

India's arms imports

A holistic overview of India's motivations for choosing arms suppliers

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Abstract

Over the past decade, India has become the world's largest arms importer. During the Cold War, India bought arms mostly from the Soviet Union, but now it is increasingly buying from other suppliers. The Russia-India defense trade relations are not as bleak as often presented, however, as Russia supplies highly sensitive arms and technology. Likewise, the USA-India defense trade relations do have weaknesses, as the USA still has strict export controls on high-tech arms, technology, and post-export use of the arms. This thesis provides a holistic overview of all the motivations India has to buy from specific suppliers. All the different choices can be traced back to one larger theme. As India grows, it wants to improve the domestic capacity, increase strategic autonomy, and be accepted as an equal player in the worldwide arena. To do so, New Delhi needs to become independent and decrease the leverage that often comes with arms supplies. Developing its own industry, diversifying suppliers, avoiding countries that trade for ulterior motives, improving multilateral relations, and joining global export control regimes are some of the strategies India has used over the past two decades to achieve those goals.

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Acronyms

ALH	Advanced Light Helicopter
CAG	Comptroller and Auditor General of India
DPSU	Defence Public Sector Undertakings
DRDO	Defence Research and Development Organisation
EU	European Union
FGFA	Fifth-Generation Fighter Aircraft
FDI	Foreign Direct Investment
HAL	Hindustan Aeronautics Limited
IAF	Indian Air Force
IOR	Indian Ocean Region
IAEA	International Atomic Energy Agency
IISS	International Institute for Strategic Studies
MMRCA	Medium Multi-Role Combat Aircraft
MoD	Ministry of Defence
MTCR	Missile Technology Control Regime
NAM	Non-Aligned Movement
NATO	North Atlantic Treaty Organization
NSG	Nuclear Suppliers Group
PNE	Peaceful Nuclear Explosion
PMF	Perspective Multirole Fighter
R&D	Research and Development
SALW	Small Arms and Light Weapons
SIPRI	Stockholm International Peace Research Institute
SAM	Surface-to-air missile
TIV	Trend-Indicator Value
UAE	United Arab Emirates
UNSC	United Nations Security Council
UAV	Unmanned Aerial Vehicles
UCAV	Unmanned Combat Aerial Vehicle
WMD	Weapons of Mass Destruction
WMEAT	World Military Expenditure and the Arms Trade

Missiles

ASRAAM	Advanced Short Range Air-to-Air Missile
ASM	Air-to-Surface Missile
ASW	Anti-Submarine Warfare
ATM	Anti-Tank Missiles
BVRAAM	Beyond Visual Range Air-To-Air Missile
SSM	Surface-to-Surface Missile
ASRAAM	Advanced Short Range Air-to-Air Missile
ASM	Air-to-Surface Missile
ASW	Anti-Submarine Warfare

1 Introduction

For people keeping an eye on the international arms trade market, it has become obvious that India has emerged as a major player. The country is now the greatest arms importer in the world.¹ This is a relative new development, as India reached this position for the first time in 2007 and has kept that position since 2009. Logically, this has attracted the attention of arms sellers all over the world, which has led to new suppliers for India. This thesis will take a closer look at that development. While India was a loyal purchaser of Soviet weaponry in the Cold War and the 1990s, it is now increasingly buying from other states. Israel and the West in particular have risen as important new arms merchants. While there is a lot of writing discussing issues of procurement in India, especially from the perspective of the military, there is no substantial academic research looking specifically at India's suppliers. The existing research is often descriptive, or only focused on one explanation, rather than analyzing the situation systematically. This thesis will therefore attempt to fill that gap and answer the following questions:

What are India's motivations for choosing its arms suppliers?

How have these motivations changed between 1970 and 2014?

Hartley identifies six different choices in arms procurement decisions: What to buy, whom to buy from, how to buy, when to buy, who makes the choices, and how to regulate.² While they are all interwoven and affect each other, this thesis focuses on at the second choice: whom to buy from. This is done in order to give a holistic in-depth overview on this issue. Common topics in the procurement debate, such as government-military relations and corruption, will not be discussed. To answer the question of how India chooses whom to buy from, one also needs to look at why countries are willing to sell to India. Arms trade is a two-way street, and importing choices cannot be analyzed without also analyzing exporting choices.

¹ Sushant Singh, "SIPRI data shows India world's biggest arms importer at three times of China", *The Indian Express*, March 16, 2015, accessed July 4, 2015, <http://indianexpress.com/article/india/india-others/india-remains-worlds-biggest-arms-importer-sipri/>.

² Keith Hartley, "The arms industry, procurement and industrial policies," in *Handbook of defence economics*, ed. Todd Sandler and Keith Hartley (Amsterdam: Elsevier, 2007), 1161-1167, accessed July 5, 2015, doi:10.1016/S1574-0013(06)02033-3.

Selling arms is a way to exert influence, and is strongly affected by political and strategic considerations. Neumann writes: “The global defense industrial sector is a remarkably accurate indicator of the stratification of power in the post–Cold War international system.”³ Arms trade is thus very interesting to study in the context of peace and conflict studies, as it is an expression of power and strategic relations. India’s growing importance and the increasing significance of the Asian strategic theater make India’s arms purchases an excellent topic of study. By studying arms supplier patterns, much can be learned about international relations. Finally, arms trade is secretive and lacks transparency. Neither precise data on the volume, financial value, or details of arms transfers is made public, nor on political considerations from governments about arms trade decisions. This thesis is therefore an attempt to bring more clarity to and understanding of this subject. The focus is on arms trade, with India as a case study, instead of on India with arms trade as a case study.

After discussing the methodology, I shall present the historiographical debate on India’s arms suppliers and discuss the facts about Indian arms trade, as presented by different data sources. I shall give the background on India’s political situation and strategic choices to give context to its motivations for buying arms. I will then explain several theoretical considerations. The bulk is the analysis of India’s situation, divided by different relevant aspects. I will conclude by synthesizing these motivations.

On a final note, I would like to state that this thesis was finished in July 2015. Anything occurring from August 2015 onward has not been included in the analysis.

³ Stephanie Neuman, “Defense industries and global dependency”, *Orbis* 50 (2006): 429, accessed July 5, 2015, doi:10.1016/j.orbis.2006.04.004.

2 Methodology

This thesis focuses on trade in conventional weapons. It excludes other weapon types such as Weapons of Mass Destruction (WMD), which are defined as nuclear, radiological, biological, and chemical weapons. Conventional weapons are different from WMD, because they also have legitimate uses by the government, military, police, and civilians.⁴ Arms control of conventional weapons is thus dissimilar too, and trade in WMD is severely restricted. WMD are studied more, while conventional weapons are also very deadly, so it is relevant to pay more attention to conventional weapons. Dual-use goods, which have both civilian and military purposes, are also excluded, as the strategic impact and the controls are different. Systematic data about trade in dual-use goods is also not available. Small Arms and Light Weapons (SALW) are excluded as well. Strategic considerations play a smaller role in SALW trade, as SALW production requires lower military-technological capabilities.⁵ In India, states procure SALW independently, and they have different procurement procedures and motivations than the union government.⁶ Included in the data used in this thesis are components and spares, while in the discussion technology, service, repairs, etc., are covered as well. These aspects are essential parts of arms trade deals, and can influence decisions for suppliers.⁷

So, what influences the patterns of arms trade? In his historiographical article on arms trade research, Kinsella identifies the main theories that have attempted to explain arms trade.⁸ He identifies descriptive, explanatory, and normative theories on arms trade, but this thesis will only include explanatory theories, to limit the scope to why India imports from certain suppliers. None of these theories mention India more than in passing, so the application of the theory to India is my contribution. I include one

⁴ Rachel Stohl and Suzanne Grillot, *The international arms trade* (Cambridge: Polity Press, 2009), 2.

⁵ David Kinsella, "The arms trade," in *The handbook on the political economy of war*, ed. Christopher Coyne and Rachel Mathers. (Cheltenham: Edward Elgar, 2011), 223.

⁶ Aaron Karp and Rajesh Rajagopalan, "Small arms and the Indian state: A century of procurement and production," *Small Arms Survey Issue Brief* 4 (2014), 2, accessed July 5, 2015, <http://www.india-ava.org/fileadmin/docs/pubs/IAVA-IB4-small-arms-of-indian-state.pdf>.

⁷ Jurgen Brauer, "Arms industries, arms trade and developing countries," in *Handbook of defence economics*, ed. Todd Sandler and Keith Hartley (Amsterdam: Elsevier, 2007), 977, accessed July 5, 2015, doi:10.1016/S1574-0013(06)02030-8.

⁸ Kinsella, "The arms trade," 215.

theory based on economics, while the others are based on political science. It is important to study arms trade from a political perspective, as trade in defense goods is not free at all. Many companies have national monopolies, and the number of buyers is limited. Governments either outright own defense companies or have strong control over private companies. To win tenders, foreign governments diplomatically campaign for their private companies.⁹ Arms are exported only after explicit government approval, due to the strong strategic value.¹⁰ This subject will thus be analyzed mostly on a country level instead of a company level.

As there is no substantial amount of academic research on arms trade, I supplement that with newspaper articles, foreign policy analyses, reports from defense research institutes, and reports from the Comptroller and Auditor General (CAG) of India. They are all subject to source criticism. As an example, when reading articles written by (former) employees of the military, it must be kept in mind that the military has a difficult relation with the Indian bureaucracy and Indian Defence Research and Development Organisation (DRDO).¹¹ That is sometimes reflected in the analysis.¹² For instance, *Indian Defence Review*, a publication largely run by military personnel, regularly writes about how the “arms mafia” controls procurement. The mafia is supposedly entrenched in the Ministry of Defence (MoD), DRDO and industry, and purposefully hinders acquisition for the army.¹³

The Handbook of Defense Economics states that the two most respected resources on arms trade are the Stockholm International Peace Research Institute (SIPRI) arms trade databases and the World Military Expenditure and the Arms Trade (WMEAT), compiled by the Bureau of Verification and Compliance of the US State

⁹ Ashley Tellis, *Dogfight* (Washington: Carnegie Endowment for Peace, 2010): 6, accessed July 20, 2015, <http://carnegieendowment.org/files/dogfight.pdf>.

¹⁰ María García-Alonso and Paul Levine, “Arms trade and arms races: A strategic analysis”, in *Handbook of defence economics*, ed. Todd Sandler and Keith Hartley (Amsterdam: Elsevier, 2007), 948-951, accessed July 5, 2015, doi:10.1016/S1574-0013(06)02029-1.

¹¹ Bibhu Prasad Routray, “Armed forces versus technologists in India’s military modernisation,” *Defence studies* 13 (2013): 37-43, accessed July 5, 2015, doi: 10.1080/14702436.2013.774962.

¹² Kaushik Kapisthalam, “What’s behind the DRDO bashing?” *The Rediff Special*, January 19, 2005, accessed July 4, 2015, <http://www.rediff.com/news/2005/jan/20spec1.htm>.

¹³ See for instance Prakash Katoch, “OROP – diminutive in deeper malaise,” *Indian Defence Review*, May 25, 2015, accessed July 5, 2015, <http://www.indiandefencereview.com/news/orop-diminutive-in-deeper-malaise/> or repeated occurrences in *Indian Defence Review*, ed. J. Balwa (New York: Lancer, 2015).

Department.¹⁴ The 2014 report of WMEAT only goes up to 2011 and is not as detailed, as most information is aggregated on a regional level. Most of the data used thus comes from SIPRI.¹⁵ There are a few other sources, but as I do not have access to historical and global data they will be used incidentally. Chapter 3 discusses the data on India's arms sales in depth and shows where and why data conflicts.

SIPRI offers a database with all international arms transfers since 1950, consisting of two parts. The Arms Trade Register lists all major conventional weapon transfers by year, weapon system, supplier, and recipient. It includes aircraft, air defense systems, anti-submarine warfare weapons, armored vehicles, artillery, engines, missiles, sensors, satellites, ships and mounted turrets. It includes transfers between countries, rebel forces, and international organizations, destined for armed forces, paramilitary forces, and intelligence agencies. The Arms Transfers Database includes all transfers by country (suppliers and/or recipients) or weapon category, sorted by the year the arms are delivered. It measures the volume of transfers by calculating the Trend-Indicator Value (TIV). It does not cover the financial value of the sales prices, as those are often obscured. Weapons can be given for free to allies and may include munitions, training, spares, etc., through offset arrangements or financing deals. The financial value therefore only partially covers the real value of weapons.¹⁶ Global annual inflation on arms prices is 12–15 percent, so that makes historical comparison of financial values difficult.¹⁷ SIPRI takes the known unit-production costs of a core group of weapons and uses that to calculate the transfer of military resources instead of the financial value. If the production cost is unknown, the weapon is compared to the core group based on size and performance (weight, speed, range and payload), type of electronics, loading or unloading arrangements, engine, tracks or wheels, armament and materials, and production years. Refurbished weapons are valued as 66 percent of a new weapon, while used weapons are valued as 40 percent of a new

¹⁴ Brauer, "Arms industries," 944-947.

¹⁵ Stockholm International Peace Research Institute, "SIPRI Arms Transfers Database," accessed July 4, 2015, <http://www.sipri.org/databases/armstransfers/armstransfers>.

¹⁶ *Ibidem*, 978.

¹⁷ Gurmeet Kanwal, "India's defense budget is inadequate for military modernization," *Center for Strategic & International Studies*, March 12, 2015, accessed July 20, 2015, <http://csis.org/publication/indias-defense-budget-inadequate-military-modernization>.

weapon. This way, a common unit is created that remains stable over time and between countries. The TIV is adjusted for inflation and presented in constant 1990 USD.¹⁸ SIPRI uses a variety of sources but requires them to be open source.¹⁹ The choice to use the TIV instead of the financial value is sometimes criticized,²⁰ but generally the data is well regarded, including by the Indian government. Since this paper is a historical comparison, and financial values get inflated due to political alliances, SIPRI data will be used throughout; keep in mind that it does not show the financial value. I often process the raw data that SIPRI provides for clarity or statistical tests. The source will then state: “Adaptation of SIPRI Arms Trade Register/Transfers Database.” When discussing prices, I use dollars, as all international databases use dollars as well. Different articles often give different prices for arms, so if there are conflicting sources, I use the price SIPRI states in the Arms Transfers Register.

The historical analysis of this thesis starts at 1970. This includes the developments that led up to the 1971 war between India and Pakistan and the 1971 Indo-Soviet Treaty of Peace, Friendship and Cooperation. That treaty facilitated arms trade for friendship prices with the Soviet Union. When speaking of the Cold War, I refer to the period between 1970 and 1991. An intermediary period lasted from 1992 to 1997, as purchasing patterns were volatile, mainly due to instability in post-Soviet countries. The current period of arms trade lasts from 1998 to now. I choose 1998 for two reasons. In 1998 India became a nuclear power and assumed a different position in international relations. This affected India’s military capabilities and priorities and how other countries, both adversaries and friends, perceived it. The second reason is the fact that the 1999 Kargil war led to military modernization. The modernization, combined with economic growth, skyrocketed defense capital acquisition. This thesis will mainly look at developments in the present period but compare them to the

¹⁸ Stockholm International Peace Research Institute, “SIPRI Arms Transfers Database – Methodology,” accessed July 4, 2015, http://www.sipri.org/databases/yy_armstransfers/background.

¹⁹ It uses newspapers, monographs, industry information, TV broadcasts, internet publications, defense papers, the UN Register of Conventional Arms, notifications to parliaments on arms transfers, national and regional reports on imports and exports, defense budget documents and parliamentary records.

²⁰ G. Balachandran, “Time to ban import of lopsided opinions on Indian defence,” *The Pioneer*, November 8, 2014, accessed July 4, 2015, <http://www.dailypioneer.com/columnists/oped/time-to-ban-import-of-lopsided-opinions-on-indian-defence.html>.

situation in the past to get a better understanding on the causes of the changes. Overall, it has to be noted that primary sources are sparse— both pertaining to raw numbers and motivations.²¹ Data used in this thesis will therefore be suboptimal, but, unfortunately, that is the best there is. Official government data is scarce and lacks information on motivations for suppliers, as that is considered sensitive to national security. The archives of the Indian parliamentary debates and written questions, which were originally meant to be a source, too, are of limited use, as the government is very hesitant to release details to the public. The lack of information is a recurring problem in this thesis and in arms trade research in general.

²¹ García-Alonso and Levine, “Arms trade and arms races,” 944.

3 The debate on India's arms imports

In work on India's arms imports, the Indo-US Civil Nuclear Agreement of 2005 is often described as a turning point. It has been claimed ever since that India and the USA are growing closer, and that India and the USA are "natural partners,"²² as the post-Cold War systemic reality dictates "US preponderance."²³ Mohan wrote in 2006 that India should join the "political West," as it would benefit the USA and India since they have shared interests.²⁴ The USA can help India rise, and India is a great balance against China.²⁵ Between 2011 and 2013, India spent more on US arms than on Russian arms for the first time ever. This all suggests that India is forging new ties with the USA, leaving Russia behind. Economic growth and the rise of China have brought the USA and India together, both economically and strategically. They are natural allies against China, so, of course, India now buys its arms from the USA instead. I want to find out to what extent this is true. To do so, I shall first present the historiographical debate on this subject, and follow up with a discussion on the different figures that are available on India's arms imports.

3.1 Historiography

There is little work offering an overview on the choices for all the different suppliers. Pant wrote in 2008 how strong economic growth made an increase in arms acquisition possible. India's bigger budget for arms procurement has attracted Western governments and industries. Russia is, according to Pant, the most serious defense partner, but their relations have come under strain because India desires smart weaponry, which Russia cannot provide. Russia's excellent defense relations with China are also objectionable to India. India wants to diversify and reduce reliance on

²² Sadanand Dhume, "Failure 2.0," *Foreign Policy*, March 16, 2012, accessed July 20, 2015, <http://foreignpolicy.com/2012/03/16/failure-2-0/>.

²³ Harsh Pant, *The US-India nuclear pact: Policy, process, and great power politics* (New Delhi: Oxford University Press, 2011), 21, accessed July 20, 2015, doi: 10.1093/acprof:oso/9780198073963.001.0001.

²⁴ Raja Mohan, "India and the balance of power," *Foreign Affairs* 85 (2006): 18, accessed July 20, 2015, <http://www.jstor.org/stable/pdf/20032038.pdf>.

²⁵ Evan Feigenbaum, "India's rise, America's interest: The fate of the U.S.-Indian partnership," *Foreign Affairs* 89 (2010): 77, accessed July 5, 2015, <http://www.jstor.org/stable/20699852>.

Russia after extended delays in arms supplies. India's ties with Israel have grown stronger, as Israel specializes in upgrading Russian equipment and is willing to transfer technology. Israel has replaced France and the UK as a supplier. Finally, India has grown closer to the USA, although Pant does not state a clear reason.²⁶ This analysis is interesting but only a few pages long and written in 2008, so this subject can use expansion and modernization. Gupta wrote in 2012 that Russia's tardiness in delivering spares, concerns about the quality of equipment, and the lack of friendship prices made India want to look elsewhere. The Indo-USA Civil Nuclear Agreement (2005) allowed the USA to build up a strategic relation, including weapon transfers. US weapons strengthen India's position in South Asia.²⁷ Matthews and Lozano state that India is changing suppliers in search of new weaponry and to diversify. They predict that US involvement will grow, but Russia will stay on top because of its entrenchment within India's production facilities.²⁸

There is more work on arms procurement in India in general. The majority focuses on another of the six aspects of procurement, as described by Hartley. There is a lot of material on the problems in the procurement process, which will be discussed in the chapter on the domestic industry. Other subjects are, for instance, the (lack of) strategic choices behind procurement,²⁹ what India is buying to modernize,³⁰ or how the government-military relations affect procurement.³¹ A systematic analysis of suppliers is lacking. Enough is written about bilateral relations with the USA, Russia, and Israel, but other countries are neglected. In fact, while searching for literature I even found a gap in work about India's defense trade relations with powers such as the UK, Italy and France. A holistic multilateral approach is missing.

²⁶ Harsh Pant, "India's arms acquisition: devoid of a strategic orientation," in *The global arms trade: A handbook*, ed. Andrew Tan (Abingdon: Routledge, 2010), 68-71.

²⁷ Amit Gupta, *Global security watch: India* (Santa Barbara: Praeger, 2012), 27-35.

²⁸ Ron Matthews and Alma Lozano, "India's defence acquisition and offset strategy," in *India's military modernization: Challenges and prospects*, ed. Rajesh Basrur, Ajaya Kumar Das and Manjeet Pardesi (New Delhi: Oxford University Press, 2013).

²⁹ Stephen Cohen and Sunil Dasgupta, *Arming without aiming: India's military modernization* (Washington: Brookings Institution Press, 2010).

³⁰ Deba Mohanty, *Arming the Indian arsenal* (New Delhi: Rupa, 2009).

³¹ Routray, "Armed forces versus technologists."

A final weakness in the debate is the use of data. Primary sources are used sparingly. If data is used, there is generally only one source, and no calculations are done with the data. The lack of data makes me question the validity of some of the underlying assumptions. I attempt to make up for these gaps in the historiography by offering a holistic approach on all supplier choices, including theory, multiple data sources, statistics and new explanations. I thus synthesize a wide variety of explanations into one overarching supplier choice strategy.

3.2 Primary sources

There are several data sources on India's arms imports, and there are stark differences between them. I will start with a presentation of the SIPRI Arms Trade Database. Figure 3.1 shows that there has been a sharp decline in the volume of Russian arms since 2012, while the USA has supplied more since 2006, and Israel since 1997. Figure 3.2 shows each country's share of India's total imports. As Indian spending on arms has risen substantially, it is essential to look at the relative importance of suppliers. Russian imports have hovered between 50 and 85 percent of all imports since 1970, with dips in 1992–1994, 2005 and 2013-2014. The timeframe is short, so one should be hesitant to conclude anything definite. However, Russia's current share is one of the lowest since 1970, while the US share is record-high. Tables of the TIV and shares per five years (lustrum) can be found in the Annex, to improve legibility. Lustrums are more useful to analyze trends, as arms purchases are volatile and can vary widely from year to year.

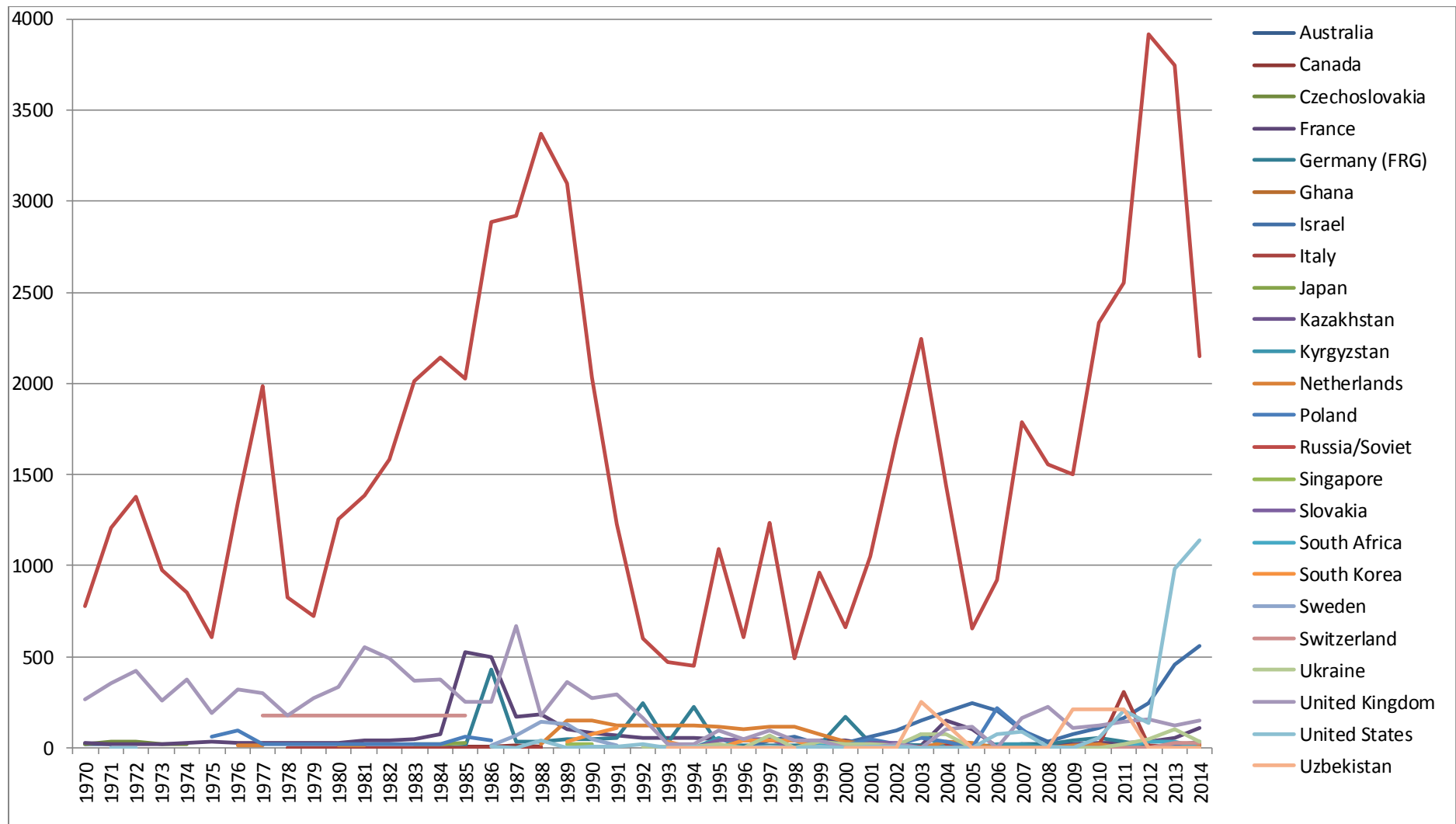


Figure 3.1 Indian arms imports per country in mill. 1990 USD in TIV 1970-2014

Source: SIPRI Arms Transfers Database.

