An evaluation
of the South African Department of Defence’s policy
on Defence Industrial Participation (DIP),
as a defence industrial development mechanism.

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Promotor: Prof R.J. Haines
“Erkenning

Ek dank hiermee my Hemelse Vader vir sy krag en genade, die wysheid en deursettingsvermoë wat Hy my gegee het om hierdie taak te kon voltooi.

Dankie aan my kinders en my Moeder, vir hulle ondersteuning en aanmoediging. Dankie ook aan almal wat onderworpe was aan my ‘ondervragings en bevragings’ ten einde hierdie dissertasie moontlik te maak.”

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I also wish to thank my employer, Denel (Pty) Ltd, for sponsoring my University studies for 2007. A very special thank you to Lee Furter for assisting me with the editing, and Prof Richard Haines for his mentoring and support in the process.”

Abstract

This dissertation focuses on the local defence-related industry as a beneficiary under the Department of Defence’s defence industrial participation (DIP) programme, managed by Armscor. Attention is given to the main construct of the development theory and how the DIP process in South Africa compares with the international reciprocal trade phenomena commonly referred to as ‘countertrade’. The author does an in-depth analysis of the Government’s policy regarding the defence-related industry (DRI) that forms part of the local defence industrial base (DIB), as well as the DIP policy, procedures and practices and their subsequent bearing on the local defence industry. The study is further substantiated with a comprehensive review of the consequences and outcomes resulting from the largest defence package deal (SDP), signed in December 1999, between the Department of Defence and several major foreign original equipment manufacturers (OEMs) and subsequently benchmarked against academic discourse on the subjects of international countertrade and development theories.

Declaration

“I Johannes Jacobus van Dyk (ID 560321 5087 087), student number 206552570, hereby declare that this dissertation is my own work and that it was not previously submitted for assessment to another university, or for another qualification.”


Johan J van Dyk
BIOGRAPHY

Johan J van Dyk manages Countertrade and Offset Solutions for Denel (Pty) Ltd – the largest defence-related company in South Africa. He has been in this position for the past seven years. As General Manager of this division, he oversees and monitors the execution process of the Denel Group’s countertrade portfolio, both locally and abroad.

From 1980 to 2001, he was employed by Armscor, the South African Ministry of Defence’s defence acquisition agency. During his 21 years of service, he was involved in defence project and financial control, administration and arms contracts. During this time he spent two years in Paris, France.

He has extensive knowledge of the defence-related industry in South Africa, its trade practices, commercial defence sales practices in general, and the marketing processes of this industry’s products and services. He participated in a number of defence-related research reports for RISCT (The Royal Institute for Security and Conflict) UK and SIPRI (The Stockholm International Peace Research Institute of Sweden) and published articles in ‘Panorama da Practica do Offset do Brazil’, a Brazilian publication focusing on countertrade and offsets.

Since 1996, he played a major role in the re-structuring of South Africa’s defence industrial participation (DIP) policy, procedures and practices. During 1997/99, he advised the SA Government’s team who negotiated unparalleled levels of industrial participation (up to 340%), linked to South Africa’s biggest ever Strategic Defence Package Deal (SDP, Dec ’99).

He holds a Bachelors degree from the University of South Africa (UNISA, 1984), and an Honours degree from the Nelson Mandela Metropolitan University (NMMU, 2006). He is now presenting his dissertation for his Master’s degree to the same University, focusing on development studies, and more specifically, the South African DIP programme. He is an acknowledged expert in the field of countertrade and was involved in various international countertrade conferences, as well countertrade-related training programmes in South Africa and Malaysia.
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CHAPTER 1: INTRODUCTION TO THE RESEARCH DONE ON THE DEFENCE INDUSTRIAL PARTICIPATION (DIP) PROCESS IN SOUTH AFRICA

1. Purpose statement

This research, analysing the South African DIP process, is intended to determine to what extent the process, managed by Armscor, is actually achieving its objectives of creating and sustaining the defence-related industry of South Africa. The DIP process forms part of the Department of Defence’s (DoD’s) policy, and is a sub-set of the National Industrial Participation Policy of SA. DIP includes activities such as work-share, training, skills development, technology transfers, exports and investments, and focuses on the retention of capabilities and capacities in the local defence-related industry. The DIP policy is specifically assessed as a national development tool, supporting the defence-industrial base (DIB) in South Africa.

2. Why this research?

The decision to research this specific topic was taken based on the author’s knowledge of all issues surrounding the DIP policy and their effect on the ‘well-being’ of the defence-related industry in South Africa. The author\(^1\) is aware of specific gaps and shortcomings in the existing policies, and he intends to demonstrate to the policymakers what steps to consider in rectifying identified shortcomings. To reach this conclusion he uses analytical and empirical research methodologies to analyse, assess, compare and benchmark issues related to the topic. The author has a personal interest in this matter, as he has been involved in the subject matter since 1996, and specifically the local defence industrial participation (DIP) process. In 2001, he joined the defence industry as an employee of Denel – the major role player, and still the biggest defence company in South Africa, despite its poor financial performance the past ten years. The author is of the opinion that this research has national worth, as it can be linked directly to the practical relevance

\(^1\) The Author – Johan J van Dyk, as related to this research dissertation.
that the defence-related industry has, on the brink of receiving recognition as one of the cornerstones of the broader industrial base in South Africa. The defence-related industry is seen as a key building block for innovative and higher-end technology developments. This research, supported by academic empirical findings and recommendations\(^2\), will also be used to inform policy makers on how to go about solving some of the practical problems in the defence-related industry in South Africa.

3. Aims and objectives

Specific attention is given to aspects such as:

- Maintaining local defence-related industrial capabilities;
- Creating local defence-related industrial capacities;
- Technology transfer principles;
- Skills development principles;
- Economic benefit considerations;
- Socio-economic benefits (jobs, black economic empowerment (BEE), small, medium and micro enterprises (SMME));
- Globalisation principles;
- Foreign direct investment (FDI) and partnerships; and
- Sustainability.

4. Focus on the DIP policy

In order to put this research in context this dissertation specifically focuses on a comprehensive, but critical assessment of the DoD’s DIP policy, (within the context of defence acquisition and procurement processes), and subsequent Armscor policies on the same subject\(^3\). Specific attention is therefore given to explain DIP’s

\(^2\) "Deciding on the topic of research." The Research in the Social Sciences. Study guide RHC 201-H. UNISA.
\(^3\) Armscor is by law, to the new Armscor Act no 51 of 2003, as promulgated in 2006 now mandated to manage the DIP process.

Author’s note: The DoD is reportedly considering the repeal of Act 51/2003 and the restructuring of the acquisition function and the incorporation of Armscor into the DoD. This is reportedly planned to be completed by 2008/9.
intended aims, goals and objectives as subsequently implemented and managed by Armscor. The latter is the legally appointed acquisition agency for all DoD acquisition programmes, and was appointed by the DoD to manage the DIP process in its entirety. In the initial phases, the DIP requirements form part of the Armscor tendering process, setting the DIP process in motion.

5. **This research topic is a current topic of social interest**

The SA government plans to restructure Armscor and tasked the Department of Trade & Industry (DTI) to implement a defence-related industry (DRI) strategy. This strategy should create possible incentives under the banner of the national industrial development programme, ensuring that key strategic defence-related capabilities are maintained. The DRI sectoral strategy holds far-reaching development implications for the local DRI, and will inevitably have an impact on the DIP and NIP processes. Presently, the DIP and NIP processes have comparable elements and activities, but are not interchangeable, except for some aspects relating to “dual use capabilities” in the DRI environment. In April 2007, the Department of Public Enterprises (DPE) introduced a Competitive Supplier Development Programme (CSDP)⁴ to further the development of the local manufacturing and services bases, using the anticipated R400-billion infrastructure budget – defence is however not part of this.

6. The topic of this research is: **“An evaluation of the South African Department of Defence’s policy on Defence Industrial Participation (“DIP”), as a defence industrial development mechanism”**. Attention is given to the role of the policy writer as a change agent – specifically the role that the author played in the creation of the DIP policy and associated processes and procedures to manage it. The dissertation therefore consists of the following:

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⁴ Interview with Mr Sean Philips, DPE CSDP Unit, 26/03/07 and the DPE website – www.dpe.gov.za


- **Chapter 1** – Introduction to the research done on the defence industrial participation process in South Africa. Why, from an academic and social point of view, is this research needed, how can it be interpreted in the context of South Africa's general development goals and how does this impact on the defence-related industry as a whole?

- **Chapter 2** provides an international view and theoretical perspective on what countertrade is all about. Why do countries apply this reciprocal form of trade? Some examples are given within the context of the South Africa programme, while views of the World Trade Organisation (WTO) are discussed briefly. Issues such as the realities of penalties and incentives in the form of multipliers are also touched upon.

- **Chapter 3** discusses the subject of research *per se* and although many scholars may have written extensively on the subject, the author deems it necessary to reflect on the various approaches to research and research methodology, and to assessing its academic reference value as related to this research on DIP. The chapter shares the approach that was followed in order to ensure scientific rigour on academic empirical levels.

- **Chapter 4** describes the relevance and applicability of this research on the defence industrial participation process in relation to national development objectives. Questions being asked include: (i) How did the defence-related industry end up as a beneficiary of DIP programmes? (ii) What led to the South African government playing a key role in leveraging the power of procurement to advance industrial and economic growth objectives?

- **Chapter 5** contains the review of the White Paper (WP) on the defence-related industries (DRI) in South Africa, covering all prevailing issues relevant to the debate at that time on the local DRI. As there are presently many developments in respect of issues pertaining to the DRI environment, a fair amount of attention is given to elaborative comments on most of these. The WP focuses primarily on the DRI in South Africa, and within the context of DIP programmes. In this dissertation, the WP is commented on as a development mechanism, aiming to maintain a strategic defence industrial capability in South Africa. In order to put
the DRI in perspective, it was necessary to pay attention to (i) the background of
the DRI, its history, how it developed and eventually got marginalised; (ii) its
contribution to the economy, and to human development, and (iii) its anticipated
role in supporting safety and security issues in South Africa in the future.

• Chapter 6 reflects on a DoD policy document that was approved in May 1997,
relating to the implementation of a defence industrial participation (DIP) process
governing all defence procurements with a foreign contract value\(^5\) of USD2-
million and more. This policy exists independently from that of the DTI’s formal
policy on ‘National Industrial Participation’ (NIP), approved by Cabinet in the
same year. NIP is relevant to those defence contracts with a foreign
contract/imported content value of more than USD10-million. Comment is thus
made in the context of the present relevancies and possible improvements of this
policy document. The aim is to provide an analytical review of the DoD’s Defence
Industrial Participation (DIP) policy, which is a ‘sub-set policy’ of the Department
of Trade and Industry’s National Industrial Participation Programme (NIPP) policy
of 1997. The DoD’s policy document is therefore assessed, analysed and
subsequently discussed and commented on, against the background that led to
its inception in May 1997. The author reflects on the rationale that governed the
thought process that resulted in the drafting of the DIP policy, and compares the
policy with requirements stipulated in international benchmarks.

• Chapter 7 - Data and information were gathered through an extensive literature
search on the subject of industrial participation in South Africa as applied by
Armscor. This was complemented by selective interviews over time, feedback
from questionnaires and the author’s personal and daily experience in DIP
activities, and how these activities manifest in the South African DRI. Data was
subsequently analysed by using descriptive analytical statistics and qualitative
analyses, whereas classification of data and its correlation analysis were both
used for qualitative and quantitative analysis. Considering Habernas’ theories on
communication for more efficacious development, the White Paper on the DRI
was subject to a structured process that aimed to derive the proposed and

\(^5\) Author’s note: There remains some confusion on the meanings of foreign contract value versus imported content versus foreign
content values to be used as basis for calculating the DIP/NIP obligations.
desired result, namely to create an understanding and an acceptance of the DRI as an integral part of the broader industrial base of South Africa.

**Chapter 8 – Conclusions and recommendations.** The question is asked, whether DIP delivered the results and objectives that motivated its implementation, and whether any changes should be made to the existing process? If one considers each of the specific comments passed on each element of the DIP policy, as described within the context of the research analysis being done on this reciprocal trade phenomenon, the answer has to be a qualified ‘yes’. In assessing whether the policy is effectively introduced and applied in practice, a procedural and regulatory perspective indicates that there is room for improvement.

7. **The research model (see Figure 1) used,** is to a large extent based on the research process model of D.R. Cooper & P.S. Schindler⁶, while E. Babbie & J. Mouton’s⁷ work provides a secondary paradigm, forming a basis for the approach to the collection of primary and secondary data, both being in numerical text formats.

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**Figure 1**

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8. **In terms of the research design process**, regular reporting on the progress of the assignment was shared with the author’s promoter, Prof Richard Haines. Reports included the following milestones:

**Step 1**: Compiling the dissertation research topic approval paper;

**Step 2**: Securing NMMU approval for the research topic;

**Step 3**: Structuring the scope of the research – as per par 6;

**Step 4**: Identifying relevant research sources and concluding an extensive literature search on the topic;

**Step 5**: Identifying and engaging selected entities in the DRI;

**Step 6**: Issuing questionnaires to targeted respondents;

**Step 7**: Conducting interviews and recording observations;

**Step 8**: Writing the research methodology chapter;

**Step 9**: Analysing literature and recording subsequent findings;

**Step 10**: Concurrently testing the findings and observations (practical and academic);

**Step 11**: Compiling a final research analysis, as a conclusion;

**Step 12**: Stating the anticipated outcome and making recommendations;

**Step 13**: Notification that the first draft was ready for submission; and

**Step 13**: Updating final draft with comments and suggested changes, finalising and printing document and submitting dissertation for final examination.

9. **Applied research methodology**

This research was done by means of collecting and assessing empirical data to determine how successful the DIP process is and to what extent the intended objectives, aims and goals are effectively met, while identifying possible hurdles and making recommendations to the DoD, Armscor and the DTI regarding possible changes and/or improvements. The results that were obtained are presented in a coherent manner, enabling the ‘practitioners’ (i.e. the Chief of Acquisition at DoD and the Senior Manager at DIP Division of Armscor) to access, and use such
information to improve aspects identified during this research, also providing academic insight into the development role of countertrade.

This research provides data in a **summarised evaluation** format, reflecting on the outcome and the end-result of the information collected, analysed and interpreted against the empirical data relating directly to this research topic on DIP.

10. **The quantitative approach**

This approach ensures that the research examines the generally-accepted explanations of the DIP policy, by contextualising its aims and objectives against a more universal background, such as recording DIP outcomes and its impact on the local defence industrial base (DIB), which is also referred to as the DRI.

The quantitative approach ensures that the research is directed, structured and controlled through specific data-collection techniques, such as the use of structured questionnaires.

11. **The qualitative approach**

As the aim of the research is to measure the outcomes of DIP in the local DIB (defence industrial base), or more commonly referred to as the DRI (defence-related industry) at large, and on Denel, both being benefactors of DIP. The DRI and Denel are included as ‘objects’ of investigation. In order to arrive at a meaningful conclusion, it is necessary to adopt complementary data collection techniques, such as conducting interviews relating to the general experience of participants involved in the DIP process; soliciting input from other DRI companies through their representative organisation, namely AMD (Aerospace, Maritime and Defence Industry Association), and including extensive literature research, covering the research subject matter between late 1999 to late 2007.
The intention is to describe the influence of DIP on these institutions (the ‘objects’) being investigated, while assessing the local DIB holistically and explaining the internal and external influences that may affect the effectiveness of this defence industrial development tool.

The research is purposeful and directed towards a variety of matters representing interrelated subjects of the same phenomenon, such as countertrade as a discipline, but with the focus on DIP and the DRI. It is furthermore used as a means of observing and commenting coherently on the inter-related effects that DIP has across the spectrum of issues governing the research topic, and related to the DRI specifically.

Due to the author’s personal involvement with the DIP process over the past eleven years, it is inevitable that perceptive and practical insights are primary drivers in this research study, although substantiated by empirical research data and findings, especially in the explanation of the rationale, aims and objectives that still drive the DIP process in South Africa and what it had achieved to date.

12. Multiple method rationale

By using the quantitative and the qualitative research approach in parallel, data so gathered was analysed and interpreted in a coherent, complementary and non-conflicting manner. Data collection governed the subsequent process of developing and designing a structured questionnaire, which was followed with interviews, literature research, content analyses, observations and contextualised conclusions. This interactive process ensured the validation, verification and relevance of information used in this research.
The research activities, as it relates to this researched topic, were approached as detailed in the following flow process model:

**Figure 2** (JJ van Dyk’s adaptation)

**Exploratory research.** This research, assessing the influence of DIP on the local DRI, and specifically Denel, is a topic that has been reported on, and speculated about in the media, and also extensively debated in Parliament, but never independently researched in any substantive and detailed fashion, notwithstanding the emerging field of research internationally and in South Africa, on the impact of defence offsets. What is interesting to observe is that this research reveals that further research could, and should be done on this topic, as the author’s efforts to analyse and assess DIP are primarily based on qualitative data collection, with the ‘what’, ‘when’ and ‘where’ of DIP clearly defined.

**Descriptive research.** The DIP process proves to be a series of structured activities, and it is therefore anticipated that descriptive details of the environment and relationships surrounding DIP, be included in research of this nature. Such information delineates the ‘who’ and ‘how’ of the topic.

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Explanatory research. This aspect of the research concentrates on gaining insight regarding the context of DIP in relation to the research topic related to development, attending to the ‘why’ element of the subject.

13. The research content

In concluding the research content process, secondary and tertiary data were added to deal with the various evaluative modes, related to research in general.

From this point of view, the research subject (i.e. the DIP policy’s influence on the local DRI) was explored with the aim of describing the practice in a descriptive manner, and explain it in the context of the actual policy intent (the causality test), in order to arrive at an evaluation of the real influence and effect, based on an evaluative approach. This exploration offered the opportunity to measure the process within the context of historic events and practices, supported by statistics collected through a methodological and meta-analytical approach. The conceptualisation of DIP within the DRI, and the national development and industrial constructs resulted in recommendations for changes that can ensure improvements.

These findings were also tested against the current theoretical discourse and perceived wisdom on the international subject of countertrade and offsets in its widest form, in order to arrive at a conclusion based on normative parameters, i.e. how the South African DIP process, and its aims, objectives and achievements weigh up against international practices.

Case study research. As part of the ‘research time dimension’ the research focused on a specific topic (being DIP), within a specific cluster (i.e. the local DIB and specifically, Denel, as a major role player in the local market and major beneficiaries under the DIP programme), for a specific period – from late 1999 to late 2007. The process was also benchmarked against international trends and perceptions, shared in various reports.
Data collection. This was primarily by means of literature search and analyses (including various scholars’ views on the countertrade phenomena world-wide, the DoD policy documents, Armscor’s annual reports and internal DIP policy, procedures and practices applied by Armscor, as well as media reports), statistics (as available from Armscor’s annual reports and within Denel). The research was further complemented by structured questionnaires and selective interviews with key players. The author used a two-step process in his research, namely a description of the phenomenon, followed by an interpretative explanation based on findings, observations, conclusions and recommendation, as alluded to above and elsewhere in this document.

Literature and sources. This research very specifically focused on the following, as legitimate and credible sources of information, statistics, facts, quotations, notations, debate, argument and academic empirical discourse:

- The DoD’s DIP policy and the subsequent Armscor DIP policy, procedure and practice (issued since 1997);
- Armscor’s annual reports, reflecting on the progress made with the execution of DIP (since late 1999 to mid 2007), complemented by relevant statistics;
- Studies concluded by the Institute for Security Studies and/or other academic institutions on the topic of DIP;
- Literature published by various scholars and/or academics and practitioners working in the countertrade and offset discipline;
- Local and international media reports relating to DIP; and
- Internal Denel statistics on DIP.

Structured DIP questionnaires and interviews were used as tools to mainly verify the views of the DRI on the development and economic benefits of the DIP process for the industry. This information was used to complement personal observations and served, mainly as a secondary source of data. The members of AMD have been identified as the key respondents, based on their
respective roles as DIP benefactors (at various levels) in the strategic defence package deal (SDP) of 1999, supplying the respective foreign OEMs.

