

Impact of Defence Offsets On The Companies of The Participating Industry - A Case Study Based Examination

Heinz Kirchwehm
Faculty of Business Administration
Turība University
68 Graudu Street, Riga, LV-1058 Latvia

h.kirchwehm@web.de

Abstract

The knowledge about the connection between purchases of equipment and offset obligations is almost unknown in many areas of the economy. The requests for this offsets occurs primarily in the area of arms imports and covers the full range of benefits that firms provide to the buying governments as inducements for the purchase of military equipment. For those companies which participate for the first time in such offset programs, is it very limited to inform on the effects of offsets. So it is necessary to provide information about the impact of offset for the companies of the participating industry. This examination was triggered through an overall research project on the impact of offsets on the business processes of SMEs. During the necessary Pre-Study for this research project first indications appear that the impact of offset is often not known by the affected companies. The purpose of this paper is to analyze the generic impact of offset for the affected companies with the help of a case study examination. The data for this examination were obtained from secondary sources. After data collection, an analysis was performed on the chosen case studies: Switzerland and Malaysia. This analyzes shows that offset has a wide range impact for the companies.

Keywords: Offset, Participating Companies, Case Study, Offset-affected Business Areas.

1. INTRODUCTION

Offset is a factor which is increasing in the context of arms imports since years. Without the acceptance of offset obligations, almost no order can generate today in the defense industry. Due to this circumstances have many of the Lead System Integrators (LSI) like e.g. Boeing, BAE Systems, etc. started to pass these obligations into the lower stages of their supply chain. Therefore, companies are increasingly coming into contact with the subject offset. These companies having only vague ideas about what does it means when they accept offsets. This lack of knowledge is not only related to the companies of the selling side, it exists also for the companies of the buying side the so-called participating industry which should benefit from the requested offsets. For these companies arise also the question of how this offset is affecting their business in the future.

1.1 Problem Description

The lack of imagination regarding the effects of offset by many of the confronted companies is getting worst by the fact that offset is one of the most complicated forms in the area of business to business (B2B) and business to government (B2G). Intensified is this also to the fact that each side in offset relationship pursued his own interests (various stakeholder interests). Furthermore, there are different pick-up points in the consideration of the impact off offset through the gradual evolution of the different defense offset programs.

1.2 Need For Action

All in all, there is a lack of transparency in the subject area offset. Those companies which are to be faced for the first time with the execution of offset obligations and for those to have the first time to participated in the government-initiated offset programs, it is very limited to inform on the

effects of offsets. Especially for companies of the participating industry remains the real benefit (if it exists at all) of the offset in secret, due to the fact that many offset programs are better displayed as they are in reality. Here it is necessary to provide information in form of a study on the effects of the offset to the companies of the participating industry.

2. BACKGROUND INFORMATION

In this chapter are provided the necessary background information for this paper. It starts with a brief introduction at the subject offset and described in a following step the different interests which are connected with it. Finalized is this chapter by a description of the step-by-step development of offset programs.

2.1 Offset – A Brief Introduction

This section will present an overview of the offset by describing its main characteristics. There is no an universal consensus about what the term offset indicates, but rather some prevailing definitions utilized by experts and academics. According to Brauer and Dunne (2004) includes this the following: "(...) an offset is a contract imposing performance conditions on the seller of a good or service so that the purchasing government can recoup, or offset, some of its investment. In some way, reciprocity beyond that associated with normal exchange of goods and services is involved." and "(...) an offset occurs when the supplier places work to an agreed value with firms in the buying country, over and above what it would have bought in the absence of the offset. Offset are usually designed to achieve relocation of economic activity from the country of the equipment supplier to the purchasing nation." However, Peter Hall and Stefan Markowski provide a more inclusive conceptualization: "(...) offsets are simply goods and services which form elements of complex voluntary transactions negotiated between governments as purchasers and foreign suppliers...they are those goods and services on which a government chooses to place the label offsets." (Hall and Markowski, 1994). In general, as a result of a defence deal the foreign supplier has to conduct a number of additional investments, local projects into the domestic industrial base so that the recipient country can offset the cost of defence procurement, up to 100% of the contract value - and even more.

