop complex systems with the government sharing development costs among competing vendors, and it formalized the Defence Offset Policy, under which foreign vendors winning large contracts had to reinvest a portion of the contract value back into Indian industry.¹⁶ Both ideas came substantially from the Vijay Kelkar Committee, appointed in 2004 to recommend how the private sector could be drawn more deeply into acquisition. The committee's April 2005 report also proposed creating a small set of accredited private 'Raksha Udyog Ratnas', champions capable of leading major weapons programmes the way a small number of firms did in France or Israel. The Committee also recommended converting the ordnance factories into a corporate entity with commercial accountability.¹⁷ Both of those specific recommendations were shelved. The government accepted the parts of the Kelkar report that were easiest to implement, i.e., the offset requirement and a longer-term acquisition plan, while setting aside the institutional restructuring to avoid giving up direct control over production entities.¹⁸ This selective adoption became the pattern of the entire 1991-2014 period; reforms that added new categories and

procedures accumulated steadily, while reforms that would have changed who held power over defence production did not.

DPP-2013 marked the most significant procedural reform within this period. It restructured the categories of acquisition into a clear hierarchy of preference: 'Buy (Indian)' first, then 'Buy and Make (Indian)', then 'Make (Indian)', with global purchase pushed to the bottom of the list. It tightened the rules on how indigenous content would be defined, reported, and audited, with financial penalties attached to shortfalls.¹⁹ On paper, DPP-2013 was the clearest statement yet that Indian sourcing should be the default rather than the exception. Whether that hierarchy was honoured in the awarding of actual contracts over the following years is a separate question, but the architecture for prioritizing domestic sourcing, which the post-2014 'Make in India' push would later inherit and extend, was substantially built in this period.

Capability in the Making

Policy reforms and numbers of papers are one thing, but the reality check comes when the individual program comes to fruition. Whether they achieved their intended capabilities and purpose or not can only be the judge of the policy performance. The Light Combat Aircraft (LCA) Tejas, the main battle tank Arjun, and the flagship integrated missile program are a few such prominent cases where the varied impact of policy reforms can be seen on different institutions. The critical review of the performance of these three programs has already been intensively covered in the relevant literature. The period 1991-2014 witnessed a shift in geopolitical orientation around India as the nation resurfaced as a potential power pillar with newfound nuclear capability. The 1998 Pokhran-II test established a nuclear deterrence and a nuclear doctrine, presenting India as a responsible nuclear power in the region. The ensuing years in terms of defence reforms and developments were largely guided by the Kargil Review Committee (KRC) report and the Group of Ministers (GoM) recommendations. The reforms in higher defence management with the establishment of the National Security Council Secretariat (NSCS) and the Integrated Defence Staff (IDS) paved the foundation for a consolidated and integrated outlook towards developing defence capabilities.²⁰

Understanding the patterns of post Kargil development in India's defence capabilities, there was an increased emphasis on strengthening air defence, and kinetic precision strike offensive capabilities. The initiation and induction of the Akash air defence system, the Pinaka multi-barrel rocket launcher, the Nirbhay, the Nag, the Trishul, Astra, the Prahaar, and the Dhanush categories of kinetic capabilities the Sukhoi Su-30MKI, the AWACS / AEW&C, the Brahmos supersonic cruise missile, and the various ICBMs of the Agni and K-family to complete India's nuclear triad support the case for this pattern. This period also witnessed an intense mobilisation of indigenous capabilities to boost India's naval power through the critical progress made in the ATV Program, i.e., the Arihant Class nuclear submarines, the beginning of programs like the P-75 (Scorpène-class) submarines, the Shivalik-class frigates (Project 17), the design and development completion of the Vishakhapatnam Class stealth destroyers, and the INS Vikramaditya etc.

The Persistence of Old Problems

Set against these individual achievements, three structural problems ran through the entire period essentially unresolved, and it is worth being precise about each rather than treating them as a single undifferentiated complaint.

