

Course:

DEFENSE AND SECURITY ECONOMICS

Distance Support Material

TOPIC 6

ARMS TRADE AS ECONOMIC DRIVER OF DEFENSE SECURING

BRNO

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Topic 6



Arms Trade as Economic Driver of Defense Securing

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LEARNING OUTPUTS

Students will know:

- Basic concepts of arms trade economics;
- Basic reasons of offsets transaction usage.

Students will be able to:

- Characterise the demand and supply side of armament market,
- Describe and explain the trends of arms trade development.

Students will capable of:

- Discussion the pros and cons with connection offsets transaction usage within armaments trade.

ARMS TRADE AS ECONOMIC DRIVER OF DEFENSE SECURING

KEY TERMS

Direct and indirect offsets, offsets agreement, offsets transactions, arms trade, Subcontracts, Co-production, Purchases, Export assistance, Technology transfer, Training, Licensed production, Investment, Credit assistance/financing

TIME NEEDED FOR CHAPTER STUDY

4 hours

INTRODUCTION

- International arms trade follow human being along all its history.
- International arms trade as "good servant" and "bed master".
- Huge scale of possibilities for acquisition „weapons, weapons systems and materials for military purpose.
- **Main Objective of this topic is** definition and characterisation of international armament market with accent on national economy positive and negative impacts.
- **As partial aims of this lecture, we can see:**
 - Definition and characterisation of international arms trade,
 - carrying out microeconomic analysis of national and international market with armaments,
 - demarcation and characterization of offsets as state intervention on armament market and
 - definition and typology of programs of industrial cooperation (offsets transactions) .

1 BASIC CONCEPTS

1.1 Arms trade (definition)

Trade in weaponry, implements of war, weapons systems and munitions.

Accessible on: <http://www.openhorizon.org.uk/armstrade/definition.html>

The international selling of armaments for profit, carried on by governments and by private contractors around the world.

Accessible on: http://www.socialsciencedictionary.com/ARMS_TRADE

Arms transfers (arms imports and exports) represent the international transfer (under terms of grant, credit, barter, or cash) of military equipment, usually referred to as “conventional,” including weapons of war, parts thereof, ammunition, support equipment, and other commodities designed for military use. Among the items included are tactical guided missiles and rockets, military aircraft, naval vessels, armored and nonarmored military vehicles, communications and electronic equipment, artillery, infantry weapons, small arms, ammunition, other ordnance, parachutes, and uniforms. Dual use equipment, which can have application in both military and civilian sectors, is included

when its primary mission is identified as military. The building of defense production facilities and licensing fees paid as royalties for the production of military equipment are included when they are contained in military transfer agreements. There have been no international transfers of purely strategic weaponry (other than US Trident missile sales to the UK). Military services such as training, supply operations, equipment repair, technical assistance, and construction are included where data are available. Excluded are foodstuffs, medical equipment, petroleum products and other supplies.

Report of The Arms Control and Disarmament Agency - World Military Expenditures and Arms Transfers 1999 – 2000 (str. 197)

1.2Phase of arms trade development

- 1.2.1 Gun powder
- 1.2.2 Industrial revolution
- 1.2.3 World Wars and "Cold War"
- 1.2.4 New era of arms trade

1.3Forms of weapons systems acquisition

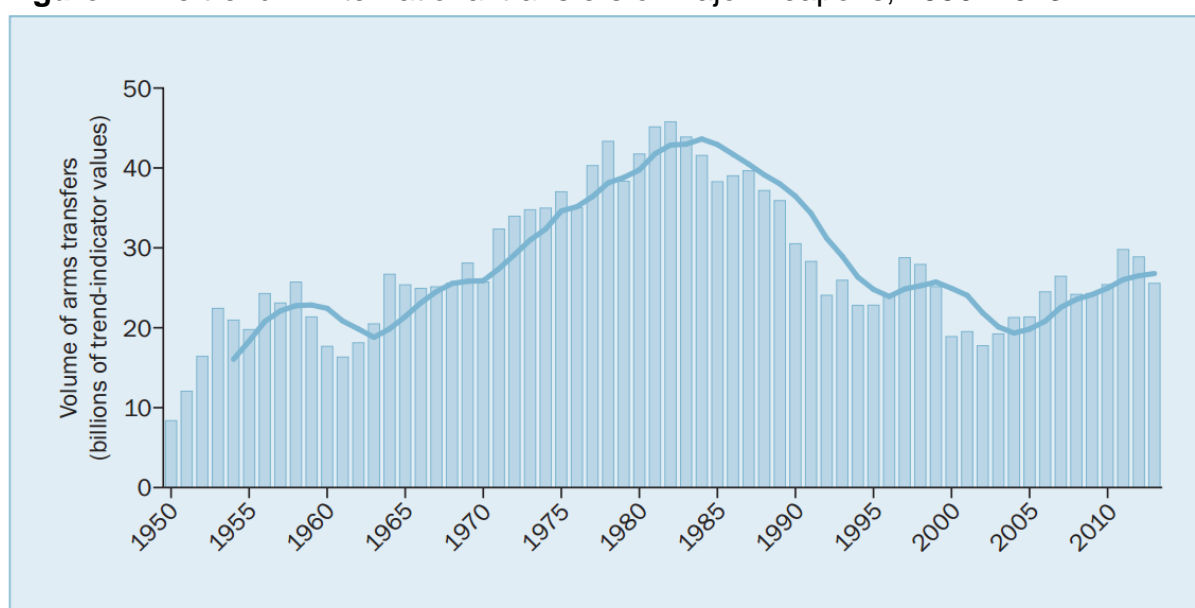


- Without nearly any benefits for homeland defense industrial base.
- Support independent potential and defense industrial base and the biggest benefits for domestic economy in connection with jobs and development technology. Unfortunately, It is the most expensive way of weapons systems procurement.