- As a tertiary data source, media reports and academic articles on the subject of DIP were consulted and selectively used, such as the independent research done by the DRI organisation AMD during 2005/6.
- The physical time frame in which this specific research project was done stretches over a period of 22 months, during 2006/2007. *(It must be noted that the author is still actively involved in the execution of the DIP process and has been involved in the DRI since September 1980, and in DIP activities since 1996).*

14. **Data analysis and interpretation**

According to E. Babbie & J. Mouton⁹, the process of the research design (as applied and used by the author in this research process) follows the following route – as per Figure 3 below:

![Figure 3](image-url)

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Analysis. Based on the research done, the data that was gathered, was interpreted and reproduced in a variety of formats, using descriptive statistics (in order to understand underlying patterns in data), tables and graphs to depict the summarised data in a logical manner, with written records observing trends and correlations.

Interpretation. By using the data so collected, it was possible to make a distinction between the nature of the reality (‘ontology’), i.e. the outcome of DIP when the process is applied in practice at industry level, versus the nature of knowledge (‘epistemology), referring to the intended outcome in relation to the DIP policy statements in this respect. Because of the empirical structure of the DIP research, data was acquired in the form of systematic, formalised and enumerated information, constituting the quantitative measurement that confirms causal regularities (i.e. tendencies or patterns) within the researched topic, and used as a means of expressing the quantum of the researched subject. On the other hand, interviews and observations (for example the interpretation of the actual policies and procedures prescribed by government) were used as a means of qualitative measurement, providing actual meaning (and a comprehension of the topic), alternatively expressed as a means of interpretation or explanation.

Dealing with ‘don’t know’ answers from respondents. According to Cooper and Schindler\textsuperscript{10} the “I don’t know” response presents special problems in data interpretation. Although ‘don’t know’ responses can have a legitimate status, it can also mean that the respondent prefers not to answer the question, although the answer is known. Having taken cognisance of the prospect of too many ‘don’t know’ or neutral responses, care was taken with the structuring of the research questionnaire to minimise evasive responses, with more attention being given to written reports than to verbal feedback.

Reliability and validity tests. The reliability of the data collected is based on the premise that the findings will deliver the same results when repeated, whereas the

validity of the data, on the other hand, is based on the commonly accepted fact that DIP (as a particular concept) has a very specific meaning to the local DIB (or DRI), and that information reflected on, can be substantiated by controlling authorities (such as Armscor in this instance). Confidential data is not available in the public domain and is protected by South African law. **Due also to the particular nature of the defence-related industry, dealing with sensitive equipment that has a direct bearing on national security, it will never be easy or even possible to replicate in-depth research based on the exact details of the DIP policy and related commercial processes.**

15. **Ethical principles applicable to this research**

Having given careful thought to the ethical issue relevant to this research proposal, the following issues were ascertained:

- The data relevant to the research topic is readily available and the research methods identified are well-suited to extract data in a meaningful manner;
- The research approach is both practical, and feasible and would not entail any costs to conduct, except for the researcher (author) and respondent to make personal time available;
- The actual research is structured on the basis of an existing phenomenon, while alternative comment is solicited as to the validity and relevance of the contents of the research, and all endeavours were made to remove any subjectivity, or biasness towards the researched subject matter of DIP in the DRI;
- The data collected, directly relates to commercial business activities of the DRI, as well as those of international companies. It reflects on the applicability and practicability of the DoD/Armscor DIP process. From a commercial point of view, as well as from a controlling government authority’s point of view, the use of data so collected cannot be exploited for any other purpose and will not compromise any commercial confidential information, or concerns of any party or process so observed, or reported on.
16. **In conclusion**

The decision to research this specific topic related to the DIP policy, and its effect on the ‘well-being’ of the defence-related industry in South Africa, resulted in a comprehensive research report, which not only identifies the anomalies, gaps and shortcomings in the existing policies, but also reflects, in an empirical manner, on how industrial participation in the South African context, (referred to as DIP) compares with international practices. It also indicates the benefits to the local DRI that did, and did not accrue. In this dissertation, the author demonstrates to the policymakers which steps they should consider to rectify identified shortcomings, and to this extent he already made presentations to the DRI’s representative organisation’s Board of Directors, the AMD, on 25 October 2007. The author and the Executive Director of AMD, Simphiwe Hamilton, started a process of inviting Armscor to deliberate and discuss actions they need to take that relate to DIP. This process will in all likelihood be entrenched during the first half of 2008. In parallel to this activity, AMD is also involved with various actions and initiatives preparing submissions to the Parliamentary Portfolio Committee on Defence, regarding various aspects influencing the DRI that need to be reviewed.

It is the author’s opinion that the DIP process largely achieves its aims and goals, securing desperately needed income for the DRI during a period where there was an obvious endeavour from government to give preference to foreign defence equipment to re-equip a depleted SANDF inventory. Simultaneously this foreign procurement process re-affirms certain bilateral North-South relations that can strengthen the standing of the SA government.
CHAPTER 2: LITERATURE SEARCH - THE THEORETICAL FRAMEWORK
EXPLAINING WHAT COUNTERTRADE CONSTITUTES

1. Introduction

The meaning of the terms countertrade, barter, offset or industrial participation may not always clearly define their real implications when used in the context of domestic and global trade, industrial and economic/socio-economic environments and development concepts.

This dissertation intends to shed some light on the international countertrade discipline, as a means of causing reciprocal trade or other benefits. The arrangement, at its most fundamental level, is straightforward - a purchasing government obliges a foreign seller to include extra benefits with the sale of the base goods.11

The word in itself is the collective noun, referring to various forms of countertrade, of which there are more than fifteen – see figures 5 and 6. All these various forms of countertrade are used in various degrees, combinations and permutations. This chapter does not explain each one of the options in detail, but concentrates on the respective principles governing each one of the most prominent forms of this reciprocal trade phenomenon.

Countertrade is probably as old as the earliest civilisations. It primarily started as a bartering activity (in other words a commodity-for-commodity type of exchange), in a period when there was no money in use. However, as money became the accepted method of payment, direct commodity exchanges reduced, but never ceased. Today, in modern economies, there is a constant shortage of money and many

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countries resort to barter deals and all sorts of intricate trading mechanisms, even swapping (exchanging) debt.

The sophistication of markets, however, led to the principle of commodity trade and structured finance deals of a very complex and intricate nature. Close to 100 countries reportedly still use countertrade in all its various forms. Even first-world countries (such as the United Kingdom and the Nordic countries) use it for industrial cooperation purposes. Although the World Trade Organisation (WTO) appears not to be in favour of countertrade, it published some exceptions, making it possible for countries to use this form of trade. Countertrade remains an important part of trade and it is the author’s view that it will probably remain for as long as there is trade. In some instances it can be regarded as a ‘nuisance factor’, as it can be prescriptive, but looking closely, the bottom line remains that the buyer can dictate to the market, and as long as the buyer wants a reciprocal benefit through countertrade, sellers will have to comply.

Although countertrade is sometimes regarded with extreme suspicion, it remains an opportunity that is supposed to benefit both the buyer and the seller alike. Needless to say, there are various types of constraints that restrain the process; aggravated by the fact that countertrade does cost money. Countertrade *is not about welfare*, and although it may include some aspects of goodwill, most of it is about sound business principles. Countertrade is only limited by the lack of creativity and innovativeness on the part of practitioners – mostly acting on behalf of government controlling authorities.

Countertrade involves cost and risk – both of which buyer and seller must make peace with when engaging each other in reciprocal business. Most governments requiring countertrade on foreign purchases expect that whatever form of countertrade is required that it should not increase the price of the goods procured, but in reality it does. The issue to debate is how much a government is prepared to pay for the reciprocal benefit that countertrade poses. How does one really evaluate
the economic and intrinsic value of foreign companies being allowed to become involved (even entrenched) in any given country’s industrial, economic and socio-economic affairs, whether at national or global levels?

Since the ’80s the concept of countertrade, linked to defence purchases, started gaining popularity, but was not limited to deals of such nature. Countries implemented various requirements and associated conditions of countertrade to ensure work for their industries and reduce the net outflow of foreign currency, in those instances where they had to procure defence equipment from foreign suppliers.

**The most commonly used forms of countertrade are alleged to be:**
- **Barter:** an exchange of commodities for arms, or commodity for commodity without the direct exchange of money.
- **Counter-purchase:** where the seller of arms is required to counter-purchase certain goods and commodities from the buyer’s country, by causing exports.
- **Offsets** developed into a mechanism used to compel sellers of defence equipment to contract certain work on that equipment back to the industries in the buyer’s country, or to effect high-tech exports from such countries’ industries.
- **Other:** there is a host of other countertrade mechanisms used in various combinations and permutations, while some are rather complex – refer to figure 6.

2. **An introduction to countertrade**

2.1. Countertrade is a common term used for different and distinct modes of international reciprocal-type trade arrangements. These may involve either one, or a combination of aspects, such as, build-operate-transfer (BOT, or variants thereof), buy-back, barter, co-production, blocked funds, counter-purchase, joint ventures, evidence accounts, offset, swap, technology transfer (ToT), tolling and switch trading, as well
as pre-offsets. Not to mention aspects related to compensation and economic enhancement programmes.

2.2 In addition to, and depending on, market conditions and specific country countertrade practices, one may find various usages of different terminologies for countertrade. The most recent examples of synonyms used, include Industrial Participation (South Africa), Local Content (Australian Industry Involvement Programme (AIIP)), Industrial Cooperation (Israel), and Partnerships for Development (Oman), with the most recent development in Libya been referred to as economic enhancement. The concept of public-private partnerships (PPP) is also an aspect that appears to be more favoured. Much of these apparent terminology changes are viewed mainly as attempts by countries (developed or less-developed alike) to circumvent possible problems relating to WTO rules. (Refer to paragraph 5 below.)

2.3 The extent, to which countries are involved in countertrade, depends largely on the political and economic environment of such a country, and the availability of hard currency; closely followed by industrial development and market access issues. It is estimated that more than 100 countries practice this form of trade internationally. It is further estimated, as also quoted elsewhere in this dissertation that internationally, countertrade represents up to 40% of all international trade, which constitute a trade phenomena that cannot be ignored.

2.4 Where traditional *marketing* actions are directed towards mainly satisfying the equipment needs of a country, *countertrade*, on the other hand is required to attend to the socio-economic and industrial needs of the buyer country – mostly in the form of work-share and economic and socio-economic activities. It calls for a fine act of balancing the effects of foreign currency outflow from the buyer country, while retaining some levels of work-share for the selling company, and still making a reasonable profit.
This rather complex process is depicted in the following flow chart:

![Flow Chart](image)

**Figure 4** (Source: JJ van Dyk)

2.5 Although commonplace, offset\(^{12}\) requirements vary considerably from one country to another and policy differences reflect different experience and objectives. S. Martin\(^{13}\) actually observes that this international diversity makes for interesting comparative study, but at the same time he alleges “economists have long neglected defence matters although the level of resources devoted to defence spending, as well as the offset element attached to it, warrants substantially increased research effort”. He also remarks that due to the relatively unavailability of reliable data on offsets, researchers have to rely on the goodwill of those in the defence industry and the controlling authorities. M. Rowe\(^{14}\), for example, remarks that, “... many companies hide their countertrade commitments as they would secret vices.”

2.6 Martin makes the observation that as defence budgets reduce, competition will become fiercer and offsets are thus likely to become more, rather than less, important. He continues his argument by reflecting on research work that was done

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\(^{12}\) **Author’s note:** Academic literature and research studies constantly use the term “offsets” which is normally associated with defence procurements. “Offsets” as such is however a sub-set of Countertrade, which is used as the collective term. (J.J. van Dyk)

\(^{13}\) Martin, S. 1996. The Economics of Offsets. Defence Procurement and Countertrade. Harwood

on offsets, covering countries such as the United States of America (USA), Australia and the main players in Europe, with various offset projects been implemented in countries such as Saudi Arabia, Taiwan and South Korea. He also remarks that countertrade appears to have grown in importance and in application since the ‘60s, especially in Eastern Europe and the West. From the ‘70s onward, the lesser-developed countries (LDC) increasingly used countertrade. Martin, however, distinguishes between two categories of literature when he assesses the subject of countertrade – the one emanating from countertrade authorities (as policies and guidelines to aid suppliers from a regulatory and buyer-demand side), and the other source creating literature that more seeks to stimulate further academic discourse on the subject matter.

According to T.K. Taylor offset often appears under the guise of compensation packages, industrial benefit programmes, cooperative agreements and countertrade policies. The US is one of the few large economies left that does not apply any explicit offset policy. Governments use offsets as a convenient way of extracting ‘rent’ that achieves a multiple of objectives, such as acquiring foreign investments, improving capabilities and technologies to gain new market access and promoting exports earnings, while forming important and strategic alliances. Taylor views offsets as a more effective tool than tariffs, quotas and subsidies, but accepts that it remains a complex subject and that economists are only beginning to understand this trade phenomenon. Benchmarking studies done by B. Udis and K. Markus, as well as P. Hall and S. Markowski establish a neoclassical economic offset theory. The work of P. Liesch and T. Taylor complement the theory by highlighting the importance of transaction cost and capacity expansion strategies of procuring governments.

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17 **Author’s note:** What Taylor forgot to mention is the fact the “Buy American Act” forces preferential procurements for US companies as well as forcing foreign suppliers to involve local US companies in any product so supplied.
J. Bauer of the College for Business Administration of the Augusta State University of the USA, echoes similar views regarding the economic aspects of offsets in arms trade. He shared his views in an academic paper delivered at the International Defence Offsets and Economic Development conference at Cape Town during September 2002.

P. Hall and S. Marowski\(^2\) express the view that mandatory arms trade offsets in the form of a specific offset percentage, create a trade diversion, a trade distortion and a welfare diminishing effect. They hold the belief that voluntary offsets, on the other hand, have a ‘welfare enhancing’ nature.

T. Ellingsen\(^2\) makes the observation that for the period 1960 to 1990, the market price typically increased and welfare decreased as a result of various countertrade policies. This statement led to the USA adopting anti-trust offsets practices, also referenced against the WTO (GATT at that time). Ellingsen also makes some econometrical, mathematical analyses to explain the so-called ‘Cournot equilibria’, describing and explaining aspects related to the relationships between buyer and seller, demand and price, profit and loss, monopolies and duopolies and welfare impacts and competition. He states that the notion of countertrade may be profitable in oligopoly markets. This is reportedly also justified by known empirical regularities and has unambiguous welfare implications, which on the other hand seem to indicate that Cournot, or quantity, or competition is justified partly on the grounds of simplicity, and because it is not too strongly prejudiced towards welfare analysis. Ellingsen concludes by alluding to the fact that although his analysis supports the general view that countertrade is harmful to overall welfare, it is also clear that clever tradesmen may have good reason to keep applying it.

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Brinley Salzman\textsuperscript{23} for example, observes that the effect of offsets in the UK maintained at least 250 000 jobs over time and that its “importance to the UK defence industry is enormous”. Offset has also grown in importance and is used as some sort of defence industry protectionist tool, becoming a critical factor in the award of international defence contracts. While many companies perceive offset negatively, others do view it as an opportunity with positive benefits in general. In countries without indigenous defence industries, offset is used as a protection, and/or tool to develop local economies, and as a counter to the outflow of foreign exchange. Despite opposition to this trend, especially from the US, offset is here to stay. Offset authorities should, however, be encouraged to ensure that offset policies are achievable. Likewise, a process of educational awareness is essential for effective mechanisms to be adopted within companies. Salzman also expresses the view that there is an increasing need to create an offset network throughout the supply chain, as offset increases in volume and complexities around the world.

Lindsay Shanson, the editor of the international publication ‘Countertrade and Offsets’, is of the opinion\textsuperscript{24} that global offset is a form of countertrade referring to various forms of unconventional trade, including barter, counter-purchase and compensation (also known as buy-back) activities. In some competitive situations offsets have been pre-emptively offered as a sweetener. There is a discernable trend towards the transfer of a part of the production and capacity of a Western prime contractor, to other countries. This is reportedly achieving a dual benefit by accessing cheaper production, while also earning offset credits. He also remarks that there is an increasing trend to ignore WTO prohibitions in the use of civil offsets.\textsuperscript{25} Shanson’s report on a Price Waterhouse Consulting finding in 2002 relates to the procurement and offset process in the Netherlands, indicating that the cost of

\textsuperscript{23} Salzman, Brinley - is the Exports Director of the UK Defence Manufacture’s Association (DMA), providing support to UK defence exporters.

\textsuperscript{24} Shanson’s (Lindsay) contribution to the Brazilian publication of Offsets (Panorama da Practica do Offsets no Brazil. 2004). Pages 189-197. “Reflections of the evolution of Offsets”

\textsuperscript{25} Author’s note: Kuwait has in April 2007 announced its decision to invoke offsets on all their civil procurement programmes as well. In the past civil programmes could be used to offset defence offset obligations. This would under their new regime be extremely difficult to do anymore.
doing offsets is at an average 2.9% of the value of acquisition. It was also found that the cost of direct offsets is less than the cost of indirect offsets.\textsuperscript{26}

Christian Hadjimas\textsuperscript{27}, on the questions of “Why offsets” and “Are they worth something and do they really contribute anything?” – or “Do they simply feed a whole industry?” comments that although one often hears about the abolishment of offset, it is instead increasing. He states that offset, in simple terms, and despite its apparent shortcomings, is really “akin to a virus that nobody seems able to get rid of, or more precisely, nobody really at the end of the day wants to risk letting them go”. He concludes that an offset cannot be measured and evaluated in strict economic terms and that, at best, it can only be assessed on an indirect basis on the surface as a peripheral side-effect of a dialogue resulting in the sharing of brain power, cultural exposure and the promotions of a country always in search of ways to ‘score’ while keeping a flexible approach.

2.7 The principal reason for being in countertrade is need versus necessity. Industrially developed countries want to sell their goods and services to either maintain a share of the market, or increase it. This is the ‘need’ factor. Third-world countries, such as Eastern Europe, the Post-Soviet republics and least-developed nations need to acquire certain machinery, equipment, knowledge and technology to develop, or even maintain and grow their own industries. This translates to the ‘necessity’ factor.

The primary reasons why countertrade are used by countries also appear to the author to occur when there is a shortage of hard currency and commercial credits or foreign exchange, it is used as a tool to stimulate economic activity as an effort to establish or to stimulate and develop local industries in a developing country, along with the need to develop new export markets. It is a tool used to advance infrastructure in support of the total effort, while it also acts as a reflection of political

\textsuperscript{26} Author’s note: The reason why direct offsets may be cheaper to perform is as a direct result of such business being core to the seller’s business and actually becomes an natural extension of the normal execution of the programme.

\textsuperscript{27} Hadjimas, Christian – of Epicos, Greece – in his contribution to the Brazilian publication of Offsets (Panorama da Practica do Offsets no Brazil. 2004). Pages 189-197. “Reflections of the evolution of Offsets”
and economic policies, to balance foreign trade and to secure foreign investments. It tends to develop, or to retain, or gain advantage over competition globally, for example through the creation of joint ventures where globalisation of the local industry is a key driver, as is the fostering of strategic international partnerships, to enable a developing country to secure direct foreign investment, and to stay clear from development assistance, or constrictive aid from industrially-development countries, or the World Bank. It is furthermore seen as a method through which capabilities can be enhanced through technology and skills transfers, as well as training and skills developments, socio-economic growth stimulation, job retention and creation.

2.9 Martin also makes the observation that there are basically four distinct types of arguments governing the generalist views on countertrade:

- The first is the so-called ‘hostile view’ as expressed by the WTO and Organisation for Economic Co-operation and Development (OECD), interpreting countertrade as a threat (to Western exporters) and portraying the activity as being harmful at global level, saying that such liberalisms run counter to the spirit of an open and multi-lateral international trade system as propagated originally by the General Agreement on Trade and Tariffs (GATT), now replaced by the WTO. This view is not only echoed by Coetzer, but also by the Bureau of Commerce of the USA and the United Kingdom’s (UK) Defence Manufacturer’s Association (DMA);
- Secondly, there is the view that those governments imposing countertrade are ill-informed and irrational, as there is little that countertrade can actually achieve;
- Thirdly, there is a group of commentators that cautions against immediate opposition to all countertrade transactions. Their view is that cost and benefits of each transaction need to be taken into consideration, and that there can be no general presumptions that all countertrade is inefficient; and
- Fourthly, and finally, there are those who see the various forms of countertrade as a rational response to the costliness of effecting some types of transactions

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along a more conventional ‘cash-for-goods’ line, which is a combination of the barter/counter-purchase/buy-back mechanisms of countertrade deployed in a structured manner. Martin, however, cautions against this fourth view as he is of the opinion that it tends to be too generalistic, and says he would rather see all the elements of countertrade operating in a homogenous manner, which is not presently the case in practice.