The first is procurement delay itself. Even after seven revisions of the DPP between 2002 and 2013, the acquisition cycle from the services' initial statement of requirement to contract signature routinely stretched past a decade for major platforms. Successive parliamentary standing committee reports on defence documented this persistent issue across this period. Part of the difficulty was the structural flow of the procurement process. The DPP required a statement of case to pass sequentially through DRDO, the Department of Defence Production (DDP), service headquarters, financial vetting, and the Defence Acquisition Council (DAC) before a request for proposal (RFP) could even be issued.²¹ Each additional gate added a veto point, and each veto point added months. Analysts writing on the acquisition system have repeatedly pointed out that India's structure stood in contrast to countries such as France. For the sake of comparison, in France, a single agency (the Direction Générale de l'Armement) holds both design-

development and acquisition responsibility under one roof, which was precisely the model the Kelkar Committee had urged India to study.²²

The second problem, related but distinct, is the disconnect between DRDO's research output and what industry could manufacture at scale and on schedule. Laxman Behera, in his detailed study of the eight defence public sector undertakings, found that most remained heavily dependent on imported components and sub-systems for their core production lines even decades after establishment. This problem compounds with low labour productivity, less export orientation, and a thin base of in-house research, creating an even harder challenge.²³ The pattern this produced was one where DRDO would develop a prototype technology, but the production agency, usually a DPSU without matching design capacity or the private sector without security clearance and assured orders, could not reliably translate that prototype into a fielded, maintained weapons system without extensive and often extended further foreign collaboration. The Kaveri engine's fate with Tejas is the clearest single illustration, but Behera's broader institutional data suggests it was closer to the rule than the exception across the DPSU ecosystem.²⁴

The third and most visible problem is the headline import statistic itself. Through the very years that these reforms were being implemented, India's dependence on foreign arms suppliers did not meaningfully decline; instead, it deepened, then plateaued at a very high level. SIPRI's arms transfer data for the years immediately following this period recorded India accounting for roughly 15 percent of the entire world's arms imports between 2010 and 2014. It grew to more than three times the share of China and Pakistan combined, making it comfortably the single largest arms importer on the planet.²⁵ Russia alone supplied 72 percent of everything India imported in those years, a dependence on a single foreign supplier that would only begin to diversify meaningfully after 2014.²⁶ Reputable assessments of India's self-reliance efforts across this era, including Behera's own Self-Reliance Index work for IDSA, found indigenous content in defence procurement still falling well short of the 70 percent target the government had itself set as early as the 1990s.²⁷

Taken together, these three problems describe a coherent shortcoming rather than three unrelated complaints. Slow procurement meant that by the time a system was approved, its technology was already dated. A weak research-to-production bridge meant that even approved indigenous projects struggled to reach the shop floor on schedule. Both of these, combined, meant the services had continually to fall back on urgent foreign purchases to keep pace with genuine security needs, particularly along a border with two nuclear-armed neighbours. Stephen Cohen and Sunil Dasgupta, in their influential study of this period, argued that Indian military modernization lacked a guiding strategic document to knit procurement, doctrine, and indigenous development together, leaving each of the services and each arm of the acquisition bureaucracy to pursue its own priorities largely independent of the others.²⁸ Their diagnosis was less about any single reform failing and more about the absence of an integrating strategy that could have made the individual reforms of 1991-2014 add up to more than the sum of their parts.

Reading the Record Differently: The Case for Incremental Success

It would be a mistake, however, to read this period only through its shortfalls, and there is a genuine scholarly case for a more generous verdict, one grounded in facts rather than optimism alone.