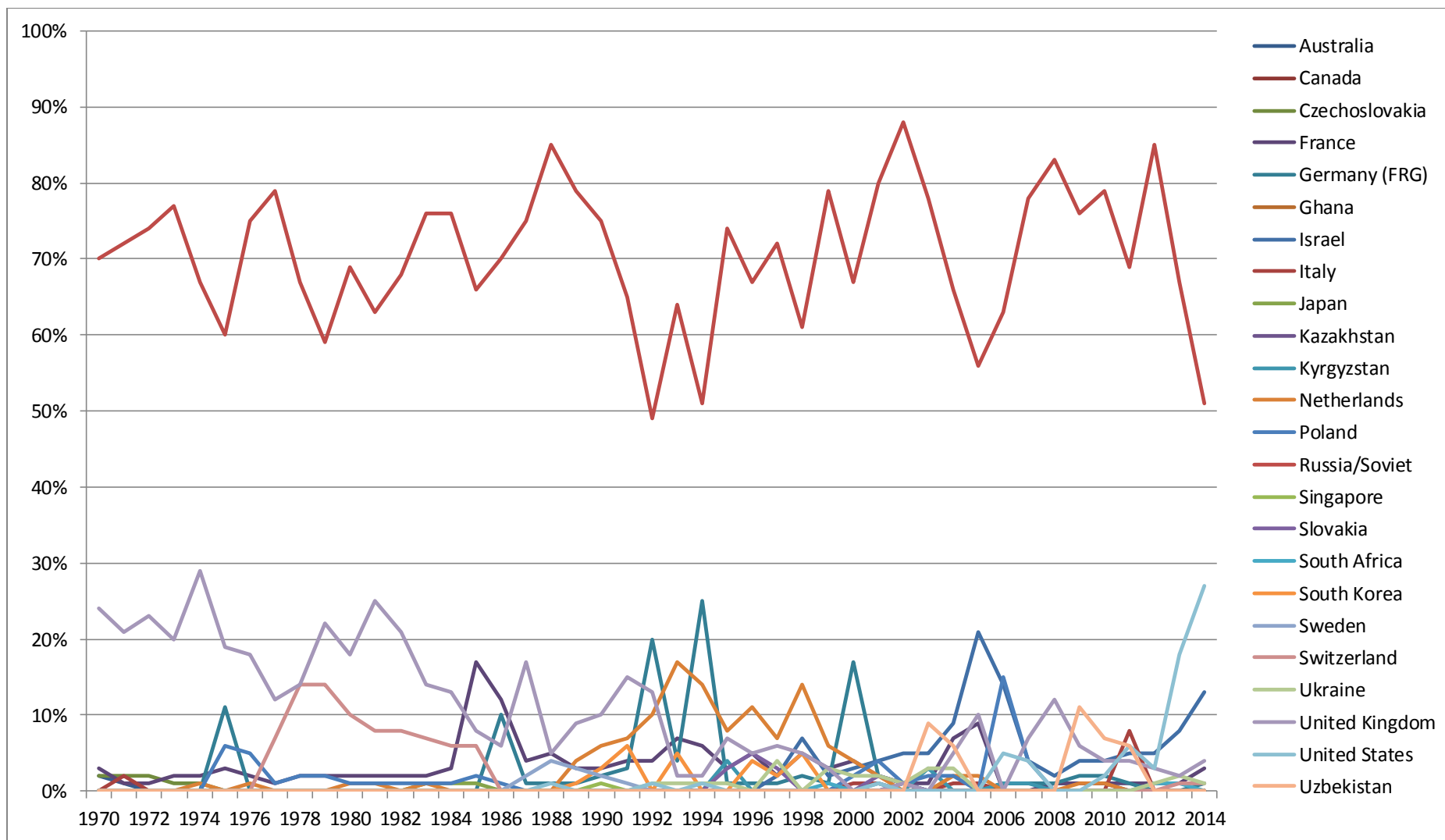


Figure 3.2 Share in Indian arms imports per country in mill. 1990 USD in TIV 1970-2014

Source: Adjustment of SIPRI Arms Transfers Database.

Official figures are sparse. The Indian government is not very open about its imports, but made a public statement in 2014 on how much it had imported from various suppliers between 2011 and 2013. Those figures rank suppliers differently than SIPRI does. They say that the USA exported to India for 5.3 billion USD (37.9 percent of all imports), while Russia exported for 4.1 billion USD (29.4 percent); France for 1.9 billion USD (14.0 percent); and Israel for 547 million USD (3.9 percent). In total, India imported for 13.9 billion USD.³² The remainder was from Germany, Italy, Switzerland, and the UK. Statements that the USA has surpassed Russia are often based on these numbers.

All sources on arms trade calculate their data differently, which explains the variance. As explained, the financial value does not reflect the volume. Sources also differ on the definition of arms, like whether SALW, munitions, trucks, IT, or chemical agents are included. Some include extras like training, service, and maintenance. They differ on the types of recipients included, like intelligence and homeland security. The sources can be the industry, customs, or classified government documents. The year can be when a weapon is ordered, a contract is signed, the sale is approved (by either government), the license is approved, money is released to the industry, or arms are delivered. Arms can take years to deliver, and delivery itself might be spread out over multiple years. Financing deals are often complex, and offset might be included, obscuring the financial value. One can use the worth of approved licenses or of actual goods transferred, and the latter is often a fraction of the former. Finally, official data is less trustworthy, as arms imports are a matter of national security. It is unclear how it is calculated by the MoD. The government report mentions the US Boeing P-8I Neptune as an example of something imported between 2011 and 2013. The deal for that was approved by both countries in 2009, and the first deliveries started in 2012 and will continue until 2015.³³ That suggests that the MoD measures deliveries, even if not completed.

³² Rahul Bedi, "US overtakes Russia as India's main supplier," *IHS Jane's 360*, August 12, 2014, accessed July 4, 2015, <http://www.janes.com/article/41867/us-overtakes-russia-as-india-s-main-materiel-supplier>.

³³ "P-8I Multimission Maritime Patrol Aircraft," *Naval-technology.com*, accessed July 20, 2015, <http://www.naval-technology.com/projects/p-8i-maritime-patrol-aircraft-india/>.

Another source is the annual report on global defense economics by the International Institute for Strategic Studies (IISS). This source states that between FY 2011/12 and FY 2013/14, the USA received 6 billion USD (39 percent,) out of a total of 15.6 billion USD; Russia 4.7 billion USD (30 percent); France 2.2 billion USD (14 percent); and Israel 626 million USD (4 percent).³⁴ They do not publish these figures consistently, so I cannot make a historical comparison. *IHS Jane's Defence* publishes figures on the money released to the industry for deliveries of conventional weapons, but they are private, so I cannot use them. According to Jane's, India bought for 30 billion USD from Russia between 2001 and 2013; 20 billion USD from France; 15 billion USD from USA; 10 billion USD from Israel; and 4 billion USD from the UK.³⁵

While most reports show the same trend for countries, although to a different degree, two countries are hard to assess. France's share of the volume declined, but the volume and financial value increased. Jane's says that between 2001 and 2013, France sold for 67 percent of Russia's financial value, while it sold for 2 percent of the volume according to SIPRI. As France and India signed multiple important arms deals, like Scorpène submarines and Mirage-2000 fighter aircraft, and the financial value is so high, I consider France a rising supplier. The UK is even more difficult to judge. Over the same period, the UK sold for 266 percent of France's volume, but 20 percent of the price, according to Jane's. I tentatively conclude that UK arms exports have gone down since the end of the Cold War, based on secondary literature, and the fact that major arms deals have been limited to one deal with follow-ups and spares for Hawk-100 trainer jets.³⁶

India is strongly reliant on foreign armaments. In 2011, 70 percent of all India's procurement was imported.³⁷ According to IISS, imports made up 43 percent of total

³⁴ International Institute for Strategic Studies. *The military balance 2015* (London: Routledge, 2015), 220, accessed July 5, 2015, doi:10.1080/04597222.2015.996361.

³⁵ Dinshaw Mistry, "US arms sales to India," *East-West Center: Asia Pacific Bulletin*, July 8, 2014, accessed July 20, 2015, <http://www.eastwestcenter.org/sites/default/files/private/apb271.pdf>.

³⁶ Satish Kumar et al, "India's strategic partners: A comparative assessment," *Foundation for National Security Research* (2011): 10, accessed July 20, 2015, http://fnsr.org/files/Indias_Strategic.pdf.

³⁷ Nilhanjana Bhowmick, "Enter the elephant: India looks to overhaul its military," *Time*, April 3, 2012, accessed July 20, 2015, <http://world.time.com/2012/04/03/indias-military-overhaul-through-export-and-import-defense-spending-a-priority/>.

procurement in FY 2013/2014, excluding components and subsystems. However, indigenous arms are defined as having a minimum of 30 percent domestic content, so the real value of imports is likely higher.³⁸

The only work on Indian arms imports I have found that uses multiple data sources and discusses the discrepancy is an article from Ministry. He shares the assessment that the USA is not a traditional supplier but has become more important on the Indian market without making a clear judgment on who is the most important.³⁹ Despite the differences in data, some conclusions can be drawn about the importance of various suppliers. Since 1998, Russia's share has been declining, but it is difficult to assess whether its share is below the US share. The USA and Israel have become important players on the Indian defense market, and I tentatively add France to this list. Several players have seen modest rises, namely Australia, Italy, Kyrgyzstan, South Africa, Ukraine, and Uzbekistan. Declining suppliers are Germany, the Netherlands, and Switzerland. I also consider the UK a declining supplier. Poland rose until 2007, and then disappeared from the Indian arms market. Finally, there are some countries with no historical defense trade ties that sold arms for a few years but then stopped. These are Singapore, Slovakia, South Korea, and Sweden. Most countries have ups and down over the period of more than forty years and cannot be simply described as "declining" or "increasing," so for greater accuracy, refer to Table 8.1 and Table 8.2 in the Annex. So, that leaves the question: why has this changed?

³⁸ Bikramdeep Singh, "Defence indigenisation: Made in India, by India, for India," *Centre for Land Warfare Studies* (2013): 254, accessed July 20, 2015,

http://www.claws.in/images/journals_doc/16092657_BikramdeepSingh.pdf.

³⁹ Mistry, "US arms sales to India."

4 Historical and strategic background

To figure out who India is buying from, it is important to also know something about India's security situation. In 1947 India and Pakistan became independent from Great Britain. This led to extensive fighting and relocation of Muslims, Hindus, and Sikhs across the new borders. Wars and skirmishes have continued ever since.⁴⁰ Relations between India and Pakistan have always remained hostile, and the rivals are still involved in a border conflict over the region of Jammu & Kashmir. The threat of the other looms large in the defense discourse in both countries. Even if internal security is more important for India than external security as Datta-Ray says,⁴¹ the internal security is directly threatened by Islamist terrorist attacks. India blames Pakistan for being lax against militant Muslim groups,⁴² and New Delhi has been on a diplomatic campaign to frame Pakistan as the mastermind behind terrorist attacks since the mid-1990s.⁴³ This makes dealing with Pakistan a major concern for India.

India feels threatened not only by Pakistan but by China, with whom it has several border disputes in the Himalaya region. The 1962 Indo-China war led to a humiliating defeat for India. After that defeat, India saw China conduct its first nuclear test in 1964, and New Delhi became hesitantly more interested in developing nuclear weapons. After the 1971 war with Pakistan, India conducted its first "Peaceful Nuclear Explosion" (PNE) in 1974. As a result, International Atomic Energy Agency (IAEA) inspections became intrusive and trade in nuclear materials got restricted, which halted further development. The nuclear program was started up again in 1989, as India felt more threatened by Pakistan. Pakistan's nuclear program started again as a response to India's nuclear program (with Chinese help), which further pushed India into

⁴⁰ David Fidler and Sumit Ganguly, "India and Eastphalia", *Indiana Journal of Global Legal Studies* 17 (2010): 149-154, accessed July 5, 2015, doi: 10.2979/gls.2010.17.1.147.

⁴¹ Deep Datta-Ray, *The making of Indian diplomacy: A critique of Eurocentrism* (New York: Oxford University Press, 2015).

⁴² Chris Ogden, *Hindu nationalism and the evolution of contemporary Indian security: Portents of power* (New Delhi: Oxford University Press, 2014), 103, accessed July 5, 2015, doi: 10.1093/acprof:oso/9780198089551.001.0001.

⁴³ Gaurav Kampani, "Placing the Indo-Pakistani standoff in perspective," *Center for Nonproliferation Studies, Monterey Institute of International Studies* (2002): 6, accessed July 5, 2015, <http://cns.miis.edu/reports/pdfs/indopak.pdf>.

developing nuclear weapons. In 1998, India conducted five more nuclear tests, called Pokhran-II. It was presented as a defense against Chinese aggression. Beijing disapproved strongly, which cooled relations significantly.⁴⁴ SIPRI estimates that India currently owns 90–110 nuclear warheads, Pakistan 100–120, and China 250.⁴⁵

Another result of the 1962 defeat was that India realized it needed foreign assistance. While formally unaligned, New Delhi cultivated good relations with Moscow, which was the main arms supplier. This culminated in the 1971 Indo-Soviet Treaty of Friendship and Cooperation, through which India got Russian arms for friendship prices. Relations with Washington were not as smooth, as India distrusted the USA for its hegemonic policies. For instance, the USA used food aid in the 1960s to exert influence,⁴⁶ fought a war in Vietnam perceived as imperialistic,⁴⁷ and supplied arms to Pakistan. India also resented the US stance on nuclear weapons. India considers it unfair that Chinese and US nuclear weapon ownership is considered stable, but not Indian ownership. The USA reacted much more strongly to the Soviet Union acquiring nuclear weapons than India reacted to China, while India's military position toward China is considerably weaker than the USA's position toward the Soviet Union was.⁴⁸

Current relations with China are not as hostile as with Pakistan, but China poses a greater threat in the long term, since China has superior conventional and nuclear arms. China currently prefers a stable regional environment, as that is more conducive to domestic economic development. India and China have been working on improving their defense relations through negotiations on the border disputes and a security dialogue.⁴⁹ They mainly want to improve economic cooperation, and China is now

⁴⁴ T. Rethinaraj, "India's nuclear weaponization: Warheads, delivery systems, and doctrinal compatibility," in *India's military modernization: Strategic technologies and weapon systems*, ed. Rajesh Basrur and Bharath Gopalaswamy (New Delhi: Oxford University Press, 2015), 67–73.

⁴⁵ Stockholm International Peace Research Institute, "World Nuclear Forces," accessed July 20, 2015. <http://www.sipri.org/research/armaments/nuclear-forces>.

⁴⁶ Robert McMahon, "On the periphery of a global conflict: India and the Cold War, 1947-1991," in *India in the world since 1947*, ed. Andreas Hilger and Corinna Unger (Frankfurt: Peter Lang, 2012), 290-293.

⁴⁷ Ashley Tellis, *Unity in difference: Overcoming the U.S.-India divide* (Washington: Carnegie Endowment for International Peace, 2015), 9, accessed July 20, 2015, http://carnegieendowment.org/files/unity_in_difference.pdf.

⁴⁸ Scott Sagan and Kenneth Waltz, *The spread of nuclear weapons: An enduring debate* (New York: Norton & Company, 2013), 161.

⁴⁹ Harsh Pant, "India's relations with China," in *Handbook of India's international relation*, ed. David Scott (London: Routledge, 2011), 235.

India's leading trade partner.⁵⁰ On a global level, both countries oppose US hegemony, and they have coordinated efforts regarding climate change, trade negotiations, and the financial crisis. That does not mean their relations are smooth. China and Pakistan are very close and have an all-weather friendship, and they bond over the perception of India as a common enemy. China is also a major arms supplier to Pakistan.⁵¹ Skirmishes occur regularly along the disputed borders in the Himalayas.⁵² China is improving its nuclear forces, cruise and ballistic missiles, and space and cyberspace warfare. Even if not directed immediately at India, they pose a major security risk.⁵³ India sees China as a bigger threat than vice versa. India feels that China betrayed India in 1962 and committed an act of aggression. In Beijing's eyes, India is not powerful enough yet to pose a threat. India is seen mainly as a regional player due to India's preoccupation with Pakistan.⁵⁴ Because China does not feel threatened by India, there is no buildup of a Chinese military at the borders, and India and China are not spiraled into an arms race in the Himalaya region.⁵⁵ However, India is also concerned about Chinese activity in the Indian Ocean Region (IOR). China is developing harbors and naval bases in South and South-East Asia and investing significantly in East Africa.⁵⁶ This tactic is called the "String of Pearls," which can be tightened around India's neck.⁵⁷ China is thus always in mind when procuring arms.

⁵⁰ "China to invest \$20 billion in India in next 5 years, much less than Japan's offer of \$35 billion," *Times of India*, September 18, 2014, accessed July 4, 2015, <http://timesofindia.indiatimes.com/india/China-to-invest-20-billion-in-India-in-next-5-years-much-less-than-Japans-offer-of-35-billion/articleshow/42814025.cms>.

⁵¹ Harsh Pant, "The Pakistan thorn in the China-India-U.S. relations," *The Washington Quarterly* 35 (2012): 84, accessed July 5, 2015, doi: 10.1080/0163660X.2012.642294.

⁵² Shannon Tiezzi, "China, India end military stand-off along disputed border," *The Diplomat*, October 1, 2014, accessed July 5, 2015, <http://thediplomat.com/2014/10/china-india-end-military-stand-off-along-disputed-border/>.

⁵³ Zia Mian and M. Ramana, "Imbricated regional rivalries and global order: South Asia, China and the United States," *Paper for Nonproliferation Policy Education Center* (2010), 4, accessed July 5, 2015, <http://www.princeton.edu/sgs/faculty-staff/zia-mian/ImbricatedRegionalRivalries.pdf>.

⁵⁴ Tien-sze Fang, *Asymmetrical threat perceptions in India-China relation* (New Delhi: Oxford University Press, 2014), 127-129, accessed July 5, 2015, doi: 10.1093/acprof:oso/9780198095958.001.0001.

⁵⁵ Cohen and Dasgupta, *Arming without aiming*, 68.

⁵⁶ Siddharth Srivastava, "India's strategic and political environment," in *Contemporary security challenges*, ed. Michael Kugelman (Washington: Woodrow Wilson International Center for Scholars, 2011), 71.

⁵⁷ Feroz Khan, "Prospects for Indian and Pakistani arms control," in *The next arms race*, ed. Henry Sokolski (Carlisle: Strategic Studies Institute, 2012), 359, accessed July 5, 2015, <http://www.npolicy.org/thebook.php?bid=26>.

4.1.1 India's military and strategic culture

There were several developments that kick-started military modernization in India, as they revealed problems in the Indian army. The latest war between India and Pakistan was the 1999 Kargil war, which was a response to the intrusion of Pakistani militants in the Indian part of Jammu and Kashmir.. India achieved victory, but the war highlighted substantial problems with India's army. While India won, it should not have been a challenge, because the war took place inside India and Pakistan had little international support, even from China.⁵⁸ A second influence was the October 2001 terrorist attack in India by Pakistani Islamist terrorist organizations. India threatened Pakistan over its support to militants, but the threat was not credible, as the Indian mobilization was so slow Pakistan could counter-mobilize, and international support dwindled. Indian troops also lacked strategic surprise and offensive power. This is partially why the situation did not escalate into war.⁵⁹ Similarly, a major reason for not launching a counter-attack after the 2008 Mumbai attacks by Pakistani militants was that top army commanders recommended against it, because the armory was inadequate and obsolete.⁶⁰ This pushed India into modernizing, expanding its weapon platforms, and updating procurement procedures.⁶¹ India also increased its military expenditure,, from 18.8 billion USD in 1990 to 23.1 billion USD in 1998 and 49.1 billion USD in 2013. However, expenditure has consistently hovered between 2.5 percent and 3.5 percent of India's GDP, as the economy grew too.⁶² These are the major causes for India's expanded weapon-procurement program.

Another influence on the military modernization is India's changing position in the world. In the late 1980s India's economy transitioned from state socialism to neoliberalism, and that has led to strong economic growth. India is set to become a

⁵⁸ Fang, *Asymmetrical threat perception*, 7.

⁵⁹ Walter Ladwig, "A Cold Start for hot wars? The Indian Army's Limited War Doctrine," *International Security* 32 (2007/08): 164, accessed July 5, 2015, doi: 10.1162/isec.2008.32.3.158.

⁶⁰ Srivastava, "India's strategic and political environment," 70.

⁶¹ Vinay Sharma, "Defence procurement: A conundrum," *Centre for Land Warfare Studies* (2013): 116, accessed July 20, 2015,

http://www.claws.in/images/journals_doc/1394685336Vinay%20Sharma%20CJ%20Summer%202013.pdf.

⁶² Stockholm International Peace Research Institute, "Military Expenditure Database," accessed July 20, 2015. http://www.sipri.org/research/armaments/milex/milex_database.

bigger economy than Russia in 2015, and to surpass Brazil in 2016.⁶³ With a stronger economic position often comes a stronger political position, but India has been hesitant about that so far. Ganguly and Fidler said in 2010 that India is not positioning itself as a great power and is not shaping its strategic environment proactively, one of the hallmarks of a great power according.⁶⁴ However, under the new prime minister, Narendra Modi, elected in May 2014, India has been starting to play a more active role. India increased engagement with its neighbors under its Look East Policy in 1991, and is now turning this into an Act East Policy. India has for instance spoken out on the security situation in the South-China Sea.⁶⁵ It is questioned whether this active role will include military power. Pant says India is not able to use force effectively, as the country is uncomfortable using force because its history was determined by the foreign great powers. New Delhi has not been able to organize and arm the army effectively. This affects its diplomatic position.⁶⁶ However, there are also ways to project power that do not include force, for which arms acquisitions are needed. These include securing sea lanes of communication, non-combatant evacuation operations, humanitarian relief, and peacekeeping.⁶⁷ These could be seen in action when India took the worldwide lead in evacuating civilians from Yemen in April 2015⁶⁸ and when it competed with China to lead the international aid effort in Nepal after the earthquake in April 2015.⁶⁹ India has increased such efforts to project power and is carefully increasing its global engagement. It is a country on the rise.

⁶³ "India is world's fastest growing economy. Can it last?" *CNN*, April 14, 2015, accessed July 5, 2015, <http://money.cnn.com/2015/04/14/investing/india-economy-fastest-growing/>.

⁶⁴ Fidler and Ganguly, "India and Eastphalia," 157.

⁶⁵ Michael Kugelman and Raymond Vickery, "From 'looking' East to 'Acting' East: India's own pivot to Asia," *The Diplomat*, October 10, 2014, accessed 5 July 2015, <http://thediplomat.com/2014/10/from-looking-east-to-acting-east-indias-own-pivot-to-asia/>.

⁶⁶ Harsh Pant, "Indian strategic culture: The debate and its consequences," in *Handbook of India's international relations*, ed. David Scott (London: Routledge, 2011), 18-19.

⁶⁷ Walter Ladwig, "India and military power projection," *Asian Survey* 50 (2010): 1167-1167, accessed July 20, 2015, doi: S.2010.50.6.1162.

⁶⁸ Ankit Panda, "23 countries want India's help in Yemen evacuation operations," *The Diplomat*, April 7, 2015, accessed July 20, 2015, <http://thediplomat.com/2015/04/23-countries-want-indias-help-in-yemen-evacuation-operations/>.

⁶⁹ Robin Seemangal, "Disaster diplomacy: After Nepal earthquake, China and India raise to give aid," *Observer*, May 1, 2015, accessed July 20, 2015, <http://observer.com/2015/05/in-nepal-china-and-india-engage-in-disaster-diplomacy/>.

This is a departure from India's old strategic policy. India played a big role in the Non-Aligned Movement (NAM) and has always put great importance on staying out of great power politics. Neutrality, independence, and restraint have always been important ideals for India, and that still expresses itself in foreign policy. There is an extensive debate on the nature of India's strategic culture, and whether India lacks strategic thought. I will try to capture some of the key opinions. Tanham argues that India has never possessed coherent strategic thought, because of its geographically isolated position, a lack of unity, the Hindu view of re-birth discouraging strategic foresight, and repeated invasions leading to a defensive posture..⁷⁰ Pant considers the lack of institutionalization of foreign policy decision-making to be an essential factor as well.⁷¹ Ogden is convinced neutrality was born out of mistrust toward all the great powers after India's experiences with colonialism, US support to Pakistan, and the 1962 Indo-Chino war.⁷² Basrur states that restraint has always been an ideological preference. Security is a political matter for Indian politicians, who made strategic political choices to not manage security issues.⁷³ Not everyone agrees with the notion that India lacks strategy. Khilnani and Guha write that that assessment is based on a foreign idea about what great powers do, which does not necessarily apply to India.⁷⁴ Xinmin states that there might not be a monolithic school of strategic thought but multiple smaller ones due to India's cultural diversity. Harjeet Singh says there is strategic thought, but it is not centered on the Indian state or confined to the military. Instead, it focuses on the social structure of the country.⁷⁵ The debate is still up on whether India possesses strategic thought and the causes for India's strategic choices. However, most scholars agree that maintaining autonomy has always been an important value for India.

⁷⁰ George Tanham, *Indian Strategic Thought: An Interpretive Essay* (Santa Monica: RAND, 1992).

⁷¹ Pant, "Indian strategic culture," 18-19.

⁷² Chris Ogden, "International 'aspirations' of a rising power," in *Handbook of India's international relations*, ed. David Scott (London: Routledge, 2011), 3-4.

⁷³ Rajesh Basrur, *Minimum Deterrence and India's Nuclear Security* (Stanford: Stanford University Press, 2006).

⁷⁴ Shashank Joshi, "A paradigm trap," *The Caravan*, May 1, 2012, accessed July 20, 2015, <http://www.caravanmagazine.in/perspectives/paradigm-trap>.

⁷⁵ Sui Xinmin, "India's strategic culture and model of international behaviour," *China Institute of International Studies*, June 25, 2014, accessed July 20, 2015, http://www.ciis.org.cn/english/2014-06/25/content_7007616.htm.

The perceived lack of strategy also expresses itself in arms procurement. Cohen and Disgupta state that India's army is modernizing without strategic purpose.⁷⁶ Pant calls the modernization ad-hoc and describes defense planning as lacking in strategic orientation.⁷⁷ Chandramohan declares that the government allocates funds to the military based on operational readiness instead of a grand strategy.⁷⁸ Mathews and Lozano write that acquisition programs and indigenization efforts are marked by an "incapacity to plan, design, implement, and manage a suitable long-term strategy."⁷⁹

I cannot look into the minds of the Indian government, but I do feel there is an overarching theme in the developments of the past years. I do not know if it is explicitly planned, but I can decipher a pattern in the choices for suppliers. India chooses to develop the domestic industry through the technology received in foreign imports, diversifies suppliers to balance their influence, and stays non-aligned in a modern way by pluralizing alignment. This is done to decrease foreign leverage, to become more independent, and to improve India's domestic growth, fitting a country on the rise. In the following chapters, I will explain how and why.

⁷⁶ Cohen and Dasgupta, *Arming without aiming*, xii.

⁷⁷ Pant, "India's arms acquisitions," 65.

⁷⁸ Balaji Chandramohan, "India's defence budget, strategic orientation and military modernisation," *Future Directions International*, August 15, 2014, accessed July 20, 2015, <http://apo.org.au/research/indias-defence-budget-strategic-orientation-and-military-modernisation>.

⁷⁹ Matthews and Lozano, "India's defence acquisition," 148.

5 Theoretical models of arms trade

This chapter discusses five different theories that explain arms-transfer patterns in the world, focusing on aspects that influence the choice for suppliers. I will explain the workings of the theories, and then use these theories to analyze India's supplier choices in the next chapter.

5.1 Krause's ladder of production

Krause composed an influential framework on the diffusion of military technology. While the specific applications have been criticized, like the nature, timing, and implications of technological innovation, his *longue durée* view of arms trade has been well received.⁸⁰ Based on historical arms trade patterns from 1400 to 1972, he extrapolates the arms trade cycles, through which technology spreads over the world.⁸¹

He categorizes countries into four types according to control over technology. The countries go from merely possessing the skill to operate a weapon (type I), to reproducing weapons (type II), to adapting weapons (type III), and finally to creating weapons (type IV). All countries want to be type IV, and they pursue that by purchasing arms. The skills of type I are obtained through material transfer, type II through design transfer, and type III through capacity transfer. Countries that supply weapons are sorted into three tiers. First-tier suppliers are the critical innovators that start technological revolutions, as they can invent and create weapons. They develop and export arms to gain power. Second-tier suppliers can manufacture a wide range of modern weapons and can adapt and modify arms, but they do not innovate. They are forced to choose between independence and technological competition, and that limits their foreign-policy options. These countries develop and export arms to obtain wealth, so they do not show a lot of restraint in export decisions. Third-tier suppliers are the copiers and reproducers. They produce weapons below current technology levels, only produce one or two sophisticated weapon systems, or are dependent on import of

⁸⁰ Kinsella, "The arms trade," 222.