2.10 In the research findings done by M. Brenan\(^{30}\) he states that international trade contain between 8% and 30% countertrade-related transactions. He is of the opinion that countertrade can be categorised as commercial countertrade, involving mainly barter and counter-purchase; and industrial countertrade, which involves practices such as buy-back, offsets, joint venture and compensation. He depicts his views on countertrade in the following manner:

![Figure 5](Source: M. Brenan)

2.11 From the literature of various countertrade and economic academics (such as Brenan\(^{31}\), Banks\(^{32}\), Cohen\(^{33}\) and Neuman\(^{34}\)) it is observed that they identify the

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31 ibid
following aspects as giving substance to the phenomenon of international countertrade, namely shortages of hard currency; promotion of exports; using countertrade as a method of disguising the sales price of the countertrade goods, without upsetting existing trade agreements, linking administrative or political factors of exports to imports – used to disguise impositions of an economic austerity programme without overtly resorting to discriminatory tariff barriers, by using the seller’s larger international infrastructure and capacities as a gateway to new markets, and increasing technological improvements to increase a country’s level of technology, through joint ventures.

2.12 Former Soviet Union (USSR) and COMECON (the Council for Mutual Economic Assistance used by the East Block countries) countries have been known for practicing countertrade among themselves since World War II. In the Post-Soviet Republics and the Post-COMECON era, these countries are still continuing doing so, joined by various other developing countries throughout the world. It was, for example, reported in 1999 that Iran has been using oil as its primary countertrade tool in all its foreign transactions. It was especially after the Cold War ended that the new Russian Federation, on many occasions, implemented debt swap deals by using arms transfers to especially the East Block countries, as a means to repay their debts in those countries.

2.13 In the category of “newly industrialised nations”, countries such as South Korea, Taiwan and Singapore set the pace, while Malaysia strongly features in the Asian race, with India, Brazil and Chile (under “Mercosur – the South American common market and trade coordinating alliance”) are marginally included, with Mexico appearing to position itself for further growth. Countertrade is important to all these countries, in order for them to acquire technology transfer, the latest state-of-the-art machinery and equipment, industrial goods to ensure their countries’ growth, and to improve access to Western markets. These countries are also known for applying protective import and export measures, and place restrictions on certain activities.
2.14 According to Martin's findings, offsets are used to grow infant industries in other countries, to protect local markets and further job creation and employment, to justify the economic benefits of spending, to reduce the adverse impact on balance of payment and to create industrial competitiveness from the seller's point of view.

He however, also states that economical empirical data is not generally available and it is therefore extremely difficult to make any empirically justified finding. He concludes that it seems as if vendors and buyers alike underestimate the scope and impact of offsets, and that the general trend is to move away from a best-endeavour type of approach, to a more structured one that aims to secure a longer-term relationship between the seller (and its country) and the buyer's industry (and its government).35

2.15 Most of the OPEC (oil-producing exporting) countries are involved in various forms of countertrade. Since the early ’90s, these countries have placed an emphasis on the building of petrochemical plants, aluminum smelting complexes and manufacturing facilities in petroleum-related industries (petrochemicals). Since the latter half of 1980, however, countries such as the United Arab Emirates (UAE), Kuwait, Qatar and Saudi Arabia have been insisting on the creation of other value-adding countertrade transactions, by excluding their petrochemical industries. Both UAE and Kuwait appear to be moving more to the establishment of a defence industrial base in their respective countries.

2.16 Dr Pompilu Verzariu, the director of the financial and countertrade division of the International Trade Administration of the US Department of Commerce, makes the observation that both industrialised and emerging, or developing countries apply defence offsets. He says the type of offset mainly depends on the sophistication of the hardware procured and that offset practices are at the same time a ‘non-tariff barrier’ to trade and a cost of doing business in an imperfect, international

35 Author's note: Major defence deals are constantly characterized by Government to Government agreements and lesser a case of a seller engaging the buyer country on its own. Case in point was the South Africa Defence Package Deal of 1999 and the recent A-Darter missile deal with Brazil (2006).
marketplace, acting as “concession to importers influencing their choice of suppliers”.

He asks for example the following question on behalf of obligors: “Can the buyer country absorb incremental offset investments in a viable and efficient manner, and at the rates and frequency prescribed by such buyer’s country?” He also questions the process by which a country can properly and quantitatively assess the real, or actual medium and long-term value and costs of projects proposed as offsets, as well as the reforms necessary and actions to be undertaken to facilitate and streamline offset processes. He appears eager to understand how offset arrangements can support programmes that accelerate regional integration, or integration into the global production chains.

2.17 In a similar fashion, Martin remarks on the views of Alon Redlich and Micavage who in turn argue that offsets should be seen as an opportunity, rather than a burden. He further alleges that it presents the opportunity for cooperation rather than adversarial opposition and that offsets can indeed be beneficial to both the seller and the buyer. Offsets should be viewed as an extension of industrial policy and not always aim at increasing domestically manufactured goods, as a country’s industrial base may be too small to absorb such work.

2.18 Dr C.G. Alexandrides (a Professor Emeritus of management at the USA Georgia State University) on the other hand states that the most obvious reason for the increasing strictness of offset requirements is that the buying countries have the power and can therefore make demands. Direct offsets are reportedly much easier to quantify than indirect offsets. He states that direct offsets do not require strict regulations because the economic outcomes remain very predictable. On the indirect offsets side, the risks are much higher as investors in non-defence sectors are required to set up non-core related commercial business and the outcomes are almost impossible to predict. Government, therefore, has little choice but to protect

itself by introducing strict terms and conditions related to the execution of the offset commitments. Alexandrides propagates the use of more indirect offsets as a way to balance the respective countries’ (buyer and seller alike) economy, and improve shrinking defence budgets.

2.19 R. Mirus and B. Yeung\(^{38}\) support the view that countries with foreign exchange constraints tend to resort to countertrade in order to “guarantee that future exports will generate” foreign exchange earnings. Countertrade is used as a “substitute for an absent futures market” and still used as a means to also diversify exports.

3. Types of countertrade

The following types of countertrade activities are found internationally and can basically be divided into three broad categories of commercial compensation, industrial participation and a third category that falls outside of the first two sectors, which is termed as “Other”:

Note: This diagram as devised by the author in 1997/8 is much more comprehensive than the model proposed by M. Brenan at Figure 5 above.

What follows hereunder is a broad description of some of the various components of the model depicted above, as applied in practice, and explained in more detail specifically by Coetzer\textsuperscript{39} (there are numerous other academic works and literature available on this subject matter):

3.1 \textbf{Barter}

This type of import/export transaction covers the direct exchange of commodity-for-commodity of equal value, where no cash is involved. In this form of countertrade, the export of goods and services is often delayed until sufficient revenue has been earned from the sale of the so-bartered commodity. A country’s clearing bank assumes the role of representative of both the seller and the buyer, based of the barter transaction that results in goods being exported or imported. Sometimes barter is used as a mechanism of trade if the buyer is either reluctant, or unable to

pay for the goods in terms of the original agreed agreement. It is reportedly mostly cash strapped countries that opt for this mechanism.

3.2 Evidence accounts
Evidence accounts look at cumulative export/import dollar value turnovers within a specific period – mostly between one and three years – and the key requirement is to balance the export of goods to the import of goods between two specific countries. This is true for large government-to-government bilateral agreements that involve multinational corporations, or traders with extensive ongoing export/import business activity in their specialised areas, with trading partners in specific countries.

The monetary value of such accounts is balanced by the participating enterprises of the two trading partner countries, within an agreed period of time – generally up to three years – either by payment of cash, or by goods. The evidence accounts are maintained by the reserve (central) banks in the trading partners’ countries, or by commercial banks designated by the central banks of the respective countries.

3.3 Build-Operate-Transfer (BOT)
BOT projects normally manifest in major infrastructure turnkey projects in power, toll-roads and the transport sectors. These sectors are ideally suited for this kind of deals and normally involve a consortium of foreign investors and suppliers, with local partnerships in the making. They then ‘build’ the project, and operate it for profit over a pre-agreed number of years. Turnkey contracts lower exchange risks by shifting the risk from the buyer, to the seller.\(^40\) All revenues generated from the project are used by the consortium to pay the suppliers of the machinery, equipment and services, as well as servicing the payment of any debts. After the end of the term of the contract period, the ownership of the project is transferred to a local concern, generally a local or state government body (or a combination).

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As a general practice, one of the members of the consortium is always a government body that will ultimately take over the project from the private BOT consortium at the end of the fixed term.

Other variations of this method include BOOT (build, operate, own and transfer) or BOO (build, operate and own) or even BLT (build, lease and transfer). In each instance the contracting model, duration and terms differ. Implementation inevitably takes a couple of years and return on investment (ROI) happens over a longer period. Programmes of this nature may also include aspects related to Private Financed Investments (PFI), as well as Public Private Partnerships (PPP’s).

Example:
Morocco, for example, invited tenders during 1996 for a BOT-type project, involving the building of a motorway of 100 km between Cassablanca and El-Jadida.

3.4 Buy-back
This form of countertrade tends to be long-term and for larger financial transactions. Under its provisions, a supplier of capital goods agrees to reimburse the investor, partially or in full, sometime in the future, from the resulting output of the capital goods exported to a country, including its own.

Several parties are involved in a buy-back transaction and it normally involves investments (in the form of equity, capital equipment, loans, management and infrastructure support and technology transfer). The supplier of the machinery and equipment needs to finance the acquisition; a broker may be involved in the country importing the goods; the importer, in need of the equipment, will plan to install the machinery; purchase the raw material, including local contents; schedule production; while the production output may be transported directly by the supplier, or sold through a broker in a third country. Bankers act as trustees of the fund until the final
payment is made to the supplier. The implementation of the deal can take a couple of years.

**Example**

In general, ‘buy-back’ deals are opted for when a production facility is established, upgraded or modernised in a developing country, with the import of new equipment (capital investment) happening in terms of joint ventures, technology transfer or production sharing. In this instance, the one country sells a chemical plant to the buyer country and separate agreements are concluded to buy-back a percentage of the plant’s production over a negotiated period of time.

3.5 **Co-production**

Co-production is used mostly by oil-producing countries. Due to the size and overall impact of such a project, there is, however, a limited number of major multinational oil and gas companies that can take part in ventures of this nature. Downstream petrochemical activities are fairly lucrative and primary industry beneficiation can be secured through co-production.

An oil and gas company, for example, can enter into a joint venture agreement with a government of a developing country to search for oil or gas reserves, and to explore and to produce oil and gas, either onshore or offshore. The oil and gas company makes the total investment in exchange for certain rights, which are limited to the number of years it is involved in the joint venture deal. Oil and gas thus produced, is shared in accordance with the agreement between the parties, and sold on the global, or local market. This inevitably poses risks, but also profit-sharing aspect, and may take some time to fully develop into a profitable business.

As stated in par 2.15 above, the trend is for oil-producing countries to move away from the traditional approach, focusing on downstream value-add related to beneficiation activities.
3.6 **Blocked funds**

Blocked funds constitute a monetary process posing very strict fiscal controls, where the Central Bank of a country will not allow repatriation because that country is short of hard currency. Blocked funds are generated when a foreign manufacturer operating in a country, cannot transfer his earnings, capital and/or profits to his own country of origin. This situation reportedly appears to be prevalent in most of the Latin American countries, and countries with small and slow moving economies. It normally involves large sums and is a form of countertrade where the borrowing country pays money into funds that are transferred to a bank of the borrowing country. Banks, brokers, traders and industries use various methods, usually at large discounts, within a country’s foreign exchange regulations, to repatriate the funds and lower a country’s external debt.

Commercial banks provide some compensatory benefits to all parties, including the reduction of external debt of a country. The involvement of government and the Central Bank in these deals, is inevitable, but parties have to work through a lot of red tape and manage processes instituted by bureaucracies.

3.7 **Counter-purchase**

Counter-purchase agreements take various forms to suit the needs of the exporter of capital goods. The exporter needs to market the goods and services received, and as a condition of the sale, in a separate contract, accepts to purchase for cash, or on credit, goods and/or services from the country in which it is selling the goods. The value of the counter-purchase can be less than, equal to, or higher than the original export order. Counter-purchase may specify the markets in which the received goods may be sold, it may carry penalties for non-performance, as well as other rigid conditions. This form of countertrade can deliver results fairly quickly and is reportedly one of the more favoured and profitable avenues. It is also referred to as commodity trade deals. It can, however, be a very restrictive process if the buyer country is too prescriptive about the types of commodities that will qualify.
3.8 Joint ventures

Companies in industrial countries lure local companies to become part of joint ventures, offering them full participation in all aspects of commercial activity, including the financing process. Joint ventures can involve two or more parties in a related industrial sector. In most countries, joint ventures are considered to be private contracts between one or more parties, specifying the role of each party within such venture, stipulating objectives, liabilities, management and risks. Certain countries require that citizens of that country hold equity positions, with laws specifying that the majority equity in the joint venture will be in the hands of local citizens. In most countries, 100% foreign ownership is allowed. It is reported that Kuwait uses to restrict foreign ownership to only 35%, but indications are that it may consider lifting this restriction. The UAE still has a requirement of at least 51% UAE ownership in any offset enterprise (or other business), although, lately there some relaxations have been announced for the export processing zones (EPZ).

Joint ventures should ideally be separate legal entities, based in the country in which the joint venture activity is performed. It is essential that one fully comprehends the commercial financial (mercantile) laws of such base country. A joint venture may take some time to deliver the desired results. If a foreign party, however, takes a stake in a running concern, it can contribute to the internationalisation and credibility of local companies, strengthening their export position.

3.9 Offset

Offsets are part and parcel of government-to-government sales of defence equipment, infrastructure projects; and/or high-price-tag technology related to manufactured goods, such as civil aircraft, telecommunications and power generation. Offset stipulates respective requirements for direct and indirect offset.

3.9.1 Direct offset

Under direct offset, the seller is required to include locally-produced content in the products it is selling to the buying country/company. In some cases, technology will
be transferred and/or joint ventures established to manufacture a product and/or to build a production facility to produce sections of the final product that is then sold to the country in question. Direct offset, in general, is used when civil aircraft and defence equipment are sold to a country, and aligns with the industrial development goals of a country. Some countries are using this kind of offset to secure business for its indigenous defence industries (such as Canada, Australia, the UK, Nordic countries and South Africa, to name a few).

Governments insisting on ‘local content’ in defence contracts must, however, ensure that there is a proper defence-industrialised base exists, and should offer preferential procurement incentive schemes to ensure the long-term viability and sustainability of the business so acquired.

<table>
<thead>
<tr>
<th>Example:</th>
</tr>
</thead>
<tbody>
<tr>
<td>In the case of South Africa, the defence industrial participation programme requires at least a 50% of the full amount of the purchase cost of equipment imported from foreign suppliers. DIP is thus required when foreign exchange is leaving the buyer’s country. A foreign seller must effectively ensure that activities related to the sale are assigned to South African companies. This return (reciprocal) business takes on various commercial forms, such as:</td>
</tr>
<tr>
<td>- orders for the manufacturing of parts or components</td>
</tr>
<tr>
<td>- orders for various other forms of work on test, integration, qualification and certification</td>
</tr>
<tr>
<td>- orders for the export of manufactured goods</td>
</tr>
<tr>
<td>- foreign investments in existing or new businesses (this includes tooling and machinery)</td>
</tr>
<tr>
<td>- training and the transferring of skills, know-how and technology.</td>
</tr>
</tbody>
</table>

Denel has been actively involved in this approach in the past five years after it has been nominated as a beneficiary under the Armscor DIP programme that resulted from the Strategic Defence Package deal. [More details in Chapter 7].

3.9.2 **Indirect offset**

*Indirect* offset can be part of the defence and/or civil industrial sectors and basically contains the same type of work-share as required in direct offset, with the main difference relating to the export of the end-product.
In the case of indirect offset, the buyer (country or company) requires the seller to undertake economic, industrial and social development projects, approved by the buyer. The ratio of these projects, in general, is dependent on the policies of the relevant country. South Africa poses a unique situation in the sense that it has an indirect requirement under both its DIP programme and its civilian, or non-defence industrial participation (NIP) programme.

<table>
<thead>
<tr>
<th>Example</th>
</tr>
</thead>
<tbody>
<tr>
<td>Typical examples of indirect defence offsets in South Africa include:</td>
</tr>
<tr>
<td>- the selling of brass parts for ammunition</td>
</tr>
<tr>
<td>- commercial aircraft parts.</td>
</tr>
</tbody>
</table>

| Typical examples of indirect civil offsets include the export of: |
| - processed wood chips |
| - fabricated gold chains. |

3.10 **Trade-offs**

Trade-off transactions are normally restricted to the swapping of credits in one country, in exchange for credits in another country. These types of transactions (also referred to as waivers, abatements or swaps) involve the exchange of offset obligations in those industries supplying defence equipment to the defence forces of such countries. The obligation and the swap have to take place within the same time period. Such a swap, however, requires specific agreements between the obligated companies and the relevant government authorities in each country. During the past six years, Armscor has assisted the local DRI in concluding relevant agreements in numerous such transactions.\(^{41}\)

\(^{41}\) *The Author* was personally involved in setting up and concluding several swap deals to the value of several hundred millions of Rands over the past seven years in the interest of several companies.
3.11 Technology transfer

Technology transfer is a common practice related primarily to offsets in many countries, and mostly when an importing country wants to develop, expand, or enhance its own industrial capabilities. Activities may include the transfer of patents, licenses, industrial processes, and machinery and equipment not available in the importing country. The valuation of technology remains problematic, as the establishment cost of the developer cannot always be fully discounted in the sale amount. The eventual value and intrinsic nature of such technology being transferred, pose many questions. Many countries, therefore, resort to upfront multipliers. Martin states that technology transfers are a common form of offset and that many countries use it as a mechanism to increase the sophistication of their industries. However, the chances of any beneficiaries, or recipients of such technologies to exploit such transfers become highly debatable. According to Martin the neoclassical economic theory stresses the advantages of exchanging money for goods in a conventional manner. However, high-tech transactions (for example the aerospace) are characterised by oligopolitic distortions and industrial policies (through the application of offsets) and used as a second-best outcome in an attempt to justify ‘economic rent’ generated in such imperfect markets.

3.12 Tolling

Tolling is a form of countertrade that sees a seller exporting the raw materials to a factory in a developing country, using its spare, or unused capacity to produce the finished goods. The factory supplies the finished goods to its customers, who pay the seller in cash for the raw materials supplied. The supplier in such instances, retains ownership of the raw materials so supplied, as well as the finished goods,
until the supplier receives payment from the factory’s customer(s). Tolling is used in cases where raw material shortages keep a factory from supplying goods to its customers. These occur mainly in countries facing hard currency shortages, including most of the Post-Soviet republics, Georgia, Belarus and the Ukraine in particular.

3.13 **Switch trading**

Switch trading is evident in third-party trading. If a country shows a disparity in its long-term bilateral trading agreements, switch trading is used to balance an ambiguous surplus (also see evidence accounts). These transactions, also known in the trade as a 'swaps' or 'switches', typically involve the switching of the destination and the documentation of goods on the high seas, influencing different markets, and many buyers, sellers and brokers.

**Example:**

An un-cleared trade surplus between Country A and Country B can be cleared by the sale of goods by Country B to Country C. Country C pays Country A to clear the imbalance in export/import trade between Country A and B.

3.14 **Pre-offset**

Pre-offset, also called a banking arrangement, involves a process where a foreign supplier, who is of the opinion that it may be successful in securing a supply contract for its country, decides to do business in another country on a pro-active basis. The company enters into a ‘strategic partnership agreement’ (or pre-offset agreement) with the countertrade authorities of the other country.