First, before 2001, private participation in defence production was not merely limited, it was prohibited outright. Whatever the shortcomings of the 26 percent and 49 percent FDI caps, the period 1991-2014 is the period in which the principle that Indian and foreign private capital could legitimately participate in arms manufacturing was established for the first time since independence. Every subsequent expansion of private participation such as the raising of the FDI ceiling to 74 percent under the automatic route after 2020, and the emergence of firms such as Tata Advanced Systems (TASL) as first-tier manufacturers of complete platforms, including the C-295 transport aircraft, rests on a legal and institutional foundation that was laid, imperfectly, in this earlier period.²⁹ Institutional change of this kind is rarely linear, it typically requires an initial, cautious opening before confidence and capacity accumulate enough for a bolder one.

Second, the procurement reforms of this period, however incomplete in execution, were not cosmetic. The 'Buy (Indian)' category created in DPP-2013, the offset policy introduced in DPP-2006, and the 'Make' procedure for cost-shared indigenous development together constituted the basic toolkit for more assertive Atmanirbhar Bharat and positive indigenisation list policies, which after 2014 were simply extended and enforced more strictly.³⁰ A reform architecture that takes over a decade to build and then gets enforced more stringently by a later government is still, in an important sense, that architecture succeeding. It just being realised on a longer timeline than any single administration's tenure would suggest.

Third, the technological base built during this period was real, even where individual platforms disappointed on schedule. The IGMDP's missile family, the accumulated composite-materials and avionics expertise from the Tejas programme, and the manufacturing discipline that firms like L&T and Tata acquired while producing components for global primes such as Boeing and Lockheed Martin all constituted genuine capability accumulation.³¹ Analysts of defence innovation systems have observed that capability of this kind is cumulative and often invisible in any single five-year data series. Judged by what India's defence-industrial base was able to attempt after 2014, indigenous aircraft carrier construction, a much larger private-sector role in missile and artillery production, and a rapid rise in defence exports, the foundation laid in the preceding two decades looks considerably more consequential than a snapshot of 2014's import statistics alone would suggest.

None of this erases the reality that India remained, throughout this period and for a decade beyond it, the world's largest single arms importer. But treating 1991-2014 purely as a story of failure risks missing what reform of this kind usually looks like in a large, institutionally conservative democracy. It presents a slow, contested, frequently diluted in implementation, and yet cumulatively significant picture when measured against an ideal endpoint it had not yet reached.

Lesson Learned from the Period and the Way Ahead

The period of 1990-2014 reveals a successive pattern of events which ultimately paves the path for private sector entry in the defence sector. During the initial years from 1991 to 1998, the private industry largely remained outside the defence production schema, which was dominated by DPSUs and OFBs. The period of 3 years from 1998 to 2001 came with some heavy strategic shocks. The Pokhran-II test made India a nuclear power, to which the contemporary world order replied hypocritically, throwing numerous sanctions to curtail growth of the newly liberalised Indian economy.³² The Kargil soon followed, catching the Indian forces off-guard by Pakistan's nefarious military regime. These two incidents exposed India to its technology and supply chain vulnerabilities, to which India responded by opening the defence sector to private industry in 2001. The formal invitation to the private sector was soon followed by necessary procurement reforms through DPP 2002 and the introduction of Offset in 2005. The DPP became the patron saint of private industries in India, through which they could avoid the heavy red-taps withholding the true potential of India's defence manufacturing ecosystem since its inception. Between 2002-2014, a total of 9 reforms were carried out in DPP, creating a policy framework accustomed to absorbing the reforms in a holistic manner without compromising the quality and consistency of defence acquisitions by services.³³

The private sector of India, amid the lingering uncertainties of orders from services and over-reliance on foreign vendors due to high competitiveness, showed a balanced approach. Companies like Tata, Mahindra, and L&T, etc., entered the defence sector without abandoning their core competencies and rather building upon them. Dynamatic Technologies Limited (DTL), now a global engineering and manufacturing company, started its career in the civil engineering industry, entered aerospace structure design and manufacturing and soon started collaborating with DRDO/HAL, now possessing global aerospace manufacturing capabilities. Ashok Leyland and Mahindra started with passenger and commercial mobility and entered into military mobility, becoming a leading name in the domain.³⁴ Samtel, a company manufacturing components and products in commercial electronics, entered to make high-end avionics components, collaborating with DRDO and HAL JV, and now it makes the fighter displays for India's indigenously

designed Tejas fighter. L&T, a renowned name in heavy engineering, has made its strongest mark in shipbuilding/ missile development and production. Collaborating with DRDO and service headquarters, L&T has successfully produced critical defence systems which were thought to be impossible within the Indian capability two decades ago.