There are two main categories of offsets: direct and indirect ones. The US Bureau of Industry and Security (BIS) defines direct offsets as "(...) an offset transaction directly related to the article(s) or service(s) exported or to be exported pursuant to the military export sales agreement" (US Department of Commerce, 2013). These are usually in the form of co-production, subcontracting, training, production, licensed production, transfer of technology (ToT) or financing activities. The same Bureau describes the indirect offsets as an transaction unrelated to the product(s) or service(s) exported or to be exported pursuant to the military export sales agreement. The kinds of offsets include purchases, investment, training, financing activities, marketing/exporting assistance and, again, the technology transfer. Indirect offsets could be divided in two subcategories, defence-related indirect offsets and non defence-related indirect offset (Eriksson, 2007).

Aside from the distinction of the offsets in direct, indirect or a hybrid form of both variants is still the type of the offset to distinguish themselves. According to U.S. Department of Commerce (1996) are defined the individual offset types as follows:

- **Co-production:** Transactions that are based upon government-to-government agreements authorizing the transfer of technology to permit a foreign company to manufacture all or part of a U.S.-origin defense article. Such transactions are based upon agreements specifically referenced in Foreign Military Sales Letters of Offer and Acceptance (LOA) and a government-to-government Memorandums of Understanding (MOU). Co-production is always classified as a direct offset.
- **Credit Assistance:** Credit assistance includes direct loans, brokered loans, loan guarantees, assistance in achieving favorable payment terms, credit extensions, and lower interest rates. Credit assistance specifically excludes the use of "banked" offset credits (credits that exceed

the requirement of the offset agreement and are permitted, by the terms of the agreement, to be applied to future offset obligation). Credit assistance is nearly always classified as an indirect offset transaction but can also be direct.

- Investment: Investment arising from an offset agreement often takes the form of capital dedicated to the establishment of a foreign entity unrelated to the defense sale or to the expansion of the U.S. firm's subsidiary or joint venture in the foreign country. Investment can be either direct or indirect.
- Licensed Production: Licensed production consists of the overseas production of a defense article based upon transfer of technical information under direct commercial arrangements between a U.S. manufacturer and a foreign government or producer. It is not pursuant to a co-production agreement specifically referenced in a LOA and co-production MOU. In addition, licensed production almost always involves the manufacturing of a part or component for a defense system, not a complete defense system. Licensed production transactions can be either direct or indirect.
- Purchases: Purchases are the procurement of off-the-shelf items from the offset recipient. Purchases are indirect transactions.
- Subcontract: In the offset context, subcontracting is the overseas production of a part or component of a U.S.-origin defense article. The subcontract does not necessarily involve the license of technical information and is usually a direct commercial arrangement between the defense prime contractor and the foreign producer.
- Technology Transfer: ToT 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.
- Other: An offset transaction other than co-production, credit assistance, licensed production, investment, purchase, subcontract, technology transfer, or training.

A further characteristic regards the distinction between offset agreement and offset transaction. The former indicates a contract defining the offset package related to a specific defence import contract. The latter is an activity for which the offset supplier claims credit for in fulfilment of the offset agreement.

Different countries consider offset in different ways. For example, offsets are often established as condition for participation to the tender: if the company fails to present an offset package, typically meeting certain requirements, that the tender is disqualified. Another widely used approach is to have offset as one of the award criteria, that means offset is one of the parameters along with cost and performance to evaluate the qualified tenders. To discern the credit value and the actual value of offsets is often crucial in examining offset policies and then the related offset projects carried out by defence companies. Indeed, the credit value is the actual value multiplied by a factor - so-called MULTIPLIER - that designates which categories of offset are deemed as particularly valuable for the receiving country (Ungaro, 2012).

2.2 Different Interests Are Connected With The Offset

As mentioned by Vats et al. in 2013 are several companies faced with a common offset problem: They keep a contract manufacturing view of their operations, and so they miss the opportunity to expand on the fulfilment of the original offset obligation, it is the production of a certain subsystem, the Maintenance, Repair and Overhaul of a particular type of equipment, or the maintenance of a software solution. High reliance on a particular system or platform makes the offset company unable to compete in other market segments after fulfilling its offset obligation. One way to avoid this is to realign seemingly conflicting stakeholder interests with the right incentives for Original Equipment Manufacturers (OEM), local partners, and offsets government agencies to work jointly to create economic-development and commercial value beyond the asset

being procured at the time. The various stakeholder interests can be described according to Vats et al. (2013) as follows:

- Interests of the “selling” government: Employment retention and exports. The aerospace and defense sectors are essential not only to the national security of exporting countries, but also to their economic and strategic interests. From the point of view of economics, these are high-value sectors plentiful with intellectual property, advanced jobs, and export potential. In a strategic manner, they secure national capabilities. As a result, “selling” governments of most defense exporters regulate and create incentives to keep vital operations on their sphere of influence.
- Interests of the “buying” government: Employment generation and capability building. Recipient governments interests are similar, if diametrically opposed, to those of exporting governments - that is, recipient governments also seek the benefits that aerospace and defense sectors offer.
- Interests of the selling companies: Trustee duty to stakeholders. Defense contractors are driven by 2 main stakeholder imperatives. The first of these is profit, which requires contractors to focus on their bottom line with levers such as low-cost outsourcing, operational improvements, and improved sales-effectiveness. Growth, the second imperative, dictates a focus on sustaining revenues, expanding into attractive markets, and protecting intellectual property. Thus, the contractor's optimum environment is one where it can strike a balance between these imperatives and the requirements of its home and “buying” governments.
- Interests of the armed forces: Capability building and readiness. The armed forces primary concern is to build fast defense capabilities and readiness. Thus, avoiding delivery risks, building mission-critical capabilities, and managing life-cycle costs are primary concerns. However, this can lead to conflict between a nation's defense system and its economic-development priorities. For instance, sustainment provided by an international supplier may ensure operational readiness, but may limit economic-development agencies' efforts to build national capability.

2.3 The Step-by-step Development of Offset Programs

Beside the different interests which are related with offset have Vats et al. (2013) described also the step-by-step development of offset programs: “(...) during the alignment of all the above mentioned different interests may be left to time, market dynamics, and externalities, the process can be accelerated to a span of only 2 or 3 decades by end-to-end defense industry management that includes effective offset policies and programs. The generating of value for all involved parties is key and can be achieved through a gradual process that summarized all parties attaining economic, commercial, and defense-capability value” (Vats et al., 2013).

But to arrive this point requires a step-by-step development which initially generates limited economic value for the “buying” country (see Table 1). Today is the defense industry at the point of nascent and initial value chain participation stages, but facing a major opportunity to develop and create value.

	Stage 1 nascent sector	Stage 2	Stage 3	Stage 4 Consolidated sector
	Speed	Value chain participation	Domestic market maker	Export leadership
Value to government	Discounts or rabates in the form of pure financial investments.	Job and infrastructure creation in selected sectors.	Gross domestic product diversification, using capabilities in adjacent segments.	Export leadership via advanced expertise across value chains.
Value to vendor	Contractual burden. Capabilities acquired.	Opportunistic compromise. Capabilities acquired.	Emerging high-growth opportunity.	High value international asset. Control of technology.
Example	Rebate in the form of financing local agriculture startup.	Foreign-domestic joint ventures in simulation.	Expansion from simulation to assembly and testing.	Regional and global leadership in exports.
	<div style="border: 1px solid black; padding: 5px; display: inline-block;">Commercial and defence capabilities</div>			<div style="border: 1px solid black; padding: 5px; display: inline-block;">Economic, commercial and defence capabilities</div>
	Value created			

TABLE 1: The Step-by-step Development of Offset Programs (Vats et al. 2013).

Offset programs can play a strong part in accelerating this development, but there is no one-size-fits-all set of measures that guarantee success. Offset programs are very different in following their strategies, the policies they enforce, and the technology niches they develop. Successful offset programs do have in common, that they effectively address 3 harassing issues - the ones the countries face today in the strategies chosen, the enablers developed, and the ways in which deals are realized. According to Vats et al. (2013) are the main success factors the following:

- Ensure the technology transfer. ToT ensures that value created goes beyond just financial transfers. Countries achieve it by generating incentives for OEMs to transfer niches of technology through licensing or co-production. The key is to generate enablers - a pool of talents, Research and Development (R&D) sponsorship, taking advantage of established industrial players - that allow the sector to not only assimilate but also commercialize the technology.
- Encourage the win-win in joint venture dynamics. There are three main components to this: First, the joint venture ownership structure must create a stimulus for the venture to expand to value chain adjacencies, innovate, and create value for shareholders. The local partner must have a stimulus to develop and manage long-term capabilities, as opposed to focusing only on short-term dividends. An ownership structure in which the OEM eventually exits can generate such a stimulus. Second, government support in the form of financial investments, talent supply, and R&D is vigorous. Third, an ongoing working relationship with international partners -through co-marketing efforts, for example - can generated win-win opportunities for all partners, local and international.
- Relieving the operational readiness. In the end, concerns about a new company supplying strategic systems or services must be resolved. Assuring that international OEM expertise is present in the recipient country, and then transferring it to the joint venture, is one way to do it. Another is to mandate a joint venture of an OEM with trusted national champions who have a track record of delivering. It is important to remember this: The offset venture must be a true partner of the armed forces. Its leaders understand the customers country's capability requirements, long-term plans to support them, and realign to changing priorities when necessary.