2 INTERNATIONAL ARMS TRADE

The volume of international transfers of major weapons in 2009–13 was 14 per cent higher than in 2004–2008 (see figure 1). The five biggest exporters in 2009–13 were the United States, Russia, Germany, China and France and the five biggest importers were India, China, Pakistan, the United Arab Emirates (UAE) and Saudi Arabia. The flow of arms to Africa, the Americas, and Asia and Oceania increased significantly between 2004–2008 and 2009–13, while there was a notable decrease in the flow to Europe. The level of arms transfers to the Middle East remained more or less unchanged.

Figure 1 The trend in international transfers of major weapons, 1950–2013



Source: WEZEMAN Siemon T. and WEZEMAN Pieter D. *Trends in International Arms Transfers*, 2013. <http://books.sipri.org/files/FS/SIPRIFS1403.pdf>

2.1 The Exporters 2009 - 2013

From 17 March 2014 the SIPRI Arms Transfers Database (see box 1) includes newly released information on arms transfers during 2013. This Fact Sheet highlights key trends and issues in arms transfers that are revealed by the new data. It lists the main exporters and importers in 2009–13 and describes the regional trends. Since the volume of deliveries of arms can fluctuate significantly from one year to the next, SIPRI uses a five-year moving average to give a more stable measure of trends in transfers of major weapons.

SIPRI has identified 55 countries as exporters of major weapons in 2009–13. The top 5 exporters—the USA, Russia, Germany, China and France—were responsible for 74 per cent of all arms exports (see table 1). The composition of the five largest exporters of arms changed between 2004–2008 and 2009–13: while the USA and Russia remained by far the largest exporters, China notably replaced France as the fourth largest exporter. The top 5 in 2009–13 exported 9 per cent more arms in that period than the top 5 in 2004–2008.

Table 1. The 10 largest exporters of major weapons and their main clients, 2009–13

Exporter	Share of international arms exports (%)		Main clients (share of exporter's total exports), 2009–13		
	2009–13	2004–2008	1st	2nd	3rd
USA	29	30	Australia (10%)	South Korea (10%)	UAE (9%)
Russia	27	24	India (38%)	China (12%)	Algeria (11%)
Germany	7	10	USA (10%)	Greece (8%)	Israel (8%)
China	6	2	Pakistan (47%)	Bangladesh (13%)	Myanmar (12%)
France	5	9	China (13%)	Morocco (11%)	Singapore (10%)
UK	4	4	Saudi Arabia (42%)	USA (18%)	India (11%)
Spain	3	2	Norway (21%)	Australia (12%)	Venezuela (8%)
Ukraine	3	2	China (21%)	Pakistan (8%)	Russia (7%)
Italy	3	2	India (10%)	UAE (9%)	USA (8%)
Israel	2	2	India (33%)	Turkey (13%)	Colombia (9%)

The United States

US exports of major weapons increased by 11 per cent between 2004–2008 and 2009–13 (see figure 2). The USA delivered more weapons than any other supplier in 2009–13, to at least 90 recipients. Asia and Oceania was the biggest recipient region of US weapons, accounting for 47 per cent of US deliveries. The Middle East received 28 per cent and Europe 16 per cent.¹

¹ Aircraft made up 61 per cent of the volume of US deliveries in 2009–13, including 252 combat aircraft. US exports of combat aircraft will be further boosted by planned deliveries of the F-35 to Australia, Israel, Italy, Japan, South Korea, the Netherlands, Norway, Turkey and the United Kingdom. The F-35 programme is the most expensive weapon programme ever. However, it is facing delays. Of 590 aircraft planned for export, only 5 have been delivered to date and several states have reduced the number that they plan to purchase or are considering less advanced alternatives. In 2009–13 the USA delivered long-range missile defence systems to Germany, Japan, the Netherlands, Taiwan and the UAE and received orders for such systems from Kuwait, Saudi Arabia and South Korea.

Germany

Germany's exports of major weapons decreased by 24 per cent between 2004–2008 and 2009–13, although it retained its position as the third largest exporter. Other states in Europe received 32 per cent of German arms exports in 2009–13, followed by the Middle East (17 per cent), Asia and Oceania (29 per cent) and the Americas (22 per cent).²

Russia

Russian exports of major weapons increased by 28 per cent between 2004–2008 and 2009–13. Russia delivered weapons to 52 states in 2009–13 but more than half of its exports went to just three countries: India, China and Algeria (see table 1). Asia and Oceania received 65 per cent of Russian arms exports in 2009–13, followed by Africa (14 per cent) and the Middle East (10 per cent).³

2.2 The Importers, 2009–13

SIPRI has identified 152 countries that imported major weapons in 2009–13, about three-quarters of all countries. The top 5 recipients in 2009–13—India, China, Pakistan, the UAE and Saudi Arabia— imported 32 per cent of the total volume of arms imports (see table 2). India and China were the two largest arms importers in both 2004–2008 and 2009–13. Asia and Oceania accounted for nearly half of imports in 2009–13, followed by the Middle East, Europe, the Americas and Africa (see figure 2).

² Germany continued to be the largest exporter of submarines in 2009–13, delivering 8 submarines to 5 countries. By the end of 2013, orders for 23 submarines were outstanding. Germany was the second largest exporter of tanks (after Russia) in 2009–13, delivering 650 tanks to 7 states (5 of which were outside Europe). By the end of 2013 it had a backlog of more than 280 tanks on order, including 62 Leopard-2s ordered by Qatar in 2013—the first time Germany has allowed the sale of tanks to an Arab state.

³ Russia was the largest exporter of ships in 2009–13, accounting for 27 per cent of all such deliveries. This included the delivery to India of an aircraft carrier and the only nuclear-powered submarine exported in this period. Aircraft accounted for 43 per cent of Russian arms exports in 2009–13, including 219 combat aircraft delivered in this period.