The point is none of these companies became defence-capable by abandoning their civilian industrial strengths. They became defence-capable by converting those strengths into military applications.³⁵ These evolutions contain many lessons for Indian policymakers, still relevant in every sense, because they showed real transformation and capability development through example. To that end, the ongoing policy evolution must be directed towards capability development instead of building procurement sources. In this age of emerging disruptive technologies, Indian policy makers must prioritise strategic technologies rather than attempting complete self-reliance. The technologies which are becoming critical, more so from our recent learning from ongoing and won wars, such as aero-engines, seekers, sensors, electronic warfare, propulsion, advanced materials, semiconductors, underwater systems, space systems, AI, cyber, autonomous systems, and quantum technologies, need special attention. Such prioritisation and a dedicated approach could be further supported by making IP ownership and procurement criteria and creating a predictable demand proposal among services so as to create a long-term reliability chain among private players.³⁶ Moreover, the Indian private sector must transform itself into a global supply chain hub for defence systems and equipment to inculcate competitiveness in the market with the main goal of keeping Indian forces, a force of annihilation.

Conclusion

The evidence supports a specific and narrow claim that the reforms of 1991-2014 were incremental rather than transformative. They were structured in the sense that they expanded who was legally permitted to manufacture defence equipment and rewrote the rules under which the state bought it, without restructuring the underlying institutional relationship between research, production, and acquisition. Kelkar, Cohen and Dasgupta,

and Behera each identified, in their different ways, the real obstacle to self-reliance. The FDI cap moved from 0 to 26 to 49% across thirteen years. The DPP was rewritten seven times, India nonetheless entered 2014 as the largest arms importer on earth, sourcing nearly three-quarters of its imports from a single supplier.

Yet incremental change of this kind is not the same as failed change. The private sector's legal entry, the offset policy, the 'Make' procedure, and the graduated indigenous-content requirements of DPP-2013 gave the Indian state, for the first time, a working set of tools for building capability rather than simply buying it. It produced the tools that a later and more assertive phase of policy would inherit and use more forcefully rather than build from scratch.

Declaration

I declare that this manuscript is being submitted exclusively to CENJOWS for publication consideration, is original, and has not been published or submitted elsewhere. I further certify that it contains no classified, restricted, or sensitive information and is based entirely on open-source material suitable for publication in the public domain.