⁸¹ Keith Krause, *Arms and the state: Patterns of military production and trade* (Cambridge: Cambridge University Press, 1992).

critical components. They pursue victory in war. Countries are positioned on a ladder, rising through the tiers, increasing their control over technology.

Bitzinger also uses Krause's classification of tiers. He states that nowadays second-tier suppliers have trouble sustaining their arms industries because financial and technological requirements have increased. Second-tier producers have not achieved autarky but merely exchanged dependence on foreign weapons for dependence on foreign critical subsystems and technologies. They have not climbed the ladder to become a first-tier supplier. Bitzinger identifies six strategies countries employ as a response. They can quit the defense business, rationalize and consolidate defense operations, diversify the arms industry to also cover civilian products, adapt dual-use technology for military purposes, increase exports, and/or globalize production.⁸²

Overall, the theory suggests that the leading motivation for buying arms abroad is to develop an industry at home. The best supplier for a country is the one offering the best options to develop a domestic industry, which is usually a country of a higher tier. I will explore how India has moved on the ladder of production, and whether it buys from countries in different tiers now.

5.2 Levine et al's collective-action problem

Levine et al study arms trade in an economics research group, and they made several important contributions. In a 2003 paper, Dunne et al found that between 1990 and 1998 the number of arms companies shrunk significantly.⁸³ After the Cold War, states' needs to buy arms domestically, or home bias, decreased, which led to increased competition on the international market. As the market became more open, R&D costs increased, which led to the concentration of the arms industry. There were many international mergers, which led to an increasingly transnational industry. For that reason, Brauer thinks countries should not be categorized into tiers. Production of

⁸² Richard Bitzinger, *Towards a brave new arms industry?* (London: International Institute for Strategic Studies, 2003), 24-25, 39-41, accessed July 5, 2015, doi: 10.1080/714027877.

⁸³ J. Dunne et al, "Concentration in the international arms industry" (paper presented at the Middlesex conference on security, 2001, and the ECAAR Atlanta meetings, 2002), April 20, 2002, accessed July 20, 2015, <http://carecon.org.uk/Armsproduction/Papers/conc2621.PDF>.

components gets outsourced to countries in lower tiers — the arms-production periphery. A single weapon system can therefore be produced in a plethora of countries.⁸⁴

Countries export arms for both economic and strategic reasons. Countries compete with each other to sell arms, and with increased competition, they sell more advanced technology to survive on the market. There is little coordination between the exporters, which leads to more arms being exported, which is not good for international security. This is a collective-action problem: individual exports are good for the exporter, but other countries think the same, leading to a total negative security balance. Export control regimes are an attempt to solve this and to coordinate between countries. They limit opportunities for recipients to play exporters against each other and prevent destabilizing stockpiles.⁸⁵ I will follow Levine et al's logic and look at how collective action on the side of the supplier has influenced India's arms imports.

5.3 SIPRI's typology of suppliers

SIPRI's typology of supplier motivations distinguishes three ideal types of arms trade. All transfers show elements of all three, but generally one pattern dominates. The type of supplier influences the amount of power the supplier has over the recipient.

The first pattern is hegemony, where arms flow from dominant to dependent powers. Hegemons supply arms for a specific task that is of interest to the hegemon or to strengthen relations with a specific group because it is strategically beneficial. It usually comes with military aid and/or the free gift of weapons, to reduce competition. They can demand favors and withhold spares if the recipient does not comply. They also supply to ensure that another dominant power does not achieve hegemony, called pre-emptive supply. This type of supply leaves the suppliers with less leverage.

The second pattern is industrial arms supply, which involves arms transferred for financial reasons. If this is the only function of arms trade, weapons will be supplied to

⁸⁴ Brauer, "Arms industries," 987.

⁸⁵ García-Alonso and Levine, "Arms trade and arms races."

whomever can afford them. If weapons are made on a larger scale, economies of scale dictate the costs go down. If production occurs over a longer period of time, instead of only once for the government, labor productivity is higher. Exports are therefore important for governments to keep a healthy defense industry. It keeps R&D alive and costs low. Industrial patterns suggest a willingness to guarantee follow-up suppliers, while hegemony includes more controls and a willingness to interrupt supplies.

Finally, there are restrictive patterns. Suppliers restrict export to avoid becoming involved in conflict. Arms are supplied only if the deliveries do not affect regional stability negatively. Recipients (potentially) involved in conflicts will not receive any weapons. This is done to keep a neutral image, to reduce a belligerent image (e.g., Germany and Japan after the Second World War), or to preserve international order.

Acquisition of weapons from a foreign source may create dependence. When interests align, this is less troublesome, but when they do not, independence is threatened. Suppliers might terminate a contract, or overcharge for parts or discontinue them. Dependence is only possible when the recipient has limited abilities to look for other suppliers. To avoid dependence, the recipient can establish a domestic industry and diversify suppliers to increase competition between suppliers.⁸⁶ I will analyze to what extent India's suppliers now have different motivations, and how this has influenced India's dependence on certain arms suppliers.

5.4 Kinsella's arms trade networks

Kinsella has a different approach. Using sociological and economic theories, he presents the global arms trade as a social network. He identifies three different ways to profit from exports. Countries profit politically, by making friends and possibly gaining influence on foreign policy; economically, by generating sales; and militarily, by making their own defense production healthier and strengthening military alliances. He also recognizes the prisoner's dilemma that Levine et al discuss, and adds that

⁸⁶ Stockholm International Peace Research Institute, *Arms trade and the third world* (Uppsala: Almqvist & Wiksells, 1971), 17-85.

competition between exporters makes realization of the three profits uncertain. Based on Granovetter's social network analysis, Kinsella poses that there are social networks within the arms trade to solve the prisoner's dilemma. Social relations and structures between countries generate trust and discourage malfeasance, overcoming the risk of free-riders, and destabilizing stockpiles. Network transactions entangle actors and promote future interactions, stimulating interdependence. Networks also facilitate the transfer of non-material things, like information, training, maintenance, technical support, etc. These arms networks can be part of larger military relations too. The networks are more than just contracts, as they are "long-term investments in mutually beneficial interstate relations." The most significant and congruent relations are between countries with common foreign policy goals. Arms transfers indicate that the supplier is committed to the security of the recipient and that the recipient can count on future commitment. Increasing trust, especially through strategic relations, thus facilitates arms trade. Not all arms transfers show this type of commitment though.

Kinsella calls the number of ties between actors in a network centralization. Based on data from 1950 to 2000, he finds that there is a trend toward decentralization of suppliers since 1985. This means the world has fewer big, central suppliers with a large number of recipients that dominate the arms market. Major suppliers (especially within the West) also have increasingly overlapping, non-distinct networks. The rate of centralization remained stable over time for recipients. This is most likely caused by the disappearing alliances from the Cold War. Note that Kinsella's *centralization* refers to the number of ties countries have, while Dunne's *concentration* refers to how the arms market is dominated by a few companies. Kinsella also builds upon Krause, finding that the role of second- and third-tier suppliers in the arms trade network is getting bigger. This leads to less leverage for suppliers.⁸⁷ In a follow-up study, he finds

⁸⁷ David Kinsella, "Changing structure of the arms trade: A social network analysis" (paper presented at the annual meeting of the American Political Science Association, Philadelphia, August 28-31, 2003), accessed July 2015, http://pdxscholar.library.pdx.edu/cgi/viewcontent.cgi?article=1018&context=polisci_fac.

that arms trade is an indicator of “the coalitional structure of the international system, with perhaps more nuance than formal alliance systems.”⁸⁸

Åkerman and Larsson Seim combine Kinsella’s social-network analysis with the Democratic Peace Theory (which states that democracies do not go to war with each other), and find that during the Cold War, democracies preferred to trade with democracies, while autocracies had an even stronger bias for other autocracies. This is not the case anymore.⁸⁹ This means that shared foreign policy considerations are based on other concerns now. I will look at the networks India has with its suppliers, and what kind of shared foreign policy considerations form the base for the current ties between countries.

5.5 Harkavy’s theory on international systems

Harkavy identifies key factors determining the characteristics of arms trade based on historical analysis from the Middle Ages onward. He uses these to make models of arms trade in the interwar (1930–1939) and postwar period (1945–1975). This leads to a complex web where the structures of global systems influence different aspects of arms trade. These influences are in turn affected by control variables. Harkavy is not very clear about causality and does not always describe in detail why the independent variables lead to the dependent variables. He states that “a tight delineation of cause and effect would be difficult to achieve.”⁹⁰ The model is not statistically proven either, as most factors are not quantifiable. However, it has some valuable and original ideas. Table 5.1 shows the identified characteristics.

⁸⁸ David Kinsella, “Power transition theory and the global arms trade: Exploring constructs from social network analysis” (paper presented at the Fifth Power Transition Conference, Carmel, August 20–22, 2004), accessed July 5, 2015, <http://web.pdx.edu/~kinsella/papers/ptt04.pdf>.

⁸⁹ Anders Åkerman and Anna Larsson Seim, “The global arms trade network 1950–2007,” *Journal of comparative economics* 42 (2014): 548, accessed July 5, 2015, doi: 10.1016/j.jce.2014.03.001.

⁹⁰ Robert Harkavy, *The arms trade and international systems* (Cambridge, USA: Ballinger Publishing Company, 1975), 1–12, 47.

Table 5.1 The variables of arms trade as determined by Harkavy

Independent variables	Intermediary variables	Dependent variables
Polarity / alliance systems	Amount of government controls	Supplier markets and their behavior
Importance of ideology	Structure of business	Donor-recipient patterns
Totality in warfare	Rate of technological change	Transfer modes
Prevailing economic system		Level of autarky

Source: Harkavy, *The arms trade and international systems*.

The different international systems in the Interbellum and the Cold War period also led to different patterns of arms trade. The Interbellum saw moderately dispersed power centers; multipolar blocs; a relatively non-ideological system, mainly based on a balance of powers; a moderated mood regarding total war; a laissez-faire economy with many transnational businesses; few government controls; and fast technological change. This led to supplier markets with more players; multiple-client relationships and extensive cross-bloc arms ties; a high degree of coproduction and licensing; and a relatively high degree of weapons-producing independence. On the other hand, the postwar world saw bipolarity with two major powers; a bipolar bloc system with hegemonic alliances; an ideological locus of conflict; a zeitgeist of total war; state capitalism and state socialism dictating a controlled economy; tight government controls; and slow technological change. This led to more narrowly oligopolistic arms-supplier markets (fewer players); predominantly single-client and within-bloc relationships; extensive coproduction and licensing agreements; and a lesser degree of weapons-producing independence.

Harkavy stated in a follow-up article in 1994 that without rival blocs, industrial motives are the most important again for suppliers, not hegemonic ones. He also suggested that with the rise of new technology, a new cycle in arms productions had begun. Aware of the short time period that had passed, he tentatively posited that arms trade in the post-Cold War period not based on political alignment anymore, but economically motivated again, like in the Interbellum, with cross-bloc trade.⁹¹

⁹¹ Robert Harkavy, "The changing international system and the arms trade," *The Annals* 535 (1994): 22-28, accessed July 5, 2015, doi: 10.1177/0002716294535001002.

This model is useful because changes in the international systems might have led to changes in the arms market too. I will study to what extent historical developments have influenced the aspects of arms trade he mentions.

5.6 Summarizing the theories

All theories bring forth different aspects that are influential in determining supplier choices. Krause mentions the importance of the diffusion of military technology, leading to trade motivated by the desire to build a domestic industry. Levine et al discuss the collective action problems, and the export control regimes that have risen as a result. Kinsella sees arms trade as a social network. SIPRI discusses how the motivations of suppliers influence their willingness to supply arms. Finally, Harkavy describes the influences of international systems. The next chapter applies these theories to India. Suppliers are never chosen for a single reason, and all the different motivations in turn interact with each other. This creates an intertwined web. Any motivations I mention for a specific purchase are always just one of many.

6 India's supplier choices

In this chapter, I will apply the theories to present-day India, and describe key developments in India's supplier choices. The order in which I discuss the different influences on supplier choices is unrelated to their importance.

6.1 Quality problems with Russian arms

As mentioned by Pant, India has been having troubles with the quality of Russian arms, and that is an important reason for the decline of the Russian share. It is useful to look at what exactly is problematic for India. The MiG-21 is often mentioned as a source of frustration. This plane has been part of the Indian Air Force (IAF) since 1963, but the aircraft has a very negative reputation in India. Between 1970 and 2013, more than 170 pilots and 40 civilians have been killed in MiG-21 crashes. New Delhi also has had difficulties in acquiring spares for it, eventually obtaining them from disassembled MiG-21s in Eastern Europe or producing them in Indian factories.⁹² This has led to Russian criticism, as those parts are unlicensed. Moscow said that those “fake” parts are the reason the MiG-21s crash.⁹³ Withholding spares is a way a supplier can continue its leverage, even long after the initial purchase.

Another issue is tardiness in deliveries. In 2008 India leased the INS Chakra II, a nuclear-powered submarine from Russia. It was supposed to be delivered in 2009, but was only handed over in 2012.⁹⁴ India also ordered three Krivak-III/Talwar class frigates in 2006, two of which arrived in 2012, and the last in 2013.⁹⁵ India and Russia are jointly developing the Perspective Multi-Role Fighter (PMF), previously called the Fifth Generation Fighter Aircraft (FGFA), yet this project has seen years of delays and

⁹² Kabir Taneja, “The trouble with India's MiG-21 fighter jets,” *New York Times*, August 8, 2013, accessed July 5, 2015, <http://india.blogs.nytimes.com/2013/08/08/the-trouble-with-indian-air-forces-mig-21-fighter-jets/>.

⁹³ “IAF's sourcing spares for MIG planes from outside Russia ‘wrong,’” *Hindustan Times*, March 26, 2012, accessed July 5, 2015, <http://www.hindustantimes.com/newdelhi/iaf-s-sourcing-spare-for-mig-planes-from-outside-russia-wrong-envoy/article1-831186.aspx>.

⁹⁴ “Russian-built nuclear submarine joins Indian navy,” *BBC News*, April 4, 2012, accessed July 5, 2015, <http://www.bbc.com/news/world-asia-india-17606829>.

⁹⁵ “India receives last of 3 follow-on Krivak III/Talwar class frigates from Russia,” *Defense Industry Daily*, June 30, 2013, accessed July 5, 2015, <http://www.defenseindustrydaily.com/india-orders-3-more-krivak-iiitalwar-class-frigates-02448/>.

cost overruns. The costs are split equally, but Russia reduced India's share of the development work from an initial 25 percent to 13 percent. Russia does not feel confident in India's capacity to produce the PMF, while India wants to contribute more, to ensure all its demands are met and to improve the domestic industry.⁹⁶

6.1.1 Admiral Gorshkov/INS Vikramaditya

The biggest problem was the sale of the old Soviet aircraft carrier Gorshkov. She was sold to India in 2004 and supposed to be refitted into a Conventional Take-Off and Landing carrier and delivered in 2008, but this was delayed until 2013.⁹⁷ As she was under construction, the price of the deal rose from 625 million USD to 2.3 billion USD in 2009. The original deal was that the carrier was free but India would pay for all the upgrades. Rosoboronexport, the Russian arms export agency, stated that they underestimated the costs of the upgrades, made mistakes in calculating the price, and were affected by rising oil prices.⁹⁸ India was forced to accept the changes for several reasons. It was under time pressure, as the old carrier INS Viraat was scheduled to retire in 2009. Significant funds had already been sunk into the ship, China was retrofitting its own aircraft carrier,⁹⁹ Russia threatened not to hand the Gorshkov over if India did not pay the full amount, and there were no alternatives.¹⁰⁰

During the 2009 re-negotiations over the Gorshkov price, India may not have been circulating rumors that it was interested in buying the U.S.S. Kitty Hawk, an US ship from 1961, but it was not suppressing them. This was a tactic to drive down the

⁹⁶ Vivek Raghuvanshi, "India compromises to smooth FGFA disputes," *Defense News Daily*, June 16, 2015, accessed July 20, 2015, <http://www.defensenews.com/story/defense/air-space/strike/2015/06/16/india-russia-fighter-fgfa-final-agreement-hal-uac-work-share-indigenous/28730155/>.

⁹⁷ Nitin Gokhale, "INS Vikramaditya, India's biggest warship, finally arrives," *NDTV*, January 5, 2014, accessed July 5, 2015, <http://www.ndtv.com/india-news/ins-vikramaditya-indias-biggest-warship-finally-arrives-546845>.

⁹⁸ "Gorshkov price settled at 2.3 billion," *Hindustan Times*, December 17, 2009, accessed July 5, 2015, <http://www.hindustantimes.com/newdelhi/gorshkov-price-settled-at-2-3-billion/article1-487615.aspx>.

⁹⁹ "INS Vikramaditya: India's new carrier," *Defense Industry Daily*, July 16, 2015, accessed July 16, 2015, <http://www.defenseindustrydaily.com/ins-vikramaditya-may-hit-delay-cost-increases-03283/>.

¹⁰⁰ "Russian aircraft carrier ready in 2012 if India pays 2 bln more," *Sputnik*, November 13, 2008, accessed July 5, 2015, <http://sputniknews.com/russia/20081113/118299115.html>.

price.¹⁰¹ New Delhi did not succeed. This shows how important it is to diversify suppliers, as India had very little leverage because there were no alternatives. Russia was behaving like a hegemon here, which is what India wants to avoid now.

6.1.2 Reducing leverage

To avoid similar fiascos, the DRDO is currently developing the aircraft carriers INS Vishal and INS Vikrant, for which it wants to use US technology.¹⁰² In January 2015, New Delhi signed an agreement with Washington in which both countries agreed they would “form a working group to explore aircraft carrier technology sharing and design.”¹⁰³ However, this is just an *agreement* to form a *working group* to *explore* the option to share such designs, and many steps away from actually handing over such technology. Whether this will truly happen is a second question, as US technology transfer is bound by many regulations and not transferred easily.¹⁰⁴ It is also unclear whether there is enough political will in the USA for that.¹⁰⁵ If this goes through, it would be significant, as it would mean the USA offered very sensitive arms technology, which is not the norm, as will be shown in the next chapters.

There is a lot of frustration felt by Indian officials over tardiness, a lack of spares and low quality delivered by Russia, contributing to Russian leverage over Indian arms. This has cooled down the defense trade relations somewhat. To increase leverage, India is developing its own weapons and purchasing from other countries than Russia in order to balance the different suppliers against each other. These two developments are a major theme in all India’s arms purchases.

¹⁰¹ Nandini Lakshman, “Why India talked up a U.S. carrier deal,” *Bloomberg*, March 4, 2008, accessed July 5, 2015, <http://www.bloomberg.com/bw/stories/2008-03-04/why-india-talked-up-a-u-dot-s-dot-carrier-dealbusinessweek-business-news-stock-market-and-financial-advice>.

¹⁰² Rajat Pandit, “India now puts aircraft carrier plan on fast track,” *The Times of India*, February 23, 2015, accessed July 5, 2015, <http://timesofindia.indiatimes.com/india/India-now-puts-aircraft-carrier-plan-on-fast-track/articleshow/46336472.cms>.

¹⁰³ The White House, “U.S.-India Joint Statement साँझा प्रयास - सबका विकास” – ‘Shared Effort; Progress for All.’” press release, January 25, 2015, accessed July 5, 2015, <https://www.whitehouse.gov/the-press-office/2015/01/25/us-india-joint-statement-shared-effort-progress-all>.

¹⁰⁴ Lavina Lee, “Russia’s engagement of India: Securing the longevity of a ‘special and privileged’ strategic partnership,” in *The engagement of India: Strategies and responses*, ed. Ian Hall (Washington: Georgetown University Press, 2014), 79.

¹⁰⁵ “India eyes US aircraft carrier technology,” *The Times of India*, February 4, 2015, accessed July 5, 2015, <http://timesofindia.indiatimes.com/india/India-eyes-US-aircraft-carrier-technology/articleshow/46122741.cms>.

6.2 Domestic industry

Developing a strong indigenous arms industry is a priority for India. New Delhi has believed since independence that due to the hostile geopolitical environment, it cannot afford to be dependent on external suppliers. Without local arms production, India is susceptible to arms embargoes and coercion. Furthermore, to be truly respected as a great power, autarky in arms production is essential. India also considers a strong domestic arms industry to be beneficial for the economy. Prices would be lower, money could be made from exporting weapons which keeps R&D costs low, it would not lose money to exchange rates, and employment and technological development would increase. India distinguishes between self-sufficiency and self-reliance. Self-sufficiency means having all the material resources and technical expertise to develop arms, while self-reliance means producing arms while allowing for import of design, technology, systems, and know-how.¹⁰⁶ Self-sufficiency is the ultimate goal, but self-reliance has been the practice for a long time.

The most important part of the defense industry are the eight state-owned Defence Public Sector Undertakings (DPSU), which have near monopolies in their sector,¹⁰⁷ and forty-one Ordnance Factories. The private sector is small. Altogether, the private sector did defense work worth 800 million USD in 2010, while the state-owned factories did 4.5 billion USD worth of work. This makes the private sector 18 percent of the size of the state-owned sectors. While the rest of India's economy has become more free-market oriented, the defense sector is still rather protectionist.¹⁰⁸ Officially, the private sector is equal, but in practice the public sector is often preferred. Private sector tenders are often for less sensitive and technologically advanced arms.

There are substantial problems with the domestic industry. It is uncompetitive, overly ambitious, and creates low quality products. A 2006 audit of Ordnance Factories showed that 40 percent produced armaments of inferior quality, even though the

¹⁰⁶ Richard Bitzinger, "The Indian defence industry: Struggling with change," in *India's Military Modernization: Challenges and prospects*, ed. Rajesh Basrur, Ajaya Kumar Das and Manjeet Pardesi (New Delhi: Oxford University Press, 2014), 118-120, accessed July 5, 2015, doi: 10.1093/acprof:oso/9780198092384.003.0005.

¹⁰⁷ IISS, *The Military Balance*, 220.

¹⁰⁸ Bitzinger, "The Indian defence industry," 118, 130.

development took decades. The technological gap between local and foreign products has widened over the past two decades, while development costs have increased. The five most important weapon-development programs are all at least two to three times over their allocated budgets.¹⁰⁹ Cohen and Dasgupta even state that the Indian military industry “has not delivered a single major weapon system to the armed forces in five decades of existence.”¹¹⁰ This has led to problems between the government, the military, and the DRDO. The DRDO focuses on self-reliance above all, while the military favors independence but prefers reliable foreign imports over inferior domestic production.¹¹¹ The whole arms acquisitions process is a mess, as it is slow, all institutions have competing interests, and bureaucracy rules.¹¹² Coordination between institutions or even between the armed services is barely existent. The military has little say in the final decisions on arms acquisitions, and the bureaucracy is allegedly ignorant about technical specifications and military needs.¹¹³ This could lead to arms purchased based on political considerations rather than technical qualifications. Problems in the industry are a reason to import arms to avoid the delays and quality issues, and make technology transfer a priority when buying arms.

Many military sources claim that the political establishment is apathetic about indigenization,¹¹⁴ but I do not share that assessment. As an illustration, I analyzed the questions asked in the Rajya Sabha, the upper house of the Parliament of India.¹¹⁵ I found that the Members of Parliament are consistently harping on indigenization. In the 235th session (23 April 2015 to 13 May 2015), the MoD answered sixty-two questions. Answers were categorized exclusively into different topics. There were twenty questions about arms procurement, three about concerns over foreign direct

¹⁰⁹ *Ibidem*, 123.

¹¹⁰ Cohen and Dasgupta, *Arming without aiming*, 32.

¹¹¹ Prasad Routray, “Armed forces versus technologists,” 35-39.

¹¹² Ravinder Pal Singh, “Recommendations on arms procurement reforms in India.” Observer Research Foundation Policy Paper 1 (2012): 7, accessed July 5, 2015, http://www.orfonline.org/cms/export/orfonline/modules/occasionalpaper/attachments/Policy-Paper_1349684216748.pdf.

¹¹³ Mrinal Suman, “Defence production and acquisitions: Enhancing capability through an integrated approach,” *Center for Land Warfare Studies* (2013): 137, accessed July 20, 2015, http://www.claws.in/images/journals_doc/1394685381Mrinal%20Suman%20CJ%20Summer%202013.pdf.

¹¹⁴ For instance Laxman Behera, “‘Make in India’ for defence: A roadmap,” *IDS Policy Brief* (2015): 4, accessed July 5, 2015, http://www.ids.in/policybrief/MakeinIndiaforDefence_lbehera_050215.html.

¹¹⁵ I chose the Rajya Sabha over the Lok Sabha because the search function is substantially better.

investment (FDI), two about concerns over the quality of already imported planes, and one about receiving foreign technology. Of those twenty questions about arms procurement, ten were outright urging for indigenization and eight were highlighting problems with foreign purchases.¹¹⁶ Modi is also pushing to increase manufacturing in India with a campaign called “Make in India.” Defense is at the heart of it.¹¹⁷ In May 2015, the government decided for instance that all procured warships and submarines must be produced domestically, and foreign vendors may participate only in the design phase.¹¹⁸ Modi’s foreign visits are characterized by promoting manufacturing in India, especially defense.¹¹⁹ It is absolutely a key concern for all stakeholders involved, and not only under Modi but also under the previous prime minister, Singh. He attempted to reform and clarify procurement procedures and started several policies to improve the domestic industry through imports.¹²⁰

Developing an indigenous arms industry is important for India, as it does not want to be pressured by foreign suppliers. Nonetheless, so far the industry has not been very successful. Procurement from abroad is therefore also guided by the desire to strengthen the domestic industry, as explained in further detail below.

6.2.1 Choosing suppliers to benefit the domestic industry

Technology transfer plays a major role in each tender for arms that India cannot develop indigenously. It is done to improve the domestic industry, and comes into play in multiple ways. As a starter, India wants foreign partners to offer generous offset deals. Offset is a mechanism where the recipient of a deal requires a supplier to engage in the economy in other ways besides the delivery of the product. This can be in the

¹¹⁶ “Rajya Sabha Questions,” Rajya Sabha, accessed July 5, 2015, <http://164.100.47.5/qsearch/qsearch.aspx>.

¹¹⁷ Dinakar Peri, “Defence at the heart of ‘Make in India,’” *The Hindu*, February 19, 2015, accessed July 5, 2015, <http://www.thehindu.com/todays-paper/tp-national/defence-at-the-heart-of-make-in-india/article6910517.ece>.

¹¹⁸ Vivek Raghuvanshi, “India to limit ships buy to domestic yards,” *Defense News Daily*, May 2, 2015, accessed July 20, 2015, <http://www.defensenews.com/story/defense/2015/05/02/india-ship-submarine-overseas-navy-domestic-shipyard-indigenous-destroyer-corvette/26631375/>.