3. METHODOLOGY

In this chapter is the methodology used for this paper described. Its starts with the purpose of this examination and ends with the description of the research framework and the chosen methodical approach.

3.1 Purpose of This Examination

The purpose of this paper is to analyze the generic impact of offset obligations on the companies of the participating industry with the help of a case study examination.

For the fulfilling of the above described purpose, the following tasks arise:

1. Analyzing the essential aspects of the offsets.
2. Sketch with the help of generic examples the offset related business.
3. Identify the areas in which offset has an essentially impact on the participating companies.
4. Analyze in detail the generic impact of offset on the participating companies.
5. Critical discussion of the results.

3.2 Research Framework And Methodical Approach

This examination was triggered through an overall research project on the impact of offset on the business processes of SMEs. During the necessary Pre-Study for this research project first indications appear that the impact of offset is often not known by the affected companies, or at least they are not aware of it.

The execution of the research purpose is done with the help of a so-called case study examination. According to Harrison (2002) is a "(...) case study research of particular value where the theory base is comparatively weak and the environment under study is messy." Harrison (2002, p. 159). Both of these criteria were relevant to this paper. The extant literature basis on the subject offset is quite good but an analysis of the impact on the companies of the participating industry and its generalization is not be given in the needed form for first time involved companies. Here is the starting point of this case study examination. By determining that the focus of is examination is on the companies of the participating industry, the author was able to select the right cases to study. Best cases in practice actually means not only the best environment for exhibiting the phenomenon under study, but also the best from a point of view of ease access (Ibid, p. 171).

For this examination two countries from the middle range of the world's unsettled offset volumes (see Figure 1) became selected: Switzerland and Malaysia. From Switzerland were used the generic examples of offset related business cases and from Malaysia were analyzed in detail the generic impact of offset on the participating companies. Possible was this approach through the generic character of example and analyses. In principle, any country that tries to expand its industrial base with the help of offset could be selected. In the case of these two countries can be assumed that no extreme phenomena in the execution of offset obligations occur, so that the results could be generalized. Another reason for selecting these two countries is the fact that the offset transactions and their results are good publicly documented and accessible.