In terms of this agreement the prospective supplier may start doing ‘indirect’ business in the other country, with the understanding that the credits so acquired can be used, at a later stage, to offset its commitment. In the event that the prospective supplier is not successful in acquiring future business, and cannot apply the credits gained, it may transfer the accumulated credits to another supplier. The process allows a country to start doing business in another country before a defence
contracts is awarded (which may take quite some time due to defence budgetary cycles). In most instances, pre-offset credits accumulated have a limited shelf life - this also varies from country to country.

In South Africa, Armscor concludes a ‘pro-active DIP agreement’ with a potential foreign supplier, even before a Department of Defence contract has been awarded. Such an agreement allows such potential foreign suppliers to start doing defence-related business in South Africa, with DRI companies, pro-actively, banking such credits for future use. DIP banked credits can be traded, with the prior approval of Armscor, and credits are only valid for four years. The DTI’s Strategic Partnership Agreement’ (SPA) allows for the banking of credits in non-defence sectors. Credits can, however, not being traded and also expire in four years.

3.15 Economic enhancement

The concept of economic enhancement, (claimed to be pioneered by Summit42) in Libya, for example, specifically aims to derive the maximum benefit from the enormous leverage that the buyer has over potential suppliers involved in the procurement process of large government contracts. The additional value created as a result of implementing economic enhancement policies, is to be closely aligned with existing government objectives, and yet, at the same time, derives benefit from capabilities, expertise and contacts that the supplier is able to provide.

Economic enhancement can be described as the next logical step in the evolutionary countertrade development process, as it makes a transition from barter, to counter-purchase, to indirect offsets. There are some core principles that must be acknowledged in understanding the concept:

42 Author’s note: Founded in 1998 by Grant Rogan, Summit Corporate Services, UK specializes in using its experience and expertise in Economic Enhancement, offset and countertrade to develop structured programmes and provide first class consultancy services to governments, corporations and companies throughout the world.
• The concept is not confined to defence or aerospace contracts, as it can be applied to any large contract through which the state is procuring something;

• Economic enhancement forges partnerships between buyers and sellers, exploring avenues whereby the seller’s resources can best be harnessed to contribute to the achievement of existing strategic national objectives;

• It can be put into practice by integrating traditional countertrade mechanisms (such as counter-purchase, direct and indirect offset) with a broad range of financial tools (such as PFI, PPP, BOT), in order to generate sufficient funds for any chosen programme, reducing bulk expenditure by the client, or nominated parties. Economic enhancement should work to further the national socio-economic and geo-political objectives of the client country.

In order to ensure the maximum potential of economic enhancement, it is essential that it should be enshrined in a country’s legislation, and regulated by a legally recognised oversight agency, offering openness and transparency to all potential suppliers.

3.16 Considering offsets in the USA, it was reported\textsuperscript{43} that an Interagency Team from the US Department of Commerce consulted with authorities in Canada, Denmark, France, Germany, India, Italy, the Netherlands, South Korea, Spain, Sweden and the UK. The team’s report states that many nations believe that the USA is practicing offsets through its ‘Buy American Act’, and that the US market is perceived to be closed to foreign competition. The Interagency Team estimates that offsets may increase the price of equipment by as much as 15% to 30%. No evidence is, however, presented to substantiate these estimates. The team states that offsets are not only persistent, but are also increasing. US prime contractors view offsets as an indispensable business tool. In its report the team recommends maximum flexibility and suggests that the European Union (EU) should develop, in collaboration with the World Trade Organisation (WTO), an internationally agreed

\textsuperscript{43} Countertrade & Offset. Vol XXV No 4. Feb 26, 2007. Available at: www.cto-offset.com
model for offset, ensuring that the value baseline takes the value of contracts and capacities of suppliers into account.

4. **Considering a practical approach to countertrade requirements**

Based on the author’s personal experience in this field, it can be confirmed that more and more countries require foreign sellers to substantiate proposed countertrade solutions already at the tendering stage. In many instances, such pre-qualifying requirements form part of the tender adjudication value systems, with non-compliance normally leading to disqualification.

The countertrade proposal must be in the format dictated by the tender and comply strictly with the terms of the tender. Caution needs to be exercised as to whom the proposal is addressed to, as it can be rejected if not addressed to the proper authority and/or not copied to designated authorities, or departments.

The ‘countertrade tender checklist’ is a handy tool to verify one’s compliance with aspects such as:

- Countertrade ratios, macro-multipliers, micro-multipliers and country rules and regulations pertaining to these and other intrinsic benefits;
- Confirming already-negotiated agreement(s) and the terms related to pre-offsets, back-to-back agreements, and other agreements supporting the bid;
- Direct or indirect activities (through brokers and 3rd parties) and required ratios, minimum and maximum requirements, restrictions and exclusions, or inclusions of strategic needs requirements;
- Reporting schedules, officially prescribed formats and scheduling, and the target audience;

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44 **Author’s note:** Tenders are legally binding documents, and once accepted by the buyer country, one cannot renege on promises made. Buyer countries are therefore very prescriptive in especially the countertrade part of the tender, where terms such as “… we will endeavor to…”; or “best effort” or any other word/phrase that does not constitute a firm irrevocable commitment, are regarded with the utmost suspicion.
- Credits and credit accumulations, recommended methods, formats and scheduling, and applicable rules;
- Local content – very clear understandings need to be reached, and limitations analysed;
- Imported content – restrictions, rules, calculation, proof required;
- Licenses – restrictions and royalties;
- Training, skills and support plan and the prioritised areas;
- The recommendations pertaining to education, including disciplines, methods and trainer profiles;
- Payments – when, how, where, against what proof;
- Performance guarantees, the amounts and release formats;
- Insurance provisions;
- Legal regulations, conditions and order of precedence, if applicable;
- Completion period, negotiation period, credit model and conditions concerning discharge to be included in the legal countertrade contract;
- Management of the commitment, the organisation chart and roles of people key players; and
- the compilation of a detailed, executive summary, including conclusions.

5. **WTO (World Trade Organisation) issues, related to the subject of countertrade**

5.1 According to the WTO analysis done by S.K. Treahan, editor of News World’s Red Book (1999 –2000 edition), the WTO Agreement on countertrade applies to any law, regulation, procedure or practice regulating the government procurements of any WTO member country, with exceptions as identified in its Appendix I (Annex 1 to Annex 5). Relevant thresholds are specified for each country in the relevant country’s Annexure to the WTO Agreement. Such an Annexure may have been filed at the time the country’s government ratified the agreement, and/or may be filed as part of an agreement with the WTO concluded the future. The following salient features of the WTO are highlighted by Treahan’s reviews.
5.2 The WTO agreement applies to procurements by any contractual means, including a purchase, or as lease, rental, or hire purchase, with or without an option to buy, for any combination of products and services.

5.3 Where entities, in the context of procurements covered under the WTO agreement, require enterprises that are not included in its Appendix I to award contracts in accordance with particular requirements, Article III of the WTO agreement applies mutatis mutandis to such requirements.

5.4 The WTO agreement applies to any procurement of a value equal to, or exceeding the relevant threshold specified in its Appendix I of the agreement.

5.5 One of the key articles in the WTO agreement, is Article V that relates to developing countries.

5.5.1 Objectives of Article V state that - “Parties shall, in the implementation and administration of the WTO agreement, through the provisions set out in this article, duly take into account the development, financial and trade needs of developing countries, in particular least-developed countries, in their need to:

i. Safeguard their balance-of-payments position and ensure a level of reserves adequate for the implementation of programmes of economic development;

ii. Promote the establishment, or development of domestic industries, including the development of small-scale and cottage industries in rural or backward areas; and economic development of other sectors of the economy;

iii. Support industrial units that are wholly, or substantially dependent on government procurement";
iv. Encourage economic development through regional, or global arrangements among developing countries presented to the Ministerial Conference of the WTO, and approved by the conference.”

Treahan states that consistently, with the provisions of the agreement, each party (country) has to, in the preparation and application of laws, regulations and procedures affecting government procurement, facilitate increased imports from developing countries, bearing in mind the problems that least-developed countries and countries at low stages of economic development experience. To ensure that developing countries are able to adhere to this agreement and that the terms are consistent with their development, financial and trade needs, the objectives listed in the paragraph 1 of Article V need to be duly taken into account in the course of negotiating procurement contracts in developing countries. When developed countries prepare their coverage lists (these are lists indicating products and services) as per the provisions of the WTO agreement, they need to endeavour to include entities that will deliver products and services that developing countries can export.

Treahan points to the fact that a party that is a developing country may modify its coverage lists in accordance with the provisions for modification of such lists, contained in paragraph 6 of Article XXIV, as long as attention is given to the development, financial and trade needs of such countries. Such countries may request the committee in charge of government procurement (the Committee) to grant exclusions from the rules on national treatment, for certain entities, products or services that are included in its coverage lists. A developing country may also request the Committee to grant exclusions for certain entities, products or services that are included in its coverage lists in the light of its participation in regional or global arrangements among developing countries, having regard for the particular circumstances of each case.
5.5.2 Treahan also analyses Article XVI and concludes that the WTO’s guidelines on offsets are contradictory. In Article XVI (1) on offsets, the WTO, for example, states that the “entities shall not… impose, seek or consider offsets”, but in part (2) it allows offsets to be “used only for qualification to participate in the procurement process…” Treahan points to the contents of Article XVI, which read as follows:

“Part 1: Entities shall not, in the qualification and selection of suppliers, products or services, or in the evaluation of tenders and award of contract, impose seek or consider offsets.

(Offsets in government procurement are measures, according to the WTO, used to encourage local development, or improve the balance-of-payments accounts by means of domestic content, licensing of technology, investment requirements, countertrade or similar requirements.)

Part 2: Nevertheless, regarding general policy considerations, including those relating to development, a developing country may at the time of agreement negotiate conditions for the use of offsets, such as requirements for the incorporation of domestic content. Such requirements shall be used only to qualify participation in the procurement process, and not as a criterion for awarding contracts. Conditions shall be objective, clearly defined and non-discriminatory. They shall be set forth in the country’s Appendix I and may include precise limitations on the imposition of offsets in any contract subject to this agreement. The existence of such conditions shall be notified to the Committee and included in the notice of intended procurement and other documentation.”

In concluding the debate on the WTO’s stance on offsets, it is Treahan’s view that the WTO permits countertrade. According to his Red Book (1999 – 2000 edition) the
WTO agreement permits countertrade when taking into account the development, financial and trade needs of developing countries, in particular least-developed countries, in safeguarding their ‘balance-of-payments’, “to promote the establishment or development of domestic industries”, and to encourage “economic development through regional or global arrangements among developing countries”.

6. **Penalties and countertrade**

- **Liquidated damages**

  In most countertrade regimes a contractual requirement for the seller, who becomes the obligor, is to submit a guarantee for liquidated damages, which is commonly referred to as a non-performance penalty.

  Penalties vary considerably, from a low five percent to a hefty one hundred percent.

  Certain countries do not accept liquidated damages, but only penalties. In some cases, however, a penalty does not release the obligor of its obligation. In the case of Turkey, for example, any unfulfilled obligation rolls over to the next discharge milestone, with an added escalation portion (normally based on the escalation formula as contained in the main agreement).

- **Blacklisting**

  Some countries, although not always publicly acknowledged, resort to the blacklisting of non-performing sellers (obligors), which means that even and although such a seller (obligor) may have opted for a penalty as a ‘walk away liquidated damages settlement’, the non-performing party is forever blacklisted as a non-credible supplier of that market. The reputational impact of such actions on such a company’s business is incalculable.

- **Best effort obligations**
In contrast to the concept of penalties and liquidated damages, this type of performance model relies solely on the morals and goodwill of companies/seller and its governments. Although the obligation is a firm and contractually agreed-to commitment, it holds no legal impact to the seller in the event of non-performance. However, due to the ‘reputation of offsets there are not many countries that allow best effort discharge, and at this stage it is probably only the UK and Israel following this practice, with a country like Pakistan expecting ‘voluntary participation’.

Without any legal and binding document stipulating the obligation and with no recourse, obligated companies/sellers tend to attend to such obligations on an incidental basis and very little time and resources are in fact allocated and spent on any active execution programmes. Resources, time, effort and money are required to discharge obligations that pose a business risk to the obligor.

7. **Multipliers**

In an article on “International offsets: An international trade development tool”, written by K. Barry Marvel in 1995, he alludes to the common perception (even then) that “…the world of offsets somehow seems mysterious and dangerous”. He poses the following question, asking why a company will, for example, commit to offsets of say USD120-million, while the actual sales transaction with that country only amounts to USD100-million. The answer hereto is allegedly to be found in the application of so-called multipliers. Multiplying practices are used as a means of attracting countertrade activities into specific industrial or social or socio-economic sectors in a country, or to attend to the development needs of such a country.

Multipliers are usually negotiated when a sales deal is concluded, and in most instances these multipliers have an arbitrary value – sometimes prescribed by a country’s countertrade policies, or otherwise set after negotiation, after the seller has been made aware of certain strategic, or niche requirements of the buyer country.

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45 Marvel, K.B. Contract Management October 1995. USA. Marvel is an attorney at law. Salt Lake City and a defence analyst and consultant.
Multipliers are commonly allowed in areas of foreign investment, training and technology, as well research and development – especially in identified areas of a country’s industrial and technology base.

Marvel also remarks that the “large values of offset commitments published internationally” make the numbers meaningless, as the effect of multipliers is not taken into consideration. However, in the case of South Africa’s strategic defence package deal of December 1999, the DIP and NIP commitments of around 340% of contract value, were negotiated and agreed to with all the respective foreign suppliers. This figure was achieved without any multipliers46.

8. **In summary**

In conclusion, it is worthwhile sharing some of the views on the future of countertrade, as expressed by Dr Pompiliu Verzariu.47 Firstly, he remarks on an observation that governments in many emerging markets are increasingly questioning the offset process and the quantitative assessment of real economic value caused by offsets. On the other hand, he expresses the opinion that defence suppliers are concerned over offsets in specific relation to a country’s abilities to actually absorb incremental offset investments in a viable and efficient manner, and at those rates prescribed by such countries’ offset requirements. He also observes the following global trends, namely that:

- Aerospace weapons-related offsets will continue to form the bulk of offset practices;
- The continuous drop in defence spending will be counter-balanced through a rise in offset demands;
- The value of offset multipliers is shrinking;
- Indirect offset is increasing;
- The accumulation of offset commitments by suppliers causes them to bid against each other’s supply chains;

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46 *The Author* was directly involved with the contracting process of the 1999 SDP.
Emerging markets are spilling offsets into the civil sectors and more stringent requirements are enforced;

Western suppliers are encountering heightened difficulties with identifying viable indirect offset projects and end up competing with independent 'cross-border business';

Buying countries are playing-off the European suppliers against the US suppliers, in order to secure more lucrative offset deals; and

Offsets tend to outweigh other (traditional) procurement criteria.

He states that the tightening and enforcing of offset conditions by governments, are increasing the cost of doing offsets, and that offsets are becoming more difficult to perform. He also comments that because US companies are "pre-eminent suppliers of defence items, they are highly vulnerable to offset demands".48 Finally, and as also observed by Martin49, there is no indication that offsets are likely to disappear in the foreseeable future and it will remain a complex and intricate challenge for all defence suppliers across the world.

9. In conclusion

Having considered all the various types and forms in which countertrade manifests in practice, it is clear that such a discipline is difficult to comment on in context and in direct relationship with what it is intended to achieve. The scholars on the subject, as can be seen in this chapter, submit a combination of positively and negatively perceived aspects of the subject matter under research. There are also cautious neutral views on the subject. It was deemed crucial for this research paper to also look at what is happening internationally and how the South African DIP programme fits into this international trade realm. This aspect is more fully argued and deliberated on, in later chapters of this dissertation.

48 Author’s note: The US Department of Commerce, is a staunch opponent of anything that remotely resembles offset and had been trying its best to “kill” offsets as a protectionist measure for their defence industry. (Similar opposing views to offset are also expressed by the UK Defence Manufacturer’s Association, also in an endeavor to protect their industry against the effects of offset and the threat of loosing work share to another country)

CHAPTER 3: RESEARCH DESIGN AND METHODOLOGY

1. Introduction

In the preparations done to conduct this research that culminated in the writing of this dissertation, due recognition was given, throughout the process, to the respective paradigms and methodologies governing social research.

On the subject of social research E. Babbie & J. Mouton\textsuperscript{50}, observes that the ability to produce knowledge and subsequently use it effectively, are some of the most important features of the modern society of today. It has become crucial to properly collect and manage information. Knowledge comes in various forms and the authors comment that one has to recognise the importance of differences between various types of knowledge, which are to be found in everyday life, as they occur and manifest in the public domain of society, compared with knowledge that is based on well-researched scientifically validated data that are empirically valid.

They see the process of research as being systematically impartial and objective and supported by qualitative and quantitative evidence or truth. “Scientific knowledge comprises statements, which are better or worse approximations of reality [TRUTH], which are accepted by the scientific community after having scrutinised these [RATIONALITY] and which are based on the best supporting evidence gained through the application of rigorous methods and techniques [OBJECTIVITY].”\textsuperscript{51}

The relationship between social science concepts and the everyday constructs (Schultz\textsuperscript{52}) leads to two methodological postulations for social science research, namely, the assumption of logical consistency and the postulate for adequacy.

\textsuperscript{51} ibid p10-13
\textsuperscript{52} ibid p29
Logical **consistency** requires theories of the social world to be coherent within the larger system of social science, whereas **adequacy** requires that such theories and interpretations of the social world be recognisable and understandable, having been the subject of observation (the research).

The research process into the identified research topic of defence industrial participation (DIP) and its effect and/or impact on the local DRI was investigated within the paradigms of social research and complemented by the author’s own participatory role (as an active participant since 1996) in the development of the DRI and industrial participation policies and process in South Africa. The author also shares his observations in this regard and assesses the outcomes of the implementation of relevant policies and processes, accordingly.

The relevancy of the social research paradigm in relation to this dissertation’s research topic, can therefore be summarised and reflected on, as in par 2 hereunder.

2. **Types of research applicable to this research**

   According to W.L. Neuman\(^53\) the following research issues need to be observed, namely that:

   a. **Basic research** tends to expand on fundamental knowledge, which in this instance focuses on “what is DIP all about?” This type of research also refers to academic research, or pure research. The researcher first states the phenomena and then describes and explains it. This type of research attempts to support, or reject *theories*, explain *social relationships*, as well as *interpreting* changes in communities, in an endeavor to enhance *new scientific ideas and* knowledge about a social phenomenon.

The basic research methodology deployed in this dissertation, relates to exploratory, descriptive and explanatory methods. This type of research is, however, often criticised for its inability to provide short-term practical solutions, but reportedly, on the other hand, it does provide for advantages in the sense of creating knowledge and understanding of the topic so researched.

Some researchers have for decades been using basic knowledge to offer solutions to problem areas, whereas other researchers cited applied knowledge to solve short-term solutions that span over several months, and not many years. This is true for the South African industrial development process – as such, a process heavily influenced by government’s policies and objectives, as more fully elaborated on in chapters 4, 5 and 6.

b. **Applied research** focuses on specific problems and immediate solutions, and not so much on the theory aspect. It adopts a descriptive approach and can thus be applied almost immediately after the research results have been obtained. This is in line with the actions taken by the defence-related industry (DRI) association, AMD, in 2005/6 and the Department of Public Enterprises (DPE), in collaboration with the Departments of Defence (DoD) and DTI in 2006/7, to effect a thorough study on the status of the DRI, with the collective view of establishing, for the first time, a DRI sector strategy to be implemented by the DTI. These findings will reportedly be tabled at Parliament in 2008\(^{54}\).

c. The main types of applied research used for the drafting of this dissertation, include:

- a process through which people, or organisations that are studied, participate in the research process itself, in the form of so-called **action research**. This type of research includes ordinary and everyday knowledge, it focuses on empowerment, it tries to foster awareness – focusing attention, it relates directly to political realities, and it can involve policy-making research. It aims at evaluating the consequences of

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\(^{54}\) *Interview with the Executive Director of AMD on 4 Dec 2007.*
social change and is usually used by government entities to set certain policy paradigms. This type of applied research is commonly used in matters pertaining to community services, social welfare, economic benefit or loss, health and/or psychological well-being of people, and matters that influence demographics and the environment.