ENDNOTES

- ¹ Mohan, Rakesh, ed. *India Transformed: Twenty-Five Years of Economic Reforms*. Brookings Institution Press, 2018. <https://www.jstor.org/stable/10.7864/j.ctt20d8754>.
- ² Dwivedi, G. G. "India's Quest for Self-Reliance in Defence Sector: Reality Check, Challenges and Way Ahead." *Journal of Defence Studies* 19, no. 03 (2025): 54–72. <https://www.idsa.in/wp-content/uploads/2025/11/3-jds-19-3-2025-GG-Dwivedi.pdf>.
- ³ Anklesaria Aiyar, Swaminathan S. "Twenty-Five Years of Indian Economic Reform." Think Tank. Cato Institute, October 26, 2016. <https://www.cato.org/policy-analysis/twenty-five-years-indian-economic-reform>.
- ⁴ CASS India. "FDI in Defence." Centre for Air Power Studies. Accessed July 2026. <https://cassindia.com/fdi-in-defence/>.
- ⁵ Observer Research Foundation. "Foreign Direct Investment in Defence: Lessons from the Automobile Industry." ORF Research. Accessed July 2026. <https://www.orfonline.org/research/foreign-direct-investment-in-defence-lessons-from-the-automobile-industry>.
- ⁶ Press Information Bureau. "Defence Production Marching Towards Self Reliance." Government of India. August 1, 2017. <https://www.pib.gov.in/www.pib.gov.in/Pressreleaseshare.aspx?PRID=1497914>.
- ⁷ Institute for Defence Studies and Analyses. "A Case for Increasing FDI up to 100 per cent in India's Defence Industry." IDSA Policy Brief. New Delhi: IDSA. https://www.idsa.in/about-mp-idsa/system/files/PB_FDIinDefenceIndustry.pdf.
- ⁸ Ibid
- ⁹ DGA Group. "Foreign Direct Investment in India's Defense Sector." October 2, 2014. <https://dgagroup.com/insight/foreign-direct-investment-indias-defense-sector/>.
- ¹⁰ Ibid, Indian Defence Review. "FDI in Defence Manufacturing—26-49-100 Percent." November 5, 2020. <http://www.indiandefencereview.com/news/fdi-in-defence-manufacturing-26-49-100-percent/>.
- ¹¹ Marathe, Varada. "India's Defence Manufacturing Ecosystem: Between Ambition and Execution – SPRF." Think Tank. SPRF, June 5, 2025. <https://sprf.in/indias-defence-manufacturing-ecosystem-between-ambition-and-execution/>.
- ¹² Radhakrishna, K. "A Perspective of R&D in Defence Sector and the Challenges." *International Journal of Research Publications in Engineering and Technology (IJRPET)* 03, no. 03 (2017). https://media.neliti.com/media/publications/342637-a-perspective-of-r-d-in-defence-sector-a-192befd3.PDF?exp=1785616415&kid=1&sig=4_09giVwGWXdjOa4oBJOpXzAp-BAE6NK8dC16tpN51w.
- ¹³ Ibid
- ¹⁴ Bharat Shakti. "Defence Procurement Procedures 2013." January 27, 2014. <https://bharatshakti.in/defence-procurement-procedures-2013/>.
- ¹⁵ Ministry of Defence, Government of India. *Defence Procurement Procedure 2013*. New Delhi: Ministry of Defence, 2013. <https://cgda.nic.in/pdf/DPP2013.pdf>, Ministry of Defence, Government of India. "Speech by Defence Minister Shri Pranab Mukherjee at the Release of Defence Procurement Procedure (DPP) 2006." Press Information Bureau, 2006. <https://www.pib.gov.in/newsite/erecontent.aspx?relid=20385>.
- ¹⁶ Ministry of Defence, Government of India. "Speech by Defence Minister Shri Pranab Mukherjee at the Release of Defence Procurement Procedure (DPP) 2006." Press Information Bureau, 2006. <https://www.pib.gov.in/newsite/erecontent.aspx?relid=20385>.
- ¹⁷ The Wire. "Why Is the Ministry of Defence So Committed to Forming Committees?" September 10, 2020. <https://m.thewire.in/article/government/ministry-of-defence-committee-reports>.

¹⁸ Ibid

¹⁹ Bharat Shakti. "Defence Procurement Procedures 2013." January 27, 2014.

<https://bharatshakti.in/defence-procurement-procedures-2013/>.

²⁰ FOUNDATION, OBSERVER RESEARCH. "The 1998 Pokhran Nuclear Tests: Reactions and Responses from the Indo-Pacific." Orfonline.Org. Accessed August 11, 2026.

<https://www.orfonline.org/expert-speak/the-1998-pokhran-nuclear-tests>.

²¹ Ministry of Defence, Government of India. "Speech by Defence Minister Shri Pranab Mukherjee at the Release of Defence Procurement Procedure (DPP) 2006." Press Information Bureau, 2006. <https://www.pib.gov.in/newsite/erelcontent.aspx?relid=20385>

²² ETV Bharat. "Defence Acquisition Procedure: Achievements and Challenges." December 15, 2023. <https://www.etvbharat.com/english/opinion/opinion-news/defence-acquisition-procedure-achievements-and-challenges/na20231215131827455455882>.