Table 2. The 10 largest importers of major weapons and their main suppliers, 2009–13

Importer	Share of international arms imports (%)		Main suppliers (share of importer's total imports), 2009–13		
	2009–13	2004–2008	1st	2nd	3rd
India	14	7	Russia (75%)	USA (7%)	Israel (6%)
China	5	11	Russia (64%)	France (15%)	Ukraine (11%)
Pakistan	5	2	China (54%)	USA (27%)	Sweden (6%)
UAE	4	6	USA (60%)	Russia (12%)	France (8%)
Saudi Arabia	4	2	UK (44%)	USA (29%)	France (6%)
USA	4	3	UK (19%)	Germany (18%)	Canada (14%)
Australia	4	2	USA (76%)	Spain (10%)	France (7%)
South Korea	4	6	USA (80%)	Germany (13%)	France (3%)
Singapore	3	2	USA (57%)	France (16%)	Germany (11%)
Algeria	3	2	Russia (91%)	France (3%)	UK (2%)

2.3. Key facts about international arms transfers

The volume of transfers of major weapons in 2009–13 was 14 per cent higher than in 2004–2008.

The five biggest exporters in 2009–13 were the USA, Russia, Germany, China and France. Together they accounted for 74 per cent of the volume of arms exports. The USA and Russia alone supplied 56 per cent of all exports.

China has further cemented its position as a major exporter of arms, replacing France as the fourth largest arms exporter.

The five biggest importers in 2009–13 were India, China, Pakistan, the UAE and Saudi Arabia. Together, they received 32 per cent of all arms imports. Saudi Arabia ranked among the five biggest recipients for the first time since 1997–2001.

The main recipient region in 2009–13 was Asia and Oceania (accounting for 47 per cent of imports), followed by the Middle East (19 per cent), Europe (14 per cent), the Americas (10 per cent) and Africa (9 per cent).

Between 2004–2008 and 2009–13, arms imports to states in Africa increased by 53 per cent, Asia and Oceania by 34 per cent and the Americas by 10 per cent. Imports by states in the Middle East remained largely unchanged, while imports by states in Europe decreased by 25 per cent.

This part of text is accessible on: WEZEMAN Siemon T. and WEZEMAN Pieter D. Trends in International Arms Transfers, 2013. <http://books.sipri.org/files/FS/SIPRIFS1403.pdf>

3 OFFSETS AND INTERNATIONAL ARMS TRADE

3.1 Offsets Basic terms

3.1.1 Definition of offsets

Offsets represent industrial compensation agreements that arms importing governments impose on their foreign suppliers.

Once a contract on the **import of defence** equipment is concluded, it is made conditional on the acceptance of offset obligations by the foreign contractor.

Compensation practices required as a condition of purchase in either government-to-government or commercial sales of “defense articles” and/or “defense services” as defined by the Arms Export Control Act.

3.1.2 Basic characteristics of offsets

While countries’ offset objectives are codified in arms offset policies that naturally vary among states and vary within states over time, a set of universal characteristics that define countries’ offset arrangements in practice can be discerned. These characteristics include:

- 1) that importing countries generally mandate offset requirements by law, often to 100 percent of the arms contract value;
- 2) that offset requirements start at some minimum contract value, often as low as \$5 million;
- 3) that multipliers are frequently attached to offset deals, meaning that a specific transaction value (say, \$10 million) can be multiplied to count toward a higher value (say, \$15 million) in fulfilment of the offset obligation;
- 4) that virtually all arms trade contracts now contain clauses that subject arms exporters to a variety of penalties for nonfulfillment of offset
- 5) obligations (e.g., exclusion from consideration for future contracts). In addition, there are expectations
- 6) that offsets will reduce arms acquisition costs;
- 7) that job creation and generalized economic development will result in the arms acquiring country;
- 8) that the offset will result in new and sustainable work (i.e., that the offset not merely replace work that would
- 9) have been sourced in-country anyway and that it not be one-off but continuous work); and
- 10) that the offsets result in general and specific technology transfers since technology is seen as a key component of future economic prosperity.

3.1.3 Typology of offsets

- **Direct offsets:** Offset transactions that are directly related to the defence items or services imported.
- **Indirect offsets:** Offset transactions that are not directly related to the defence items or services imported. Indirect offsets are subdivided into:
 - **Defence** (related) indirect offsets
 - **Non-defence** (related) indirect offsets.

3.1.4 Forms of offsets transactions (programs of industrial cooperation)

- **Subcontracts** (normally based on business-to-business agreement)
- **Co-production** (direct offset; based on government-to-government agreement)
- **Purchases** (indirect offset; this includes offset swapping – cf. below)
- **Export assistance** (indirect offset)
- **Technology transfer** (both types)
- **Training** (both types)
- **Licensed production** (both types)
- **Investment** (both types)
- **Credit assistance/financing** (both types).

Subcontract: In the offset context, overseas production of a part or component of a U.S.-origin defense article. The subcontract does not necessarily involve license of technical information and is usually a direct commercial arrangement between the defense prime contractor and a foreign producer.

Co-production: Overseas production based upon government-to-government agreement that permits a foreign government or producer(s) to acquire the technical information to manufacture all or part of a U.S.-origin defense article. Co-production includes government-to-government licensed production, but excludes licensed production based upon direct commercial arrangements by U.S. manufacturers.