- The process of value judgment, based on evidence, is used in two sections pertaining to the **evaluation research**, covering a wide spectrum of issues, and is being applied to the formative evaluation, using a built-in monitoring mechanism that provides continuous feedback and ensures a continuous, progressive evaluation of the progress made. Secondly, a summative evaluation, which is a reflective process, with the emphasis on outcome, i.e. evaluating the end result has been applied to this research.

- G.M. du Plooy\(^{55}\) identifies the following five different **participatory research strategies** (as per Burke, Innes, Kentridge, Perold and Stroh) and makes the observation that such participation is a means of achieving perfect democracy, while recognising the immediate problem of ‘freedom’ versus the need for control. For example
  - The educational-therapeutic strategy is aimed at citizenship training where participation is a form of therapy, used to develop individuals and/or organisations;
  - The behavior-change strategy is in turn, used to change a group’s behavior, resulting in a changed behavior of an individual as a consequence of group pressure, or conformance;
  - Supplemental employees strategy aims to solicit voluntary participation, on the assumption that employees’ participation can contribute to a specific and agreed-to, goal;

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- The co-optation strategy’s aim is to elicit participation through the election of suitable representatives who give effect to procedures and policies and decisions, in order to achieve specific goals; and
- Community empowerment strategy aims to give a group of people power and rights to exert influence and enforce decisions. This inevitably leads to confrontation, which in turn forces other levels of participation.

Du Plooy,\textsuperscript{56} however, recommends that the researcher should carefully assess any targeted entity or organisation – being the proposed subject of any particular research – to understand the nature of such entities, its sentiments, its social position, its skills and experience, as well as its values, aspirations, goals and expectations.

This process inevitably requires the participants to be representative of the research phenomenon, and to be stimulated – through a process of awareness – to become aware of a specific problem, in order for eventual recommended solutions, based on findings, to be implemented by consensus.

The research topic is normally posed as an element of a process that will bring about change in a social system, or as an awareness of a specific problem or an issue, such as the actual economic and industrial value of the South African DIP programme, and its influence on the DRI. This is to be followed by a process of research to determine the context of collective decision-making that is preceded by the dissemination of information, the creation of awareness and the sharing of information. Work groups, workshops and focus groups are established and organised with the aim of including all these participants as active research contributors. The participation of the focus group is justified by complying with the indicators gauging the level of representivity of the various members. Once the collective decision has been approved, the intent of the research is translated into a series of actions to reach a certain outcome. Communication plays a key role, as the same information needs to be shared and disseminated to all stakeholders participating, giving due cognisance to

\textsuperscript{56} ibid, p 293-303
the constraints on information posed by the defence security and company commercial restrictions.

The participatory action research process is summarised (by Du Plooy) as the participants’ collective collaboration with the researcher, in determining the actual nature of the problem, the research questions to be asked, the respondents who need to participate, how the project can be broken down into smaller tasks with short, medium and long-term objectives, what other data needs to be considered or collected, what methods needs to be used to collect data, who are the stakeholders who need to be involved, how the participants will be involved in the gathering of data, and by whom the data will be interpreted, how the responsibility for the task can be allocated to participants, an action plan be implemented, based on the findings and finally how the effectiveness of the action plan will be monitored.

Du Plooy proposes that ‘triangulation’ be used in research projects with multidisciplinary stakeholders, using both the quantitative and the qualitative research methods in a complementary manner.

“The more popular research methods used in participatory action research are focus-groups interviews, in-depth interviews and participant observation, because in the words of Bless and Higson-Smith they “acknowledge the value of the opinions and thoughts of all people”.

The research should insure that documented research findings and experiences are shared and participants are encouraged to reflect on research findings and take specific action.

E. Babbie and J. Mouton refer to a new paradigm research that involves a much closer relationship between the researcher and the researched, through a mutual activity creating co-ownership in, and shared power over, the researched product. This is also viewed as a distinctive feature of the classical action research model.
E. Babbie and J. Mouton provide several modes for distinguishing participation, as drawn from postulations by Brigss (as observed by Cornwall and Jewkes)\(^ {60} \), indicating that the people are to be contractually included as participants in a research project and then consulted by researchers before interventions are made. The parties collaborate with each other and then the researcher records his findings by working at collegiate level with the participants, through a process of mutual learning and shared control.

3. **Intervention research and the researcher as a change agent**

Du Plooy compares ‘intervention research’ with ‘applied research’, in the sense that it extends knowledge of human behavior, while finding solutions for practical problems. A concept that is central to this type of research is **change**, which can occur at various micro and macro levels of development.

Du Plooy continues by observing\(^ {61} \) that researchers in a participatory action research, should take note that their roles become unique as they simultaneously act as **change agents, team builders, facilitators, or catalysts for change**. He also provides some practical hints, concluding that participants can be meaningfully directed towards group consensus on the basis that they follow an approach towards logic argument, instead of accepting individualistic judgments and that support is only given to those solutions agreed upon. Difference of opinion is accepted as natural, positive and helpful to decision-making and participation is collective-inclusive, with conflict-reducing techniques being ensured, while changing one’s mind is avoided. This reportedly ensures that mutual trust is maintained, the process of negotiation among the participants is promoted and conflict between participants is mediated.

\(^ {60} \) ibid p 66
Participatory research action is, according to Mouton\textsuperscript{62}, the conceptualisation and mode of reasoning, which is more inductive than deductive, with an emphasis on the participants and their world-views, earmarked by the reluctance to impose any pre-set theory or explanations. The main danger lies in possible manipulations by research participants of the process, to serve their own interests.

Du Plooy recommends that there should not be a specific format for participatory research. He provides some cautionary notes on this subject, namely that researchers should, for example, observe a focus on a specific problem and do not resort to generalisation on findings, not to allow participants to become too subjectively involved, to be cautious of reactivity responses that may be triggered by the simulated research environment and aware of external influences that may impact on the research process and the participants.

4. Other research methodologies and practices used by researchers\textsuperscript{63} in a different manner are as follows:

- Researchers use various forms of statistics (either descriptive or inferential), in either describing the characteristics of a sample, or the relationship between the variables of such a sample;
- Discourse analysis involves verbal communication and dialogue;
- Ethnographic studies use qualitative research, aimed at describing and understanding different cultures and societies;
- The grounded theory principle is used, as a qualitative measure, to assume the posture of discovery, development and verification through systematic analysis of collected data pertaining to a phenomenon;
- Human behaviour is interpreted, rather than explained or predicted;

• Naturalistic evaluation occurs during the process of the qualitative research process, and is often associated with process evaluation conducted in natural settings posing open designs;

• Surveys are used as means to provide predominantly descriptive analysis of data\textsuperscript{64};

• Experimental designs represent laboratory studies of a quantitative nature, aiming at providing a causal study of a small number of cases of a highly-controlled nature\textsuperscript{65};

• Evaluation research is used as a mode of answering the question of whether any intervention (change) has been properly implemented and whether outcomes have been realised as intended, by using a combination of qualitative and statistical methods of analysis\textsuperscript{66}; and that

• Statistical modeling is aimed at providing an accurate representation of the theorised real world, through a process of abstraction (the focus here is on testing and validating underlying theoretical assumptions and hence providing for deductive analysis\textsuperscript{67}).

5. **Introduction to the terms qualitative and quantitative**

In analysing and understanding where the concepts of qualitative and quantitative paradigms fit into research methodologies, it is worthwhile noting Mouton’s views on the word methodology (Coetzee 2001), which contains two concepts, namely ‘methods’ and ‘techniques’. The higher order of abstraction is represented by ‘methods’ and complemented with various ‘clusters’ of research techniques and research instruments. At the highest level of the research complexity one finds the ‘methodology paradigm’ that includes the qualitative and quantitative paradigms.


\textsuperscript{65} ibid p155

\textsuperscript{66} ibid p 158-159

\textsuperscript{67} ibid p163
According to Du Plooy\(^{68}\) a **paradigm**, is a set of basic beliefs about how researchers view that, which they study. Babbie & Mouton\(^{69}\) state that a **paradigm** is a model for observation and understanding, shaping both what we see, and how we understand it. This term was reportedly popularised by Thomas Khun\(^{70}\) who uses it to refer to an accepted tradition and set of beliefs and values that guide research. The present paradigm on ‘offsets’ in South Africa (and elsewhere) is one of a complex intricate process of trade manipulation that is generally perceived not to work in practice.

**Quantitative** research (also referred to as positivist or empirical research) is viewed\(^{71}\) as a type of philosophical system that rejects any form of speculation and uses only factual arguments. Babbie and Mouton refer to it as a process of numerical representation and manipulation of observations for the purposes of describing and explaining the phenomenon that those observations reflect, with the emphasis on the quantification of constructs. See Table 1 as an example of this approach.

Babbie and Mouton also reflect on **qualitative** research as the non-numerical examination and interpretation of observations, for the purposes of discovering underlying meanings and patterns of relationships. The goal is one of describing and understanding, rather than explaining and predicting – see Table 2 for example. Du Plooy\(^{72}\) views qualitative research as having a common focus on the ability to interpret and construct a particular outcome – this includes aspects such as field research, interpretive research, naturalism and constructivism.

It is Cooper and Schindler’s collective view that “quality is the essential character or nature of something, with quantity being the amount. Quality is the what, where quantity is how much. Qualitative therefore refers to the meaning, the definition, or analogy, or model or metaphor characterising something, while quantitative assumes the meaning and refers to the measure of it”.

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\(^{70}\) ibid p 646
\(^{72}\) ibid p29-34
The two paradigms, although appearing as seemingly absolute opposites, are, however, used by researchers in a complementary manner. In this respect Du Plooy quotes Ehlers and Lazenby as having the opinion that it is ideal to use the concepts of qualitative and quantitative measures in conjunction with each other, which is in most instances complemented by the researcher’s intuition – as was done and applied in the drafting of this dissertation.

6. **Comparative analysis between the qualitative and quantitative paradigm**

6.1 **Quantitative paradigm**

It appears as if the phenomenon of social research quantification, which is shared through surveys and statistical analysis, occurred around the nineteenth century and manifested at that time as *positivism ideals*. The latter, in turn, was linked to aspects of behaviorism and operationism\(^\text{73}\).

They also identify a number of key themes that will be associated with the quantitative paradigm, namely that it covers an emphasis on quantification of constructs and that the researcher believes that the best, or only, measure of the phenomenon is through quantitative measurement, namely through the assignment of numbers to the perceived quality of things, which includes the role of variables in describing and analysing the phenomena, offers the control of sources to validate the research and subsequent findings, and illustrates the relationship between meta-theories, methodological paradigms and the social science phenomena in the following manner:

During the ‘40s and ‘50s interesting debates were reportedly conducted on the ontological status (the reality) of constructs, such as self-concept, intelligence and anxiety, as intervening variables in behaviorist psychology studies. This development was generally viewed as the first steps towards establishing quantitative measures in the research of human behavior, paralleled by the social research (sociology) sciences, especially at the University of Columbia in the ‘30s and ‘40s. Under the teachings of Giddings, Stouffer and Ogburn, the use of the quantitative approach was strongly propagated. It was reportedly due to the further influences of people such as Paul Lazarsfeld and Robert Lynd at Columbia, and Samuel Stouffer at Harvard, that the quantitative paradigm became the dominant research approach in the 50s and 60s.74

6.2 The qualitative paradigm

The phenomenon of qualitative research was originally dominated by the positivism approach, but eventually started to rise in importance, mainly as a result of research done in the field of anthropology. The departure point here, was that social research

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74 ibid p 50-51
was done on the premise of an ‘insider view’, which would include observational methods, such as unstructured interviews and participant observation.

Collected data would be analysed, with the emphasis on the grounded theory and other more inductive analysis, with the aim to create an understanding, rather than a prediction. In this respect, the qualitative research process adopts several approaches\(^{75}\), including in-depth interviewing, with the emphasis on process rather than outcome; participant observation, in a natural manner; a conceptualised objectivity by studying of films, videos and photos; the use of projective techniques and psychological testing; performing of actual case studies including in-depth contextual analyses. The understanding of the actions in context, rather than generalising concepts based on theoretical assumptions, is enhanced by elite, or expert interviewing, with the insider view being emphasised.

**The research process is often inductive in its approach, resulting in the generation of new hypotheses and theories.**

In the writings of Babbie & Mouton it is stated that the qualitative paradigm attempts to study a phenomenon from the ‘insider’s’ point of view – see Figure 7 in this context. The aim is to try and describe and understand, rather than to explain and predict. The emphasis is in this instance, more on methods of observation and analysis. It also includes aspects of interviewing, participant observation and the use of personal documentation, while relying on grounded theories.

The influence of the Chicago School was decisive in breaking away from the social survey practice and establishing an independent repertoire of methods for research in the sociology fraternity. In this development John Dewey\(^{76}\) was reportedly known for his pragmatic philosophies and his concerns for concrete and empirically-based findings. This reportedly led to a major methodological shift in the post '60s,

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\(^{75}\) Cooper & Schindler, 2001, p140, as well as Babbie & Mouton, 2006, p309

requiring researchers to think more systematically about the epistemological assumptions and methodological consequences of their research practices.\textsuperscript{77} Qualitative fieldwork, according to Mouton requires that extensive field notes and observations, with various other forms of data collection, be deployed in order to be able to capture the essentials of the context of such observations made in such a fashion.

Statistics as an academic discipline, dates back to at least the 17\textsuperscript{th} century, when an Englishman William Petty (1623-1687) introduced the phrase ‘political arithmetic’. Over the centuries that followed, statistics became the tool used by scientist and researchers to quantify findings. Samuel Stouffer (1900—1960)\textsuperscript{78} (supported by the teachings of Giddings) became the “champion of the quantitative paradigm”, advocating the rationale for the systematic use of statistics linking to a value-neutral and quantifying approach to a social phenomenon.

Methodology and phenomenology have traditionally been associated with the qualitative approach to research. Interpretative understanding of a researched phenomenon requires a methodology that emphasises clear observation through tools, such as open interviewing, idiographic descriptions and objective qualitative data analysis, from an ‘insider’s’ point of view.

6.3 **Comparative table**

Drawing on the analysis of Du Plooy\textsuperscript{79}, the following comparative table was found to be quite useful in explaining the differences between the two paradigms under discussion and its relevancy to the content of this dissertation on DIP and the DRI.

\textsuperscript{77} \textit{ibid.}
\textsuperscript{78} \textit{ibid} p. 53
<table>
<thead>
<tr>
<th>Quantitative approach</th>
<th>Qualitative approach</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Ontological assumptions</strong> ('the reality of')</td>
<td></td>
</tr>
<tr>
<td>Tends to be more authoritarian</td>
<td>Tends to be more participative</td>
</tr>
<tr>
<td>Access to information leads to power</td>
<td>Access to information leads to sharing of responsibilities and developing of knowledge</td>
</tr>
<tr>
<td>Perceptions are managed by selective dissemination of information</td>
<td>Information is shared on the principles of inclusivity</td>
</tr>
<tr>
<td>Authority and credibility are not questioned</td>
<td>Authority and credibility are questioned</td>
</tr>
<tr>
<td>Control is centralised</td>
<td>Control is decentralised</td>
</tr>
<tr>
<td>Tends to reduce conflict</td>
<td>Conflict is acknowledged and resolved by analysing relationships and agreed-to collaborative strategies</td>
</tr>
<tr>
<td>It tends to maintain order through prescription</td>
<td>It tends to create joint responsibilities for maintaining order</td>
</tr>
<tr>
<td><strong>Epistemological assumptions</strong> ('the knowledge of')</td>
<td></td>
</tr>
<tr>
<td>Variations are avoided</td>
<td>Variations are seen to provide opportunities for growth and are not distrusted, but instead advance dialogue in order to generate better understanding</td>
</tr>
<tr>
<td>Status quo is maintained by repetition of previous research methods</td>
<td>Renewal is sought on a continuous basis, allowing free flow of information, reformulation and retesting of previous assumptions</td>
</tr>
</tbody>
</table>
Research is done in a deterministic manner and procedures are predictable | Research is done in a consultative manner, within a flexible environment

The effectiveness of the research is measured by predictions | The effectiveness of the research is derived from interdependent observations

Research only becomes meaningful when predicted outcomes are realized | Developing interdependent relationships are more important than the predicted outcome of the research

Problem-solving is based on established procedures, policies and rules | Problem-solving is guided by participative research

The research design is thus intended to observe, predict and prescribe the research matter in quantitative terms | The research design is selected as a means to explore and interpret the research matter in a qualitative and holistic manner

Triangulation is used to combine the quantitative and qualitative approaches in research, as a method to test theoretical assumptions in more than one way, and to increase the reliability and validity of observations, analyses and findings.

### 7. In summary

All research is basically aimed at creating an understanding through the interpretation of collected data of certain phenomena in order to control and/or contain and/or accept it as it is, or otherwise to **change** it through various processes involving aspects of development, intervention, facilitation, prediction, manipulation, influencing, suggestion and/or recommended adjustment.
Based on the above statement and the teachings of Babbie & Mouton, it appears as if there is not “one neat, tidy approach” to data analysis. What was, however, very useful in context of this research on DIP, as per Figure 8 below, is the structure proposed by Renate Tesch\textsuperscript{80}, designed to link the broad spectrum of theoretical qualitative approaches to various forms of qualitative data analysis:

\begin{figure}[h]
\centering
\includegraphics[width=\textwidth]{structure_model.png}
\caption{The qualitative analysis structure model of Tesch}
\end{figure}

In conclusion, the research design focuses on a specific development phenomena, namely DIP, and its relation to the DRI. How it manifests as a development and economic tools, and the academic, industrial and economic discourse on this subject matter. The research eventually leads the reader to a full comprehension of the phenomena and how it actually manifests in real life.

\footnote{Babbie, E. and Mouton, J. 2006. The Practice of Social Research. OUP. SA edition. p 490}
CHAPTER 4: A SELECT LITERATURE AND THEORY REVIEW

1. Introduction

There has been relatively little engagement to date by scholars within the terrain of Development Studies with the burgeoning body of work on defence countertrade and offsets. Even the overlapping discipline of economics (with a neo-classical and market-oriented epistemology) has at best dealt with the subject matter in passing. Indeed, there is a need both in South Africa and internationally to provide for a more theoretically grounded approach to countertrade and offsets and their impact on the economy, especially a national defence industrial base (presuming it exists) of the country where they (countertrade) are deployed. See for example the respective academic and scholarly arguments put forward in chapters 2 and 3.

This development research chapter (4) specifically and deliberately therefore focuses on the empirical domain of development theory and draws mainly from the works of John Martinussen\textsuperscript{81}, J.K. Coetzee\textsuperscript{82}, as well as those of G.M. Meier and J.E. Rauch\textsuperscript{83}. This provides for a reference framework, and a benchmark, against which the reviews of the two specific DoD policy papers (see chapters 5 and 6) are commented on in context. Issues related mainly to industrial development, as well as various peripheral matters pertaining to a macro-economic, global growth and development nature, are reflected upon. Observations made by various independent researchers, further contribute to the formulation of opinions as expressed in the comments on the contents of each of the two respective policies and endeavours to describe \textit{in context the relevance and applicability of this research topic on defence industrial participation (DIP), in relation to development objectives, and the DRI as a key beneficiary under DIP, with government acting as a key}

\textsuperscript{82} Coetzee, J.K. et. al. 2001. Development Theory, Policy and Practice. OUP.
\textsuperscript{83} Meier, G.M. and Rauch, J.E. 2005. Leading Issues in Economic Development, OUP. Chapters i-iv
role player in leveraging the power of procurement to advance industrial (including defence), economic and socio-economic goals and objectives.

In understanding the thought processes and the external influences that reigned, during the drafting of key national policy documents, such as the South African Department of Defence’s policy on Defence Industrial Participation (May 1997)\(^\text{84}\), and the subsequent policy on the defence-related industry as contained in the Government White Paper of December 1999, it is important to view such processes against international academic and empirical research on the topic of development.

Both policies directly deal with very specific dimensions of industrial development in the South African context, and it is against this backdrop, that each one of these two policies is reviewed, considering its respective approaches, its arguments and prepositions, its contentions, observations, and finally the strategy it had in mind.