¹¹⁹ Amitendu Palit, “Economic drivers of India’s external engagement strategy,” *Institute of South Asian Studies Insights*, April 27, 2015, accessed July 20, 2015, <http://www.eurasiareview.com/27042015-economic-drivers-of-indias-external-engagement-strategy-analysis/>.

¹²⁰ Karanpreet Kaur, *Defence acquisitions and offsets: The road ahead* (New Delhi: Kalpana Shukla, 2013), 19-21, accessed July 20, 2015, http://www.claws.in/images/publication_pdf/457520731_MP4218-11-13.pdf.

form of making purchases from the industry of the recipient, licensed production, or investing in the recipient country. The Medium Multi-Role Combat Aircraft (MMRCA) tender is the most expensive tender in Indian history; it is estimated to be worth between 11 billion USD and 20 billion USD. It is a great example of how important offset is for India. In 2012, after multiple rounds, India decided to negotiate exclusively with French Dassault, officially because of its lower life-cycle cost. An offset deal worth 50 percent was required by law. The USA offered two different jets, but did not even make it to the second round. Vucetic and Duarte attribute this to the fact that the USA restricts transfer of technology through offsets more than France or the European joint-venture Eurotyphoon does, which was the other company to be shortlisted.¹²¹ Now while the specifics are being hammered out, it turns out that France is hesitant to supply all the required technology. India demanded 108 planes to be manufactured in India, but according to Dassault that would increase costs 2.7 times.¹²² Hindustan Aeronautics Limited (HAL) supposedly cannot absorb the technology, or produce the desired quality, or stick to the desired deadlines.¹²³ Due to the increased costs, and the hesitation about technology transfer, the deal is currently reduced to only 36 ready-made planes. Even that deal is uncertain, despite India's alarming lack of combat aircraft. Still, Indian commentators critique Modi for not insisting enough on technology transfer.

What one can take away from this incident is that whom India picks and the size of the contract depends partly on how much technology India can get from the offsets, to improve the industry. Offsets have become a more important strategy to receive technology. Offset became mandatory in 2005, and since 2012 all arms contracts with more than 50 percent foreign components require 30 percent offset in the form of counter purchases or FDI. In 2014, the cap of FDI was increased from 26 percent to 49 percent to make offset more attractive. In cases of technology transfer 75 percent FDI

¹²¹ Srdjan Vucetic and Erico Duarte, "New fighter aircraft acquisitions in Brazil and India: Why not buy American?" *Politics and Policy* 4 (2015): 410, accessed July 5, 2015, doi: 10.1111/polp.12119.

¹²² Pranah Samanta and Manu Pubby, "France offers 25% discount to India on purchase of 36 Rafale jets," *The Economic Times*, May 6, 2015, accessed July 5, 2015, <http://economictimes.indiatimes.com/news/defence/rafale-deal-india-france-set-up-teams-to-work-out-details/articleshow/47174671.cms>.

¹²³ Jay Menon and Amy Svitak, "India rethinking Rafale fighter deal," *Aerospace Daily and Defence Report*, April 13, 2015, accessed July 5, 2015, <http://aviationweek.com/defense/india-rethinking-rafale-fighter-deal>.

is allowed, and 100 percent when it involves new technology.¹²⁴ It was increased because limits in FDI were seen as hampering defense trade with the USA especially.¹²⁵ The success of the offset strategy has been limited, as many foreign vendors consider the Indian offset policy harsh and outdated, or feel that the Indian industry is not advanced enough to invest in.¹²⁶ The lack of success does not take away from the fact that it is a strategy of the government to develop the industry, so it still influences their supplier choices. During the Cold War, offset deals with the Soviet Union included substantial licensing, countertrade, and cheap long-term financing. India could trade in rupees, which was preferable. Offset from Western countries was not as good, as they only offered limited licensing and some credit arrangements.¹²⁷ However nowadays, Russia does not offer better offset deals anymore than others.

India wants to improve the private sector, as it hopes it will be more efficient than the DSPUs. This might pressure the DSPUs into reforming and becoming more cost-effective and market oriented, while listening more to the military's demands.¹²⁸ Foreign companies can partner with Indian companies through offset deals and strengthen the private sector.¹²⁹ The role of the private sector in Russia is small, so Russia is not an ideal partner for this approach. Moscow allows arms exports only through Rosoboronexport,¹³⁰ and there is a strong mindset among Russian defense firms that anything in the defense sector has to be done through the government.¹³¹

¹²⁴ D. Raghundan, "The key is technology, not money," *The Hindu*, April 15, 2015, accessed July 5, 2015, <http://www.thehindu.com/opinion/op-ed/fdi-in-defence/article7102328.ece>.

¹²⁵ Harshita Kohli, "The ties that don't (yet) bind: India's uncertain role in the United States' 'rebalance' to the Asia Pacific," *S. Rajaratnam School of International Studies Policy Brief* (2014): 5, accessed July 20, 2015, <http://pub.iges.or.jp/modules/rssc/forward.php?fid=651094>.

¹²⁶ Matthews and Lozano, "India's defence acquisition," 146.

¹²⁷ Angathevar Baskaran, "The role of offsets in Indian defence procurement policy," in *Arms trade and economic development: Theory, policy and cases in arms trade offsets*, ed. Jurgen Brauer and J. Dunne (Abingdon: Routledge, 2004), 218-219.

¹²⁸ Rahul Gajare, Amit Mahawar and Swarnim Maheshwari, "Defence: gunning for indigenous fire power," *Edelweiss Security Limited* (2014): 25, accessed July 5, 2015, http://www.edelresearch.com/showreportpdf-26476/DEFENCE-_SECTOR_UPDATE-JUL-14-EDEL.

¹²⁹ Amer Latif, "Defense offsets in India," *Center for Strategic and International Studies Commentaries*, August 16, 2012, accessed July 5, 2015, <http://csis.org/publication/defense-offsets-india>.

¹³⁰ P. Dash, "Indo-Russian defence ties: An overdependence dilemma," in *India's military modernization: Challenges and prospects*, ed. by Rajesh Basrur, Ajaya Kumar Das and Manjeet Pardesi (New Delhi: Oxford University Press, 2014), 263, accessed July 5, 2015, doi: 10.1093/acprof:oso/9780198092384.001.0001.

¹³¹ Alexandra Katz, "Indian business bullish on Russia as investment partner," *Russia & India report*, June 19, 2015, accessed July 5, 2015, http://in.rbth.com/economics/2015/06/19/indian_business_bullish_on_russia_as_investment_partner_43779.html

Overall, Russian investment in the Indian private sector is very low. Between 2000 and 2015, Moscow was the 19th largest investor, with 0.42 percent of all FDI.¹³² There is little FDI yet in the defense sector, but Russia cannot really improve the situation.¹³³

India is also looking for foreign partners interested in setting up joint ventures. This can be done in or outside of an offset deal. The number of joint ventures has increased since 1998 and India also considers this a good model for technology transfer.¹³⁴ Russia and Israel offer the most advantageous joint ventures to India.¹³⁵ Russia and India are jointly developing BrahMos cruise missiles, and India hails this cooperation as a model to repeat in the future. The equality of this partnership has been critiqued, as India's concrete contribution, besides financial, is hard to identify.¹³⁶ BrahMos imports the propulsion system from Russia, and India is allegedly involved only in the assembly work of subsystems.¹³⁷ Other joint ventures are the Indo-Russian PMF,¹³⁸ and the Israeli-Indo joint development of a longer-range version of the existing Israeli Barak missile.¹³⁹ France and Israel agreed to jointly develop the short-range surface-to-air missile (SAM) Maitri in 2007, but no concrete steps have been taken yet.¹⁴⁰

Overall, technology transfer is important for India, as the country wants to indigenize the defense production. While a desire for indigenization is not new, the strategies to receive technology through offset and FDI more recent. This focus has led to the rise of Israel especially, and decreased Russia's importance. The new importers offer more

¹³² Fact Sheet on foreign direct investment," *Indian Department of Industrial Policy & Promotion*, accessed July 20, 2015, http://dipp.nic.in/English/Publications/FDI_Statistics/2015/india_FDI_January2015.pdf.

¹³³ Rajat Pandit, "Hike in defence FDI cap fails to lure investors," *The Times of India*, March 11, 2015, accessed July 5, 2015, <http://timesofindia.indiatimes.com/india/Hike-in-defence-FDI-cap-fails-to-lure-investors/articleshow/46522466.cms>.

¹³⁴ Mathews and Lozano, "India's defence acquisition," 151.

¹³⁵ Rakesh Simha, "Building India's defence base: Offset vs. Joint development," *Russia & India Report*, October 2, 2012, accessed July 5, 2015, http://in.rbth.com/articles/2012/10/02/building_indias_defence_base_offsets_vs_joint_development_18039.html.

¹³⁶ Cohen and Dasgupta, *Arming without aiming*, 23.

¹³⁷ Kalyan Kemburi and Richard Bitzinger, "Cruise missiles in India: Key operational and technological issues," in *India's Military Modernization: Strategic technologies and weapon systems*, ed. Rajesh Basrur and Bharath Gopalaswamy (New Delhi: Oxford University Press, 2015), 198-205.

¹³⁸ IISS, *The Military Balance*, 129.

¹³⁹ "India & Israel's Barak-8 SAM development project(s)," *Defense Industry Daily*, March 2, 2015, accessed July 5, 2015, <http://www.defenseindustrydaily.com/india-israel-introducing-mr-sam-03461/>.

¹⁴⁰ Deevakar Anand, "India revives joint missile project with French firm," *DNA India*, March 31, 2015, accessed July 5, 2015, <http://www.dnaindia.com/india/report-india-revives-joint-missile-project-with-french-firm-2073368>.

attractive offset deals, with Western companies possessing substantial technology and wealth. Soviet offset used to be more advantageous for India than Western offset, but it does not stand out anymore. On the other hand, Russia does provide a lot of technology through joint ventures. Levine et al stated that increased competition leads to higher-level transfers of technology, and Russia seems to do precisely that to survive on the tougher Indian market. India's export market is so important for Russia that it supplies more and better technology than to any other recipient.¹⁴¹ Israel is an especially attractive trade partner, as it is supplying technology generously. Israel has stated that the deals between India and Israel Aerospace Industries were facilitated by the willingness to transfer technology and knowledge.¹⁴² No other countries are willing to transfer technology on this scale. The USA is more hesitant to supply higher levels of technology, and what it supplies is tamper-proof, making maintenance difficult. The USA does this to all recipients, but this is not to the liking of India.¹⁴³ The USA has rejected all six joint high-technology projects that India proposed since signing the U.S.-India Defence Technology and Trade Initiative, which was supposed to facilitate technology transfer.¹⁴⁴ When India was buying anti-tank missiles in 2014, it chose Israeli Spike missiles over US Javelin missiles specifically because Spike missiles came with more technology transfer and more extensive licensing.¹⁴⁵

6.2.2 The rise and fall of suppliers

The above proves that, as Krause identified, India is motivated by the extent it will receive military technology to climb on the ladder of production. Bitzinger identified

¹⁴¹ Jayant Singh, "Indo-Russian defence trade: Recipe for revival," *Institute of South Asian Studies Insights* 242 (2014): 4, accessed July 5, 2015, http://www.isas.nus.edu.sg/Attachments/PublisherAttachment/ISAS_Insights_242_-_Indo-Russian_Defence_Trade__A_Recipe_for_Revival_07042014112807.pdf.

¹⁴² Barbara Opall-Rome, "IAI courts India with offsets, tech transfer," *Defense New*, March 16, 2013, accessed July 5, 2015, <http://www.defensenews.com/story/defense/policy-budget/industry/2015/03/16/israel-india-iai-trade-offsets-technology-export-russia-phalcon-/22843269/>.

¹⁴³ Anit Mukherjee and Manohar Thyagraj, "Competing exceptionalisms: US-India defence relationship," *Journal of Defence Studies* 6 (2012): 19-20, accessed July 20, 2015, http://www.idsa.in/jds/6_2_2012_CompetingExceptionalisms_Anit.html.

¹⁴⁴ Brahma Chellaney, "Built on hype, deflated by reality," *The Hindu*, July 24, 2015, accessed July 20, 2015, <http://www.thehindu.com/opinion/lead/indous-nuclear-deal-built-on-hype-deflated-by-reality/article7418025.ece?homepage=true>.

¹⁴⁵ "Indian army opts to buy Israeli Spike multi-purpose missiles," *Defense Update*, October 25, 2014, accessed July 20, 2015, http://defense-update.com/20141025_indian-army-opts-to-buy-israeli-spike-multi-purpose-missiles.html.

India as a second-tier producer in 2004.¹⁴⁶ There are good reasons for that. India currently produces a wide array of products, but imports critical components and lacks innovation. India also has ambitions to export to countries in South-East Asia, as it wants to make money and strengthen ties with friendly countries under the Look East Policy.¹⁴⁷ These are typical qualities of a second-tier producer. Second-tier producers have different goals when it comes to importing, about what to import, as they desire type II or type III technology. New Delhi is looking not only for blueprints (type II) but especially for capacity transfer (type III), through investing, licensing and coproduction, so the Indian industry can flourish.

Harkavy identifies Russia and the USA as first-tier producers, while Bitzinger identifies the USA, UK, France, Germany, and Italy as first-tier producers. Tier I suppliers are innovators, and Russia could arguably be downgraded to the second tier, as military R&D has gone down.¹⁴⁸ As India rose from the third to the second tier, Russia fell from the first to the second tier. India thus prefers to buy from the current first-tier producers instead. This would make the USA, Italy and France more attractive suppliers. Brauer thinks that classifying countries in tiers is not relevant anymore, because arms production has become transnationalized. India attempts to become part of this transnational production through licensing. But the system designers it buys from, whether countries or companies, are located in the countries that Bitzinger classifies as first-tier producers, so the explanation holds up.

There is specific weaponry that India wants which Russia cannot produce. Pant wrote that India desires smart weaponry (guided munitions), but production is still at a beginner level.¹⁴⁹ The USA makes for a better supplier, as it has a strong technological edge on Russia.¹⁵⁰ Unmanned Aerial Vehicles (UAVs) have become more advanced,

¹⁴⁶ Bitzinger, *Towards a brave new arms industry*, 7.

¹⁴⁷ Jayant Singh, "India 'looking East' via military diplomacy," *Institute of South Asian Studies Insights* 268 (2014), accessed July 20, 2015, http://www.isas.nus.edu.sg/Attachments/PublisherAttachment/ISAS_Insights_268_-_India_%27Looking_East%27_via_Military_Diplomacy_29102014155029.pdf.

¹⁴⁸ Bitzinger, *Towards a brave new arms industry?* 79.

¹⁴⁹ Zachary Keck, "India eyes drone-launched smart bombs," *The Diplomat*, August 29, 2013, accessed July 5, 2015, <http://thediplomat.com/2013/08/india-eyes-drone-launched-smart-bombs/>.

¹⁵⁰ Andrew Krepinovich, "The Pentagon's wasting assets: The eroding foundations of American power," *Foreign Affairs* 88 (2009): 24, accessed July 5, 2015, http://ece.wpi.edu/courses/ee579sw/ECE579S/Pentagons_Wasting_Assets.pdf.

and India wants to possess them too, as they are great for surveillance at its long borders.¹⁵¹ Russia is not an expert in drone production, while Israel and the USA are.¹⁵² Israel also offers electronic warfare technology that Russia cannot.¹⁵³ Suman states that India only purchases arms from the USA that no other country possesses or wants to offer. The US technological prowess however ensures this is often the case.¹⁵⁴ Economic growth has also enabled India to afford the latest technology from Western suppliers. Russia has started an extensive campaign to modernize the industry, which might lead to a more competitive position in the future again.¹⁵⁵

6.2.3 Concluding remarks on the domestic industry

A strong arms industry is a symbol of a strong and independent country. India aspires to be just that, which makes it a point of pride. New Delhi believes a strong arms industry is good for the economy, improves India's position in South-East Asia, and decreases dependence on major powers. However, the current arms production is lacking, so improving this is a priority. The strategy is to acquire technology through offset deals, investments in the private industry, and joint ventures. This has strengthened the position of certain suppliers over others. Russia used to offer more favorable offset deals during the Cold War, but its current offset is not much further ahead. Moscow does offer a lot of technology through joint ventures though. Israel is very willing to transfer technology, which appeals to India. India's industry improved since the Cold War while Russia's deteriorated, so now India is looking at strong innovators, like the USA, France and Italy. Finally, new types of technology have

¹⁵¹ Joseph Noronha, "Flying high: The bright future of India's military UAVs," *Indian Defence Review*, February 18, 2015, accessed July 5, 2015, <http://www.indiandefencereview.com/news/flying-high-the-bright-future-of-indias-military-uavs/>.

¹⁵² Richard Bitzinger, "Israeli arms transfers to India: Ad hoc defence cooperation or the beginnings of a strategic partnership?" *S. Rajaratnam School of International Studies Policy Brief* (2013): 3, accessed July 5, 2015, <https://www.rsis.edu.sg/rsis-publication/idss/219-israeli-arms-transfers-to-indi/>.

¹⁵³ Sunil Dasgupta and Stephen Cohen, "Arms sales for India: How military trade could energize U.S.-Indian relations," *Foreign Affairs* 90 (2011): 24, accessed July 20, 2015, <http://www.jstor.org/stable/pdf/25800454.pdf>.

¹⁵⁴ Mrinal Suman, "Indo-US military trade: A decade of wasted opportunities," *Indian Defence Review* 27 (2012): 71.

¹⁵⁵ Margarete Klein and Kristian Peter, "Russia's armed forces on modernisation course," *Stiftung Wissenschaft und Politik Comments* 9 (2014): 4-5, accessed July 20, 2015, http://www.swp-berlin.org/fileadmin/contents/products/comments/2014C09_kle_pst.pdf.

appeared, which Russia does not master as well, so India is looking for suppliers who do. Israel and the USA shine in that regard.

6.3 Typologies of suppliers

SIPRI's typology of suppliers divides suppliers into three categories: hegemonic, industrial, and restrictive. It identified Russia and the USA in 1975 as hegemonic; UK, France, and Italy as industrial; and Canada, Sweden, Switzerland, Germany, and Japan as restrictive. My hypothesis is that India has managed to reduce dependency on Russia and is now better able to acquire arms under its own terms.

India has been trying to reduce dependency by developing the domestic industry and diversifying its suppliers. Table 6.1 shows three different measures to calculate diversification. Kinsella counts the amount of ties per country and calls this centralization. I measured this by calculating the amount of unique suppliers per historical arms trade period as defined in Chapter **Error! Reference source not found.**, lustrum, and the average of the annual number of suppliers. Harkavy also discusses the relative importance of suppliers, but he looks at their market share. For clarity's sake, I will refer to that here as *consolidation*, so all operationalizations of similar concepts have a different name. Over the three historical arms transfers periods, centralization increased slightly, as India traded with more countries each year on average. There were fewer unique suppliers in the intermediary period because the period was so short. Consolidation decreased, as the market shares of the five greatest suppliers went down. Split up by subsystem, one can see a marked increase in Table 6.2 in the centralization of suppliers for aircraft and engines, and to a lesser extent for missiles and ships too. Not only does India have more suppliers, they are also offering arms in multiple weapon systems.

Table 6.1 Diversification of India's arms suppliers 1970-2014

	1970-1991	1992-1997	1998-2014
Average of annual number of suppliers	7	8.3	9.87
Number of unique suppliers per period	17	13	19
Single largest supplier	72.6%	64.3%	72.1%
Two largest suppliers	87.1%	74.5%	78.9%
Three largest suppliers	91.3%	82.2%	85.4%
Four largest suppliers	94.4%	88.5%	89.1%
Five largest suppliers	96.0%	92.9%	91.5%

Source: SIPRI Arms Trade Database

Table 6.2 Number of unique suppliers in total and per weapon system for India 1970-2014

	Total suppliers	AD systems	Aircraft	Armored vehicles	Artillery	Engines	Missiles	Naval weapons	Sensors	Ships	Other	Cumulative suppliers per subsystem
'70-'74	8	0	4	0	1	2	5	0	1	1	0	14
'75-'79	9	0	3	0	1	1	6	1	5	1	1	19
'80-'84	9	1	4	2	2	0	4	4	3	4	0	24
'85-'89	14	0	8	1	0	1	5	1	4	2	0	22
'90-'94	10	4	0	4	1	0	6	2	0	3	0	20
'95-'99	15	0	4	4	1	2	5	0	6	3	0	25
'00-'04	16	3	8	2	1	1	4	3	3	6	0	31
'05-'09	12	4	5	5	4	5	7	0	2	2	1	35
'10-'14	15	1	11	1	1	6	7	0	5	3	0	35
Total	24	13	47	19	12	18	49	11	29	25	2	225

Source: SIPRI Arms Transfers Register

India is also trying to change the nature of its relations with its suppliers. It is more appealing to purchase from an industrial supplier than a hegemon or a restrictive supplier, since an industrial supplier has the least leverage. Since India is now the largest defense importer in the world, it wants to dictate terms to its suppliers and have industrial relations with them.¹⁵⁶

During the Cold War, the Soviet Union had hegemonic relations with India, as it supplied arms under favorable economic conditions out of a strategic interest. These conditions were generally offered to socialist states only.¹⁵⁷ In 1971 the USA had hegemonic relations with many countries bordering the Soviet Union, in order to penetrate Asia strategically and surround the Soviet Union. Moscow made a pre-emptive move to prevent the USA from doing that with India, and to counter the improving Sino-USA relations.¹⁵⁸ There was no extensive pressure on India to do Russia favors, as interests aligned, and pre-emptive supply offers less leverage. The Soviet Union never had a monopoly, since its average annual share was 72 percent between 1970 and 1991.¹⁵⁹ The hegemonic position of the Soviet Union changed after the Cold War. Presently, there is no trade under favorable conditions or with military aid. Russia pressured India when it sold the Gorshkov and controls the joint ventures, but not to the extent of full-fledged hegemony. The arms contracts are also not linked to political preconditions.¹⁶⁰ Industrial arguments have also become more important for Russia, as it depends more on exports to keep up its industry.

India also wants to avoid hegemonic relations with the USA. Industrial arguments are important to the USA,¹⁶¹ and the USA has not leveraged India (yet) into achieving US

¹⁵⁶ Singh, "Indo-Russian defence trade," 2.

¹⁵⁷ SIPRI, *Arms trade and the third world*, 20-25, 55-58.

¹⁵⁸ McMahon, "On the periphery of a global conflict," 295.

¹⁵⁹ SIPRI Arms Trade Database.

¹⁶⁰ "Arms trade in the age of turbulence: The crisis in Ukraine, Western sanctions, and the Russian defense industry," *Security Index: A Russian journal on international security* 20 (2014): 107, accessed July 5, 2015, doi: 10.1080/19934270.2014.986371

¹⁶¹ Kenneth Juster and Ajay Kuntamukkala, "U.S.-India Initiative Series: Unleashing U.S.-India defense trade," *Center for New American Studies Working Paper* (2010): 4, accessed July 5, 2015, <http://www.cnas.org/publications/working-papers/unleashing-u-s-india-defense-trade>.

goals in Asia.¹⁶² Nonetheless, India is afraid of the USA becoming a hegemonic supplier, and that is limiting further growth. One of the reasons Israel is an attractive supplier to India is that Israel asks no questions and makes no demands.¹⁶³

Decreasing leverage might have also fuelled a desire to avoid restrictive suppliers, which harms arms trade with the Netherlands and Germany especially. Their small share is odd, as they were, respectively, the second and third largest suppliers in the intermediary period. Between 2009 and 2014, Germany was the fourth and the Netherlands the twelfth largest arms exporters worldwide.¹⁶⁴ Outside arms trade, they are still major trade partners.¹⁶⁵ That they disappeared from the market might be caused by their export policies. After Pokhran-II, the Netherlands maintained an arms embargo to India until 2004, the longest of all countries.¹⁶⁶ The other countries with an arms embargo were Sweden and the USA.¹⁶⁷ Dutch trade picked up in 1988, and its share reached a peak of 17 percent in 1993. It halted in 1998 and never recovered. While the Netherlands is not generally restrictive, and did not return to this restrictive policy after 2004, it is likely that India wants to avoid a similar situation in the future. Pokhran-II also influenced trade with the UK, as it stopped supplying parts after Pokhran-II. This caused great hesitation to buy UK Hawk-100 trainer jets, and India insisted on a guarantee that the UK would never stop supplying parts for those jets.¹⁶⁸

German export laws are also generally considered restrictive. It has for instance denied export licenses of SALW to some Indian police forces on the grounds that they were

¹⁶² Bronson Percival, "China, India and the United States: Tempered rivalries in Asia," *S. Rajaratnam School of International Studies Policy Brief* (2013): 4, accessed July 20, 2015, https://www.rsis.edu.sg/wp-content/uploads/2014/07/PB131201_China_India_USA_Tempered_Rivalries.pdf.

¹⁶³ Bitzinger, "Israeli arms transfers to India," 3.

¹⁶⁴ SIPRI Arms Trade Database.

¹⁶⁵ "Export Import Data Bank Version 7.2," *Indian Department of Commerce*, accessed July 20, 2015, <http://commerce.nic.in/eidb/iecnttopnq.asp>.

¹⁶⁶ Wendela de Vries and Mark Akkerman, "Analyse Nederlandse wapenexport 2013 [Analysis Dutch arms exports 2013]," *Campagne Stop de Wapenhandel* (2014): 22, accessed July 5, 2015, <http://www.stopwapenhandel.org/sites/stopwapenhandel.org/files/analyse2013-def.pdf>.

¹⁶⁷ "World Reaction to the Indian Nuclear Tests," *James Martin Center for Non-Proliferation Studies*, accessed July 5, 2015, http://cns.miis.edu/archive/country_india/wreactpk.htm.

¹⁶⁸ T. Malhotra, "India angry over UK decision to renew arms sales to Pakistan," *CNS News*, July 7, 2008, accessed July 20, 2015, <http://cnsnews.com/news/article/india-angry-over-uk-decision-renew-arms-sales-pakistan>.

committing human rights abuses in the fight against Naxalites.¹⁶⁹ Another issue is that it supplies critical components to India's Advanced Light Helicopter (ALH). India has invested significantly in the ALH, and hopes to export it when it has been completed, but currently 90 percent of components are still foreign.¹⁷⁰ Amnesty International accused India in 2007 of wanting to export the ALH to Myanmar, which is under embargo by the EU.¹⁷¹ Germany forbids re-export of components to embargoed destinations and wanted to enforce that. India denied wanting to export the ALH to the dictatorship,¹⁷² but as India had previously re-exported two British BN-2 Islander maritime-surveillance aircraft to Myanmar, there was cause for concern.¹⁷³

The importance of the export policies was shown during the second round of the MMRCA deal. It pitted French Dassault against Eurotyphoon, for which Germany took the lead in the negotiations. France and Germany have very different export policies. France expressed understanding after Pokhran-II, which Mohan attributes to France foreseeing India's potential as an export market.¹⁷⁴ Only by exporting can France stay an independent arms producer, as otherwise R&D costs are too high. France has thus proved itself to be industrial, while Germany has proved itself to be restrictive, making France a better pick for the MMRCA.¹⁷⁵

The USA has also shown restrictive tendencies, as it only dropped the 1998 arms embargo in 2001, to get India's support in Afghanistan following the terrorist attacks

¹⁶⁹ Gunther Latsch and Padma Rao, "Dubioser Waffenhandel: Deutsche Knarren für den Zigarettenkönig [Dubious arms trade: German guns for the cigar king]," *Der Spiegel*, November 16, 2011, accessed July 20, 2015, <http://www.spiegel.de/wirtschaft/unternehmen/dubioser-waffenhandel-deutsche-knarren-fuer-den-zigarettenkoenig-a-797640.html>

¹⁷⁰ Comptroller and Auditor General of India, "Production and supply of Advanced Light Helicopter: Hindustan Aeronautics Limited," *Performance audit of Activities of Public Sector Undertakings* 10 (2010/11): 23, accessed July 5, 2015, http://www.saiindia.gov.in/english/home/Our_Products/Audit_Report/Government_Wise/union_audit/recent_reports/union_performance/2010_2011/Commercial/Report_no_10/Report_no_10.html.