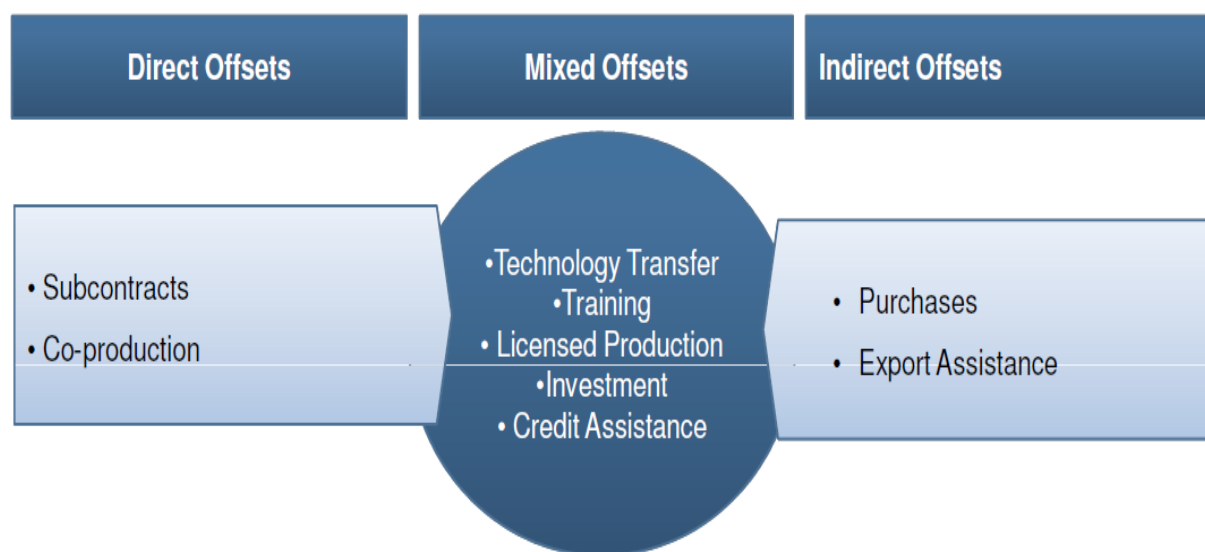
Purchases: Procurement of off-the-shelf items from the offset recipient. Often, but not always, purchases are indirect by nature. Indirect purchases are similar in definition to countertrade e, while direct purchases are analogous to buy-backs.

Licensed production: Atlantis firms manufactured some components of the KS-340 jet fighters, totalling \$240 million, which accounted for 48 percent of the offset obligation. There was no multiplier associated with this activity.

Technology Transfer: Transfer of technology that occurs as a result of an offset agreement and that may take the form of research and development conducted abroad, technical assistance provided to the subsidiary or joint venture of overseas investment, or other activities under direct commercial arrangement between the defense prime contractor and a foreign entity.

Training: Generally includes training related to the production or maintenance of the exported defense item. Training, which can be either direct or indirect, may be required in unrelated areas, such as computer training, foreign language skills, or engineering capabilities.

Figure 2 Classifications of Offset Transaction Categories



Source: KIMLA Dominik, *Military offsets and in country Industrialisation Market Insight*. Frost–Sullivan, 2013⁴

⁴ The top three offset transaction categories reported by industry for 2008 were purchases, subcontracts, and technology transfers. These three categories represented 78.18 percent of all transactions reported for 2008 based on quantity, 77.95 percent of transactions based on actual value, and 68.42 percent of the transactions based on credit value. The top three offset transaction categories for transactions involving multipliers were purchases, technology transfer, and miscellaneous transactions. Based on the total number of transactions including a multiplier, miscellaneous transactions accounted for 24.32 percent, technology transfers accounted for 18.92 percent and purchases accounted for 17.57 percent.

The top three offset transaction categories reported by industry for the 16-year reporting period (1993-2008) were also purchases, subcontracts, and technology transfer (on the basis of quantity, actual value and credit value). Based on the number of total offset transactions, purchases, subcontracts, and technology transfers accounted for 46.47 percent, 22.77 percent, and 11.52 percent respectively, of all transactions. Based on actual value, the same offset transaction categories accounted for 36.39 percent (purchases), 22.18 percent (subcontracts), and 17.54 percent (technology transfer), respectively. Finally, based on credit value, they comprised 33.73 percent (purchases), 20.58 percent (subcontracts), and 17.83 percent (technology transfer), respectively.

The term mixed offsets refers to mixtures of military offsets transaction types. For large defence contracts the military offset agreement will cover many compensation projects both direct and indirect. Among top the most popular military offsets transaction categories: are purchases, subcontracting, and technology transfer. From industry perspective indirect offsets is cheaper than direct one, so original equipment manufacturers (OEMs) are more willing to offer these type of projects in their compensation packages

FOR BETTER UNDERSTANDING PROBLEM



Direct Offsets (i.e., related to the production of the export item, the KS-340 jet fighter)

Technology Transfer: The technology transfer requirement was assigned 36 percent of the total offset obligation. PJD agreed to transfer all the necessary technology and know-how to Atlantis firms in order to repair and maintain the jet fighters. The Atlantis government deemed this capability to be vital to national security and, therefore, gave a multiplier of six. As a result, the transfer of technology actually worth \$30 million was given a credit value of \$180 million.