In conclusion, the author makes a call regarding the relevancy and applicability of these government policies that still regulate and directly influence the existence and prosperity of the DRI – being an integral and important part of the South Africa’s industrial base and a valuable contributor to human development, as well as to technology and economic growth. What remains fascinating is the fact that the various models and application of countertrade as it manifests itself in South Africa and elsewhere remains under-theorized by the various relevant academic disciplines, including development theory and advanced development research.

2. Development studies – the theory

John Martinussen\(^\text{85}\) is of the opinion that traditional ‘development research’ tended to take a reductionist approach to economic problems in developing countries, losing sight of other dimensions, such as social, political, geographical or cultural aspects.


He observes, however, that over the period from 1975 to 1995, an improved awareness of these dimensions became prevalent and countries started to understand better the importance of time, relationship, world-market and global societies. Increased attention was also given to non-economic issues, such as cultural and gender differentiation.

Martinussen identifies three distinct areas of development research, namely the concept, i.e. concentrating on what development is; theory, focusing on how development objectives can be chosen and be promoted; and strategy, entailing an abstract option that refers to planned actions and interventions. In the latter respect it must be noted that the structuralist theory of development maintain that developing countries should remove obstacles through substantive and coordinated state action – the ideal is to get the state to provide a huge impetus for industrialization.

The view of J.K. Coetzee et al. on industrialisation is that it is a very difficult concept to confront as it encompasses a process that is driven by rhythms and forces that no single agency or even group of agencies can control. In South Africa one of the main drivers central to the government’s policy on industrial development, is centered on an approach relating to the redistribution of wealth. Through the mechanisms of national local procurement, as well international procurements, the government uses the instrument of industrial participation as a means to create this required redistribution of wealth in South Africa, especially by means of the Broad Based Black Economic Empowerment (BBBEE) legislation introduced since 2004. The latter is a direct reflected against the theories of “dependencies”, which calls for an inevitable development of the underdeveloped (Cardoso, 1972).

It is also worth bearing in mind that the nature and form of industrialization and industrial development experienced by a particular country is conditioned by that country’s relationship to the world economy, as well as the complexity of national

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86 Ibid Pages 1 - 15
economy in question. J. Graaff and D. Venter\textsuperscript{89} drawing from Wallerstein’s theories on the world economic system define South Africa as being a “semi-peripheral country because of the latter’s exploitation by the more powerful (‘core’) countries” (e.g. Europe and USA), while in turn, South Africa is exploiting other weaker peripheral countries, especially within its sphere of dominance in sub-Saharan Africa. Due recognition is given to the fact that there are many countries “competing for position within semi-peripheral economic domain”. Accordingly it is expected that a state’s intervention in the economy is critical for creating or attempting to create favorable conditions for development. An example of such intervention is the South African Government’s self-conscious enforcement of industrial participation through the leverage of national procurement projects. Sustainable development has become a key consideration, as was already addressed in the World Commission on Environment and Development (the “Brutland report of 1987”), which propagated the kind of economic development that would meet the needs of the present generation, but not at the expense of the future generation. D.C. Korten\textsuperscript{90} for example states that the term ‘sustainable development’ stresses the essential incompatibility of economic growth in its current forms with environment-friendly development.

Industrial development and ‘sensible’ policy interventions to improve economic and industrial performance require a reflexive state and related policy elites – the kind of approach that is encapsulated in the ideal of a development state. (R. Haines. Herald article on Development State. July 2007). But even in the more successful transitional industrializing economies in the Far East have to take cognizance of the multi-layered and contradictory notion of development. Development cannot be fully experienced as a progressive shift to a more complex and competitive economy. Nor can such concepts and theories regarding development, ‘successful’ industrial development, and the strong development state, fully encapsulate the experience and future of a particular developing society.

\textsuperscript{89} ibid pages 88 - 92
According to Coetzee\textsuperscript{91} the word “development” relates to favourable change – moving from worse to better, an ongoing hand-in-hand growth and progressive process, evolving from simple to complex or advancing away from the inferior. Development is thus closely related to human well-being, requiring action plans aimed at providing the opportunity for people to become more than they are. Development inevitably manifests in the various domains of society, geography and time, which impacts and cause a constant review of the dynamics of development. (“A continuous affirmation of meaning”\textsuperscript{92}). In a similar fashion Nederveen Pieterse\textsuperscript{93} states that human development, while it endorses some of the principles as popular development, remains a state-centred, top-down social engineering, in which the state plays the role of the main agent for implementing human development policies and actions.

Jurgen Habernas (as quoted by Norma Romm)\textsuperscript{94}, expresses the opinion that development involves a continuous process of social dialogue, in an effort to reach consensual understanding\textsuperscript{95}. Thus government has to engage more honestly with intellectual criticism of its current industrial policies and practices and seek to promote development in a more open-minded and modern fashion. Johan Graaff\textsuperscript{96} views on ‘functionalist thinking’ can for example be associated with the process that led to the creation of the policy paper on the DRI, accepting however that no single development theory can really provide for a comprehensive understanding of how states operate and how well they will do in achieving their transformation objectives\textsuperscript{97}. In the latter respect it is clear that government policies are too often overly positivistic and technicist, as well as too derivative of models from advanced capitalist societies. Thus the DRI policy paper could have gone through a more interactive process taking greater cognizance of seemingly dissident points of view.

\textsuperscript{91} Coetzee, J.K. et. al. 2001. Development Theory, Policy and Practice. OUP - p119
\textsuperscript{92} ibid p123
\textsuperscript{94} ibid p152
\textsuperscript{95} ibid p150 (Author\textsuperscript{'}s note: It is in this above respect that the White Paper on the DRI was put through a structured process that aimed to derive at exactly this proposed and desired result.)
\textsuperscript{96} ibid p152
\textsuperscript{97} ibid p191
There are also strong indications that changing environments and circumstances necessitate a review of the types of development approaches to be considered, for e.g. Ben Fine and Vishnu Padayachee’s views\textsuperscript{98} that the South African government’s Growth Economy and Redistribution (GEAR) strategy failed and that a return to a Keynesian\textsuperscript{99} approach may be necessary. The latter is also the author’s view as would be seen from chapter 8.

However global economic recession and declining commodity prices and mounting third world debt contribute to a declining Keynesian influence and cause a resurgence in neo-classical economic discourse. Neo-liberalism or market liberalism became dominant in development theories and contributed to the views on regulation as more fully discussed in the next section.

3. The regulatory approach

Countertrade inevitably leads to a broad based outcome through a well structured interdependency of the two primary concepts of economics and industrialization, while it also embraces the concept of globalization\textsuperscript{100} and contributing in one form or the other to other/specific socio-economic aims and goals of nations. Government intervention is however a prerequisite, which within the regulatory approach (Aglietta, Lipietz and Boyer,)\textsuperscript{101} is seen to govern this process to a large extent.

The “Regime of Accumulation”, of M. Aglietta\textsuperscript{102} (one of the doyens of the contemporary regulationist school) represents a specific and time bound system, which assures the correspondence of production and consumption in a phase of capitalism. It refers to a set of institutional patterns that serve to contain and limit the contradictions and conflicts inherent to the capitalistic mode of production. The

\textsuperscript{98} ibid p192

\textsuperscript{99} ibid p105

\textsuperscript{100} www.moital.gov.il - General info on the Israeli industrial cooperation programme.


concept depicts the development of capitalism as a non-linear, non-evolutionary and discontinuous process. It is further associated with a competitive mode of regulation through means of state protectionism measures to ensure its industry’s participation in an open market domain. This regime however remains constrained by market competitive forces, despite any government’s protectionist measures, as at the end of the day economics prevail – in other word such business will still have to make business sense. This is specifically observable (as per the DIP findings of chapter 8) in the real application and use of the various forms of countertrade, especially when it comes to co-production, works share and exports. Whereas Gilton Klerck\textsuperscript{103} in conclusion holds the opinion that it is “a theoretically grounded alternative to economic determinist, functionalist and teleological concepts of development...is a highly complex, socially mediated, uneven inherently unstable process that defies simple explanation.” Also in this respect “a mode of regulation (as per the views of Gilton Klerk\textsuperscript{104}, quoting Aglietta and Gramci) can for example be interpreted as the 'sectoral development' or industrial clusters approach, as found also in South Africa.

Martin for example observes that the use of industrial policy is aimed at an attempt to capture some economic rent caused by imperfect markets. He views a competitive economy as one that could attract new entrants to economic rent through the utilization of steep learning curves within industries that are already important trading sectors. In the case of South Africa, the defence-related industry had been involved in the export market since the early eighties and such had moved to a large extend beyond the learning curve. Yet under the Strategic Defence Package Deal (Dec '99) the local industry, both defence and non-defence, realized (with some shock) that without a reciprocal investment from own resources towards non-recurring cost it was very difficult (to impossible) to accept export orders. The latter orders were normally placed in small quantities as a trial run to ensure that local industry could meet production targets and standards.\textsuperscript{105}

\textsuperscript{103} Haines, R.. and Bradshaw, G. Course outllining for Development Change and Conflict. SDS508. Masters in Conflict, Transformation and Management. Nelson Mandela Metropolitan University. 2006.

\textsuperscript{104} Coetzee, J.K. et. al. 2001. Development Theory, Policy and Practice. OUP - ibid page 107

\textsuperscript{105} These findings and views are incidentally concurrent with the findings and experience of the Author.
Countertrade is thus closely related to the construct of development (Coetzee). His statement needs to be viewed against the complexities of Figure 6 to fully comprehend the macro and micro environments in which countertrade manifests itself. Rather than seeing the conception and implementation of countertrade as the play of market forces, one needs to see it as both conditioning and conditioned by development discourses and practices. And it is usefully seen “in the context of the outcome which is the collective of a number of complex uneven processes of struggles and alliances of many different social forces happening simultaneously on many different terrains, as for example propagated in theories of Gilton Klerck.

Countertrade involves both an economic and development process, which is subjected to the full circuit of capital expenditure with its respective phases of planning, budgeting, to development, to production, distribution and consumption. This is also the case, in the context of defence acquisition and procurement, although a number of additional processes may be possible, for example a very high levels of testing, evaluation and certification before any piece of equipment is taken into operational service.

Very similar to Coetzee’s (again quoting from Gilton Clerck) notion of the phenomena of in-equal capacities of the various different capitalists nations to either self generate or otherwise assimilate new “techno-economic systems” within the same forces in time and space, occurs in the practice of countertrade. Thus when a nation decides to buy imported equipment, instead of investing huge amounts of money to develop and manufacture it themselves, due consideration is given to the use of countertrade mechanisms to semi-counter the impact on their local industry.

The author is therefore of the opinion that countertrade as a means of development can also be viewed as a part of a mode of regulation, which by itself can be associated with experienced or perceived crisis in any given capitalist economy. Three distinct forms of crisis have been identified by Coetzee, these are
• the micro crisis – affects individual units and exist in all the forms of accumulation and regulation. Such crisis is resolved by “man intervention’;
• secondly - the conjectural or minor crisis are symptoms of a cyclical downturn in the economy and are manifested in the reverse of business indicators (for example the Stock Market). This according to Coetzee can usually be resolved within the ambit of a particular regime and mode of regulation to “re-establish the unity of the circuit”, and
• thirdly - structural or major crisis is an indication of a mode of regulation no longer suitable to a regime of accumulation (a) outdated forms of regulation constrains new regimes or (b) the development potential of a regime of accumulation is exhausted, given corrective mechanisms of regulation. This need proper corrective mechanism of regulation to be introduced and supported by a complementary mode of regulation.

Briefly in summation (as reflected in the respective works of Aglietta, 1982, Klerck, 2001 and De Vroey, 1984), the regulatory approach represents structural combinations within the international divisions of labour, production and finance. This theory categorizes the regimes of accumulation as either extensive or intensive and that forms of regulation could be viewed as either competitive or monopolistic in nature.

4. **Industrial policy trends**

Development is synonymous with change – whenever change is applicable there is an inevitable reaction, commonly referred to as conflict. There will always be those for and against change. Development designed to distribute wealth more evenly through society will equally threaten the economic elite benefiting from any current system.\(^{106}\)

\(^{106}\) Haines, R.J. 2006. Masters in Conflict Transformation and management. Course outline for SDS508. NMMU.
Considering closely the aims and objectives of the Defence Industrial Participation policy as more fully set out in chapter 6 and 7 and reviewed and commented on in chapter 8, it is worthwhile to note that Bezuidenhout\textsuperscript{107} for example observes that a neo-liberal approach to industrial development strongly reflects on the fact that such development is mainly market-driven with minimum state intervention, but on the other extreme the ‘developing’ state played a central role in shaping the industrial structure through industrial policy measures, with strategies such as targeting certain industries for investment, or for other supportive measures. Especially during the sanctions era the South African government set up major corporations to supply key resources, such as arms (Armscor), fuel (Sasol), power (Eskom), telecoms (Telkom) and nuclear (AEC).

He also quotes World Bank findings (in 1999), indicating a weakness in the manufacturing industries in South Africa, specifically due to “protection from international competition”\textsuperscript{108}. Moving away from apartheid will, according to his views, imply the liberalisation of trade and the removal of all trade barriers, and the insurance of investor confidence that will be made possible through “sustainable, consistent and credible economic policies”\textsuperscript{109}. From the mid 1990’s the South African DRI in particular, suddenly (post ’94) found itself competing for defence contracts in the open market, both at home and on foreign ground and hence it made the implementation of a “protectionist type of mechanism” such as the DIP process that more imperative in order to “protect’ the strategic defence-related requirements of the South African National Defence Force for maintaining and servicing foreign procured equipment.\textsuperscript{110}

The Economic Forum (1994) argues (based on earlier works of Michael Porter (1990)) that the “approach to competitiveness assumes that it is companies and not nations that compete”. It is also argued that government’s role should be to define competitive environments and rules to promote innovation, and that co-operation

\textsuperscript{108} ibid p385
\textsuperscript{109} ibid
\textsuperscript{110} These are key objectives of the DIP policy of the DoD and Armscor. Refer also to Chapters 6 and 7.
should occur at a ‘cluster’ level\textsuperscript{111}. The latter work is later complemented by the extensive and comprehensive work done by Ben Fine and Zaf Rustomjee (in 1996), reporting on the industrial policy of South Africa. Herein they clearly reflect on the fact that the interaction between the state and market is a “very complex product of the forces exerted upon them”. They are also content with the fact that the state should actually be involved with industrial development, by developing infrastructure and the creation of demand\textsuperscript{112}. \textit{Industrial Participation in South Africa is, in fact, used as a leverage to achieve such results through the government’s foreign procurement process}. The DPE has recently implemented the new industry development programme (referred to as the Competitive Supplier Development programme – CSDP”)\textsuperscript{113}. The latter intends to better leverage the substantial planned expenditure on various infrastructure projects by various State Owned Enterprises (SOEs) over the next ten to fifteen years, to further develop the local industry.

Bezuidenhout observes that there is a clear movement on the side of the DTI (1998) to adopt a more “supply-side orientated” industrial model\textsuperscript{114} of import substitution, and one that is export-led. The DTI subsequently (since 1996) took steps to reduce import tariffs and introduced a tax holiday scheme with low interest loans to companies. Legislation governing competition was reviewed and a support programme for the development of SMMEs and BBBEE (broad based black economic empowerment) was introduced. The DTI also embarked on the “spatial development initiative” (SDI) and created several industrial development zones in order to attract investments into certain geographical areas, such as the Coega development initiatives in the Eastern Cape.\textsuperscript{115}

\textsuperscript{111} ibid p387
\textsuperscript{112} ibid p389
\textsuperscript{113} Interview with Mr Sean Philips, DPE CSDP Unit. 26/03/07 and the DPE website – www.dpe.gov.za
\textsuperscript{114} Coetzee, J.K. et al. 2001. Development Theory, Policy and Practice. OUP- ibid p389
\textsuperscript{115} Author’s note: The implementation of the National Industrial Participation Program in 1997, already born witness of this approach, which manifested strongly in the Strategic Defence Package Deal of 1999.
5. **Human development and the productivity debate**

For the sake of understanding where South Africa features internationally on the scale of ‘human development’ and ‘productivity’ it is worthwhile taking note of the research of G.M. Meier and J.E. Rauch\(^ {116} \). Based on empirical research, countries are compared mainly on a per capita Gross Domestic Product (GDP) earning, expressed in US Dollars. The higher, or the lower per capita income is accordingly used to interpret the level of a country’s development programmes. A correlation between the price of commodities and services is observed – the poorer a country, the cheaper its labour\(^ {117} \). According to the findings of Meier and Rauch (supported by independent findings of the World Bank and the International Monetary Fund), South Africa falls into the category of medium human development countries\(^ {118} \) and is therefore also categorised as being a “less developed country”.

Meier and Rauch\(^ {119} \) quote from the research work of Adam Smith’s “progressive state”, where the observation is made that there is a direct correlation between the levels of skills, dexterity and judgment, and the level of proportional deployment of the labour force in useful and non-useful employment.

Accordingly, it was found that the major sources of growth were (i) the growth in the labour force and stock of capital and (ii) improvements in efficiencies with capital application to the labour component through greater division of labour and technologies, coupled with (iii) foreign trade that widens the market and reinforces (i) and (ii) as a result. The common view is, when once begun, this growth process becomes ‘self-reinforcing’ in a progressive state, as long as such growth favours profit and savings, which in turn create additional capital accumulation. With capital accumulation the demand for labour increases and is absorbed into productive

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\(^ {117} \) Author’s note: This observation is also very true for South African Industry expected to compete with countries with “cheaper labour costs”, especially in Eastern Europe and Far East.  
\(^ {118} \) ibid pp22 and 32  
\(^ {119} \) ibid p76
employment, leading to improved efficiencies and increased specialisation, with a resultant rising per capita income\textsuperscript{120}.

It is relevant to note the “accumulation” observations as quoted from the works of Bela Balassa\textsuperscript{121} on the topic of import-substitution industrialisation and the consequences of overriding market signals, that he concurs that if accumulation proceed far enough, that domestic production (as a primary import substitution imperative) can be profitable even at international prices. However, at the second stage of competitiveness, he states that it becomes more difficult due to the efficiency scales of capital-intensive, versus labour-intensive industries\textsuperscript{122}.

Domestic markets are traditionally too small to support the efficient levels of plant size and horizontal and vertical specialization to protect industries in this second phase of import substitution, making international cost competitiveness and the consequent ability to export a cardinal imperative\textsuperscript{123}. The latter is specifically true as related to the SA government’s decision in 1999 to procure relatively small quantities of sophisticated defence equipment from abroad\textsuperscript{124}.

It is subsequently concluded that considerations for “global commodity claims” are enhanced through international trade, which in turn contribute to more direct contact and exchanges in skills and technologies, with resultant foreign direct investment, especially between the developed and lesser developed countries, as was caused by the DIP process, as explained chapter 7.

The observations made by Meier and Rauch in their analysis of the “typology in development theory” and subsequent findings on the issues of shifting from “primary import substitution” to “primary export substitution”, state that the following

\textsuperscript{120} ibid
\textsuperscript{121} ibid p135
\textsuperscript{122} Author’s note: This observation is particularly true for the local DRI, as local demand is driven down by budgetary constraints in the DoD’s budget, which forces the DRI to export in order to be sustainable.
\textsuperscript{123} Author’s note: The local DRI (especially Denel with its vertical integrated cross divisional supply structures) had found it particularly difficult to be competitive in the field of lower end manufactured goods.
\textsuperscript{124} The Strategic Defence Package Deal – commonly referred to as the SDP in Dec 1999, involving corvettes submarine aircraft and helicopters.
constraints have to be overcome: (i) the resistance from industrialists to move from certain large unit-profit rates on fairly small domestic demand, to much more uncertain smaller unit-profit rates, but on much larger export volumes (ii) the civil service that is threatened by a reduced power of control and (iii) organised labour watching wage rates more than the wage bill\textsuperscript{125}.

Meier and Rauch observe that countries with industrial protectionist policies (aimed at import substitution) become less competitive as such protectionist mechanisms cause an estimated price increase of six to seven percent of Gross National Product (GNP). Another result indicates levels of lower productivity, supported by empirical evidence that countries applying a more outward-orientated development strategy perform better in terms of exports, economic growth and employment\textsuperscript{126}.