²³ Laxman Kumar Behera, "India's Defence Public Sector Undertakings: A Performance Analysis," Journal of Defence Studies 3, no. 4 (October 2009): 118–30.

²⁴ Laxman Kumar Behera, Indian Defence Industry: Issues of Self-Reliance, IDSA Monograph Series, no. 21 (New Delhi: Institute for Defence Studies and Analyses, 2013).

²⁵ Deccan Herald. "India Still World's Largest Arms Importer." March 16, 2015.

<https://www.deccanherald.com/india/india-still-worlds-largest-arms-2118281>.

²⁶ Stockholm International Peace Research Institute (SIPRI). "Trends in International Arms Transfers, 2024." SIPRI Fact Sheet, March 2025. https://www.sipri.org/sites/default/files/2025-03/fs_2503_at_2024_0.pdf.

²⁷ Manohar Parrikar Institute for Defence Studies and Analyses (MP-IDSA). "The Fourth Positive Indigenisation List: A Step Forward for India." Issue Brief, 2025.

²⁸ Cohen, Stephen P., and Sunil Dasgupta. Arming without Aiming: India's Military Modernization. Washington, DC: Brookings Institution Press, 2010.

²⁹ SPRF (Strategic Policy Research Foundation). "India's Defence Manufacturing Ecosystem: Between Ambition and Execution." 2025. <https://sprf.in/indias-defence-manufacturing-ecosystem-between-ambition-and-execution/>.

³⁰ Ministry of Defence, Government of India. Defence Procurement Procedure 2013. New Delhi: Ministry of Defence, 2013. <https://cgda.nic.in/pdf/DPP2013.pdf>, Manohar Parrikar Institute for Defence Studies and Analyses (MP-IDSA). "The Fourth Positive Indigenisation List: A Step Forward for India." Issue Brief, 2025.

³¹ SPRF (Strategic Policy Research Foundation). "India's Defence Manufacturing Ecosystem: Between Ambition and Execution." 2025. <https://sprf.in/indias-defence-manufacturing-ecosystem-between-ambition-and-execution/>.

³² FOUNDATION, OBSERVER RESEARCH. "The 1998 Pokhran Nuclear Tests: Reactions and Responses from the Indo-Pacific." Orfonline.Org. Accessed August 11, 2026. <https://www.orfonline.org/expert-speak/the-1998-pokhran-nuclear-tests>.

³³ Dwivedi, G. G. "India's Quest for Self-Reliance in Defence Sector: Reality Check, Challenges and Way Ahead." Journal of Defence Studies 19, no. 03 (2025): 54–72. <https://www.idsa.in/wp-content/uploads/2025/11/3-jds-19-3-2025-GG-Dwivedi.pdf>.

³⁴ Vice Admiral Anil, Vice Admiral Anil Chopra (Retd.), PVSM, AVSM. "Evolving India's Defence Industry Through Private Sector Prime Contractors." Think Tank. Delhi Policy Group, August 10, 2026. <https://www.delhipolicygroup.org/>.

³⁵ Radhakrishna, K. "A Perspective of R&D in Defence Sector and the Challenges." International Journal of Research Publications in Engineering and Technology (IJRPET) 03, no. 03 (2017). https://media.neliti.com/media/publications/342637-a-perspective-of-r-d-in-defence-sector-a-192befd3.PDF?exp=1785616415&kid=1&sig=4_09giVwGWXdjOa4oBJOpXzAp-BAE6NK8dC16tpN51w.

³⁶ Verma, Kuldeep, and Divya Dwivedi, eds. *The Quest for Strategic Autonomy: Indigenisation of Indian Defence Industry*. Routledge, 2025. <https://doi.org/10.4324/9781003591498>.