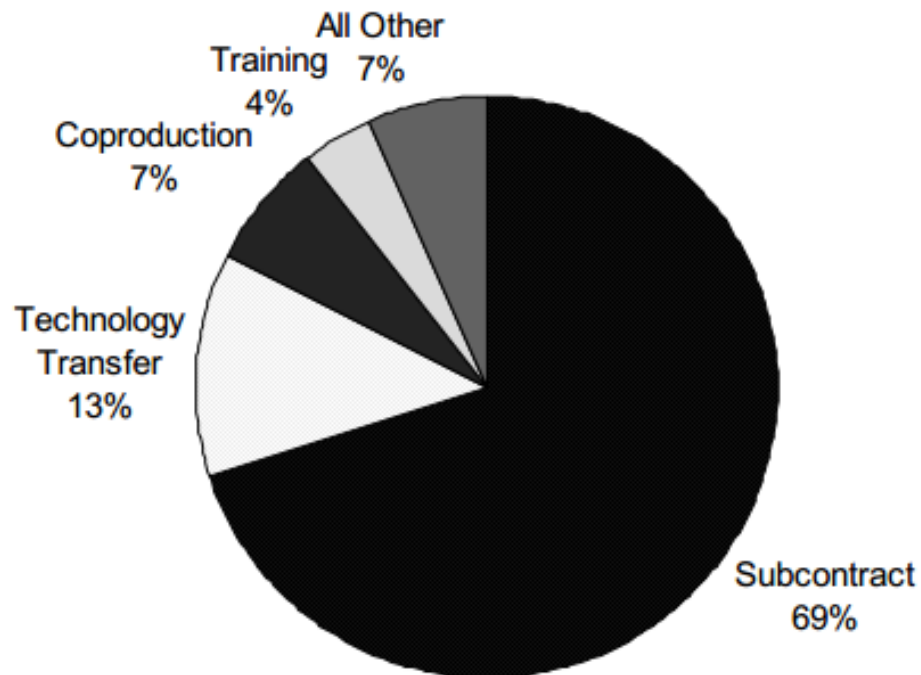
Licensed production: Atlantis firms manufactured some components of the KS-340 jet fighters, totaling \$240 million, which accounted for 48 percent of the offset obligation. There was no multiplier associated with this activity.

Indirect Offsets (i.e., not related to the production of the export item, the KS-340 jet fighter)

Purchase: PJD purchased marble statues from Atlantis manufacturers for eventual resale. These purchases accounted for nine percent of the offset obligation, or \$45 million. There was no multiplier associated with this activity.

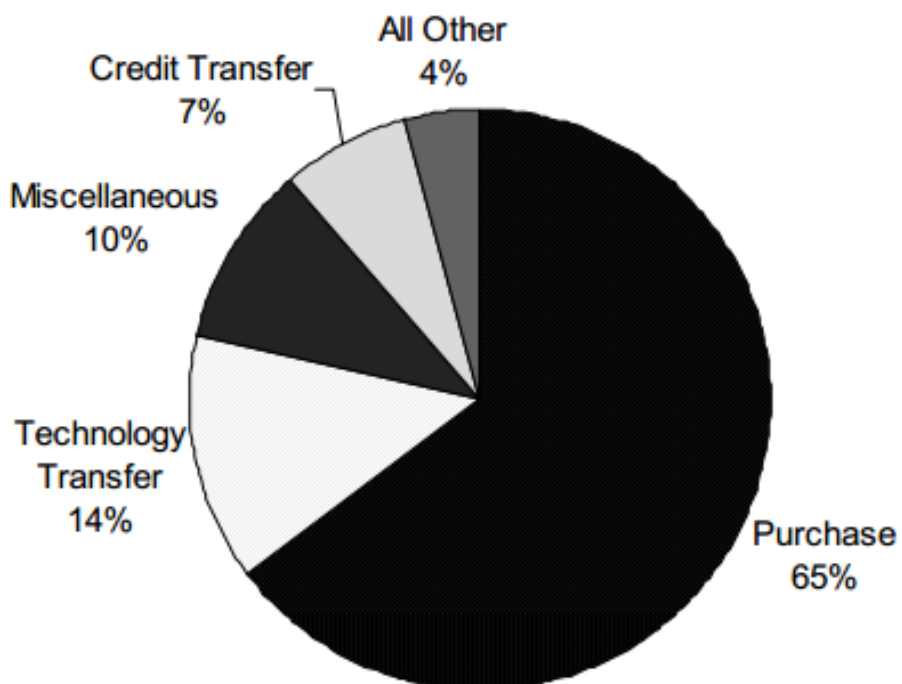
Technology Transfer: PJD provided submarine technology to Atlantis firms, which accounted for seven percent of the offset obligation, or \$35 million. There was no multiplier associated with this activity.

Figure 2 Direct Offset Transactions by Category, 1993-2003



Source: BIS Offsets Database

Figure 3 Indirect Offset Transactions by Category, 1993-2003



Source: BIS Offsets Database

3.2 Economic impacts offsets on subjects of defence contract

3.2.1 Economic impacts on recipient of offsets

- Transfer technology a gaining economic rent
- Support of employment and regional policy
- Development domestic industry by outsourcing
- Co-production and licenced production

3.2.2 Economic impacts on supplier of offsets

- Cost effectiveness
- Transfer technology
- Impacts on employment

Figure 1 European offset based on 2000-06 SIPRI and study data (values in € (2007))

	Group 1: DE, FR	Group 2: IT, NL, SE, UK	Group 3: EL, ES, FI, PL, PT	Group 4: all other EDA-24	Sum/Avera ge
A. Defence equipment import contracts p.a. (SIPRI data)	297	1 461	2 346	374	4 478
B. Defence equipment import contracts with offset p.a.		1 461	2 346	374	4 181
C. Offset percentage: average (pMS range)		122% (100-178*)	145% (81*-230)	124% (72-237)	135%
D. Offset agreements p.a.		1 783	3 400	465	5 647
E. Direct offset: share of total (uncertainty range)		35% (27-35)	44% (13-48)	3%	38%
F. - value p.a.		624	1496	12	2 131
G. Defence indirect off- set: share of total (un- certainty range)		55% (44-58)	28% (7-34)	20% (2-21)	36%
H. - value p.a.		980	952	93	2 025
I. Civilian non-defence offset: share of total (uncertainty range)		10% (7-29)	28% (28-52)	77% (76-95)	26%
K. - value p.a.		178	952	358	1 488

3.3 Future of offsets

- There is high probability of restriction these habits. In foreseeable future we can await a ban on these compensations (offsets).