Looking at their economic and development case studies\textsuperscript{127} on Taiwan and South Korea, they conclude that there remains a case to be made for government intervention, which can take many forms. The view is expressed that policy-makers can coordinate private-sector production and investment decisions through credit control, tax incentives, trade policy and “administrative guidance”. Resultant government investment subsidisation in “modern sectors” of the economy results in large pay-offs, especially evident in the cases of the two countries mentioned. Mention is also made of the effective use of “public enterprises” within the development strategy of the economic and industrial base of a country. The author is however of the opinion that this is unfortunately, as yet, not evident in the case of South Africa’s State Owned enterprises (SOEs), and one will have to wait and see what the results of the Competitive Supplier Development Programme (CSDP) – see par 8 hereunder, will hold for the future growth in the SMME domain.

\textsuperscript{125} ibid p149
\textsuperscript{126} ibid p160. (Author’s note: On the other side of the scale one finds certain countries (especially in Eastern Europe) that silently subsidize its manufacturing industries, which creates very favorable Labor rates, which in turn makes it extremely difficult for especially the DRI to compete – also negatively influenced by the long supply lines moving manufactured goods to Europe).
\textsuperscript{127} ibid pp166 - 167
The research findings of various economists also reflect on the role of “foreign contact and technology transfer” in a developing country. Coetzee quoting from a study by Egan and Mody from 1992, states that there are evidence of various forms of in-plant training, also taking place in the developed country’s factories; “…buyer may send international experts to train local workers and supervisors … buyer may also arrange short-term worker training in a developed country plant…” It is observed that technology transfers are key to improved production (best practices); contribute to competitiveness, increased exports and sales, and subsequent profitability. A case in point in terms of the South Africa industrial participation programme is the skills development and training that technical staff of Denel Aviation (now Denel Saab Aerostructures) has received as part of the DIP obligations under the procurement of the Gripen fighter aircraft from Sweden. Similarly Boeing has established a manufacturing hub at the same Denel facility by donating production machinery and training Denel staff in the principles of lean manufacturing in the production of a range of Boeing aircraft parts, regularly ordered by Boeing.

In the case of South Africa, the country’s shortage of skilled black people is still squarely blamed on apartheid and the fact that black communities in the “Black Homeland” programmes were deprived of access to proper/better schools. Despite the South African government’s initiatives with the creation of a skills levy fund and the establishments of various training and skills development structures, South Africa is still faced with huge shortages in many vocations. These skills shortages are further aggravated by government’s interference with demands for affirmative actions and equity employment, aggravated by a constant outflow of human capital.

128 ibid pp 172 – 176 (Author’s note: This approach has been particularly evident on the SDP’s where numerous employees of local DRI-companies (and the SANDF) were sent on specialized training courses in OEM countries, e.g. Sweden, France, Germany and the UK)
129 ibid p 206. (Author’s note: Today, as a result of having being historically disadvantaged, the Country is generally suffering, as black people who have not been properly skilled are, as a result of the SA Government’s equity employment policy, required to perform outputs they were never trained to achieve. This impacts across the Country, local and central government, as well as in the public and private industries.
130 During March 2007, on the first anniversary of the establishment of Jipsa – a high-level working group attempting to address local skills shortages – Deputy President Phumzile Mlambo-Ngcuka has called on the business community to do more to address the shortage. “For every skilled person the company needs they should train five,” Joint Initiative for Priority Skills Acquisition (Jipsa)
Quoting the World Bank Report of 1999\textsuperscript{131}, T. Alan and A. Thomas conclude with the statement “that economies are built not merely through the accumulation of physical capital and human skill, but on a foundation of information, learning and adaptation. Because knowledge matters, understanding how people and societies acquire and use knowledge – and why they sometimes fail to do so – is essential to improving people’s lives … poor countries – and poor people – differ from rich ones not only because they have less capital, but because they have less knowledge…”

Seeraj Mohamed\textsuperscript{132}, in a recent article on the South African government’s macroeconomic policy, expresses the views that such a policy will cause inflation to grow beyond the existing targets levels and that the economy will be losing many jobs and fixed investments as a result of the government’s neo-liberal macro-economic policies. He expresses the hope that the SA government’s intended infrastructure expenditure will promote more private investment, but that it requires a closer integration between industrial and economic growth policies.

The World Bank Report of development policies for the 21\textsuperscript{st} century states that development will fail if the following four interactive building blocks are not included:

- macro-economic stability as an essential prerequisite for achieving growth;
- growth needs to trickle down in an interdependent process and human development needs need to be addressed directly;
- development should happen coherently and comprehensively and should not depend on a single policy; and
- the principal that institutions matter, and sustained development should be based on processes that are socially inclusive and responsive to changing circumstances.\textsuperscript{133}

\textsuperscript{131} Alan, T. and Thomas, A. (ed)2000. Poverty and Development into the 21\textsuperscript{st} Century. OUP. p409.

\textsuperscript{132} Sareej Mohammed is a senior research fellow at the CSID of WITS. Engineering News, March 2-8, 2007.

The key to development appears to be locked in the word ‘sustainability’. When one considers the ‘new world order’ with the concept of ‘globalisation\(^{134}\)’, one also needs to consider the impact of this phenomenon. This is seen by some as a politically convenient\(^{135}\) rationale for implementing unorthodox neo-liberal economic strategies, and furthermore conceived as a powerful transformative force, responsible for a massive societal shake-out process. In turn this makes the imbalance between the ‘have’s’ and the ‘have-nots’ only that more notable and consistently influence the sovereignty of all those involved, especially those lesser-developed societies.

6. **Armington elasticities**

The use of the Armington\(^{136}\) elasticities model may be one way to measure the effects of the South Africa policies on industrial participation, and specifically sectoral development issues. This model is reportedly\(^{137}\) being used as an effective tool to measure the “elasticities between import substitution and domestic production”. It is interesting, just for the sake of this dissertation, to note that Trade and Industry Policy Strategies of the DTI (TIPS) in 2003, determined, by using this model, that the *most import-sensitive* sectors were (in order of sensitivity) coal mining, footwear, beverages, tobacco, leather and leather products, and, whereas the *least import-sensitive* sectors were catering and accommodation services, basic chemicals, coke and refined petroleum products.

However it is not the intention of this dissertation to debate the issue of import substitution versus domestic production. On the other hand it does remain a valid topic and reference point as it provides for a research tool/mechanism that can be deployed in proving, or disproving whether the SA government’s approach to


\(^{136}\) Paul Armington in 1969 came up with an exposition that presented a general theory of demand for goods in order to make estimations and forecasts. This is reportedly a model also used in most of South Africa’s trade policies. Source TIPS. WP12-2003. Contiprint Jhb (ISBN1-919982-10-8). Report written by Katherine Lee Gibson (University of Natal).

sectoral development works in practice, through the process of ‘forced’ industrial participation measures.

7. **South African development benchmarks**

In a paper written by T. Bauman of Community Microfinance Network\(^{138}\) on the socio-economic policy in South Africa, he expresses the views that certain structural reforms were needed in the immediate post-1994, such as a macro-economic stability with fiscal and monetary discipline, a faster growth, stimulated by foreign direct investment (FDI) with improved capital flows a shift towards higher value-added manufacturing and beneficiation and a reduced emphasis on natural resource exports and agriculture, with comprehensive technological upgrade as part of an economical objective, by encouraging the SMME sector to focus on job creation, as well as attending to the modernisation of the manufacturing sector.

Bauman also observes that with some exceptions, South Africa is not in a position to play a significant role in the decentralised mass production systems of the developed world. South Africa’s competitive advantage continues to be in specialist capital-intensive industries, such as heavy and civil engineering and mineral beneficiation, and in some service sectors\(^{139}\). The problem is, however, a lack of enough downstream demand. The success of South Africa’s automotive exports lies mainly in the fact that it is part of a global supply chain – there is of course also been a good deal of government subsidization evident to actually achieve these successes.

The South African economy is energy-intensive\(^{140}\), using a large amount of energy for every Rand of value-add. The country’s energy is dominated by coal, which contributes 70% of primary energy. Local coal is relatively cheap, resulting in very

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\(^{138}\) Bauman, T. *South Africa as a Developing Country. Implications for Socio-economic Policy in the second Decade.* Community Microfinance Network. (Available at: www.brcs.co.za).

\(^{139}\) Ibid

low energy cost, particularly for electricity, which still is the cheapest in the world. The 2005 USA Environmental Protection Agency Report contains a statement on “Goals to be met by energy efficiency”, which alludes to the fact that improved industrial competitiveness (Goal 6) can be achieved by the adoption of appropriate energy efficiency measures.

If one further considers the fact that South Africa has an abundance of mineral supplies and substantial labour resources (although under-skilled), a well-developed infrastructure and governance system (although poorly managed), together with a well-developed primary industrial base and high-tech industry clusters, (especially the DRI and the automotive industry), theoretically there should be no reason why South Africa should not be able to excel in competitive down-stream manufacturing and ensure that its industrial output is very competitive.

The DTI, in 2002, drafted a policy, referred to the “Integrated Manufacturing Strategy (IMS)”, which has not been properly implemented. This reportedly led to a renewed effort of the DTI to develop a “new” National Industrial Policy Framework (NIPF)”, backed by developments in the East Asian economies that reportedly141 showed that active industrial and tariff policies could play a role in supporting industrial development and exports.

8. The Competitive Supplier Development Programme

The DPE has been working since 2004 on creating a new industry development programme (referred to as the Competitive Supplier Development programme – CSDP”)142, which intends to better leverage the substantial planned expenditure on various infrastructure projects by SOEs over the next ten to fifteen years as a means to further develop the local industry. This expenditure is taking place against a globally increasing demand for infrastructure-related capital goods, which in turn is increasing import costs.

142 Interview with Mr Sean Philips, DPE CSDP Unit. 26/03/07 and the DPE website – Available at: www.dpe.gov.za
DPE produced a local supplier development policy in collaboration with the DTI, which was approved by Cabinet on 25 January 2007. This policy aims to leveraging SOE expenditures to optimise the development of national supplier industries, and where possible, build export capabilities, focusing on enhanced competitiveness and capacity building. The development of local suppliers is primarily a competitiveness initiative – any price premiums must be short-term, transparent and robustly motivated in terms of long-term supplier industry development, and ultimate cost savings for enterprises.143

For large-scale expenditure with imported components, SOEs must commit to either the DTI’s national industrial participation programme (NIPP) or the DPE’s new CSDP. NIPP is mandatory when the government and/or SOEs buy or lease goods and services with an imported content equal to or exceeding USD10-million. Implementing the supplier policy can include international suppliers being mandated to partner with local suppliers, or make direct investments. SOEs are encouraged to enter into long-term contracts with local suppliers, requiring such suppliers to cut costs over time. During the drawing up of supplier development plans by the SOE, the DTI sector teams must be consulted to ensure that the alignment between these plans and the DTI’s customised sector programmes is optimised. This is to be done by the SOE, through the DPE’s CSDP unit. Presently Denel is being excluded from the programme as Denel is not seen as a direct SOE buyer, but actually selling equipment to the Department of Defence144.

The DTI will be given one month after receiving the plan, to raise concerns to the shareholder representative regarding the alignment of the plan with the NIPP objectives, and such concerns will be taken into account before its formal acceptance. The SOE must report to the DPE on the progress, and strict criteria

143 Department of Public Enterprises (DPE) announcement March 2007 regarding the newly approved by parliament CSDP initiatives to leverage the government’s intended R400bn spent on infrastructure development over the next 10-20 years.
144 The Author in his professional capacity as General Manager Countertrade and Offset Solutions at Denel Corporate approach DPE in 2007, with the request to be exempted from NIPP and to pursue the CSDP instead. The minister of DPE subsequently ruled Denel out based on the argument that Denel is a supplier and not a procurer as is the case for all other SOEs.
apply. The DPE submit quarterly reports on progress of the implementation of the supplier development plans to DTI, to assess progress against the intended objectives. If, after a three-year period after the submission of the plan, a SOE fails to make progress on implementing the plan against the relevant criteria for performance, the normal NIPP procedures will be reinstated for that SOE immediately. This decision will be taken jointly by DPE and DTI.

SOEs have the strongest interest in securing the development of their supplier industries, as this will enhance their own competitiveness in their core activities and ensure security of supply in high-value, high-risk areas, ensuring and security of supply, the decrease of foreign exchange risks, greater supplier responsiveness through proximity, while addressing monopolies and improving the competitiveness of the supply base\textsuperscript{145}.

Through total procurement spend (including capital expenditure (CAPEX) and operational expenditure (OPEX), the SOEs have the most powerful instrument to ensure that foreign suppliers invest locally in skills, plant and technology. At the same time, the SOEs should compile detailed technical and commercial data on the suppliers and their associated industries, through categorising functional requirements and designing a standard procurement process.

The objective of the intervention is to develop a procurement tool kit and create supporting measures to promote investment and the development of internationally competitive capabilities in the SOE supplier sectors, using capital and relevant operational expenditure, to reduce costs through increased efficiencies and reduce dependency on imports and foreign exchange exposure, while developing niche export areas.

The CSDP remarkably mirrors the challenges facing the DRI in South Africa, and can be aptly supported by the DIP programme that has been in practice since 1988.

\textsuperscript{145} ibid p143
The links between the programmes can be seen from the ensuing discussions on these two topics per se and are in line with the DTI’s strategic plans for development over the period from 2006 to 2009. These strategic plans categorically state that “central to the economic growth path is the question of sustainable growth, which in turn requires a continued focus on competitiveness and competition. The competitiveness of many enterprises in the economy continues to be based on the traditional factors of cost and access to raw materials, rather than on the new drivers of competitive advantage”\(^{146}\).

The author supports the view that in order to give proper effect to the CSDP initiatives of the DPE, the following aspects, as stated in the diagram, contain the key building blocks for successful implementation, and need to be considered.

![Diagram of globalisation with interconnected circles labeled Economy, Skills, Supply and Demand, Capacity, Politics, Religion, Ecology, Industrial sector, and a central oval labeled GLOBALISATION.](Source: J.J. van Dyk)

\(^{146}\) Medium Term Strategic Framework: 2006-2009. Department of Trade and Industry
9. **In conclusion**

Development theory appears to be a process of ever assimilating and reworking of the various elements from more specific fields of economic, social and political inquiry. A key theme in both classical and contemporary development theory is the question of industrial development and policy, and the need to understand the relationship between focused state intervention and a coherent and workable industrial policy. In RSA there has been an increased interest in the development state, and since 1994 (if not before) there is a belief in the efficacy of industrial policy and a sense that the state can diversify the economy with targeted interventions. One such intervention is the industrial participation policy/programme as discussed in fair detail in this dissertation.

Considering the contents and arguments and debates in chapter 8, one can clearly view the contemporary thoughts and views of the fraternity of strategic scholarly debates around industrial development in context of the perceived value adding or non-value adding nature of countertrade. There is a modest but growing body of critical work on countertrade – both internationally, and to a more limited extent nationally (in South Africa).

However, most of these studies, especially the South African ones appear to be based more on hearsay and academic rhetoric and discourse than on an in-depth analysis of the whole process. In order to address these shortcomings of previously reported academic studies the author is of the opinion that this dissertation could most probably be used as a base document to engage government with the view to allow for an in-depth analysis of the whole industrial participation programme and how it should or could be changed to achieve a better result than presently perceived by critics to be the case.

**In conclusion** it is generally accepted that the DTI will announce the so-called “high impact/high priority” sectors, to complement the already-successful MIDP, with associated incentives for implementation after the 2008 budget. As issues such as
costing and import-parity pricing will have to be addressed, it is expected that the
Competitions Act will also have to be reviewed. Another key element of the NIPF is
the government’s intentions to build a competitive supplier community around the
planned R400-billion public sector infrastructure expenditure, as well as its
intentions to implement a DRI sector strategy during 2008/9.

CHAPTER 5 - WHITE PAPER ON THE DEFENCE-RELATED INDUSTRY IN SOUTH AFRICA

1. Introduction

This chapter contains the review of the White Paper (WP) on the Defence-Related Industries (DRI)\(^{148}\) in South Africa and an effort was made to cover all prevailing (at that time) issues relevant to the debate on the local DRI. As there are presently many developments in this area, a fair amount of attention is given to elaborative comments on most of these.

The WP focuses primarily on the DRI in South Africa, with a definite assessment of the DIP programme in this context – see chapter 6 – viewed as a development mechanism for maintaining strategic defence industrial capabilities in South Africa.

In order to put the DRI in perspective, it is necessary to pay attention to the background of the DRI, its history, how it developed and minimised its contribution to the economy, the human development aspects, as well as the industry’s anticipated role in supporting safety and security issues in South Africa\(^{149}\).

In this research, attention is given to debates relevant on the DRI, especially in the period post-1994, leading up to the publication of the first government policy document on the South African defence industrial base (DIB) in 1999.

The White Paper on the DRI is assessed and reviewed in the context of its relevancy, and how it compares with international trends and the relevance of academic debates on development, given the sometimes emotional nature of matters pertaining to, and surrounding, defence.

\(^{148}\) As approved on 1 December 1999.

\(^{149}\) The Author was intimately involved with various contributions during the period of the drafting of the WP on the DRI, especially in respect of arms control (Jan '91 to May '96) during which period he assisted the Secretary for Defence in re-establishing this control function under the DoD in collaboration with Prof Kader Asmal, the then chairperson of the National Conventional Arms Control Committee (NCACC). His insight into this WP on the DRI and the comments and observations made are thus based on his personal exposure and experience in this field, as well as on the aspects of industrial participation (although not that extensively covered by the WP on the DRI).
2. **The rise of the DRI**

In the period preceding 1960, South Africa received most of its armament requirements from the United Kingdom, but this was summarily stopped after the Sharpville incident in 1976.

By then, South Africa has already established and created some levels of self-sufficiency in the manufacturing of ammunition, which incidentally was initiated during the Second World War. Already in 1948, the SA government founded the Defence Research Board, which was required to develop the technical and manufacturing capabilities to produce arms locally. In 1953 the Defence Ordnance Workshop (DOW)\(^{150}\), later to be known as Lyttelton Engineering Works (‘Lyttelton Ingenieurswerke (LIW)’), was established, and by 1965 it reportedly already obtained some 120 different small arms production licenses from the UK, France, Belgium and Israel. In parallel, the Council for Scientific Industrial Research (CSIR) was established in 1945 to undertake, among other, defence research and development work.

By 1963, the international reaction to South Africa’s political dispensation was tinged with stronger resistance, resulting in the United Nations calling for a voluntary arms embargo on South Africa.\(^{151}\)

Mounting external pressures, together with the increased levels of insurgencies of the various freedom fighter movements, caused the SA government to increase its demands for local self-sufficiency in arms. On 19 June 1968, the Armaments Board was established, followed by the creation of the Armaments Corporation of SA Limited (Armscor) in 1977, in terms of the Armaments Development and Production Act (Act no 57 of 1968, as amended).

\(^{150}\) Ibid

\(^{151}\) United Nations Security Committee Resolution 818 dd 7 Aug 1963
The task of Armscor was to further develop the local defence industrial base in South Africa and a number of Armscor subsidiaries were created, together with some 1 000 other private industry local companies, creating a supplier network with cross-manufacturing capabilities and a vertically-integrated supply chain structure. This process was further promoted and accelerated as a result of the second UN arms embargo in 1977.\textsuperscript{152} By the mid ‘80s, the DRI was in a position to supply almost all of the SADF’s requirements,\textsuperscript{153} as well as covertly exporting to various other (mostly pariah) states.

Due to the increasing international isolation of South Africa and increased levels of insurgencies and acts of terrorism, the need for technology to further develop the DRI, increased. This resulted in Armscor having to resort to all kinds of ‘surreptitious methods’\textsuperscript{154} of procuring and acquiring whatever was needed. Armscor extensively made use of ‘fronting’ companies to disguise its modus operandi and protect the identity of its sources supplying technology, sub-assemblies (for example engines) spares and components.

The SA government’s drive towards self-sufficiency led to the establishment of production capabilities (between 1956 and 1985) that covered a wide range of technologies, and words such as “proven in battle”, and “leading-edge technologies” were frequently used to boast with, and reiterate, these achievements. Products quite unique in design and suited to the harsh South Africa environment saw the light and managed to draw the world’s attention to South Africa’s technological capabilities.