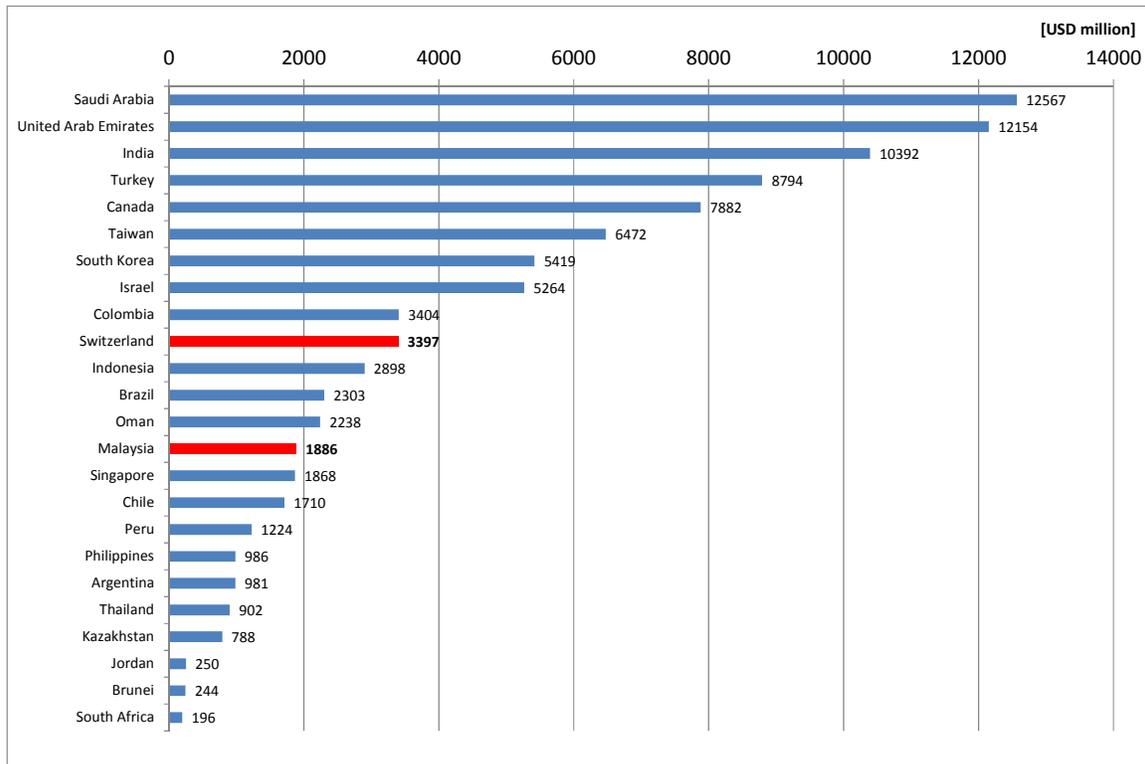


FIGURE 1: Forecast of Unsettled Offset Returns - 2012 to 2022 (Anderson & Moores, 2013).

The examination has been undertaken in four phases:

- Phase One was the sketching of generic examples of offset related business cases. This includes positive, neutral and negative examples from the two selected countries in order to provide an understanding of the complexity of offset related relationships.
- Phase Two involves the identification of the areas in which offset has an impact on the participating companies.
- Phase Three consist of a detail analyzes of the generic influence for each “impact area” for the participating companies.
- Finally, phase Four involved a critical discussion of the results.

4. GENERIC EXAMPLES OF OFFSET RELATED BUSINESS

The below presented examples of offset related business cases are displaying positive, neutral and negative consequences of the offset for the affected companies. The examples themselves are mainly derivate from to the evaluation of the Swiss Federal Finance Control (SFFC) in 2007 and are used here due to their generic significance. Due to the fact that the impact of offset deals with the core competencies of a company, they are not willing to be named in such research. That’s the reason why the names of the companies the following business cases are coded. In addition is the defense industry per se interested in protecting their data (key word: protection of know-how to avoid competitive disadvantages).

4.1 Example of Positive Offset Business Case

Company A is dedicated to a niche product in the aircraft equipment business. It has thanks to offset successfully managed in the past few years to establish itself as a global equipment

supplier of its products for a large number of airlines. The foundation for this success was set up by company A through the execution of offset obligation in the aviation sector and the linked contacts made within the participating aircraft manufacturers. Thanks to the product quality of company A, the offset committed manufacturer could be persuaded to recommend the products of A with its customers. Due to this could the market access accelerated and the revenue growth strengthened (door opener effect). An important prerequisite for the beginning and the subsequent course of the business relationship was for company A its technology and market expertise which was previously already present in a particularly high degree. In addition to the clear and present technological expertise could convince the manufacturers the extensive expertise of company A to a perfect treatment of the corresponding business cases. Today offset is for the continued success of the company A are rarely needed because the corresponding products - thanks to good quality and good price/performance ratio - have become self-perpetuating. Company A has established itself thanks to good positioning in the market and can thus benefit from the past offset obligation (repeat business).

4.2 Example of A Neutral Offset Business Case

Company B is a medium sized company in the field of electrical engineering, specializing in the production of a specific, large equipment for civilian use. Company B is one of the bigger companies that benefit from the offset, the offset transactions makes more than 10% of its turnover. The offset transactions are actively used. Traditionally, the company B has good business relations with the LSI especially to the LSI's their suppliers of country X. These companies can play their international network to encourage companies to purchase the equipment at the company B. As such, the offset obligations promote customer contacts for the company B. Despite these positive effects can be ultimately assumed a more or less neutral overall effect of offset. According to company B they were also able to get in contact with the customers due to the small market. As such, the offset obligations led to a slightly faster development without open new markets or achieve new innovation effects.