¹⁷¹ Omega Research Foundation, "Indian helicopters for Myanmar: Making a mockery of the EU arms embargo?" *Amnesty International and Saferworld* (2007): 2, accessed July 5, 2015, <https://www.amnesty.org/download/Documents/64000/asa200142007en.pdf>.

¹⁷² "Myanmar may still get EU choppers," *Taipei Times*, July 17, 2007, accessed July 5, 2015, <http://www.taipeitimes.com/News/world/archives/2007/07/17/2003369968>.

¹⁷³ Jo Johnson and Amy Kazmin, "India under fire for its military aid to Burma," *Financial Times*, December 8, 2006, accessed July 5, 2015, <http://www.ft.com/intl/cms/s/0/3839997c-85c0-11db-86d5-0000779e2340.html#axzz3dF1ZEDP3>.

¹⁷⁴ Mohan, "India and the balance of power, 25-26.

¹⁷⁵ Giovanni de Briganti, "The real reasons for Rafale's Indian victory," *Defence Aerospace*, February 1, 2012, accessed July 5, 2015, <http://www.defense-aerospace.com/article-view/feature/132379/why-rafale-won-in-india.html>.

on September 11, 2001.¹⁷⁶ US export controls are strict. To avoid diversion, all recipients have to sign intrusive agreements so the US can keep control over its arms. India and the USA got into a diplomatic quarrel over signing the End-Use Monitoring Agreement, which gives the USA access to the arms during inspections, and sets conditions for the recipients to use the arms. Modification and re-export without permission are forbidden.¹⁷⁷ Other agreements to receive technology that also increases interoperability have not been signed, as India does not want to be pressured into fighting US wars.¹⁷⁸ India bought the P8I and C-130J aircraft without the accompanying electronics and avionics suites, as they required those agreements.¹⁷⁹ India believes it is a buyer's market, while the USA believes it is a seller's market, leading to different expectations. The export controls restrict the sale of high-tech sensitive technology, and not signing the agreements are a big hurdle for defense trade. They are seen as intruding on sovereignty, and as leading to patron-client relations.¹⁸⁰ Other countries are not so strict in their post-export controls. France for instance allowed India to modify Mirage-2000 jet fighters in the 1999 Kargil war.¹⁸¹

Japan has traditionally had a very restrictive export policy fitting its post-WW2 pacifist nature.¹⁸² Since 1976 it had a ban on all arms exports with a few small exceptions, but this ban was lifted in April 2014. The problem with the old restrictive policy was that local defense production was extremely costly, because the industry was not able to sell to more clients than the Japanese government. The industry was

¹⁷⁶ James Chiriyankandath, "Realigning Indian foreign policy after the Cold War," *The Round Table: The Commonwealth Journal of International Affairs* 93 (2007): 207, accessed July 5, 2015, doi: 10.1080/00358530410001679567.

¹⁷⁷ Brahma Chellaney, "End-use monitoring woes for India," *The Hindu*, July 27, 2009, accessed July 5, 2015, <http://www.thehindu.com/todays-paper/tp-opinion/enduse-monitoring-woes-for-india/article239784.ece>.

¹⁷⁸ Mukherjee and Thyagraj, "Competing exceptionalisms."

¹⁷⁹ Sourabh Gupta, "Back to the drawing board on US-India relations?" *East Asia Forum*, August 19, 2014, accessed July 20, 2015, <http://www.eastasiaforum.org/2014/08/19/back-to-the-drawing-board-on-us-india-relations>.

¹⁸⁰ Robert Metzger, "US-India defence cooperation: Towards an enduring relationship," *Indian Defence Review* 27 (2012): 63-64.

¹⁸¹ Joshi, "A paradigm trap."

¹⁸² Heigo Sato, "Japan's arms export and defense production policy," *Center for Strategic and International Studies*, April 1, 2015, accessed July 5, 2015, <http://cogitasia.com/japans-arms-export-defense-production-policy/>.

also cut off from joint ventures, which are often used for complex weapon systems.¹⁸³ Since the policy changed only last year, no major defense contracts have been signed yet between India and Japan, but there are rumors that Japan is interested in selling India six stealth submarines.¹⁸⁴ India will also likely purchase twelve ShinMaywa US-2i amphibious search-and-rescue aircraft in 2016.¹⁸⁵ Japan's pivot from restrictive to industrial might lead to Japan becoming an important defense exporter to India too.

Altogether, India is reducing dependence on hegemonic suppliers. In its position as the largest arms importer of the world, it sees the defense market as a buyer's market, where India can dictate the terms. With more suppliers, India can reduce their leverage. Russia changed from a mainly hegemonic to a mainly industrial supplier, which suits India. More suppliers and more competition prohibits hegemony. However, fear of US hegemony hinders more extensive trade with the USA. In the buyer's market, India does not want to deal with restrictive suppliers, and that has limited trade with the USA, and most likely Germany and the Netherlands too. The more India will want to export, the less dependence it will accept. France and Israel are great suppliers for India, as they are very industrial, and Japan might supply arms in the future as a new industrial supplier. By diversifying and choosing suppliers with specific types, India increases the control over its arms.

6.4 Arms trade networks

During the Cold War, India was formally part of the NAM. In practice, it also had close ties with the Soviet Union, as evidenced by the arms trade. India was determined to stay outside the bipolar system of the Cold War, but the USA-Pakistan alliance, animosity toward China, and the Sino-Soviet split all made the Soviet Union an

¹⁸³ Kiyoshi Takenaka, "Japan relaxes arms export regime to fortify defense," *Reuters*, April 1, 2014, accessed July 5, 2015, <http://www.reuters.com/article/2014/04/01/us-japan-defence-idUSBREA2U1VF20140401>.

¹⁸⁴ Rajat Pandit, "India asks Japan if it's interested in Rs 50,000 crore submarine project," *Times of India*, January 29, 2015, accessed July 5, 2015, <http://timesofindia.indiatimes.com/india/India-asks-Japan-if-its-interested-in-Rs-50000-crore-submarine-project/articleshow/46049111.cms>.

¹⁸⁵ Rahul Bedi and James Hardy, "Parrikar heading to Tokyo with US-2, closer strategic ties on the agenda," *IHS Jane's Defence Weekly*, March 23, 2015, accessed July 5, 2015, <http://www.janes.com/article/50147/parrikar-heading-to-tokyo-with-us-2-closer-strategic-ties-on-the-agenda>.

interesting partner.¹⁸⁶ The West was not interested in providing weapons on favorable terms, especially after the 1965 Indo-Pakistan war, while the Soviet Union was. The 1971 Indo-Soviet Treaty of Friendship and Cooperation was not a formal alliance, but it led to arms supplied for “friendship prices,” consulting each other during crises, and not supporting third parties against each other. Kinsella mentions that arms trade reveals strategic interests sometimes better than formal alliances do, and that was the case here too. Through strategic relations, countries improve the trust in each other, now and in the future, and overcome the prisoner’s dilemma of selling arms. In turn, arms trade strengthens strategic relations. In this chapter I will explain the strategic relations between India and its suppliers, and how that influences arms trade.

6.4.1 The great powers

The current geopolitical situation is different from what it was during the Cold War. In 1993, India and Russia signed a new Treaty of Friendship and Cooperation, without friendship prices, or the clauses about the US and Chinese threats. The first years after the Soviet collapse, Russia neglected its relations with India, but this turned around in 1998, and now their relations are very good.¹⁸⁷ Modi stated in December 2014 that Russia remains India’s most important defense partner.¹⁸⁸ They share concerns about the rise of China and Islamist terrorism, especially with the NATO departure from Afghanistan.¹⁸⁹ They are both in favor of a multipolar world without US dominance and they support each other in the diplomatic world. Moscow called Pokhran-II justified and has hinted at accepting India as a permanent member of the United Nations Security Council.¹⁹⁰ India refused to condemn the Kremlin for invading

¹⁸⁶ McMahon, “On the periphery of a global conflict,” 276-295.

¹⁸⁷ Chandra Rekha, “Synergies in Indo-Russia Defence Cooperation Since 2000,” *Defence and Diplomacy* 3 (2014): 28, accessed July 5, 2015, https://www.academia.edu/9622036/SYNERGIES_IN_INDO-RUSSIA_DEFENCE_COOPERATION_SINCE_2000.

¹⁸⁸ Saurav Jha, “Vladimir Putin’s productive India visit,” *The Diplomat*, December 12, 2014, accessed July 5, 2015, <http://thediplomat.com/2014/12/vladimir-putins-productive-india-visit/>.

¹⁸⁹ Witold Rodkiewicz, “The turn to the East: The flawed diversification of Russian foreign policy,” *Ośrodek Studiów Wschodnich* 44 (2014): 22-24, accessed July 20, 2015, <http://aei.pitt.edu/58860/>.

¹⁹⁰ Richard Weitz, “The maturing of Russia-India defence relations,” *Journal of Defence Studies* 6 (2012): 78, accessed July 5, 2015, http://www.idsa.in/jds/6_3_2012_TheMaturingofRussiaIndiaDefenceRelations_RichardWeitz.

Crimea.¹⁹¹ They are friendly toward each other, and India is probably the best friend Russia has, but their strategic link is not as strong as it used to be.¹⁹² Bilateral trade outside of arms is low, but both countries are working on improving this. Not everyone in India is also convinced Russia is strong enough to provide sufficient counterweight to US hegemony.¹⁹³ As Russia feels more threatened by the West, it might attempt to move closer to India for support, but it might also move closer to China. It is not that India has abandoned Russia, but that their relations have become more equal.

The relations between the USA and India are complicated. The USA has become more interested in Asia, as the USA believes that Asia will play an important economic and political role in the 21st century.¹⁹⁴ Specific US concerns about Asia are safeguarding the transport of energy on international shipping lanes in the IOR, China's rise, and the prevalence of radical Islam.¹⁹⁵ India can profit from US engagement by receiving defense technology, improving bilateral trade and economic development, and gaining an ally against China. The rise of neoliberalism in India has improved relations, as India's planned economy was a barrier to US-India cooperation.¹⁹⁶ After the Indo-US Nuclear Pact in 2005, many scholars and policy advisors predicted a close strategic partnership. Kaplan stated that the more India and China rise, the more welcome the USA will be as a counterbalance.¹⁹⁷ There are still several roadblocks. India complains the US went back on promises on export control regimes and does not sell high-tech military technology. Trade in nuclear energy is also not coming from the ground.¹⁹⁸ The USA wishes India would support the USA more with Iran¹⁹⁹ and not follow the

¹⁹¹ Zachary Keck, "Why did BRICS back Russia on Crimea?" *The Diplomat*, March 31, 2014, accessed July 5, 2015, <http://thediplomat.com/2014/03/why-did-brics-back-russia-on-crimea/>.

¹⁹² Dmitri Trenin, "Challenges and opportunities: Russia and the rise of China and India," in *Strategic Asia 2011-2012: Asia responds to its rising powers: China and India*, ed. Ashley Tellis, Travis Tanner and Jessica Keough (Washington: The National Bureau of Asian Research, 2012), 235.

¹⁹³ Harsh Pant, "India-Russia ties and India's strategic culture: Dominance of a realist worldview," *India Review* 12 (2013): 7, accessed July 5, 2015, doi: 10.1080/14736489.2013.759464.

¹⁹⁴ Kurt Campbell and Brian Andrews, "Explaining the US 'pivot' to Asia," *Chatham House Research Paper* (2013), 4-5, accessed July 5, 2015, <http://www.chathamhouse.org/publications/papers/view/194019>.

¹⁹⁵ Andrew Winner, "The United States, India, the Indian ocean, and maritime elements of security cooperation," in *India's contemporary security challenges*, ed. by Michael Kugelman (Washington: Woodrow Wilson International Center for Scholars, 2011), 111.

¹⁹⁶ Tellis, "Unity in difference," 17.

¹⁹⁷ Robert Kaplan, *Monsoon: The Indian Ocean and the Future of American Power* (New York: Random House, 2010).

¹⁹⁸ Chellaney, "Built on hype."

¹⁹⁹ Bronson, "Tempered rivalries," 10.

Russian and Chinese lead on Syria and Libya.²⁰⁰ The USA also bid on the MMRC tender with two planes and losing the bid was a significant symbolic blow.²⁰¹

There are many explanations for the slow progress. Goals do not always align, as the USA wants a strategic alliance, while India prioritizes technology and development. New Delhi does not know if Washington will have India's back in the long term, and it fears US hegemony. The USA has previously reached out to and developed economic ties with China, still pays considerable attention to the Middle East and Pakistan, and is struggling to find the resources for its foreign and military commitments, risking imperial overstretch. India might be hindered by overreliance on the USA in a conflict with Pakistan, as the USA still supplies military aid to Pakistan. India is cautious and does not want to antagonize China either.²⁰² Their worldviews are different, and the USA does not seem to fully grasp India's perspective or its post-colonial identity, which is neutral, civilized, and with a moral view of the world order.²⁰³ The anti-Western ideology has also not completely disappeared yet. Slow bureaucratic policymaking in India, which resists change and big decisions, is not helping either.²⁰⁴ However, the past year relations have gone upward again under Modi, who invited US president Obama as a guest of honor to Republic Day, "India's most important formal invitation to offer."²⁰⁵ Modi's party, Bharatiya Janata Party, is on average more pro-USA than its rival, Indian National Congress, which was in power previously. Modi feels that as both China and India rise, India can no longer afford ideological anti-Western sentiments for economic and political reasons.²⁰⁶ Mukherjee and Thyagraj also say that the problems with the MMRC deal and the lack of high-tech transfers are just small setbacks in a trend toward convergence, based on mutual strategic

²⁰⁰ Dhume, "Failure 2.0."

²⁰¹ Vucetic and Duarte, "New fighter aircraft acquisitions," 403.

²⁰² Harsh Pant and Yogesh Joshi, "Indian foreign policy responds to the U.S: pivot," *Asia Policy* 19 (2015): 94-98, accessed July 5, 2015, doi: 10.1353/asp.2015.0012.

²⁰³ Priya Chacko, "A new 'special relationship'? Power transitions, ontological security and India-US relations," *International Studies Perspective* 15 (2014): 337-342, accessed July 5, 2015, doi: 10.1111/insp.12029.

²⁰⁴ Tellis, "Unity in difference," 3.

²⁰⁵ Katie Zezima, "Why Obama's trip to India's Republic Day is a big deal," *Washington Post*, January 24, 2015, accessed July 5, 2015, <http://www.washingtonpost.com/blogs/worldviews/wp/2015/01/24/why-obamas-trip-to-indias-republic-day-is-a-big-deal/>.

²⁰⁶ Raja Mohan, "Modi's American engagement: Discarding the defensive mindset," *Institute of South Asian Studies Insights* 203 (2015): 10, accessed July 20, 2015, <http://carnegieendowment.org/2015/04/09/modi-s-american-engagement-discarding-defensive-mindset>.

interests and social links created by the Indian diaspora.²⁰⁷ It is not clear what the long-term effects will be on arms trade, because it takes years to agree on deals and deliver the arms. These developments mean that the USA is important for India, but that India wants a partnership, not a patron, to maintain strategic autonomy.²⁰⁸

6.4.2 The semi-great, medium, and small powers

Strategic relations affect not only trade with the great powers, but all other countries. India is growing closer to Japan and South Korea, but carefully, to not offend China. South Korea's relations with China are decent, but by networking with another middle power, South Korea can exert more influence.²⁰⁹ Seoul aims to become a major arms exporter, and India would be a welcome market, while India hopes to jointly develop technology.²¹⁰ North Korea is also rumored to have traded in nuclear material with Pakistan, to the dismay of both. It makes sense to befriend your enemy's friend's enemy. India's defense ties with Japan are closer than with South Korea. Japan sees India as a strategic and economic counterweight against China, a way to reduce overdependence on the USA, and an ideological ally as they are both democracies.²¹¹ India and Japan have stated they want to make the trade in defense equipment and technology a "key pillar of bilateral defense relations."²¹² Trade will likely be centered on naval equipment, as both are concerned about China's maritime power.²¹³ The USA wants to accelerate this cooperation. In turn, Japan's view of India is influenced by

²⁰⁷ Mukherjee and Thyagraj, "Competing exceptionalisms."

²⁰⁸ Cohen and Dasgupta, *Arming without aiming*, 23

²⁰⁹ Sukjoon Yoon, "Middle-power cooperation between South Korea and India," *Center for Strategic and International Studies Pacific Forum*, January 28, 2014, accessed July 20, 2015, <http://www.isn.ethz.ch/Digital-Library/Publications/Detail/?id=191528&lng=en>.

²¹⁰ Sumitha Kutty, "'Make in India' and defence: Modi's outreach to South Korea," *S. Rajaratnam School of International Studies* 132 (2015): 2-3, accessed July 20, 2015, <http://www.isn.ethz.ch/Digital-Library/Publications/Detail/?lang=en&id=188042>.

²¹¹ Michael Green, "Japan, India, and the strategic triangle with China," in *Strategic Asia 2011-2012: Asia responds to its rising powers: China and India*, ed. Ashley Tellis, Travis Tanner and Jessica Keough (Washington: The National Bureau of Asian Research, 2012), 131-132.

²¹² Franz-Stefan Gady, "India and Japan continue to deepen their defense ties," *The Diplomat*, April 1, 2015, accessed July 5, 2015, <http://thediplomat.com/2015/04/india-and-japan-continue-to-deepen-their-defense-ties/>.

²¹³ Rupakjyoti Borah, "Anchoring Indo-Japanese maritime relations," *Institute for Security & Development Policy Policy Brief 180* (2015): 1, accessed July 20, 2015, <http://www.isdp.eu/images/stories/isdp-main-pdf/2015-borah-anchoring-indo-japanese-maritime-relations.pdf>.

India-USA relations.²¹⁴ The USA requested that India let Japan join their naval exercises in the hope of creating an alliance against China. India agreed to the naval exercises but is hesitant to become part of a formal alliance.²¹⁵

France has strong interests in the IOR, as its overseas territories there have a million inhabitants and are strategically located. There are French military bases in Abu Dhabi and Djibouti, and Paris wants to secure shipping routes.²¹⁶ France sees India as a counterweight against US and Chinese dominance in Asia,²¹⁷ and France could serve the same function for India. Military ties with France are close, and their relations go back a long time. It has been argued that France got to the final stage of the MMRCA tender to spread the risk and avoid dependence. Russian planes make up a large part of the IAF, especially with the PMFs,²¹⁸ and India does not want to become dependent on the USA either. France makes the perfect counterbalance between the two.²¹⁹

Relations with the UK are affected by London's relations with Pakistan. The UK has been criticized for "coddling" Pakistan, especially after remarks that India should resolve the issue in Kashmir to let Pakistan focus on fighting terrorism.²²⁰ In 2008, the UK decided to supply arms to Pakistan, despite a Commonwealth arms embargo following the 2007 military coup.²²¹ These frustrations, combined with the fact that the UK is not engaging substantially in South Asia, have led to a decline in arms trade.

²¹⁴ Tomoko Kiyota, "Forward together we go with Japan: 'Dazzling' US India rapprochement for Tokyo," *Center for Strategic and International Studies Pacific Forum*, October 6, 2014, accessed July 20, 2015, http://csis.org/files/publication/Pac1474_0.pdf.

²¹⁵ Sudhi Ranjan Sen, "Japan on agenda as US Defence secretary Ashton Carter meets Union Minister Manohar Parrikar today," *NDTV*, June 3, 2015, accessed July 5, 2015, <http://www.ndtv.com/india-news/japan-on-agenda-as-us-defence-secretary-ashton-carter-meets-union-minister-manohar-parrikar-today-768251>.

²¹⁶ Isabelle Saint-Mézard, "The French strategy in the Indian Ocean and the potential for Indo-French cooperation," *S. Rajaratnam School of International Studies Policy Report* (2015), 4-6, accessed July 5, 2015, http://www.rsis.edu.sg/wp-content/uploads/2015/03/PR150312_French-Strategy.pdf.

²¹⁷ Yves-Marie Rault, "France and India: Decoding the strategic partnership," *Institute of Peace and Conflict Studies Special Report* 147 (2013): 7, accessed July 5, 2015, http://www.ipcs.org/pdf_file/issue/SR147-Yves-IndiaFrance.pdf.

²¹⁸ Reuben Johnson, "Analysis: India faces crunch decision over Rafale, PAK-FA," *Jane's Defence Weekly*, April 8, 2015, accessed July 5, 2015, <http://www.janes.com/article/50530/analysis-india-faces-crunch-decision-over-rafale-pak-fa>.

²¹⁹ Vuvetic and Duarte, "New fighter acquisitions," 412.

²²⁰ S. Kalyanaraman, "The limits of the India-United Kingdom defence Relationship," *Journal of Defence Studies* 7 (2013): 234, accessed July 20, 2015, http://www.idsa.in/jds/7_1_2013_TheLimitsoftheIndiaUnitedKingdomDefenceRelationship_SKalyanaraman.html.

²²¹ T. Malhotra, "India angry over UK decision to renew arms sales to Pakistan."

Israel and India have gotten closer, largely as the result of arms trade instead of as a precursor.²²² Israel would like a closer strategic relation to soften the perception of Israel in the NAM, cooperate in fighting Islamist terrorism, and push India away from Iran.²²³ This will likely not happen, as India has good relations with the Middle East, a significant Muslim population, and strong domestic opposition in the left.²²⁴

Australia is following Japan's and US leads and has become more interested in strategic cooperation with India. This is limited by Australia's mixed feelings.²²⁵ Canberra wants both India's and China's markets and desires stability in the IOR.²²⁶ In turn, Australia does not have that much to offer to India, but in 2014 Australia agreed to sell uranium to India. This big political decision might change things.²²⁷

Finally, India's troubled relations with Pakistan are one of the motivations for its increasing presence in Central Asia. Up until the 2000s, New Delhi engaged with Central Asian countries mainly through Moscow, but now India has started to engage with them directly. New Delhi has tried to maximize the NATO presence in Afghanistan as a counter to Pakistan²²⁸ and wants to encircle Pakistan through Indian presence in Central Asia as well.²²⁹ Securing energy is also important, as there is plenty of fossil energy and uranium. For Central Asian countries, India can serve as a

²²² Sadanand Dhume, "Revealed: The India-Israel axis," *Wall Street Journal*, July 23, 2014, accessed July 5, 2015, <http://www.wsj.com/articles/revealed-the-india-israel-axis-1406133666>.

²²³ Jayita Sarkar, "India and Israel's secret love affair," *The National Interest*, December 10, 2014, accessed July 5, 2015, <http://nationalinterest.org/blog/the-buzz/india-israels-secret-love-affair-11831>.

²²⁴ Richard Bitzinger, "Indian-Israeli defence cooperation: The elusive partnership," *S. Rajaratnam School of International Studies* 55 (2013): 2, accessed July 20, 2015, <https://www.rsis.edu.sg/wp-content/uploads/2014/07/CO13055.pdf>.

²²⁵ David Brewster, "Australia and India: the Indian Ocean and the limits of strategic convergence," *Australian Journal of International Affairs* 64 (2010): 550-551, accessed July 5, 2015, doi: 10.1080/10357718.2010.513369.

²²⁶ Rory Medcalf, "Grand stakes: Australia's future between China and India," in *Strategic Asia 2011-2012: Asia responds to its rising powers: China and India*, ed. Ashley Tellis, Travis Tanner and Jessica Keough (Washington: The National Bureau of Asian Research, 2012), 197-200.

²²⁷ Michael Safi, "Australian uranium 'could end up in India's nuclear weapons program,'" *The Guardian*, February 13, 2015, accessed July 20, 2015, <http://www.theguardian.com/environment/2014/oct/03/australias-uranium-deal-with-india-risks-weakening-safeguards>.

²²⁸ Jhinuk Chowdhury, "India watches warily as Russia deepens ties with neighbors," *RT*, January 10, 2015, accessed July 5, 2015, <http://rt.com/op-edge/221411-russia-relations-india-military-economy/>.

²²⁹ Zehra Akhbar, "Central Asia: The new great game," *The Washington review of Turkish and Eurasian Affairs*, October, 2012, accessed July 5, 2015, <http://www.thewashingtonreview.org/articles/central-asia-the-new-great-game.html>.

balancing power between Russia, China, and the USA.²³⁰ There is some doubt about the geopolitical utility of these relations, as India has no direct access to them.²³¹ However, relations are growing stronger and are a likely explanation for the increasing supplies from Uzbekistan and Kyrgyzstan. In fact, 83 percent of all Kyrgyz arms exports and 99.6 percent of all Uzbek arms exports have gone to India, and Uzbekistan is the fourth greatest trading partner in volume in the current period since 1998.²³²

The strategy of multi-alignment and balancing powers would suggest increasing engagement with other rising powers, like Brazil and South Africa. However, trade is likely thwarted by the fact that India cannot develop its industry with their technology.

6.4.3 Corruption

While the individual strategic relations have been discussed, corruption plays an important role in general. Trust is essential to create a stable network and corruption can undermine that, especially as it is a huge issue in India. Antony, the Minister of Defence under Singh, was for instance accused of evading and delaying procurement decisions just to avoid corruption scandals.²³³ In 1987, allegations of corruption in a purchase of Swedish Bofors Howitzers even brought down the Indian government. That scandal is still referred to regularly. Sweden's non-existent share on the market, despite its position as the 11th largest arms exporter worldwide, might be related to that. Russia used to be seen as less corrupt than the "mercenary and unscrupulous" capitalist West.²³⁴ However, capitalism is not a dirty word anymore in India.²³⁵ Russia

²³⁰ Arun Saghal and Vinod Anand, "Strategic environment in Central Asia and India," in *Reconnecting India and Central Asia. Emerging security and economic dimensions*, ed. Nirmala Joshi (Washington: The Central Asia and Caucasus Institute and Stockholm: The Silk Road Studies Program, 2010), 54-68, accessed July 5, 2015, http://www.silkroadstudies.org/resources/pdf/Monographs/2010_03_MONO_Joshi_India-Central-Asia.pdf.

²³¹ Louise Merrington, "India and China: Strategic engagements in Central Asia," in *The engagement of India: Strategies and responses*, ed. Ian Hall (Washington: Georgetown University Press, 2014), 96.