This part will assess trends and forecasts concerning international defence offsets, also by considering some examples of procurement programmes which have required the fulfilment of offset obligations by defence companies. This analysis will consider, for example, which categories of offset are generally requested and the role played by the related technology transfer. The focus will mainly be on offsets demanded by non-EU countries to European defence companies, since they are an instrument both to enter a specific lucrative market and to develop local industrial capabilities.

According to recent studies published by two consulting firms, the value of defence offset market is increasing. For example, Frost & Sullivan forecasts that the cumulative value of military offsets obligations demanded by 20 countries⁶ will reach approximately \$424.57 billion between 2012 and 2021. Among these markets, APAC⁷ countries such as Indonesia, South Korea and Taiwan show the highest grow, while the Saudi Arabia's market is expected to create the biggest cumulative value of military offset obligations, totalling \$62.63 billion by 2021.

Figure 1 – Military Offsets Market: Value Forecast by Country, 2012-2021 (\$Billion)

Year	Germany	Greece	Italy	Netherlands	Norway	Poland	Turkey	UK	South Africa	Australia
2012	0.87	1.49	1.32	1.10	1.04	1.04	1.28	1.58	0.67	2.31
2013	0.85	1.42	1.26	1.08	1.09	1.09	1.35	1.55	0.69	2.38
2014	0.84	1.35	1.19	1.05	1.15	1.14	1.42	1.52	0.71	2.45
2015	0.86	1.32	1.17	1.09	1.18	1.23	1.46	1.56	0.74	2.53
2016	0.89	1.29	1.15	1.12	1.22	1.32	1.50	1.61	0.76	2.60
2017	0.91	1.27	1.12	1.15	1.25	1.42	1.55	1.66	0.78	2.68
2018	0.94	1.24	1.10	1.19	1.29	1.53	1.59	1.71	0.80	2.76
2019	0.97	1.28	1.14	1.22	1.33	1.60	1.64	1.76	0.84	2.90
2020	1.00	1.32	1.17	1.26	1.37	1.68	1.69	1.81	0.89	3.04
2021	1.03	1.36	1.20	1.30	1.41	1.77	1.74	1.87	0.93	3.20
CAGR	1.9%	(1.0) %	(1.0)%	1.9%	3.4%	6.1%	3.4%	1.9%	3.7%	3.7%

Source: KIMLA Dominik, *Military offsets and in country Industrialisation Market Insight*. Frost –Sullivan, 2013

Figure 2 Military Offsets Markets: Top 20 Markets, 2012-2021



Source: KIMLA Dominik, *Military offsets and in country Industrialisation Market Insight*. Frost –Sullivan, 2013⁵

3.3.1 Drivers and factor influencing future of military offsets⁶

Defence Procurement and Budget Limitations

As end-users modernise obsolete assets to maintain minimum battle readiness through modernisation and procurement programs, the need for sustaining these advanced capabilities, both in context of aftermarket support and future supply drives

⁵ The top three offset transaction categories reported by industry for 2008 were purchases, subcontracts, and technology transfers. These three categories represented 78.18 percent of all transactions reported for 2008 based on quantity, 77.95 percent of transactions based on actual value, and 68.42 percent of the transactions based on credit value. The top three offset transaction categories for transactions involving multipliers were purchases, technology transfer, and miscellaneous transactions. Based on the total number of transactions including a multiplier, miscellaneous transactions accounted for 24.32 percent, technology transfers accounted for 18.92 percent and purchases accounted for 17.57 percent.

The top three offset transaction categories reported by industry for the 16-year reporting period (1993-2008) were also purchases, subcontracts, and technology transfer (on the basis of quantity, actual value and credit value). Based on the number of total offset transactions, purchases, subcontracts, and technology transfers accounted for 46.47 percent, 22.77 percent, and 11.52 percent respectively, of all transactions. Based on actual value, the same offset transaction categories accounted for 36.39 percent (purchases), 22.18 percent (subcontracts), and 17.54 percent (technology transfer), respectively. Finally, based on credit value, they comprised 33.73 percent (purchases), 20.58 percent (subcontracts), and 17.83 percent (technology transfer), respectively.

⁶ KIMLA Dominik, *Military offsets and in country Industrialisation Market Insight*. Frost –Sullivan, 2013. 34 p.

the need for military offset market. Asia-Pacific and Middle East countries have implemented extensive re-armament programs that lead to increase of weapon import and related military offsets' projects. However, economic downturn led to consequent significant pressure on defence procurement projects particularly in Europe. In this case, budget cuts are forcing procurement programs to be scaled back, postponed or cancelled, inadvertently impacting military offsets.