4.3 Example of A Structure-preserving Offset Business Case With Negative Consequences

The company C was active for many years in the engineering, electrical and metal industry. The company appeared above average in a number of offset projects either as parts supplier in connection with offline businesses or for the delivery of standard components in the context of direct investments. The offset related revenue has increased to 25 % in the last years. The loss of one of the large offset orders of the last years brought the company C in a difficult position. In addition to that they had missed to drive innovation in their company as well as to modified the necessary structural adjustments. Because of the no longer competitive product portfolio, the company C had no chance to compensate the loss of the substantial high revenues from offset transactions (over 25% of total sales). After three more years with almost no offset they disappeared entirely from the scene and reported a short time later that they are bankruptcy.

4.4 Example of A Company That Previously Had No Offset Transactions

The company D is a SME with fewer than 50 employees and is active for 20 years in the engineering industry. It produces mechanical parts and special machines. Their main customers come from their region. The Company D has increasing sales figures, but it is not export oriented. For some time, the company D tries to generate contracts in the defense sector, particularly in the function as a subcontractor. It showed great interest in industrial participation programs, in particular to offset transactions. For this it has actively gained information and is also become a member of various industry associations which have contacts with foreign manufacturers. In addition, it participated in numerous events which had the objective to bring together companies with foreign manufacturers, as well as to deepen contacts with the big defense contractors. These efforts have so far not yet been crowned with success; company D has never been able to benefit from offset. The many established contacts has generate no business. Company D has the impression that neither the large domestic companies nor the foreign manufacturers are interested in working with small SME 's.

5. RESULTS AND DISCUSSION

Based on the above presented generic examples of offset related business cases will be described in this section the generic impact of such business cases on the participating industry.

5.1 Areas In Which Offset Having An Impact On The Participating Industry

As Balakrishnan in 2007 has recognized is the all-determining factor for the impact of offset on the participating industry the design of the national offset policy. When this is taken into account the effect of offset on the different areas of the participating industry can be sketched as follows (Balakrishnan, 2007):

- Technology Development
- Employment
- Skills improvement
- The Supply Chain
- Competition within Supplier Countries
- Sustainability

5.1.1 Technology Development

In relation to technological development of indigenous defence industry, offsets may not have resulted in producing the best possible outcomes. Numerous offsets activities have resulted in technology transfer. However, in most cases the outcome of technology development through offsets has been minimal. Most technologies transferred are basic and often on the declining end of the supplier's product life cycle. Suppliers are not willing to transfer 'knowhow' for various reasons including their country's technology export control restrictions. First world defence suppliers invest huge amounts in R&D to invent and innovate the latest state-of-the-art technology; they then want a return from such investments. These technologies are transferred through licensed production or co-production, and buyer countries are charged a royalty for the technology. In the past, developing countries have had a bad track record in terms of protecting intellectual property rights and patenting. Many LSI have complained that their technologies have been pirated by SMEs in these countries, especially in the electrical and electronic sectors. Some of these problems have hindered the smooth transfer of technology from seller to buyer countries. Nevertheless, purchasing countries continue to demand technology through offsets. The learning curve in defence production can be steep, proving impossible for some countries, especially developing ones, to climb the technological ladder. Offsets can provide the opportunity to 'catch-up' in a market place that would otherwise be impossible. The success of technology transfer depends on the physical, social, economic and technological environment in which the technology must operate. Developed country technologies require reasonably high quality utilities such as clean water, reliable electronic power supply, waste treatment facilities, interaction with other technology, high skilled maintenance personnel-equipped with state of the art tools to keep high technology equipment in good operating order.

Despite the higher costs and risks of failure, countries still engage in spin-off activities as they find it vital to invest in such technologies for national pride and self-sufficiency. On the other hand, sellers are cautious of technology transferred through offsets as beneficiaries can in the long run acquire the capability to become possible competitors. This may create over-capacity in a particular niche area. Seller country governments often view transfer of technology through offsets as creating possibilities for leakage of leading-edge weapons products and processes, undermining national and world security. There is increasing concern about the diversion of technology to unauthorized users and the need to prohibit third parties from obtaining sensitive military technologies and know-how.

5.1.2 Employment

Despite the view that offsets increase the level of employment within the defence industry, evidence suggests that offsets have not brought in the promised amount of work. Offsets may be damaging for the seller country's economy as offsets transfer jobs out of seller's country. The sale of the main equipment may actually sustain many more high-end research and development and high technology jobs within the seller's country, with only the low-end labor intensive jobs transferred through offsets related work.