²³² SIPRI Arms Transfers Database.

²³³ Anit Mukherjee, "Cleaning the Augean stables," *India Seminar* 268, June 1, 2014, accessed July 20, 2015, http://www.india-seminar.com/2014/658/658_anit_mukherjee.htm.

²³⁴ Cohen and Dasgupta, *Arming without aiming*, 193.

²³⁵ Panka Mishra, "Narendra Modi and the new face of India," *The Guardian*, May 16, 2014, accessed July 5, 2015, <http://www.theguardian.com/books/2014/may/16/what-next-india-pankaj-mishra>.

was suspected of corruption during the Gorshkov deal²³⁶ and the Ordnance Factory Scam.²³⁷ Therefore, Russia does not have the advantage of being perceived as less corrupt anymore. It has been argued that the MMRCAs tender did not go to the USA because corruption allegations in that deal would create so much backlash in India, that the reputation of the USA might not recover.²³⁸ India has a rigorous policy of blacklisting any company accused of corruption. In 2005 Denel, the state-owned South African defense conglomerate, was blacklisted based on mere allegations, which affected trade substantially. The ban was lifted in 2014, so trade might pick up again.²³⁹ It has also affected South Korea, as Kangnam Corp. was blacklisted in 2013 for using a middleman, which is forbidden. This annoyed Seoul, who threatened to not do business again with India.²⁴⁰ The corruption policy thus hinders India's options for diversifying procurement. Over the past two years the corruption policy has been relaxed, as several bans have been lifted and agents are now allowed.²⁴¹ Italian/UK Agusta-Westland also did not get blacklisted after a major scandal in 2014.²⁴² This will smooth procurement procedures and increase the possible number of suppliers. India will thus have more options, fitting in a strategy of diversification.

6.4.4 Implications of arms trade networks

Strengthened strategic relations with many different countries are a natural result of India's growth on the recipient side, and an increased interest in Asia on the supplier side. These relations facilitate a balanced arms network. Closer relations foster the trust that is necessary to overcome the security dilemma and let technology and information

²³⁶ "Unravelling Gorshkov," *DNA India*, April 13, 2010, accessed July 5, 2015,

<http://www.dnaindia.com/analysis/editorial-unravelling-gorshkov-1371042>.

²³⁷ "India blacklists Russian defense company," *Sputnik*, March 7, 2012, accessed July 5, 2015,

<http://sputniknews.com/world/20120307/171845080.html>.

²³⁸ Dan Twining, "Why isn't India buying American fighter jets," *Foreign Policy*, April 29, 2011, accessed July 20, 2015, <http://foreignpolicy.com/2011/04/29/why-isnt-india-buying-american-fighter-jets/>.

²³⁹ Vivek Raghuvanshi, "India lifts ban on Denel," *Defense News*, August 18, 2014, accessed July 20, 2015, <http://archive.defensenews.com/article/20140818/DEFREG03/308180006/India-Lifts-Ban-Denel>.

²⁴⁰ Vivek Raghuvanshi, "India may legalize agents for foreign firms, limit blacklisting," *Defense News*, January 12, 2015, accessed July 20, 2015, <http://www.defensenews.com/story/defense/policy-budget/industry/2015/01/11/india-agent-minesweeper-south-korea-blacklist/21330323/>.

²⁴¹ Sudhi Ranjan Sen, "Government's new defence rules: Less blacklisting, more penalties," *NDTV*, February 24, 2015, accessed July 20, 2015, <http://www.ndtv.com/india-news/governments-new-defence-rules-less-blacklisting-more-penalties-741926>.

²⁴² Vivek Raghuvanshi, "India opts not to blacklist AgustaWestland," *Defense News*, January 2, 2014, accessed July 20, 2015, <http://www.defensenews.com/article/20140102/DEFREG03/301020011/>.

pass through. India does not want to join any formal alliance, as part of its policy of neutrality, but the trade is a good indicator of improved strategic relations. These strategic relations enable India to pursue a balance of power politics in its arms deals without choosing sides, thus ensuring a steady supply of arms. This reduces the leverage countries have against India and facilitates India's strategic autonomy.²⁴³ Mohan mentions the omni-directional engagement with all great powers, and that strategy is also reflected in arms trade.²⁴⁴

India's strategic relations used to be defined by non-alignment. In theory, that meant India would not define its (inter)national interests through foreign goals or ideologies, and that it would retain maximum strategic autonomy to develop itself, for a more just and equal world order.²⁴⁵ Many critics look down on this approach and say that in practice it meant weakness and inaction.²⁴⁶ Others feel that the end of bipolarity made non-alignment trivial.²⁴⁷ Both the left-wing United Progressive Alliance and the right-wing National Democratic Alliance have called it irrelevant and dead,²⁴⁸ and the US establishment has called it an outdated concept.²⁴⁹

However, in 2012, a group of experts published a book called *Non-Alignment 2.0*, recommending a modern version of non-alignment. They state that ensuring India's internal development is key. To achieve this, India needs to "enhance [its] strategic space and capacity for independent agency," to give it the most options for relations with the outside world, which in turn gives it the most options for internal development. Non-Alignment 2.0 is different, as the global system is different and more intertwined. To maintain economic growth, India engages more with the outside

²⁴³ Dipankee Banerjee, "India's defence and security in the 21st century: Hard choices," *Center for Land Warfare Studies* (2014): 2, accessed July 20, 2015,

http://www.claws.in/images/journals_doc/1028663823_DipankarBanerjee.pdf.

²⁴⁴ Mohan, "India and the balance of power," 23.

²⁴⁵ Sunil Khilnani et al, *Nonalignment 2.0: A foreign and strategic policy for India in the Twenty First Century* (New Delhi: Centre for Policy Research, 2012), 8, accessed July 20, 2015,

http://www.cprindia.org/sites/default/files/working_papers/NonAlignment%202.0_1.pdf.

²⁴⁶ Bronson, "Tempered rivalries," 8.

²⁴⁷ Tellis, "Unity in difference," 17.

²⁴⁸ Seema Mustafa, "Non-alignment 2.0 need of the hour," *DNA India*, March 2, 2012, accessed July 20, 2015, <http://www.dnaindia.com/analysis/column-non-alignment-20-need-of-the-hour-1657268>.

²⁴⁹ Zorawar Singh, "Flashback: Non-alignment 2.0," *Pragati*, March 2, 2012, accessed July 20, 2015, <http://pragati.nationalinterest.in/2012/03/flashback-non-alignment-2-0/>.

world on all levels: trade, labor, technology, and ideas. Anti-West sentiments have diminished. Old non-alignment was about passively staying out of the world order to avoid being caught between two frontlines, but Non-Alignment 2.0 is about taking an active role, carefully balancing different powers. India should engage not with no one but with everyone, thereby reducing their influence. It should take the side that best serves its interests on a case-by-case basis without rejecting other options.²⁵⁰

The work has been criticized extensively, including by the past three National Security Advisors, who feel that India should align with the USA.²⁵¹ Pant calls it insufficient to deal with China and does not see Non-Alignment 2.0 reflected in Indian policy, considering Modi's positive stance toward the USA and more assertive stance toward China.²⁵² Non-Alignment 2.0 is called outdated, but a lot of the criticism is partly based on prejudice about non-alignment 1.0.²⁵³ Commentators said it conceded too much to China and concluded that it was against engaging too much with the USA.²⁵⁴ But, actually, it recommends that India encourages US maritime power in the Asia-Pacific yet be careful, as the USA can be demanding and resentful of other ties. It should just avoid relations beyond a certain threat threshold to China.²⁵⁵

Maximizing the number of arms suppliers and creating a coalitional multi-polar arms network while minimizing the leverage on India, to create national power and a strong military technological base, is just what Non-Alignment 2.0 recommends. I do not make any claims about a wider (grand) strategy than one for supplier choices, nor do I think this is an active policy in New Delhi, considering the backlash, the lack of concrete policy recommendations, and the behavior toward China and the USA. I am merely saying that the idea of strategic autonomy through multi-alignment, as Non-

²⁵⁰ Khilnani et al, *Nonalignment 2.0*.

²⁵¹ Mustafa, *Non-alignment 2.0*.

²⁵² Harsh Pant and Julie Super, "India's 'non-alignment' conundrum: A twentieth century policy in a changing world," *International Affairs* 91 (2015): 760, accessed July 20, 2015, doi: 10.1111/1468-2346.12336/.

²⁵³ K. Bajpai, "NAM and the pitfalls of revisiting it," *Business Standard*, March 6, 2012, accessed July 20, 2015, http://www.business-standard.com/article/opinion/k-shankar-bajpai-nam-and-the-pitfalls-of-revisiting-it-112030600022_1.html.

²⁵⁴ Tom Wright, "Non-alignment rises from the dustbin of history," *Wall Street Journal*, March 22, 2012, accessed July 20, 2015, <http://blogs.wsj.com/indiarealtime/2012/03/22/non-alignment-rises-from-dustbin-of-history/>.

²⁵⁵ Ian Hall, "A strategy for India: Nonalignment 2.0?" *Lowy Interpreter*, March 6, 2012, accessed July 20, 2015, <http://www.lowyinterpreter.org/post/2012/03/06/A-strategy-for-India-Nonalignment-20.aspx>.

Alignment 2.0 recommends, is in practice one of the pillars of choosing arms suppliers.

6.5 A new world?

Harkavy draws our attention to how the international system affects arms supplies. In 1994 he suggested the world was returning to the Interbellum model of arms trade. Yet many of the characteristics of arms trade in the Interbellum are not currently found. The market share of countries was *not* and is still *not* related to GDP.²⁵⁶ There is *not* less co-production and co-development, as those have actually increased, and there is *not* less licensing.²⁵⁷ India did not lose its dominant supplier (more than 60 percent in share) in volume over the period since 1998, nor the last lustrum. There has not been a dominant supplier in financial value between 2011 and 2013 though.²⁵⁸ Some characteristics are hard to measure, like the amount of export controls or re-transfers. To state that the world is like the Interbellum again is therefore inaccurate. However, a few changes Harkavy predicted have occurred.

6.5.1 Polarity

The extent to which the world has changed should first be analyzed, which is not easy. Harkavy decided on bipolarity because there were two major nuclear superpowers with first-strike capabilities. That is not a good way to define polarity. There were no nuclear weapons in the Interbellum, so the operationalization lacks historical continuity. The nuclear balance now involves smaller, regional nuclear powers with different nuclear rulebooks, which alters the implications of first strike capabilities.²⁵⁹ There is extensive debate on whether the world is currently unipolar or multipolar, and

²⁵⁶ A Pearson correlation between market share and GDP gave a result of 0.09 for the period of 1970-1975 and a result of 0.07 for the period 2010-2014.

²⁵⁷ The Annex contains a graph about the share of licensing in all trades. Licensing increased until 1990, dropped until 1996 and since then has risen again. The current level is similar to that of the Cold War.

²⁵⁸ There are no five-year periods where Russia supplied less than 60%. There are five single years where Russia did: 1979, 1992, 1994, 2005 and 2014. Four of five are in the post cold-war period and two out of five in the current post-1998 period. This might mean the start of a trend.

²⁵⁹Thérèse Delpech, *Nuclear deterrence in the 21st century: Lessons from the Cold War for a new era of strategic piracy* (Santa Monica: Rand, 2012), 111-114, accessed July 5, 2015, http://www.rand.org/content/dam/rand/pubs/monographs/2012/RAND_MG1103.pdf.

I cannot reflect all opinions here. Mearsheimer thinks that while the USA is currently stronger than all other states it is not a global hegemon. He identifies the USA, Russia, China, and potentially Japan and India as great powers and calls the world an unbalanced multipolar system.²⁶⁰ Waltz stated in 2000 that we are in a transitional period between unipolarity and multipolarity, with the new great powers located in Asia.²⁶¹ With the developments of the past fifteen years, calling the world multipolar is reasonable. Harkavy himself wrote in a 2005 article that the world was unipolar mixed with asymmetric multipolarity.²⁶² In his 1975 book he described the 18th and 19th centuries as multipolar despite strong disparities in powers among all the important actors.²⁶³ For this reason, he also included a gradient of power. Following Harkavy's logic that classified the world as multipolar even during strong asymmetry, we can say that the current world is asymmetric multipolar, even though that is disputed.

A multipolar world is in India's interest, as it has always felt threatened by its position between two bipolar blocs. The multipolar world allows for India's strategy of Non-Alignment 2.0. Multipolarity facilitates arms trade for industrial motivations instead of hegemonic ones. Suppliers want to sell weapons to whomever they can in order to make money. Recipients are not bound anymore to buy from a specific bloc but can buy from whomever they want. This would lead to more cross-bloc trade. India is not a member of any blocs, so instead I measure whether it is purchasing from multiple blocs, as identified by Harkavy. I use WMEAT for the historical comparison of the financial value. Unfortunately this does not offer data on all time periods or on a country level, so comparison is suboptimal. Table 6.3 shows that the financial value of the arms trade is divided more evenly over different blocs nowadays. The volume of the arms trade has not changed as much.

²⁶⁰ John Mearsheimer, "Can China rise peacefully?" *The National Interest*, October 25, 2014, accessed July 5, 2015, <http://nationalinterest.org/commentary/can-china-rise-peacefully-10204>.

²⁶¹ Kenneth Waltz, "Structural realism after the Cold War," *International Security* 25 (2000): 32, accessed July 5, 2015, doi: 10.1162/016228800560372.

²⁶² He identifies the major powers as USA, EU, Russia, China, Japan, India and perhaps radical Islam.

²⁶³ Harkavy, *The arms trade*, 28.

Table 6.3 Extent of multiple bloc trade in volume and financial value 1975-1979 vs. 2010-2014

TIV	Financial value						
	1975-1979		2010-2014				
Warsaw Pact	73.3%	Russia*	69.8%	Warsaw Pact	85.9%	Russia	42.9%
NATO	19.8%	USA*	12.0%	NATO	14.1%	USA	29.4%
Switzerland	6.9%	EU*	7.0%			EU	11.8%
		Other	10.9%			Other	15.9%

*If measuring the spheres of influence instead of formal alliances, and assuming that Uzbekistan is in the Russian sphere of influence, Australia, Israel, Canada and Israel are in the US sphere of influence, Switzerland is in the EU sphere of influence, and South Africa and Ukraine (since 2014) are unaligned, the shares in volume are as follows: Russia – 71.8%; USA – 19.6%, EU: 7.3%, Other: 1.37%.

Sources: Adaptation of the SIPRI Arms Transfers Database and WMEAT.

Another effect of multipolarity is the amount of suppliers. In a multipolar world, arms trade will be less consolidated, and the great powers will have smaller market shares. As arms production is prestigious, more powers will develop independent arms production and compete on the market. Table 6.1 showed how the market shares of the top five suppliers were indeed decreasing, although not significantly. Multipolarity also suggests multiple-supplier relations. As seen in Table 6.1 and Table 6.2, India has an increasing number of suppliers, especially when separated by weapon system.

Lastly, a multipolar world causes insecurity about whether a country will be able to obtain arms in the future. As economic motives prevail over strategic ones, recipients can no longer count on a steady supply of weapons. To counter that, countries focus instead on developing their own industry. On Harkavy’s six-level scale of independence, India has moved up from level 3, Mixed Independence-Dependence (as independence in production, but dependence for R&D) to level 4, Mixed Dependence-Independence (significant licensing capacity, limited independent R&D and dependence on imports or licensing). India’s indigenization efforts showcase the stronger insistence on independence.

6.5.1 Technological change

Harkavy also states that the rate of technological change in weaponry affects how arms are traded throughout the world. Harkavy measured technological change as the number of generations of fighter aircraft and main battle tanks. That does not seem to

be a strong operationalization right now.²⁶⁴ The past decades have seen an influx of new technology, such as stealth, robotics, sensors, and electronics, and a rise in irregular warfare, for which fighter aircraft and main battle tanks are less essential. Innovation has been rapid.²⁶⁵ The focus on quality over quantity is supported by the fact that the worldwide volume of arms has decreased.²⁶⁶ A fast rate of technological change also explains why second-tier producers are struggling on the market.

Slow technological change occurs during quantitative arms races, while fast change occurs during qualitative arms races. Quantitative arms races are fuelled by imminent threats, while qualitative arms races are not subject to the same urgency. In my opinion, a qualitative arms race can also lead to fast technological change, because necessity is the mother of innovation. Dyadic rivalries are characterized by qualitative arms races, and India and Pakistan have such a rivalry. Ijyer-Mitra claims that India traditionally focused on quantity in the IAF, while Pakistan focused on quality. Yet nowadays quality is of increasing importance to India.²⁶⁷ India insists on having better aircraft than Pakistan and when India attempted to purchase Howitzers, the range of the guns compared to the range of Pakistani Howitzers played a key role.²⁶⁸ Furthermore, as China rises, India is not only starting to see a quantitative arms gap but also a qualitative gap.²⁶⁹ This creates a greater sense of urgency to get high-quality weapons, which are offered by first-tier suppliers, as they are innovators.

A fast rate of technological change suggests that as suppliers develop new weapons, they are more willing to release the outdated versions to the market. The rise of new

²⁶⁴ Nonetheless, I measured it, and it shows that since the end of the Cold War, USA had a new fighter aircraft every 8.3 years versus 5 years in the Cold War, and no new battle tanks versus a new one every 7.5 years. Russia now has one fighter aircraft per 8.3 years versus one per 4.3 years in the Cold War, and one battle tank per 12.5 years versus one per 7.5 years in the Cold War. This means the rate of technological change of conventional weapons is slower than during the Cold War.

²⁶⁵ Patrick Morgan, "American military power and challenges to international security," in *From superpower to besieged global power: Restoring world order after the failure of the Bush doctrine*, ed. Edward Kolodziej and Roger Kanet (Athens, USA: University of Georgia Press, 2008), 34.

²⁶⁶ SIPRI Arms Transfers Database.

²⁶⁷ Abhijit Iyer-Mitra, "Technology and military escalation in South Asia," seminar, *Carnegie Endowment for International Peace*, June 3, 2014, accessed July 20, 2015, <http://carnegieendowment.org/2014/06/03/technology-and-military-escalation-in-south-asia/hbbv>.

²⁶⁸ "Procurement Nadir: India's murky, messed-up Howitzer competition," *Defense Industry Daily*, November 24, 2014, accessed July 5, 2015, <http://www.defenseindustrydaily.com/murky-competition-for-2b-india-howitzer-order-may-end-soon-0805/>.

²⁶⁹ Kanwal, "India's defense budget."

technology might mean that more countries are willing to offer good conventional weapons, as they feel that new technology will give them the advantage in warfare now. Yet, even though the West might produce higher quality weapons, that does not mean they are all offered to India. A quick comparison in Table 6.4 of the aircraft offered for the MMRCA tender shows a marked difference in the ages. Not only did the USA offer the oldest weapons, it was also the only country with a new generation in development (Lockheed Martin F-35 Lightning II) that it did not offer. Harkavy states that France has always been willing to offer the latest weapons in order to steal markets from the USA and Russia. This still seems to be the case, and makes it an attractive seller. Now, as this is only one tender, no conclusions can be derived from it, but it is interesting. Further research would need to be carried out to make an exhaustive comparison.

Table 6.4 Comparison of age of aircraft offered in MMRCA tender

Origin	Name	Year of introduction
USA	Boeing F/A-18E/F Super Hornet	1999
USA	Lockheed Martin F-16 Fighting Falcon	1978
France	Dassault Rafale,	2001
Russia	Mikoyan MiG-35	Under development
Sweden	Saab JAS 39 Gripen	1997
Europe	Eurofighter Typhoon	2003

Source: Wikipedia.

One of the takeaways of this is that there are many different definitions of quality. It can be related to the characteristics, age, level innovation, the rate of malfunctioning (as in Chapter 6.1), etc. Russia struggles with newer technologies, but its conventional weapon production is not as much behind.²⁷⁰ India is still interested in those weapons too, so Russia has not lost all of its appeal. India is also not only interested in the quality of arms, but also the quantity, and Russia remains a good trade partner for that.

²⁷⁰ Jonas Gratz, "Russia's military reform: Progress and hurdles," *Center for Security Studies* 152 (2014): 3, accessed July 20, 2015, www.css.ethz.ch/publications/pdfs/CSSAnalyse152-EN.pdf.

6.5.1 Conclusion about the international systems

Multipolarity enables India to purchase from many different suppliers with industrial motives. Not only does it buy from more suppliers, the suppliers also have smaller shares on the Indian arms market, and they come from different blocs, if arms trade is measured by the financial value. Multipolarity also made indigenization more essential, as industrial motives do not guarantee future sales. Fast technological change is related to qualitative arms races, which India is experiencing with Pakistan and China. This motivates India to buy high-quality arms from the West.

6.6 Export control regimes

Levine et al describe the effect of the combination of economic and strategic considerations. India's economic position has improved substantially since 1970. According to the World Bank, India's GDP has risen from 63.5 billion USD in 1970 to 1876.8 billion USD in 2014, and it currently has the world's fourth largest GDP. This has put India in a better position to afford the higher prices of the West. Not only can India now afford Western prices, the price of Russian weapons has increased as well, due to the rate of imported components and growing domestic costs.²⁷¹ This makes the price a worse reason to purchase from Russia.

According to Levine et al, suppliers face a collective-action problem, which affects their export decisions. The arms embargo by the USA, Sweden, and the Netherlands following Pokhran-II is a good example. Other countries did not join in, which made the embargo useless. Export control regimes are a way to deal with the collective-action problem, as countries jointly decide on what can be exported and what should be taken into account when deciding on an export license. It lowers the risk of destabilizing stockpiles that can occur if countries compete for a market. For example, the EU export control regime lets countries share rejected export-license applications, so suppliers are not played out against each other. There are four global export control regimes currently, which are the Nuclear Suppliers Group (NSG), Missile Technology

²⁷¹ "Arms trade in the age of turbulence," 107.

Control Regime (MTCR), Wassenaar Arrangement and Australia Group. India is not a member of any of them, but aspires to be. While most regimes do not require the recipient to be a member, membership is generally seen as a sign of trustworthiness and responsibility. Membership would enable India to participate in managing strategic trade and the diffusion of advanced technology²⁷² and showcase that India is an independent actor in the global arena.

The NSG was set up in 1975 in response to India's PNE in 1974, as India used Canadian civil nuclear material to develop warheads. The NSG restricted India from buying material that could facilitate the development of nuclear weapons. This changed in 2005 when India and the USA signed the India-United States Civil Nuclear Agreement, in which India promised to separate civil and military nuclear reactors and put civil reactors under control of the IAEA. Following this, the NSG granted India a waiver in 2008 to purchase civilian nuclear technology. The collective decision to (dis)allow nuclear trade with India is a way to avoid the economic and strategic fallback from others supplying nuclear material to India.²⁷³ Russia, France, the USA, the UK, Canada, and South Korea have signed nuclear trade agreements following the waiver.²⁷⁴ The agreements show that those countries consider India a responsible nuclear state, which makes way for stronger strategic relations and increases the trust needed to sell weapons.²⁷⁵ However, it is a chicken/egg question. Nuclear agreements might also be signed in order to sell arms and nuclear material. No matter the order, signing these agreements helps with arms trade. As mentioned, the India-US Agreement was long seen as a turning point for strategic relations. It has now come under fire because many promises have not held up. The USA would support India's quest for membership of the export control regimes, but this has not extended beyond lip service, even though India has adapted its legal instruments to (mostly) fit in line

²⁷² Rajiv Nayan, "Update on India's Membership of Multilateral Export Controls Regimes," *Institute for Defence Studies and Analyses Comment*, December 19, 2012, accessed July 20, 2015, http://www.idsa.in/idsacomments/UpdateonIndiasMembershipofMultilateralExportControlsRegimes_rnayan_191212.html.

²⁷³ Kate Sullivan, "Is India a responsible nuclear power?" *S. Rarjaratnam School of International Studies* (2014): 6-7, accessed July 20, 2015, <https://www.rsis.edu.sg/rsis-publication/idss/is-india-a-responsible-nuclear/>.

²⁷⁴ India also signed agreements with Mongolia, Kazakhstan, Argentina and Namibia for supplying uranium.

²⁷⁵ Pant, *The US-India nuclear pact*, 123-124. .

with the regimes.²⁷⁶ A 2010 law put the responsibility for nuclear accidents on suppliers, which deterred US investors.²⁷⁷ Following that, Washington did not want to do the diplomatic heavy lifting anymore on India's membership of these regimes.²⁷⁸ This shows that diplomatic support follows economic interests, hinting that the nuclear agreements were signed in order to improve trade.

The MTCR limits the trade in the missiles that can be used to deliver WMD. The MTCR divides missiles into two categories.²⁷⁹ Missiles in Category I (payload over 500kg/range over 300km) are not to be traded, while missiles in Category II (payload less than 500kg/range less than 300km) are supposed to be traded only with great restraint. The payload and range may be traded off against each other. When deciding whether to approve a license, a supplier should look at whether the target owns or is trying acquire WMD, the purposes and capabilities of the missile and space programs, the contribution the missile can make to the development of a delivery system for WMD, a country's credibility, the risk of diversion, and whether the trade conflicts with multilateral treaties. All major developers of missiles are members of this regime or say they adhere to its regulations (e.g., China and Israel).²⁸⁰ Since India is a nuclear state, exporting states should be cautious. The PJ-10 BrahMos missile, which was jointly developed by Russia and India, just skirted the borders of Category I with a range of 290 km, and Russia received international criticism for that. In 2002, India wanted to purchase Arrow 2 missiles from Israel. The USA had contributed to the development of the missiles and vetoed the sale, stating that it would breach the MTCR, as they had potential to reach a range of 300 km.²⁸¹ The US contributions to

²⁷⁶ Rajiv Najan and Ian Stewart, "Export controls and India," *Centre for Science & Security Studies Occasional Papers* 1 (2013): 15, accessed July 20, 2015,

<https://www.kcl.ac.uk/sspp/departments/warstudies/research/groups/csss/pubs/India-export-control.pdf>.

²⁷⁷ Nicholar Burns, "Passage to India: What Washington can do to revive relations with New Delhi," *Foreign Affairs* 93 (2014): 134, accessed July 20, 2015,

<http://www.heinonline.org/HOL/Page?handle=hein.journals/fora93&id=1138&collection=journals>.

²⁷⁸ Jayanth Jacob, "Getting real: India prunes wishlist on 4 export regimes," *Hindustan Times*, January 16, 2015, accessed July 20, 2015, <http://www.hindustantimes.com/india-news/getting-real-india-prunes-wishlist-on-4-export-regimes/article1-1307617.aspx>.

²⁷⁹ This includes major subsystems and production facilities.

²⁸⁰ "The missile technology control regime at a glance," *Arms Control Association* (2004), accessed July 5, 2015, <https://www.armscontrol.org/factsheets/mtcr>.