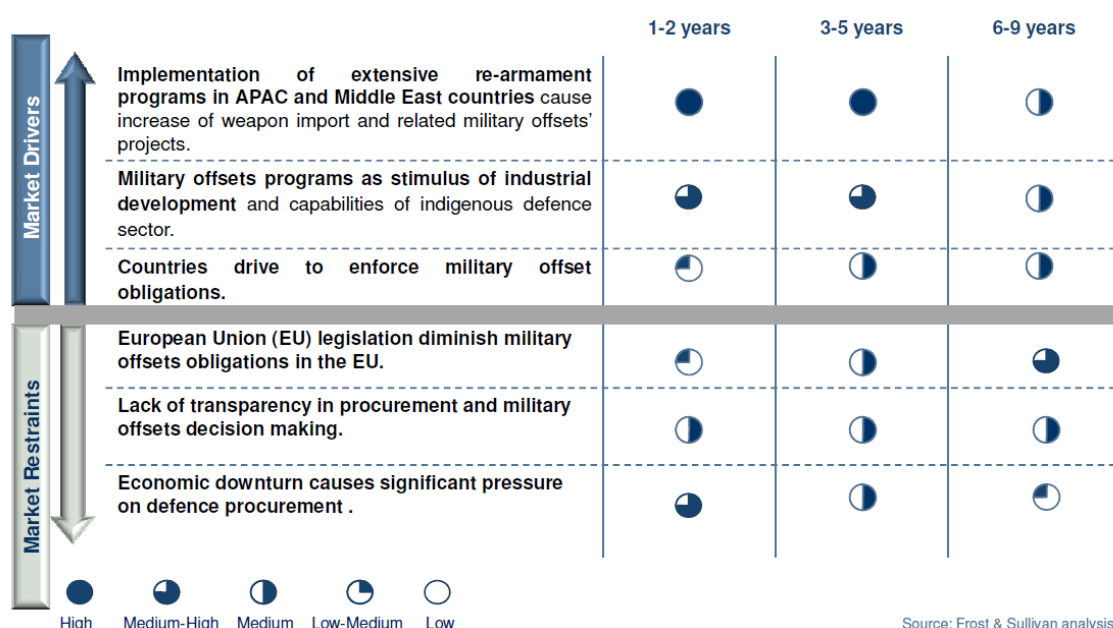
Legislation and Policy

The offsets legislative and political environment is complex, though evolving fast. The European Union recently implemented regulations which significantly narrow military offsets' requirements among the EU member states, which cause a decrease of the military offsets market in the EU or cover it under offsets like practice. On the other hand, offsets markets in other regions / countries straiten their legislations to enforce implementation of offsets obligations in line with signed military offsets agreements.

Industrial Policy:

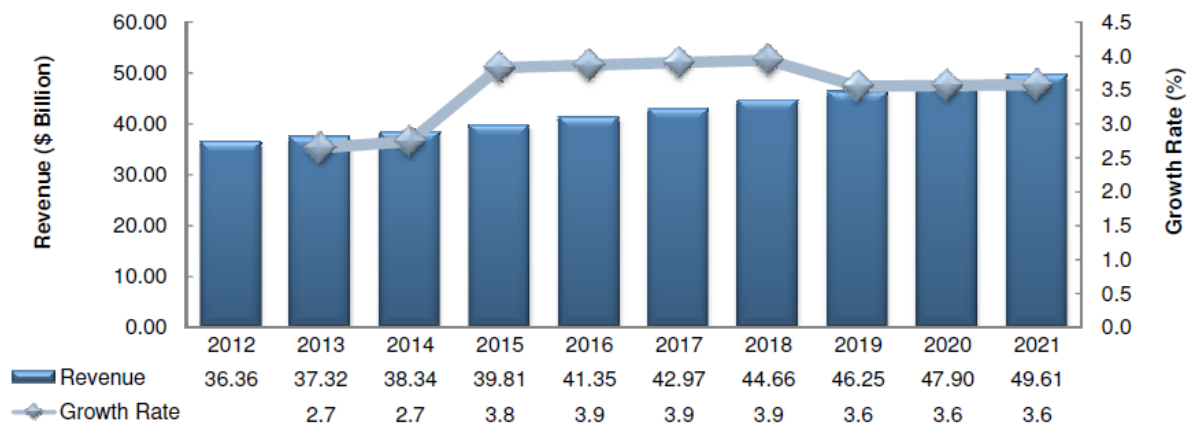
Military offsets programs are perceived by decision makers of developing countries as a stimulus of local economy industrial development including indigenous defence sector. However, countries aiming to develop a competitive edge based on the technology transfer through military offset deals; need to ensure that the local industry presents skills and capabilities that are necessary for proper absorption of technology transfer. This is a pre-requisite to build competitive technological competence.

Figure 3 Military Offsets Market: Key Market Drivers and Restraints, Top 20 Markets, 2013-2021



Source: KIMLA Dominik, *Military offsets and in country Industrialisation Market Insight*. Frost –Sullivan, 2013

Figure 4 Military Offsets Market: Top 20 Markets Value Forecast, 2012-2021



Source: KIMLA Dominik, *Military offsets and in country Industrialisation Market Insight*. Frost – Sullivan, 2013

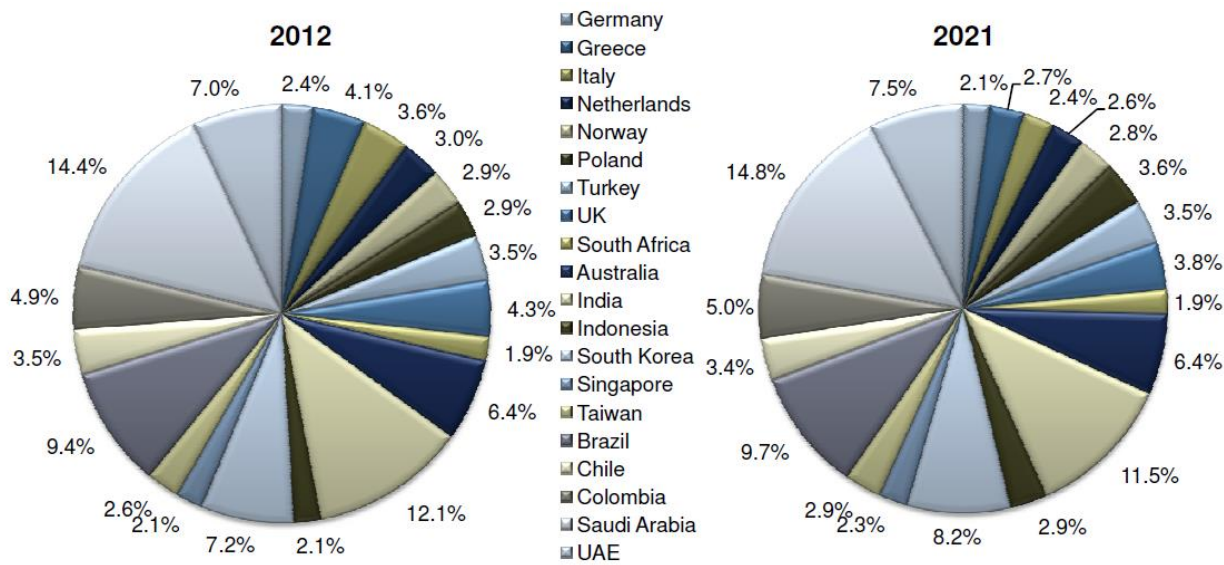
Despite austerity measures implemented by most of the Western countries, the cumulative value of military offsets obligations by top 20 countries is predicted to be \$424.57 billion during the forecast period.