5.1.3 Skills Improvement

Offsets are claimed to enhance the skills of local workers, if they are able to learn, adapt and enhance technology for local production. Nevertheless, offsets are said to contribute towards raising the buyer countries' worker skills only if the standards of low-skilled labor are raised through offsets programs. Otherwise offsets are merely diverting skilled labor from one sector to another in the purchasing country. Military oriented activities have little real economic value if the skills acquired through military-oriented production are not easily and cost effectively transferable to the commercial sector. Some skills may be transferable only after considerable reshaping of a potentially expensive process. Even for the kinds of skills that can be relatively easily transferred, there is the question of whether a military-oriented environment is the most cost-effective way of acquiring those skills. Further, questions are raised as to whether the level of skilled workers employed through offsets training is simply from an existing pool of limited skilled workers available within the host country.

5.1.4 The Supply Chain

Offsets are utilized by major defence suppliers to source efficient and effective subcontractors located overseas. Sellers are then able to improve their comparative advantage by moving parts of the production process to more cost effective locations abroad, where labor and raw material costs are significantly lower thus reducing equipment production costs. There is evidence that countries have benefitted from vertical disintegration, work-sharing arrangements, and subcontracting activities through offsets. Offsets may benefit only the bigger and more powerful defence companies in certain countries.

5.1.5 Competition Within Supplier Countries

The growth of offsets and the increasing outsourcing activities by large offshore prime contractors endangers the local small and medium sized defence contractors in the advanced countries. Offsets agreements that include subcontracting or licensed activities can displace local sub-suppliers, transferring jobs from these companies to low cost centers abroad. Offsets activities may enhance future competition from foreign competitors. To counter these negative effects, governments of large prime contractors implement measures to counter threats.

5.1.6 Sustainability

Offsets receiving countries may negotiate projects obligating exporting countries to buy-back products produced with the transferred technology. In most cases, contracts do not compel the principal contractor to maintain ties with sub-contractors. An offsets deal with a buy-back arrangement can only work if the buyer country has the capacity and competitiveness to sustain the business momentum once the offsets programs ends. Otherwise the buy-back process will fail. Short-term solutions have proven to be worthless, as once foreign suppliers have completed their offsets obligations, operations will cease to exist.

5.2 Critical Discussion of The Results In Terms of The Methodology

This case study examination examined the impact of offset obligations on the companies of the participating industry in general. For this are used the experience made by Malaysian and Switzerland companies. The main result is that for six areas could be summarized briefly the impact of offset. Through the fact that essentially depends on the design of the respective national offset policy, the results must be considered with appropriate caution. One of the limitations of the examination is the usage of the data which are belonging to the year 2007 the other is the use of only two countries for the extraction of the offset related impact. Newer dates

are not available so that this fact can be a starting point for further research on this subject. All in all for those companies which participate for the first time in government-initiated offset programs provides the extracted results a good overview and impression which effect could have on the companies of the participating industry.

5.3 Comparative Evaluation of The Results

If we try to compare the results of this study with similar studies, we can see very quickly that there are only few studies on this subject exists. The majority of the studies on the subject offset deals with the economic impact of offsets. A business administration view has not yet been respected so often. In addition to this we have the fact that only some countries specific examination are existing such as Balakrishnan (2007) for Malaysia, SFFC (2007) for Switzerland and Economie (2008) for Belgium. Other examinations are focusing on regions such as Scandinavia and Europe. In this context must be named the works of Sköns (2002) and Eriksson (2007). The Impact of defense offsets on the companies of the participating industry is still needing a further investigation.

6. IMPLICATION AND CONCLUSION

This examination was triggered through an overall research project on the impact of offset on the business processes of SMEs. During the necessary Pre-Study for this research project first indications appear that the impact of offset is often are not known by the affected companies, or at least they are not aware of it.

The used methodology of a case study examination is of particular value due to the fact that the theory base is on the subject offset and its impact comparatively weak. Due to the selected size of this case study could be the result represented only an overview, but it adds to the already identified areas of impact in the extant literature due to their summary presentation. During the work on this paper could the author observe again that the available literature on the subject offset is very limited in particular to its impacts on the participating industry. It is still a niche subject. Nevertheless dictates the constant increase of offset obligations that affected companies have to engage them with this subject and have study some specific aspects of them.

The purpose of this paper was to analyze the generic impact of offset obligations on the companies of the participating industry with the help of a case study examination. The implications of this examination is the concentrated display of effects of offset.