²⁸¹ Christer Ahlström, "Arrows for India? Technologoy transfers for ballistic missile defence and the Missile Technology Control Regime," *Journal of Conflict & Security Law* 9 (2004): 104-105, accessed July 20, 2015, doi: 10.1093/jcsl/9.1.103.

the development of the Arrow system already went against the MTCR, as Israel is a non-member and a nuclear state. This shows the decision is political rather than legal. India formerly applied for membership in June 2015, so this might lead to it buying Category I missiles in the future, most likely from Russia. Applicants only get accepted with a unanimous vote, but the USA has a lot of influence. It will be interesting to see how much active support the USA will provide and what the USA will demand for that in return. As of July 2015, the USA and Sweden have expressed support explicitly after the bid,²⁸² while Russia, France, and the UK expressed hypothetical support earlier.²⁸³ While this is not explicitly said, the support is likely given to improve these countries' chances on the Indian defense market, as they are all major arms exporters. Membership of the NSG is the next step.

The MTCR includes some types of UAVs, since in practice it is difficult to differentiate between missiles and UAVs. It excludes many drones that should arguably be included, especially new types of technology. The Israeli Harop Unmanned Combat Aerial Vehicle (UCAV) has a range of 1,000 km and counts as an explosive itself, as it loiters on the battlefield to attack targets. The Heron, another Israeli UAV, has a range of 3,000 km, and can carry a warhead of 250 kg, while its successor, the Heron TP, can fly for 7,400 km and has a maximum payload of 1,000 kg, enough for a nuclear weapon.²⁸⁴ India has purchased both the Harop and the original Heron. The USA has developed similar weapons. These UAVs are not currently included in the MTCR. Efforts to include them have been blocked by drone exporters, such as the USA, because of strong pressure from the companies producing them.²⁸⁵ US law does not allow the export of Category I UAVs to non-MTCR member

²⁸² "Sweden backs India's bid for entry into Missile Technology Control Regime," *The Economic Times*, June 2, 2015, accessed July 20, 2015, <http://economictimes.indiatimes.com/news/defence/sweden-backs-indias-bid-for-entry-into-missile-technology-control-regime/articleshow/47514397.cms>.

²⁸³ Hasan Suroor, "U.K. to back India's membership of export control regimes," *The Hindu*, June 29, 2011, accessed July 20, 2015, <http://www.thehindu.com/news/national/uk-to-back-indias-membership-of-export-control-regimes/article2145046.ece>.

²⁸⁴ Christian Weidlich et al, "Unmanned aerial vehicles: A challenge to a WMD/DVs free zone in the Middle East," *Academic Peace Orchestra Middle East Policy Brief* 8 (2012): 2-3, accessed July 5, 2015, <http://library.fes.de/pdf-files/iez/09608.pdf>.

²⁸⁵ Samuel Brannen, "Sustaining the U.S. lead in unmanned systems: Military and homeland considerations through 2025," *Center for Strategic and International Studies* (2014): 12, accessed July 5, 2015, http://csis.org/files/publication/140227_Brannen_UnmannedSystems_Web.pdf.

states, although it allows exports to Israel in practice.²⁸⁶ The USA has been trying to downgrade certain UAVs to Category II instead of I, as it wants to increase exports with non-members in Asia, but it failed.²⁸⁷ Membership in this regime would give India influence on deciding how these UAVs get regulated, and increase its global influence on arms trade.

All in all, there are several collective solutions in place to deal with the risks countries face when exporting arms. Membership of export regimes would likely improve India's stature and influence in the world and might lead to more countries interested in supplying to India. However, the road to membership has not been easy, and the USA has not really supported India as it promised. The MTCR controls the worldwide trade in missiles and has been a tool to limit missile transfers from Israel before. Now India is seeking membership to have a seat at the table where missile trade is regulated and the support for India is likely influenced by a desire to sell to India. I predict that India will gain membership, but that only Russia and Israel might possibly supply Category I missiles, as they generally provide the most advanced weapons.

6.7 Worldwide patterns

Some changes in supplier choices come from developments on the supplier side. Bitzinger says that after the Cold War ended, second- and third-tier countries were not able to achieve autarky or cost-effective and financially beneficial weapon production. Second-tier suppliers struggle because of growing economic and technological demands. Countries use six different strategies to adjust to that partially or completely abandon defense production; focus on arms exports; convert from defense to commercial production; specialize in specific industries; leverage dual-use technologies; and produce transnationally.

²⁸⁶ Savita Pande, "Missile technology control regime: impact assessment," *Strategic Analysis* 23 (1999): 931, accessed July 5, 2015, doi: 10.1080/09700169908455096.

²⁸⁷ Thomas Melito, *Nonproliferation: Agencies could improve information sharing and end-use monitoring on unmanned aerial vehicle exports* (GAO-12-536) (Washington: U.S. Government Accountability Office, 2012), 20-21, accessed July 5, 2015, <http://www.gao.gov/products/GAO-12-536>.

It is a reasonable assumption that India buys from the countries that succeeded in adapting their industries successfully in some or all of these aspects. Bitzinger states that Israel has had the most successful adaptation, and it fits the neatest in the ladder model. It has shown great success in exporting arms, converting the defense industry to commercial production and carving out a niche for itself in UAVs, AAM, reconnaissance and surveillance systems, and electro-optics. Israel is also increasingly engaged in transnational production. Harkavy notes that South Africa is good at adapting equipment to unique environments.²⁸⁸ Mohanty writes that one of India's challenges is to find systems that can meet the harsh and diverse climate conditions in the region,²⁸⁹ and India mainly buys armored personnel carriers from South Africa, which hold up well on difficult terrain.²⁹⁰ South Africa's niche is thus useful. The successes of Israel and South Africa explain their role on the Indian arms market.

Bitzinger's theory can be applied to other countries outside his book too. In the Cold War, the SALW market was dominated by the USA and the Soviet Union, but over the past two decades Switzerland has become an important SALW exporter too.²⁹¹ India is one of its biggest clients.²⁹² It is likely that Switzerland specialized in the production of SALW as a niche. The data does not show that, as SALW are not covered by the SIPRI Arms Trade Database. Another example is Ukraine. Ukraine and Russia used to have extensive armaments cooperation. Ukraine supplied Russia with components for missiles and with engines for helicopters and aircraft²⁹³ Of the fifteen entries of Ukrainian arms sales on the Arms Trade Register, ten are for components for Russian ships and aircraft. Purchasing from Russia thus led to Ukrainian sales. The war in Crimea will likely put a halt to Ukrainian sales, as India supports Russia in this matter, and coproduction of Ukraine and Russia has ceded. Some adaptation strategies can be

²⁸⁸ Bitzinger, *Towards a brave new arms industry*, 63-69.

²⁸⁹ Mohanty, *Arming the Indian arsenal*.

²⁹⁰ "Casspir," *Army Guide*, accessed July 5, 2015, <http://www.army-guide.com/eng/product1130.html>.

²⁹¹ Brauer, "Arms industries, arms trade and developing countries," 995.

²⁹² Christelle Rigual, "Trade Update: Authorized Small Arms Transfers Annex 8.1," online annex to *Small Arms Survey 2013: Everyday dangers*, (Cambridge: Cambridge University Press, 2013), 7, accessed July 5, 2015, <http://www.smallarmssurvey.org/publications/by-type/yearbook/small-arms-survey-2013.html>.

²⁹³ Anna Dyer, "What ending cooperation on armaments means for Russia and Ukraine," *Polish Institute for International Affairs Bulletins* 645 (2014): 1-2, accessed July 20, 2015, <http://www.isn.ethz.ch/Digital-Library/Publications/Detail/?id=179071&lng=en>.

seen in first-tier suppliers too. In Europe, national defense spending declined significantly after the Cold War, so the local markets shrunk. Exporting became a necessity. During the financial crisis of 2007–2009, defense budgets were slashed in many countries. The Italian industry, for instance, had to focus on exports to survive, because it was hit so heavily.²⁹⁴ India, as the biggest arms importer in the world, is like a ripe peach for these industries struggling to survive. Changes in the defense industry in these countries thus lead to changes on the Indian arms import market.

6.7.1 Worldwide trends or an unique Indian position?

It is not always clear to what extent changes are caused by historical developments or policy changes in India, or by policy changes of the supplier. I will test that, by comparing suppliers’ annual share in India’s total imports (in TIV) to their share in the imports of the second to fourth largest importers, as well as their worldwide share. SIPRI identifies the top five arms importers between 2010 and 2014 as India, China, Pakistan, the United Arab Emirates (UAE), and Saudi Arabia. I use a Spearman correlation, as the data is non-parametric and monotonic, to test how closely a supplier’s share is associated with that supplier’s share to another top importer. A significant test means that when the share of that supplier changes in India, it changes the same way somewhere else. This suggests that a change is not unique to India. This is not the most elegant model to run a time series, but it was the best that could be done with the available software, data, and the large number of tests. For statistical reasons, India cannot be compared to another importer if a supplier does not sell any arms at all to that importer. The results can be found in Table 6.5.

Table 6.5 Comparison of the purchasing patterns of the top five arms importers 1970-2014

	Pakistan	China	Saudi Arabia	UAE	Global
Australia	-0.10				0.22
Canada	0.49**	0.23	0.05	0.37**	-0.01
Czechoslovakia					-0.35
France	-0.06	-0.02	0.06	-0.19	-0.05
Germany (FRG)	-0.31**	-0.46**	0.07	0.30**	0.45**

²⁹⁴ “Italy among world’s top arms exporters,” *The Local*, March 16, 2015, accessed July 20, 2015, <http://www.thelocal.it/20150316/italy-among-worlds-top-arms-exporters>.

Ghana					0.68**
Israel		-0.10			0.78**
Italy	0.35**	-0.28*	0.14	-0.23	0.40**
Japan		-0.06			0.17
Kazakhstan					0.67**
Kyrgyzstan					0.91**
Netherlands	0.46**		-0.16	0.48**	0.38**
Poland					0.45**
Russia	0.45**	0.02		-0.20	0.49**
Singapore				0.35**	0.37**
Slovakia	-0.12				0.50**
South Africa			0.08	0.16	0.31**
South Korea					0.05
Soviet Union	-0.02	-0.14		0.07	-0.18
Sweden	0.29*		-0.11	0.02	0.00
Switzerland	-0.17	-0.27	-0.29	0.17	0.17
Ukraine	-0.15	-0.35		0.26	0.03
United Kingdom	0.03	-0.55**	-0.08	0.29*	0.11
United States	0.00	-0.06	-0.38**	0.37**	0.06
Uzbekistan					0.93**
Amount of suppliers	0.38**	0.73**	0.61**	0.55**	0.45**

Significance: $0.01 \leq P \leq 0.05 = *$, $P \leq 0.01 = **$

Source: Adaptation of SIPRI arms transfers database

The most likely explanations for a significant relationship are that the supplier's industry has developed, its export policies changed, or that India makes up a large share of all exports. The latter is the case for Kyrgyzstan and Uzbekistan, as India is the target destination for 83 percent and 99.6 percent respectively of all arms exports. It is true to a lesser extent for Ghana, Israel, and Russia, with 24 percent, 20 percent and 29 percent respectively of all exported arms going to India. For those three countries, domestic factors also play a role. The industry or export policies influence the share of Germany, Italy, the Netherlands, Poland, and Singapore. Maybe they climbed up or down the ladder of production or switched between hegemonic, industrial or restrictive motives. Maybe they adapted more or less successfully to their position as second-tier supplier. However to give a clear reason, one would need to study their respective industries.

My hypothesis was that as a country supplied more arms to Pakistan, it would supply less to India, and vice versa. However, that was only the case for Germany, who supplied to Pakistan almost exclusively between 1970 and 1981 and then switched to mostly supplying India instead. The hypothesis was suspected for Russia, but there was actually a positive correlation there. SIPRI's Arms Trade Register shows that Pakistan ordered Russian Mi-8MT/Mi-17/Hip-H helicopters through the UK, Denmark, or China. This might be re-exports outside Russian control, but it is not 100-percent clear. The positive relation between Pakistan and India for buying Dutch arms can be explained by the fact that arms sales to both stopped after the nuclear tests. Periods of instability in South Asia might have led to increased procurement for both countries at similar times, explaining the other positive significant relations. Finally, India's trend toward diversification matches with the other importers and the rest of the world. The state of polarity of the world most likely caused this.

In conclusion, India's experiences are somewhat explained by changing circumstances on the supplier side. Some industries developed better than others, or did not adapt in a way that fits India's needs. Niche specialization is especially a strong factor in the success of selling to India. Weak domestic economies create a stronger need to export globally. Overall, it shows that not all changes are caused by Indian developments. For a complete picture, one would need to study the industry and export policies of each country individually.

6.8 Sensitivity comparison

There is a lot of uncertainty about the extent of the decline of Russian-Indian relations. Russia is not the number-one supplier in raw dollars and might not be the greatest innovator, but what about the type of weapons India receives from Russia? Russia offers India weapons no other country does, like the nuclear submarine INS Chakra, which it would not lease to any other country either.²⁹⁵ This sparked the question about the sensitivity of delivered weapons on a structural level. How does the sensitivity of

²⁹⁵ Ankit Panda, "Will India lease another Russian nuclear submarine?" *The Diplomat*, March 30, 2015, accessed July 5, 2015, <http://thediplomat.com/2015/03/will-india-lease-another-russian-nuclear-submarine/>.

the weapons differ by supplier? As with quality, sensitivity is also not clearly defined, but it refers to how critical a weapon is to the national security and how much it gives an advantage to the owner. Now, there is no standard for measuring the sensitivity, like how advanced a piece of equipment is, or comparing classes of arms with each other, as confirmed by experts from SIPRI, which was the original plan for this thesis.²⁹⁶ Countries likely classify their exports into different sensitivity levels, but that is not public. Arms have so many characteristics that there is no systematic way to judge sensitivity, just as with quality. Instead, to figure out how the sensitivity of arms from different suppliers compares, I shall present a case study on missiles.

This is not deemed to be representative of all weapons, since countries often have niches for specific weapon types. As said earlier, Israel is a world leader in UAV production, so comparing UAVs from Israel to UAVs from France would suggest that Israel exports more sensitive arms, ignoring the fact that France might export more sensitive submarines. Instead, it is a case study meant to generate a hypothesis on the possible causal relation between the sensitivity of arms supplied to India and the choice for suppliers. To judge all weapons, one would need to develop a methodology to run a large N cross-case study of all weapon types over time, and that goes beyond the scope of this thesis and my technical knowledge of weapons.²⁹⁷ Missiles are chosen because they are relatively homogenous, and the differences between missiles are relatively limited. It is complex technology, but compared to other high-level weapon systems, there are fewer essential characteristics, and they are quantifiable.

6.8.1 Methodology

The data used consists of all the missile transfers in SIPRI Arms Transfers Register since 1998.²⁹⁸ Missiles are judged on their speed, range and payload (the weight of the

²⁹⁶ Pieter Wezeman and Mark Bromley, e-mail messages to the author, May 2015.

²⁹⁷ John Gerring, *Case study research: Principles and practices* (Cambridge: Cambridge University Press, 2007), 36-63.

²⁹⁸ Missiles are defined by SIPRI as “(a) all powered, guided missiles and torpedoes, and (b) all unpowered but guided bombs and shells. This includes man-portable air defence systems (MANPADS) and portable guided anti-tank missiles. Unguided rockets, free-fall aerial munitions, anti-submarine rockets and target drones are excluded.” “SIPRI Arms Transfers Database – Methodology.”

warhead). These characteristics are chosen because the MTCR categorizes missiles on range and payload, and because missiles are usually divided into categories based on their speed as well. The propulsion and guidance systems are also important characteristics, but they cannot be quantified.²⁹⁹ The specifics of each missile were taken from Wikipedia, militarypower.com.br, ausairpower.net, army-technology.com, army-guide.com, fas.org, and the website of Rosoboronexport. Missing values occur because some information is classified (e.g., the payload of Italy's Black Shark torpedoes), because sometimes it is unknown which version India ordered, or, in the case of guided bombs, because they are unpowered.

The transfers were weighted for the amount ordered; otherwise an order of 1,000 missiles would be equivalent to an order of 100 missiles. Bigger deals are more important, and variation in size occurs over the entire spectrum, although not to the same extent. However, there were strong outliers that could not be dropped.³⁰⁰ To deal with that the outliers, the size was log transformed, as untransformed it would skew the significance. Multiple deals for the same weapon are counted as different cases, because it is assumed that for new deals new tenders went out, new negotiations were done, and a new decision for suppliers was made. Tests showed that the data was not normally distributed and lacked homogeneity of variance, so a Kruskal-Wallis test was used to see if there were significant differences between the countries.

6.8.2 Results

Table 6.6 shows a complete overview of all trades per country per year, weighted and unweighted. Eight countries supplied missiles to India, with fifty-nine deals in total. Russia has the most deals (52.9 percent) when weighted, followed by Israel (25.5 percent) and the USA (10.2 percent). Unweighted, the division is the same, with Russia in the top spot with 49.2 percent of the deals, Israel 25.4 percent and the USA 10.2 percent. Looking at the frequency per year, one can see a steady supply from Russia, Israel's sales picking up in 2000, and the USA's sales starting in 2010.

²⁹⁹ Kemburi and Bitzinger, "Cruise missiles in India," 194-197.

³⁰⁰ The outliers are 25000 9M119 Svir and 10000 9M113 Konkurs anti-tank missiles from Russia and 8563 Spike-ER anti-tank missiles from Israel. Scatterplots can be downloaded from a link in the Annex.

Table 6.6 Frequency of missile suppliers to India weighted (and unweighted) 1998-2014

	France	Israel	Italy	Kyrg.	Russia	Ukr.	UK	USA	Total
1998	0	0	0	0	10.0 (4)	0	0	0	10.0 (4)
1999	0	0	0	0	8.0 (3)	0	0	0	8.0 (3)
2000	0	2.3 (1)	0	0	7.4 (3)	0	0	0	9.7 (4)
2001	0	1.5 (1)	0	0	7.1(3)	0	0	0	8.7 (4)
2002	0	2.4 (1)	0	0	3.30 (1)	0	0	0	5.7 (2)
2003	0	0	0	0	3.5 (1)	0	0	0	3.5(1)
2005	1.6 (1)	3.3 (2)	0	0	5.1 (2)	0	0	0	10.0 (5)
2006	1.9 (1)	0	0	1.6(1)	5.1 (3)	0	0	0	8.5 (5)
2008	0	7.8 (3)	0	0	2.4 (1)	0	0	0	10.2(4)
2009	0	9.31 (4)	0	0	0	0	0	0	9.3 (4)
2010	0	0	0	0	2.7 (1)	0	0	1.3 (1)	4.0 (2)
2011	0	0	0	1.2 (1)	6.4 (3)	0	0	1.5 (1)	9.0 (5)
2012	2.7 (1)	2.7 (1)	0	0	6.3 (2)	2.6 (1)	0	3.3 (2)	17.6 (7)
2013	0	0	0	0	4.4 (1)	0	0	8.03(3)	12.4. (4)
2014	0	6.3 (2)	2.0 (1)	0	2.0 (1)	0	2.6 (1)	0	12.9 (5)
Total									
<i>Unweighted</i>	3 (5.1%)	15 (25.4%)	1 (1.7%)	2 (3.4%)	29 (49.2%)	1 (1.7%)	1 (1.7%)	7 (11.9%)	59
<i>Weighted</i>	6.2 (4.4%)	35.6 (25.5%)	2.0 (1.4%)	2.7 (1.9%)	73.8 (52.9%)	2.6 (1.8%)	2.5 (1.8%)	14.2 (10.2%)	129.5

Source: Adaptation of SIPRI Arms Transfers Register.

A Kruskal-Wallis test was used to see if there was a significant difference. The complete results can be downloaded from a link in the Annex, and I will report only the significant results. The median of payload ($\chi^2 = 25.9$, $p = 0.00$) and speed ($\chi^2 = 15.7$, $p = 0.01$) differ significantly between countries, while the range did not.³⁰¹

³⁰¹ The complete result, including tests for variance of homogeneity, normality, and descriptive variables, can be downloaded from a link in the Annex.

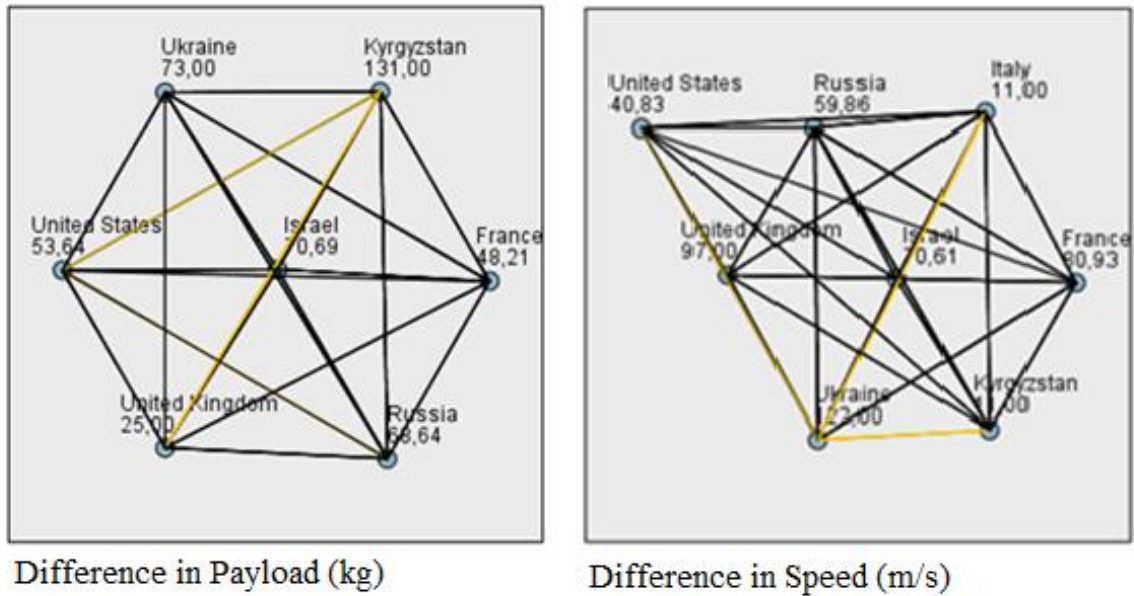


Figure 6.1 Post-hoc tests for payload and speed for all missile suppliers 1998-2014

Source: Adaptation of SIPRI Arms Transfers Register.

The post-hoc tests in Figure 6.1 show that there were only a few statistically significant differences between countries. Significant results are lightly colored (yellow). The only differences in payload were that Kyrgyzstan offers heavier payloads than the USA and the UK. Ukraine offers faster missiles than Italy, the USA, and Kyrgyzstan. The underlying assumption that Russia’s missiles were of a higher sensitivity than Western missiles can therefore not be confirmed. There are two reasons for that. First, Russia offers a wide variety in missiles, from anti-tank missiles (ATM) to supersonic cruise missiles, so it does not come out on top clearly. Secondly, the N is very small, especially split up by country. This makes it hard to get significant results. Thirdly, non-quantifiable characteristics were not taken in account. Therefore, the top ten missiles in each category will also be analyzed to see whether some countries are ahead.

Table 6.7 Top 10 imported missiles for India in 1998-2014: Speed

	Country	Weapon	Type	Amount ordered	Speed (m/s)	Year
1	Ukraine	R-27	BVRAAM*	360	1530	2012
2	Israel	Derby (2x)	BVRAAM	750/20	1360	2008/2005
	Israel	Python-5	BVRAAM	750	1360	2008
	France	MICA	BVRAAM	493	1360	2012

6	Russia	RVV-AE (3x)	BVRAAM	500/40/1000	1328	2011/2006/1999
9	Israel	Python-4	BVRAAM	100	1190	2005
10	UK	ASRAAM*	SRAAM	350	1020	2014

*BVRAAM: Beyond Visual Range Air-To-Air Missile, ASRAAM; Advanced Short Range Air-to-Air Missile
Source: Adaptation of SIPRI Arms Transfers Register.

Israel features prominently on the list of fastest missiles in Table 6.7, with four entries. Ukraine exported the fastest missile, while the USA does not appear on this list. Additionally Russia and India are now jointly developing the BrahMos-II cruise missile, which has a speed of 2380 m/s. This is the fastest missile in the world.

Table 6.8 Top 10 imported missiles for India in 1998-2014: Range

	Country	Weapon	Type	Amount ordered	Range (km)	Year
1	Israel	Harop	SSM*	50	1000	2009
2	Russia	PJ-10 Brahmos (3x)	Various**	216/400/150	290	2012/1998 (2x)
5	Russia	3M-54 Klub (2x)	Anti-ship missile/SSM	150/28	220	1998/2006
7	Russia	Kh-35 Uran (3x)	Anti-ship missile	100/50/30	130	2014/2011/2001
10	USA	RGM-84L Harpoon-2 (2x)	Anti-ship missile	21/20	124	2012/2010

* SSM: Surface-to-surface missiles

** India has bought Brahmos Air-to-Surface missiles (216), surface-to-surface missiles (400) and anti-ship missiles (150). They differ in payload.

Source: Adaptation of SIPRI Arms Transfers Register.

Russia is a strong contender for missiles with the furthest range in Table 6.8, with eight different entries. The USA features once on this list, in the tenth spot. Israel supplied the missile with the highest range. This is the UCAV mentioned in the chapter on export regimes.

Table 6.9 Top 10 imported missiles for India in 1998-2014: Payload

	Country	Weapon	Type	Amount ordered	Payload (kg)	Year
1	Kyrgyzstan (2x)	SET-65E	ASW* torpedo	14/36	450	2011/2006
	Israel	SPICE	Guided bomb	100	450	2008
4	Russia (2x)	KAB-500/1500	Guided bomb	100/1000	380	2011/1998
6	Israel	AGM-142E	ASM*	30	340	2001

7	Russia	Kh-59 ME Ovod	ASM*	100	320	1999
8	Russia	PJ-10 Brahmos (2x)	Anti-ship missile/SSM	150/400	300	1998 (2x)
10	USA	Paveway-2	Guided bomb	100	241	2012

* ASW: Anti-submarine warfare, ASM: Air-to-surface missiles

Source: Adaptation of SIPRI Arms Transfers Register.

Russia is strong on the list of the heaviest payloads in Table 6.9, with five entries. Kyrgyzstan has the top spots with two sales of ASW torpedoes. The USA has the tenth spot again.

6.8.1 Conclusion

These figures show that the sensitivity of missiles differs in payload and speed. On a pairwise level, only Kyrgyzstan offers missiles with a high payload, and Ukraine offers fast missiles. The small N and the high range of the characteristics likely play a role. The lack of significant results, and the fact that the two countries with significant differences had few sales, leaves doubt on the validity of this test. Even though a Kruskal-Wallis test accounts for a skewed distribution and a lack of homogeneity of variance, the latter two are strong indicators that the data offers problems for statistical analysis. While quality and characteristics are not comparable over all weapon types, perhaps a sensitivity comparison could be repeated using the age of all imported arms. An overview of who sells the most sensitive missiles per category shows that Russia and Israel offer missiles with better characteristics than the USA. The USA has only recently entered the market, but so far it does not look like the USA is replacing Russia or Israel for the most sensitive arms. To say this with certainty one would need to do a follow-up test to measure all weapon systems.

Several conclusions can be derived from this. Russia offers the greatest variety of missiles to India. It offers some of the best missiles but also a lot of garden-variety missiles. The missiles from the USA are not the top of the range, while Israel offers generally good-quality missiles. This means that at least regarding missiles, other countries offering more sensitive items is not the reason to divert from Russia. It is

interesting that some of the top missiles come from countries that do not deliver a lot of other missiles to India, like Ukraine and Kyrgyzstan. These countries were at the time of the trade in the Russian sphere of influence. This makes it unlikely they would sell the weapons if Russia strongly disapproved. This adds further weight to the idea that sensitivity of weapons is not the reason to look to the West.