The market will experience growth of CAGR at 3.5 per cent, due to ambitious military platform procurement plans and the related military offsets packages across APAC, Middle East and Latin America countries.

Governments in these countries are interested in using military offsets projects mainly as a tool to develop industrial capabilities of the local defence sector.

It is expected that Saudi Arabia market will generate the biggest cumulative value of military offset obligation at \$62.63 billion.

Figure 5 Military Offsets Market: Per cent Revenue Forecast by Country, 2012 and 2021



Source: KIMLA Dominik, *Military offsets and in country Industrialisation Market Insight*. Frost –Sullivan, 2013

If tailored correctly, military offsets allow the receiving country to develop domestic industries in areas in which it had limited capabilities. However, it is worth noting two aspects of military offsets transactions;

- Firstly, defence procurement with military offsets is more expensive way of weapon purchases (from 10.0 to 30.0 per cent of the main defence contract value) than 'off-the-shelf' transactions.
- Secondly, the receiver of military offsets investments should have necessary recourses to properly accumulate know-how and technology granted in framework of military offsets projects.

FOR BETTER UNDERSTANDING PROBLEM



CASE STUDY OF MILITARY OFFSET

Indian Medium Multi-Role Combat Aircraft (MMRCA)

Duration: Approximately 2013–2020

Contract value: Approximately \$6.00 billion

Overview

On 31 January 2012, the Indian government announced selection of Dassault Rafale over the Eurofighter Typhoon as preferred bidder for MMRCA. The deal for 126 French Rafales fighters is estimated at \$12.00 billion. However, the agreement has not been signed yet. This could be potentially increased in numbers by additional 60+ jets. Such a decision will increase the value of MMCRA program for another \$5.00-6.00 billion. The Indian Air Force Approximately \$6.00 billion expects to finally complete negotiations and sign the contract by the end of the 2013.

Military Offsets Requirements /Opportunities

As a result of the contract for 126 fighters, 50.0 per cent military offsets will be required by Indian government. India is mainly interested in technology transfer, manufacturing aircraft structures, sub-systems and military avionics including active electronically scanned array (AESA) radars and electronic warfare suits. The prime receiver of the military offsets will be Hindustan Aeronautics Ltd, where 108 out of 126 fighters will be assembled. However, other companies of Indian aviation sector such as: Reliance Industries Ltd, Tata Technologies and many more will benefit from the French military offsets projects.

CONCLUSION

The five biggest exporters in 2009–13 were the USA, Russia, Germany, China and France. Together they accounted for 74 per cent of the volume of arms exports. The USA and Russia alone supplied 56 per cent of all exports.

China has further cemented its position as a major exporter of arms, replacing France as the fourth largest arms exporter.

The five biggest importers in 2009–13 were India, China, Pakistan, the UAE and Saudi Arabia. Together, they received 32 per cent of all arms imports.

The main recipient region in 2009–13 was Asia and Oceania (accounting for 47 per cent of imports), followed by the Middle East (19 per cent), Europe (14 per cent), the Americas (10 per cent) and Africa (9 per cent).

Between 2004–2008 and 2009–13, arms imports to states in Africa increased by 53 per cent, Asia and Oceania by 34 per cent and the Americas by 10 per cent. Imports by states in the Middle East remained largely unchanged, while imports by states in Europe decreased by 25 per cent.

Despite global economic downturns, military offsets market presents strong dynamics fuelled by significant defence procurement programmes in APAC and Middle East countries.

As end users are more price conscious, higher military offsets obligations; with significant technology transfer will be expected from the suppliers side during the procurement process.

End-users are expected to tighten their military offsets guidelines and increase penalties for non-performance of the offset obligation, which will contribute to growth of the military offsets markets but could also adversely impact OEMs net revenues.

Demand is expected to grow at a compound annual growth rate (CAGR) of 3.5 per cent between 2012 - 2021 and present opportunities up to \$424.57 billion available to the industry which consists of 20 military offset markets. The military offsets obligations are expected to increase from \$36.36 billion in 2012 to \$49.61 billion in 2021.

Saudi Arabia will be the biggest military offsets market among the analysed countries with a CAGR of 3.9 per cent; the country's military offsets an obligation is expected to surpass \$62.63 billion by 2021.

TASKS FOR SELFSTUDY



1. Make the analysis of export arms development in selected countries of the world. Which countries are the biggest exporters? What volume of sales was realized? What trends we can to see from data sets?
2. Make the analysis of import arms development in selected countries of the world. Which countries are the biggest importers? What volume of sales was realized? What trends we can to see from data sets?
3. Explain the core of the term „programs of industrial cooperation. Point out its kinds and explain its core.
4. Define the offsets. Explain mission and economic importance of offsets? Give examples of offsets policy selected countries and compare them.
5. Are arms trade offsets part of normal trade relations or are they in some sense „extra-normal” and, if so, why would that matter?
6. Why are arms trade offsets agreed to? There are two aspects to this question:
(a) what economic theory would explain offsets? and
(b) what are the rationales of buyer and seller when they agree to offsets?
7. Are arms trade offset agreements economically efficient? Is social welfare maximized? What is the benefit, net of cost, for whom? In a word, what is the empirical evidence?

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ADDITIONAL STUDY RESOURCES



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