Based on the findings of the previous sections can be summarized the following. Offsets are very complex and therefore not easy to handle. Nevertheless, offsets remain a popular mode of trade transaction, especially amongst the defence industry community. Offsets impact is "country-specific" and depends largely on each nation's offsets strategy, policy and processes.

6.1 Areas For Further Research

It is possible to identify a number of areas for future research on the impact of offset on the companies of the participating industry.

It would be of interest to investigate further the impact in relation to the company size. Have we the same area of impact on the different levels of a company size – from SMEs to major defence industry companies? Also could be of interest the impact under the influence of the step-by-step development of the offset programs.

Further work could be undertaken in understanding the impact on the companies of the so-called supply chain, Is here also an impact by offset or is the impact only linked to the direct involved companies?

7. REFERENCES

- [1] Anderson, Guy and Moores, Ben (2013). The growing burden of offsets, in Jane's Defence Weekly, Edition of 30th October 2013, pp. 28-31.
- [2] Balakrishnan, K. (2007). Evaluating the Effectiveness of Offsets as a Mechanism for Promoting Malaysian Defence Industrial and Technological Development; Cranfield University, United Kingdom.
- [3] Brauer, J. and Dunne, J. P. (2004). Arms Trade and Economic Development: Theory, policy, and cases in arms trade offsets, Routledge.
- [4] Economie (2008). Policy on Industrial participation in Defence Contracts, Online, available at: http://economie.fgov.be/en/modules/publications/general/politique_industrielle_de_la_participation_dans_le_cadre_des_commandes_de_defense.jsp [Accessed: 09 April 2014].
- [5] Eriksson, E. (2007). Study on the effects of offsets on the development of a European Defence Industry and Market - Final Report for the European Defence Agency FOI and SCS; Monograph online, available at: http://www.eda.europa.eu/docs/documents/EDA_06-DIM-022_Study_on_the_effects_of_offsets_on_the_Development_of_a_European_Defence_Industry_and_Market.pdf; [Accessed: 20 November 2012].
- [6] Hall, P. and Markowski, S. (1994). On the Normality and Abnormality of Offsets Obligations. In: Defence and Peace Economics 5(3), pp. 173-188.
- [7] Harrison, A. (2002). Case study research. In: Essential Skills for Management Research, edited by David Partington, Sage Publications.
- [8] Sköns, E. (2002). The Economic Aspects of Defence Offsets: Experience from Sweden and Finland. Stockholm International Peace Research Institute (SIPRI).
- [9] Swiss Federal Finance Controll – SFFC (2007). Rüstungsbeschaffung im Ausland - Evaluation der Kompensationsgeschäfte (Defense procurement abroad - Evaluation of compensation transactions). Monograph online, available at: http://www.efk.admin.ch/images/stories/efk_dokumente/publikationen/evaluationen/Evaluationen%20%2819%29/6366BE_Bericht_23-06-08.pdf [Accessed: 07 April 2014].
- [10] Ungaro, Alessandro R. (2012). Le compensazioni industriali nel mercato della difesa e il caso indiano, Quaderni IAI (The industrial offsets in the defense market and the Indian case, IAI Quaderni), luglio 2012. Monograph online, available at: http://www.iai.it/pdf/Quaderni/iaiq_04.pdf [Accessed: 04 April 2014].
- [11] U.S. Department of Commerce - Bureau of Industry and Security (2013). Offsets in Defense - Trade Seventeenth Study, February 2013. Monograph online, available at: <http://www.bis.doc.gov/defenseindustrialbaseprograms/osies/offsets/17th%20Offset%20Report.pdf> [Accessed: 02 April 2014].
- [12] U.S. Department of Commerce - Bureau of Export Administration (1996). Office of Strategic Industries and Economic Security, Strategic Analysis Division. Offsets in Defense Trade. [Washington, D.C.] U.S. Department of Commerce, Bureau of Export Administration, 1996.
- [13] Vats, A., Zuazua, M. and de Clercq, M. (2013). Defence Offset-Programs: The Trillion-Dollar Opportunity. AT Kearney White-Paper, Monograph online, available at: <http://www.atkearney.de/documents/10192/3278959/GCC+Defense+Offset+Programs+The+Trillion-Dollar+Opportunity+v2.pdf/4a92196a-fb52-4bb8-835c-cc4f04cf30ce> [Accessed: 07 April 2014].