6.9 Feedback loops

All these developments also interact with each other. SIPRI writes that suppliers often become associated with their recipients, so supplying arms to the adversary becomes unthinkable out of fear of jeopardizing their relations.³⁰² This is reflected in the mutual relations between India, Pakistan, Russia, the USA, and China. For a long time, the USA supplied arms to Pakistan, while Russia supplied to India. Currently, the USA sells more in dollars than Russia does, partially because Washington has become more concerned about China. Relations between the USA and Russia have also cooled, especially since the war in Ukraine, which could push Russia into China's hands. My final argument, using recent developments of the past year, is that relationships with suppliers affect relationships with other suppliers, creating feedback loops. To do so, it is important to look at the relations between all five countries.

India's gradual shift toward the USA has led to great concern in Russia. India is an important market for Russia, as trade to India made up 39.3 percent of all its arms exports 2010–2014. Moscow does not want to lose this, especially with its weak economy and arms industry reforms. Russian attempts to woo India back were mainly geo-political maneuvers with limited success.³⁰³ It stated that Russia has always had India's back, that they should bond together against the West, and that India and the USA cannot really trust each other.³⁰⁴ The tactic to increase co-development has paid off, as Russia shares more technology than the USA does. This is why Russia is still a strong player on the Indian arms market.

³⁰² SIPRI, *The arms trade with the Third World*, 69.

³⁰³ Singh, "Indo-Russian defence trade," 3-4.

³⁰⁴ Rakesh Simha, "Arming India: Russia tools up," *Russia & India Report*, October 8, 2012, accessed July 5, 2015, http://in.rbth.com/articles/2012/10/08/arming_india_russia_tools_up_18205.html.

The relations between Pakistan and the USA are hegemonic, even more than India's relations with Russia were, as the USA offers military assistance and free weapons to achieve its strategic goals to Pakistan. Countering India is a priority for Pakistan. It feels so threatened by India and the military has such a large role in politics that SIPRI's 1971 quote that the "quest for arms has largely determined rather than reflected Pakistan's international alignment" is still valid.³⁰⁵ Pakistan does care from whom it receives its arms, and it does not share a culture, religion or ideology with either the USA or China, its main suppliers.

Russia used to have a moratorium on arms sales to Pakistan because it considered Pakistan a threat to the stability of the region. In 2012, Russian deputy prime minister Rogozin said to India, "We do not do military business with your enemies. We do not transfer any arms to them."³⁰⁶ Then Russia announced in June 2014 that it would consider exporting arms to Pakistan.³⁰⁷ Pakistan will likely purchase 20 MI-35 helicopters, especially since an Indian tender for helicopters went to the USA.³⁰⁸ This is largely as a response to India's pivot to the USA. There are several benefits for Russia besides financial ones. Previously, many Russian arms were illegally re-exported to Pakistan. Now Russia can control this and benefit from it. Trade can also help with shared security threats, such as radical Islamists; improve relations with China; and possibly decrease US influence. Finally, it can be used as leverage against closer Indian relations with the USA.³⁰⁹ Pakistan benefits as it receives more arms, which are especially useful as NATO withdraws from Afghanistan. It decreases

³⁰⁵ Ibidem, 56.

³⁰⁶ Dadan Upadhyay, "Unlike Russia, Ukraine continues arms supplies to Pakistan," *Russia & India Report*, February 25, 2013, accessed July 20, 2015, http://in.rbth.com/world/2013/02/25/unlike_russia_ukraine_continues_arms_supplies_to_pakistan_22529.html.

³⁰⁷ Zachary Keck, "Russia ends arms embargo against Pakistan," *The Diplomat*, June 4, 2014, accessed July 5, 2015, <http://thediplomat.com/2014/06/russia-ends-arms-embargo-against-pakistan/>.

³⁰⁸ Kabir Taneja, "Why is Russia, India's closest ally, making overtures to Pakistan?" *Scroll.in*, December 10, 2014, accessed July 5, 2015, <http://scroll.in/article/694034/why-is-russia-indias-closest-ally-making-overtures-to-pakistan>.

³⁰⁹ Tim Craig, "As Obama visits India, Pakistan looks to Russia for military, economic assistance," *Washington Post*, January 28, 2015, accessed July 5, 2015, http://www.washingtonpost.com/world/asia_pacific/as-obama-visits-india-pakistan-looks-to-russia-for-military-economic-assistance/2015/01/28/fee988f0-a58a-11e4-a7c2-03d37af98440_story.html.

dependency on China and the USA.³¹⁰ Russia's official explanation is that the arms are used to combat drugs and terrorism, as they affect the situation in Afghanistan.

India is concerned about that development.³¹¹ Indian Navy Chief Arun Prakash stated that Russia likely made the offer in order to "arm-twist" India into not buying from other suppliers.³¹² Some Indian analysts worry that Russia is mainly befriending Pakistan's army leadership, which is very anti-India.³¹³ The director of the Russian Institute of Strategic Studies stated when the decision was announced, "I do not think that India will have any objections. After all, India and Pakistan both buy weapons from the US, and this has not bothered them."³¹⁴ It is obvious that Russia feels it is slightly hypocritical to criticize Russia for selling arms to Pakistan when India buys from the USA. However, Kadadin, Russia's ambassador to India, said, "Never ever will Russia do anything to the detriment of India's security. India is the closest friend of my country."³¹⁵ Overall, the Indian response has been negative but not extremely so, since India realizes as well that Russia has genuine security considerations in Pakistan, and that the sale of equipment to Pakistan would not compensate for lost sales with India.³¹⁶ A visit from Putin in December 2014 has also tempered the anger.³¹⁷ It is overall a symbol for the fact that the "special relations" between Russia and India are no longer the same. As India diversifies, so does Russia. Pakistan has not expressed a similar anger over closer US ties with India, as it did not trust the USA anyway, based on its past track record. The USA used Pakistan to assist Afghan mujahedeen, only to drop Islamabad after the Soviets withdrew from Afghanistan,

³¹⁰ Petr Topychkanov, "Can Russia sell arms to both India and Pakistan?" *Carnegie Moscow Center*, June 6, 2014, accessed July 5, 2015, carnegie.ru/eurasiaoutlook/?fa=55823.

³¹¹ P. Stobdan, "Is Russia relevant for India?" *IDSIA Comment*, December 8, 2014, accessed July 5, 2015, http://www.idsa.in/idsacomments/IsRussiaRelevantforIndia_pstobdan_081214.html.

³¹² Petr Topychkanov, "Will Mi-35M helicopters fly to Pakistan?" *Carnegie Moscow Center*, November 26, 2014, accessed July 5, 2015, <http://carnegie.ru/eurasiaoutlook/?fa=57325>.

³¹³ Chowdhury, "India watches warily."

³¹⁴ Keck, "Russia ends arms embargo."

³¹⁵ "Will never do anything detrimental to India's security: Russia," *The Indian Express*, December 8, 2014, accessed July 5, 2015, <http://indianexpress.com/article/world/world-others/will-never-do-anything-detrimental-to-indias-security-russia/#sthash.pHZMuVEU.dpuf>.

³¹⁶ Rajeev Sharma, "Russia's defence pact with Pak shows Modi govt's diplomatic failure," *First Post*, November 24, 2014, accessed July 5, 2015, <http://www.firstpost.com/world/implications-india-russia-signs-defence-pact-pakistan-1816957.html>.

³¹⁷ Jha, "Vladimir Putin's productive India visit."

leaving Pakistan to deal with the mujahedeen.³¹⁸ Other countries that supply to both do not get as much negative feedback, as those relations are not as intertwined.

It is possible that buying arms from the USA could give India leverage over US arms supplies to Pakistan.³¹⁹ As the USA dropped Pakistan before, it is not unthinkable that that could happen again in the future if that offered more strategic benefits. However, trade between the USA and Pakistan has not changed yet. The yearly percentages are volatile but do not suggest a clear trend downward. The five-year periods only show an increase toward the highest share in 2010–2014 (30 percent) since 1985–1989 (48 percent). Influence the other way round is also possible. India was concerned it would be coerced into making concessions about Kashmir in order to let Pakistan focus on fighting Islamist terrorists, like the UK had suggested. With the withdrawal of US troops from Afghanistan, it is unlikely the USA would demand that of India. It might ask for other strategic favors in the future, though.

Table 6.10 Share of US arms in total Pakistani arms imports in TIV 1970-2014

	'70-'74	'75-'79	'80-'84	'85-'89	'90-'94	'95-'99	'00-'04	'05-'09	'10-'14
USA	5%	15%	30%	48%	5%	12%	3%	27%	30%

Source: SIPRI Arms Trade Database

China also plays a role. The Russia-China relations are complex. China offers opportunities to Russia for trade and military cooperation but is a threat at the same time.³²⁰ Relations have improved over the past decades, and China is Russia's biggest trade partner.³²¹ Russian-Chinese defense cooperation has grown substantially but did not come from the ground easily, due to mutual misunderstanding and mistrust.³²² The partnership was built on a mutual fear of the USA instead of a positive attitude toward each other.³²³ China used to be a faithful customer of arms since 1992 but has now developed its own industry, and sales have decreased sharply since 2006. Russia is

³¹⁸ Pant, "The Pakistan thorn," 90.

³¹⁹ Simha, "Arming India."

³²⁰ Trenin, "Challenges and opportunities," 227-256.

³²¹ Rodkiewicz, "The turn to the East."

³²² Kjell Engelbrekt and John Watts, "Sino-Russian strategic collaboration: Still an 'Axis of convenience'?"

Swedish National Defence College (2015), 23-24, accessed July 5, 2015, <http://www.fhs.se/Documents/Externwebben/forskning/Forskningsprojekt/Statsvet/Forbe/Still%20An%20Axis%20of%20Convenience.pdf>.

³²³ Bobo Lo, *Axis of convenience: Moscow, Beijing, and the new geopolitics* (Washington: Brookings Institutions Press, 2008), 187.

annoyed that China most likely reverse-engineered many Russian arms and made Chinese copies.³²⁴ China wants to buy Su-35 advanced fighter aircrafts, but Russia wants to sell more than China wants to buy.³²⁵ This is possibly Russia's strategy to make the sale worthwhile despite the risk of reverse engineering.³²⁶ India objects to this deal. Due to a lack of transparency about Chinese armaments, it is hard to compare equipment India and China receive from Russia.³²⁷ If they are equal, India does not have the qualitative edge on China it desires. If China copies the Su-35 aircrafts, the technology might proliferate to Pakistan as well, since China and Pakistan are jointly developing defense technology, such as the JF-17 combat aircraft.³²⁸ This aircraft has a Russian engine, and Russia gave approval for the direct export of that engine to Pakistan in February, after Putin's visit to India where he promised to not go against India's strategic interests.³²⁹ Just like India, Russia is also trying to engage multilaterally, balancing different interests.

These feedback loops lead to the following model on arms trade relations. Improving India-USA relations have a negative effect on India-Russia relations. In response, Pakistan-Russia relations improve, which has in turn a negative effect on the India-Russia relations, resulting in a negative feedback spiral. If India is able to obtain leverage and influence the USA-Pakistan relations, more feedback would occur. If Russia and China get closer and more Russian technology gets delivered to Pakistan through China, India and Russia's relations would likely become more strained.

³²⁴ Tai Ming Cheung, "Dragon on the horizon: China's defense industrial Renaissance," *Journal of Strategic Studies* 32 (2009): 47, accessed July 5, 2015, doi: 10.1080/01402390802407418.

³²⁵ Nikolai Novichkov and James Hardy, "Russia ready to supply 'standard' Su-35s to China, says official," *IHS Jane's Defence Weekly*, November 25, 2014, accessed July 5, 2015, <http://www.janes.com/article/46273/russia-ready-to-supply-standard-su-35s-to-china-says-official>.

³²⁶ Yu Bin, "China-Russia relations: Tales of different 'pivots,'" *Comparative Connection* (2013): 4-5, accessed July 5, 2015, http://csis.org/files/publication/1203qchina_russia.pdf.

³²⁷ Singh, "Indo-Russian defence trade," 5.

³²⁸ Pant, "The Pakistan thorn," 89-91.

³²⁹ Usman Ansari, "Russia-Pakistan deal may lead to more sales," *Defense News*, February 16, 2015, accessed July 5, 2015, <http://www.defensenews.com/story/defense/policy-budget/industry/2015/02/16/russian-pakistani-engine-deal-could-lead-to-further-equipment-sales/23519813/>.

7 Conclusion

I started writing with the assumption that India's close ties with Russia were a thing of the past, and as the economy grew and India started maintaining close strategic ties with the West, Western countries became more interested to supply arms to India. But the situation turned out to be a lot more complicated.

First, I want to add nuance to the idea that the USA is the most important defense trade partner for India. Trade with the USA has the highest financial value now, but there are other characteristics to judge how important a supplier is. Is importance based on financial value, or volume of the trade; the level of innovation, age, or sensitivity of the weapons; the trust between countries; or how much technology India can get out of it to develop its own industry, a major goal for New Delhi? The USA does not score the highest on all of these categories. There are still substantial hiccups in their arms trade relations. India disapproves of the USA restricting technology transfer, modification, and re-exports of goods, and not helping India with its bid for the export control regimes. The USA does not trade arms of the highest technology or sensitivity levels (probably), nor does it offer India the latest weapons it owns. They have indubitably made great strides, but the situation deserves more nuance than it is generally given. Relations with Russia have worsened in some aspects. The financial value has gone down, Russia cannot supply the most innovative weapons, Russia might trade with Pakistan now, and there are concerns about delays, spares and malfunctions. But there are also strong aspects. Russia transfers highly sensitive weapons, the latest weapons it owns; is willing to cooperate extensively on developing weapons; transfers high amounts of technology; and still supplies the greatest volume.

Secondly, all the mentioned motivations, decisions, and developments can be synthesized in one bigger strategy specifically for choosing arms suppliers. It is said that India does not prioritize military matters, lacks long-term planning, has non-integrated doctrines from separate services, shows a disconnect between objectives and technology, and retains strong civilian control over the military. I do not disagree with these observations. There is indeed a clear lack of strategic thinking about what to

buy, how to buy, when to buy, who should make the choices, and how to regulate. The wish lists of the different military branches are uncoordinated, with unrealistic demands, and the strategic purpose often unclear. Procurement procedures are difficult to understand. The budget does not account for long-term planning or show strategic priorities. The institutions have competing interests, with little coordination or external control. But the lack of strategy does not extend to one question: whom to buy from.

I propose that maintaining strategic autonomy in arms procurement is a strategy of its own, fitting the greater strategy of Non-Alignment 2.0. I do not claim that this is what government officials actively think, just that it is a pattern shown repeatedly. In theory, strategic autonomy refers to increasing one's options by engaging with all possible actors, but in practice this has long been done with an anti-Western view. Under Non-Alignment 2.0, this is no longer the case. Instead, India maximizes its options with all foreign powers in order to have maximum options to develop domestically. With more suppliers, suppliers have less leverage, and India has more room to maneuver. New Delhi is afraid of getting cut off again during conflicts, and the economy has grown strongly. Becoming independent has thus become a focal point. India's attempts to increase independence, decrease leverage, strengthen India, and maximize options can be consistently seen in its supplier picks. India invests in the domestic industry, picks suppliers who are willing to supply technology for the domestic industry, chooses suppliers who will try to gain as little influence over India as possible, diversifies the suppliers, improves strategic ties to have more options, and attempts to join export control regimes to get a seat at the global table. This is a change from the Cold War, as the multipolar world led to industrial motives for suppliers, which decreases India's hesitance toward Western arms. Finally, the development of India's own industry, bigger budgets, decreased tolerance for Russian mishaps, and a qualitative arms race with China have increased the desire for Western technology.

There are several problems with this thesis. As with all arms trade research, there are few primary sources. Datasets are conflicting, and there is little transparency about why decisions are made. This has led to a lot of speculation. I mention many political considerations to choose the Rafale, but technical details might have been the reason. I

cannot tell for sure. I am missing perspectives from Russia, France, and Israel especially. That is caused by language barriers, but Israel and Russia are also very secretive about their defense trade. Even in my own language Dutch there is little material about arms trade between the Netherlands and India. I have attempted to not let the US perspective drown out other perspectives, but US sources are still dominant. Finally, some of the debates have been presented only briefly, due to a lack of space and an attempt to focus specifically on arms suppliers. This has made the debate on many aspects less nuanced than it deserves, like the other problems with procurement, corruption, strategy, non-alignment, new technology, and all bilateral relations.

This thesis has also opened up opportunities for further research. There are several statistical tests that would be illuminating, such as a complete assessment of sensitivity, a comparison per supplier between the ages of arms sold to India and Pakistan, or a comparison per supplier of the differences in domestic models and export models of arms. I could not do most of these, as I lacked access to sources about their specific characteristics. In addition, more research should be done on bilateral relations with many smaller trade partners. Finally, it will be incredibly interesting to see what the future holds. India has a 12-billion-USD tender coming up for six stealth submarines that will have to be manufactured in India. France, Spain, Russia, Sweden, and Germany are allegedly competing.³³⁰ To whom shall it go? Other developments also inspire curiosity. Will Modi's policies lead to buying more US arms? Will India be accepted in the MTCR, and will that lead to increased missile trade and/or acceptance in the NSG? How will the war in Crimea affect arms sold to India, and how will that affect India's relations with the USA and Russia? How many arms will Russia sell to Pakistan and China, and how will that affect India-Russia relations? Will Japan and South Korea start to trade actively with India, and how will China respond? The situation is always evolving and so exciting that it is worth keeping an eye out.

³³⁰ Franz-Stefan Gady, "Will India purchase German stealth submarines?" *The Diplomat*, May 27, 2015, accessed July 20, 2015, <http://thediplomat.com/2015/05/will-india-purchase-german-stealth-submarines/>.

8 Annex

Table 8.1 Arms trade per country to India in TIV per five years 1970-2014

	'70-'74	'75-'79	'80-'84	'85-'89	'90-'94	'95-'99	'00-'04	'05-'09	'10-'14
Australia	34	0	0	0	0	0	17	59	34
Canada	0	0	0	25	0	0	0	0	36
Czechoslovakia	128	0	0	0	0	0	0	0	0
France	120	144	233	1479	314	219	237	145	247
Germany	0	115	3	554	600	64	231	98	152
Ghana	0	6	0	0	0	0	0	0	0
Israel	0	0	0	0	0	116	522	657	1543
Italy	36	6	15	8	0	9	57	24	347
Japan	0	0	34	26	0	0	0	0	0
Kazakhstan	0	0	0	0	0	9	6	0	0
Kyrgyzstan	0	0	0	0	0	54	76	36	0
Netherlands	7	24	40	176	650	518	93	35	32
Poland	0	227	115	103	0	6	177	319	11
Russia/Soviet	5185	5478	8381	14296	4773	4383	7077	6419	14686
Singapore	0	0	0	38	19	0	0	0	0
Slovakia	0	0	0	0	0	139	52	0	0
South Africa	0	0	0	0	0	18	15	0	66
South Korea	0	0	0	36	216	120	0	0	0
Sweden	0	0	0	355	55	0	0	0	0
Switzerland	0	525	875	175	0	0	0	0	60
Ukraine	0	0	0	0	21	119	205	0	203
UK	1670	1261	2121	1718	762	319	122	617	690
United States	2	0	0	45	36	12	14	168	2516
Uzbekistan	0	0	0	0	0	0	378	209	418
Total	7182	7786	11817	19034	7446	6105	9279	8786	21041
N suppliers	8	9	9	14	10	15	16	12	15

Source: SIPRI Arms Trade Database

Table 8.2 Share of total arms trade per country to India in TIV per five years 1970-2014

	'70-'74	'75-'79	'80-'84	'85-'89	'90-'94	'95-'99	'00-'04	'05-'09	'10-'14
Australia	0.5%	0.0%	0.0%	0.0%	0.0%	0.0%	0.2%	0.7%	0.2%
Canada	0.0%	0.0%	0.0%	0.1%	0.0%	0.0%	0.0%	0.0%	0.2%
Czechoslovakia	1.8%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%

France	1.7%	1.9%	2.0%	7.8%	4.2%	3.6%	2.6%	1.7%	1.2%
Germany	0.0%	1.5%	0.0%	2.9%	8.1%	1.1%	2.5%	1.1%	0.7%
Ghana	0.0%	0.1%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Israel	0.0%	0.0%	0.0%	0.0%	0.0%	1.9%	5.6%	7.5%	7.3%
Italy	0.5%	0.1%	0.1%	0.0%	0.0%	0.2%	0.6%	0.3%	1.7%
Japan	0.0%	0.0%	0.3%	0.1%	0.0%	0.0%	0.0%	0.0%	0.0%
Kazakhstan	0.0%	0.0%	0.0%	0.0%	0.0%	0.2%	0.1%	0.0%	0.0%
Kyrgyzstan	0.0%	0.0%	0.0%	0.0%	0.0%	0.9%	0.8%	0.4%	0.0%
Netherlands	0.1%	0.3%	0.3%	0.9%	8.7%	8.5%	1.0%	0.4%	0.2%
Poland	0.0%	2.9%	1.0%	0.5%	0.0%	0.1%	1.9%	3.6%	0.1%
Russia/Soviet	72.2%	70.4%	70.9%	75.1%	64.1%	71.8%	76.3%	73.1%	69.8%
Singapore	0.0%	0.0%	0.0%	0.2%	0.3%	0.0%	0.0%	0.0%	0.0%
Slovakia	0.0%	0.0%	0.0%	0.0%	0.0%	2.3%	0.6%	0.0%	0.0%
South Africa	0.0%	0.0%	0.0%	0.0%	0.0%	0.3%	0.2%	0.0%	0.3%
South Korea	0.0%	0.0%	0.0%	0.2%	2.9%	2.0%	0.0%	0.0%	0.0%
Sweden	0.0%	0.0%	0.0%	1.9%	0.7%	0.0%	0.0%	0.0%	0.0%
Switzerland	0.0%	6.7%	7.4%	0.9%	0.0%	0.0%	0.0%	0.0%	0.3%
Ukraine	0.0%	0.0%	0.0%	0.0%	0.3%	2.0%	2.2%	0.0%	1.0%
UK	23.3%	16.2%	18.0%	9.0%	10.2%	5.2%	1.3%	7.0%	3.3%
United States	0.0%	0.0%	0.0%	0.2%	0.5%	0.2%	0.2%	1.9%	12.0%
Uzbekistan	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	4.1%	2.4%	2.0%

Source: Adaptation of the SIPRI Arms Trade Database

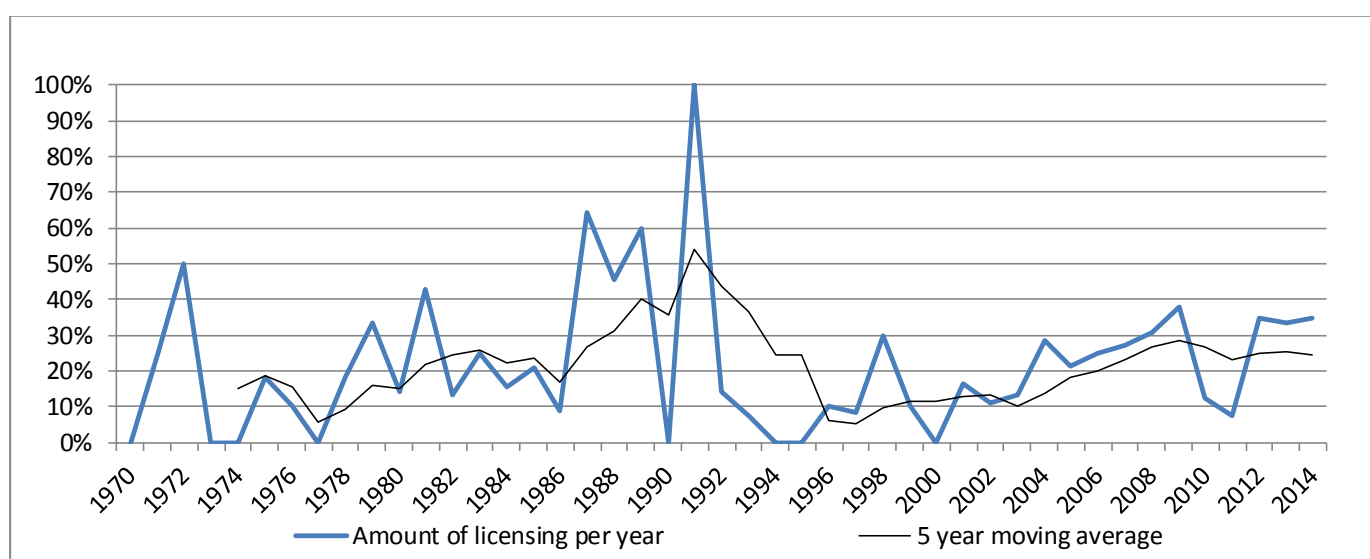


Figure 8.1 Share of licensing vs. direct sales for India 1970–2014

Source: Adaptation of SIPRI Arms Transfers Register.

Table 8.3 Descriptive variables for range, speed, and payload of Indian missiles per supplier 1998–2014

Country	Category	N	Min.	Max.	Mean	Std. Dev.
France	speed (m/s)	6	309	1360	920.5	467.4
	range (km)	6	6	50	36.3	22.3
	load (kg)	6	3	165	47.8	74.5
Israel	speed (m/s)	28	41	1360	782.4	424.3
	range (km)	36	8	1000	70.1	212.1
	load (kg)	33	11	450	75.4	117.3
Italy	speed (m/s)	2	26	26	26.0	0.0
	range (km)	2	50	50	50.0	0.0
	load (kg)	0				
Kyrgyzstan	speed (m/s)	3	26	26	26.0	0.0
	range (km)	3	100	100	100.0	0.0
	load (kg)	3	450	450	450.0	0.0
Russia	speed (m/s)	69	10	1328	649.7	408.1
	range (km)	74	4	500	75.0	114.3
	load (kg)	74	1.5	380	99.2	119.9
Ukraine	speed (m/s)	3	1530	1530	1530.0	0.0
	range (km)	3	100	100	100.0	0.0
	load (kg)	3	39	39	39.0	0.0
United Kingdom	speed (m/s)	3	1020	1020	1020.0	0.0
	range (km)	3	15	15	15.0	0.0
	load (kg)	3	10	10	10.0	0.0
United States	speed (m/s)	12	21	750	409.9	230.2
	range (km)	14	8	124	30.7	46.2
	load (kg)	14	3	241	84.3	107.0

Source: Adaptation of SIPRI Arms Transfers Register.

Extra material is available to download at <https://goo.gl/wp8294>. This includes:

- SIPRI tables of annual arms trade per supplier in TIV
- SIPRI tables of annual arms trade per supplier in share of the total imports
- SIPRI data on the top 5 importers compared
- Combined SIPRI Arms Trade Register
- Missile trade dataset with characteristics, including propulsion system and guidance
- Exploratory tests on missile trade datasets
- Results of Kruskal-Willis test on missiles

Additional data can be made available upon request.

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