By 1985 the local defence industry capability, as developed by Armscor, reportedly employed between 130 000 and 150 000 people. By then, the industry acquired the abilities to design, reverse-engineer, manufacture, produce and maintain, as well as

\textsuperscript{154} ibid
refurbish, upgrade and modify the following items (note that this list is not exhaustive):

- various types of aircraft, including the Cheetah fighter aircraft based on the French Mirage III air frame;
- various helicopters, all of French design, and ultimately the SA-designed and developed Rooivalk attack helicopter;
- missiles, rockets and unmanned aerial vehicles (UAVs);
- ordnance and landmines of various shapes and sizes;
- world-renowned 155 mm artillery systems (G5 and G6);
- various types and sizes of small and medium caliber ammunition, guns and cannons;
- various types of vehicles, most with unique anti-mine capabilities;
- state-of-the-art mine clearing methods, equipment and practices;
- various types of pyrotechnical products, including red and white phosphor;
- various anti-riot equipment, teargas, rubber bullets, and stun grenades;
- a range of sensors and electro-optical equipment, as well as electronic measures and counter-measures, radio equipment and encryption;
- a space launch and satellite capability;
- a nuclear weapons capability (although at that time this was kept secret); and
- various high-tech test ranges and facilities all over South Africa.

The DRI became a technology leader in South Africa as a result of the beneficiary and privileged dispensation it enjoyed under Armscor’s seemingly never-ending list of requirements (generously funded by the government) to satisfy the needs of the SADF (now SANDF) during a period that was characterised by serious security threats from within South Africa and from its neighboring countries.

In a research paper commissioned by the Institute of Security Studies\textsuperscript{155} it was reported that by the mid ’80s Armscor had concluded contracts with some 2 270 private sector companies and that the armaments industry employed 131 750

people, which figure represented 8.3% of the total number of employees in the manufacturing sector at that stage. By 1989 the DRI emerged as one of SA’s major industrial sectors that contributed nearly 4.5% of the GDP and 19% of manufacturing output, after gold and coal, as well as being the largest exporter of manufactured goods.\textsuperscript{156}

The DRI’s export successes into the international arms market, resulted in additional steps by the UN to isolate South Africa even further, in introducing yet another arms embargo, requesting member states to refrain from importing SA-manufactured weaponry.\textsuperscript{157} Despite this arms embargo, SA continued with its arms exports to countries such as Iraq, Iran, Taiwan, Israel, Chile, Peru, and the UAE, to name but a few. Armscor’s skills at evading sanctions developed to such a degree that it became sought-after by other clandestine exporters. Chester Crocker, US under-secretary of State, when appearing before the House of Foreign Affairs on 17 April 1985\textsuperscript{158}, admitted that “Our experience with the UN arms embargoes against South Africa has not had the crippling effect on South Africa’s military capabilities as desired. Indeed it has provided the impetus to turn South Africa into the world’s 10\textsuperscript{th} largest exporter”.

3. \textbf{Regulating the DRI}

3.1 \textbf{Until 1994}

Since Armscor’s inception, the Act on Armaments Development and Production (Act 57 of 1968)\textsuperscript{159}, explicitly charged Armscor with the task and responsibilities to effect defence industrial development and to simultaneously regulate such an industry:

\begin{enumerate}
\item Section 3(1) states that the objectives of the corporation (Armscor) are to meet as effectively and economically as may be feasible, the armaments
\end{enumerate}


\textsuperscript{157} UN Security Council Resolution 558 of 1984.

\textsuperscript{158} Harvard Business School Class Paper, 9-796-186 dd 21/06/1996

\textsuperscript{159} This Act has since been repealed and replaced by Act 51 of 2003.
requirements of SA, as determined by the Minister (of Defence), including armaments for export.

b. Section 3(2) (lA) mandated Armscor to exercise control over the development, manufacture, acquisition, supply, export or marketing of armaments.

c. Section 4C vested certain powers in the Minister of Defence to issue various types of regulatory permits related to anything that deals with armament and/or related matters. (This control was mandated to Armscor by the Minister of Defence under numerous Regulations, published over time, in the Government Gazette.)

In short, Armscor was constituted and mandated by law, to develop the armaments industry, and was given considerable freedom within an environment that was fairly unconstrained by normal bureaucratic limitations usually associated with government departments.

3.2 During transition (1989 to 1994)

In 1989, FW de Klerk took over the reins of the National Party from PW Botha. This happened at the same time as the collapse of the Soviet Union and the dismantling of the Berlin wall. Closer to home, a settlement was reached in Namibia, followed by the country’s transition into a democracy in 1989, allowing for the SADF to withdraw from Namibia.

In 1990, De Klerk embarked on a campaign to totally transform the political dispensation in South Africa. First, the African National Congress (ANC) was unbanned, with all the other ‘freedom movements’ following, and in 1992 the political detainee Nelson Mandela, was released from prison. These acts have put South Africa on a non-reversible road of reform. During the elections in 1994, the ANC secured a landslide victory and for the first time in South Africa’s history, the country became a democracy.
However the ‘peace dividend’ started taking its toll on the DRI with the result that there was an almost total halt in defence spending on new equipment. This caused the DRI to downsize, despite the fact that the export market was now willing to accept SA defence exports after the lifting of all the UN arms embargoes in 1994.

During this transition period (‘88/89 to ’94) the DRI resorted to so-called diversification. A process that aimed to create survivability and sustainability for the DRI, by establishing cross-subsidisation by producing non-defence related equipment to ensure the optimal use of industrial capabilities. This process did not work particularly well for the DRI.

As the Armaments Development and Production Act 57 of 1968 barred Armscor from deploying commercial/civilian conversion actions, a decision was taken to form a new government-owned enterprise that could explore such opportunities. This gave rise to the birth of Denel160 (Pty) Ltd on 1 April 1992, a private state-owned company established under the Companies Act. Armscor’s role was henceforth reduced to that of an acquisition and procurement agency for the former SADF, also attending to surplus SADF stock sales, and maintaining the regulatory control over the DRI.

One remaining area, representing a potential conflict of interest, was the fact that Armscor was the arms control regulatory authority (as per Section 4C of Act 57/1968), but was also actively promoting, marketing and exporting defence equipment. This eventually landed them in the hot water with the ANC, when a shipment of AK47s went astray en route to Lebanon. Consequently the ANC removed this function from Armscor and transferred the responsibility to the Secretary for Defence (in late 1994). This step was followed by a lengthy enquiry (led by Judge E. Cameron) investigating the aforementioned AK47 transaction. The findings and recommendations of the Commission resulted in the formation of the National Conventional Arms Control Committee (NCACC), by appointment of

160 Author’s note: The name DENEL is reportedly derived from “DE=detonics” + “N=and” + “EL=electronics”. Denel(Pty) Ltd resorts under the Minister of Public Enterprises.
Cabinet. All conventional arms control issues were henceforth to be sanctioned and approved by NCACC,161 chaired by (a “neutral” Minister) the former Minister of Water Affairs and Forestry, Professor Kader Asmal. (The Chairperson now is the Minister of Safety and Security).

This regulatory measure had a huge influence on the DRI, especially in the first two years of its existence, as the DRI had to become accustomed to a new, rigid and much lengthier process of obtaining the various prescribed permits for conventional arms, similar to the period pre-1994. The DRI is still complaining that the process is lengthy and unpredictable at its best, and AMD is reportedly actively working with the DoD to see if relaxations can be implemented162.

3.3 The DRI from 1994 to present

The new political order in South Africa (1994) had a huge effect on South Africa – on its people, politics, industry, international trade relations and the economy. SA was re-admitted to the international community, which meant that the South African industry, especially the DRI, was suddenly put on an equal footing globally.

The level of distrust with which the military fraternity was viewed by the ANC (and others) and the previously oppressed people of South Africa, resulted in extended debates regarding the role of the military fraternity and the need for defence – especially the need for a defence industrial capability. The SA government, through the DoD, went through an extremely democratic and transparent process in requesting all stakeholders’ views on these matters. The first step was to get the White Paper on Defence accepted and approved in 1996. This was followed by an equally elaborate consultative process to ensure the acceptance of maintaining a defence force capability with certain needs, as expressed in the Defence Review of

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161 The Author was intimately involved in this process, having being the Head of Arms Control in Armscor and subsequently seconded to the Secretary for Defence where he worked (1994-96) closely with Pierre Steyn and Prof Kader Asmal (as well as Foreign Affairs officials, the Non-Proliferation Council under Abdul Minty and the SAPS) in creating a new arms control dispensation for South Africa.

162 Interview with the Exec Director of AMD on 4 Dec 2007.
1998. A comprehensive review was launched and debated, resulting in the White Paper on the DRI, also forming the subject of this policy review.

Internationally, especially since mid ‘90s, defence companies started consolidating and many mergers occurred, both in Europe, as well as in the USA, as the cost of developing new generations armaments became inhibiting.\(^{163}\) On the local front, the DoD introduced a revised open-tender approach for the DRI (as envisaged by the respective defence policy documents, i.e. The Defence White Paper, the Defence Review and the White Paper on the DRI). ‘The old ways’ of collusion between the DRI, the former SADF (renamed in 1994 to the South African National Defence Force (SANDF)) and Armscor were replaced. The SANDF and Armscor had no choice but to make peace with the new era of ‘civilian supervision’ initiated by the DoD, and vested in the Secretary for Defence as the only accountable officer.\(^{164}\)

Similar to the mergers witnessed in Europe and the USA, foreign companies, since the late ‘90s, set their sights on local DRI companies, for example:

- Thales of France acquired African Defence Systems, originally part of the Altech Group. The latter ceased all defence business in the mid ‘90s;
- MTU of Germany took over Prokura Diesel;
- Saab-CelsiusTech of Sweden acquired a stake in Avitronics, which was part of the Grintek group;
- EADS, Germany, formed a joint venture with Grintek, creating a new companies called Ewation;
- EADS, Germany, procured a share in Reutech Radar Systems (RRS);
- BAE Systems, UK, took over Paradigm Systems and also procured a stake in Advance Technology Engineering (ATE). They may allegedly opt to buy-out BAE Systems during 2007/8 and form a joint venture with Denel on UAV products;
- Saab, Sweden, procured a majority stake in the Grintek group and took over AMS;

\(^{164}\) Singh, R.P. (ed) Arms Procurement decision making. Vol II. Chile, Greece, Malaysia, Poland South Africa and Taiwan. 200. SIPRI. OUP.
Denel Airmotive sold 51% of its business to Turbomeca France (part of Snecma, belonging to the Safran Group), creating a company called TMA (Turbomeca Africa);

Reumech OMC and Gear Ratio changed hands first to Vickers Plc, UK, then to Alvis Plc, UK, and in 2005 to BAE Systems, UK;

The latest Denel deals saw Saab Aerostructures, Sweden, acquiring an initial 20% stake in Denel Aerostructures in 2006, and Carl Zeiss of Germany acquiring a 70% stake in Denel Optronics in 2007; and with several other equity-based and local consolidation deals involving Denel, are being considered and form part of the company’s turn-around, strategy to unbundle, prioritising foreign partnerships that involve Denel’s artillery business and its Munitions Group (consisting of several plants, such as PMP, and its brass smelter), Naschem (including the La Forge plant) and Western Cape (which consolidated Swartklip and Somchem during 2004).

4. Analytical review of the White Paper on the DRI, from a development viewpoint

4.1 Background to the White Paper

In a covering statement by the former chairperson of the NCACC\textsuperscript{165}, he reflects on the fact that the relevant White Paper is the result of a transparent process that followed an exhaustive consultation process with government, industry, civil society and academia\textsuperscript{166}. He confirms at that stage, that in terms of the Transitional Executive Council Act (Act 151 of 1993), the research was commissioned to assess the future of the arms and related industries. A committee of Ministers formulated a comprehensive framework for an underlying philosophy, policy and approach with regard to the various aspects of the arms industry that the White Paper subsequently addressed issues of arms control and the defence industry, and that

\textsuperscript{165} Statement by Prof Kader Asmal, Chairperson of the National Conventional Arms Control Committee on the process that lead to the drafting of the White Paper on the DRI – presented to the Parliament after approval by the Cabinet. The NCACC is a Cabinet appointed committee and has an obligation to report to Cabinet first then to Parliament.

\textsuperscript{166} Author’s note: The drafting team was complemented by representatives from AMD, Armscor and academics from the University of Cape Town’s Center for Conflict Resolution. (Author was also an active participant in the process.)
the NCACC was tasked by Cabinet to initiate and oversee the preparation of this White Paper on 21 August 1996.\textsuperscript{167}

The primary aim of the White Paper was to review the role, nature and current status of the DRI in South Africa and to provide a government vision to shape the future of this industry and prepare policy options for the governance thereof, also identifying areas critical to its viability.

Prof Kader Asmal alluded to the fact that South Africa was the first country to “coin the term defence-related industry”, as the research that was done during the drafting of the White Paper concluded that a “defence industry” as such could not be identified, nor defined as a distinct industrial sector in the South African context. It was also observed that many defence-related companies used and deployed so-called dual-use technologies, creating an overlap between the production processes of civilian and military companies. The White Paper is thus seen as a significant document based on exhaustive research on a part of the industry that was shrouded in secrecy.

The White Paper, as an end-result, is viewed as an incisive policy that directs the state on the future of the DRI in South Africa. The SA government thus recognised that the DRI is an integral part of the country’s defence capability, requiring and calling for an indigenous strategic capability within the broader, national industrial development framework.

Government, does, however, state that it will follow a very selective process to govern technologies and needs for self-reliance, although they accept the DRI’s industrial capabilities to be singularly different from the components of the national industrial base. The DRI’s capability is of strategic importance to the SANDF, although only certain components of it actually qualify, and due to the nature of the DRI’s output (i.e. defence-related products, services and technologies), it must be

\textsuperscript{167} Author’s note: The drafting process was coordinated by the Policy and Planning Division of the DoD, and the drafting process took three years to complete.
subjected to government control, as South Africa is a responsible member of the international community.

4.2 **Contents of the White Paper (WP) - per each chapter**

4.2.1 **Chapter 1 of the WP** examines the national policy framework applicable to the industry and interprets the WP in the context of the South Africa’s economic, industrial and technology policies. Reflecting on the Constitution of South Africa, the WP introduces the topic of sovereign rights of the state, which includes the right of self-defence and the protection of the country’s national security. It highlights specific key aspects of principles that was already accepted by the Government of National Unity, including:

- international rights to self-defence and security;
- advanced defence technology needs;
- core defence force concepts;
- efficient domestic defence industry capabilities;
- the armaments acquisition process; and
- arms control.

The base arguments in the WP on the DRI are to be found in the Defence Review (of 1998), reflecting on the requirement for long-term planning of the DoD (and SANDF) regarding matters such as defence posture, doctrine, force levels, logistic support, armament, equipment and human resource needs, as well as other resources requirements and funding. It draws on findings as contained in the White Paper on Science and Technology, where it was concluded that the balance of trade in medium and high-technology industries remains negative (at that time) with the exception of the armaments industry, which showed a positive annual balance of trade. In this respect emphasis is placed on a technologically advanced SANDF that can (theoretically) scale up and mobilise quicker, in times of heightened threats.
The DRI WP takes it for granted that key technologies will have to be retained, ostensibly within the DRI. The Science and Technology WP’s arguments against conversion are captured to promote special efforts to leverage defence technologies as spin-offs into the civilian sector, as a tool ensuring further industrial and economic development.

Strong collaboration between various government departments is anticipated, with references being made to other strategies related to the development of South Africa’s industrial base, its general trade, economic growth, the improvement on the country’s balance of payments, tariff reductions, incentives, promotion of investment and human resource development, the strengthening of competition, as well as the development of SMMEs, the promotion of sectoral industrial strategies, the restructuring of state assets and the continued rationalisation and reduction of import protectionist schemes, while promoting the industrial participation programmes related to the foreign procurement transactions of government.

Recognition is given to the government’s focus on driving its industrial policy towards providing long-term improvements in employment and wealth creation, through the creation of a sustainable, internationally competitive manufacturing base. Industrial policy is reportedly shifting away from demand-side incentives to supply-side measures aimed at encouraging companies to invest in products and processes that are internationally competitive (see the discussion on the DPE’s CSDP (2007 – see previous chapter)).

Some research argument is included, examining and scrutinising the history of the DRI, how it developed into and whether it actually forms an integral part of the local industrial base. The DTI is singled out and criticised for not having any specific policies directed towards the DRI.

Comment - The observation is being made that the drafting approach to this chapter 1 of the DRI WP, is clearly based on several key policy issues, which have already
been debated and accepted by the government during the preceding three years. The sound argumentative deductions eventually culminate in a general acceptance of the continued existence of the DRI, and government support is projected as a given. However, the “close collaboration between government departments” in optimising opportunities and collaboration never materialised to the extent anticipated, neither did the DRI see much of the “anticipated government support” for its activities either.

4.2.2 **Chapter 2 of the DRI WP** is in essence a descriptive narrative containing a condensed history of the DRI, with some economic analyses of earnings, value and employment statistics in order to provide a basis of significant evaluation and a historic overview of the DRI, going back to the Second World War up to the period immediate preceding the drafting of the WP. The latter was provided in order to inform all interested parties on this rather suspect or covert part of the industrial base of South Africa.

The roles that the respective UN arms embargoes play, in conjunction with the regional conflict in southern Africa, the apartheid struggle, acts of insurgency and terrorism, and the SA government mandating Armscor to create a domestic defence industry, are discussed in fair detail, while also identifying the changes in the strategic environment since 1989 and how these elements contributed to transform the DRI.

The role of Armscor (and its transformation) is covered, as well as its sub-ordinate interactions with the newly instituted DoD (1994), *vis a vis* its regulatory position towards the DRI, with a snapshot of what the DRI looked like in 1995/96, an overview of its manufacturing capacity and skills base and its contribution to the economy and associated effects on socio-economic development.

Details of the decline in the domestic defence market are debated, in the context of the dwindling contribution of the DRI to the national economy in terms of
manufacturing output. Although an increase in defence exports is cited, it is clear that the increased exports did little in closing the gap between the traditional levels of local defence spent (1975 – 1985), and that the net result remained negative.

A description of the interdependency between the SANDF’s requirements and local defence industrial capabilities is included, with an explanation of the so-called ‘systems hierarchy approach’. Core competencies vested in the DRI are reportedly in areas such as electronics, weapon systems (read ‘systems’ in its widest possible context), communications, vehicle systems (read ‘systems’ in its widest possible context), simulators, unmanned aerial vehicles and logistics.

The assumption is made that the DRI and the CSIR provide sound building blocks for various research and development (R&D) projects and many so-called ‘technology demonstrators’ saw the light. (The implication of this observation is found in the fact that until the mid ‘80s, a substantial expenditure on R&D in the defence environment was recorded.)

On the issue of the viability and sustainability of the DRI, a statement is made indicating that “many firms” went bankrupt (all in the category of SMME, acting as sub-contractors to the larger companies), or exited the defence business, or were otherwise taken over by other firms. Mention was then already made of a “less than impressive” financial performance of especially Denel.

Comment - The observation is being made that the basic arguments contained in the DRI WP are based on sound research and supported by factual data. With ten years having lapsed since the last proper review on the DRI, there is an urgent need to review the DRI against developments over these past ten years, in order to determine its present state of health in terms of capability, capacity, technology and contribution to the economy in terms of manufacturing output.
As a result of the extremely poor financial state of affairs with Denel, having announced a record loss of ZAR1.6-billion in the financial year 2004/5, the DPE has for the first time since Denel’s inception in 1992, taken a serious interest in Denel’s affairs. The government for the first time acknowledged the fact that Denel is regarded as a strategic asset of national security importance. (A substantial portion of all SANDF equipment either came from, or via Denel).  

Other government departments have been asked to support the “save Denel campaign”, with both the DoD and Armscor considering a change to their open tendering approach. The DoD, on the other hand, remains constraint by the insufficient levels of funds available for capital equipment. It is evident that National Treasury is not planning any increase in the defence budget, especially for capital equipment. The National Treasury (Department of Finance) promised a recapitalisation grant to Denel, amounting to ZAR5.1-billion. Of this amount some ZAR2.6-billion have already been paid to Denel during 2005/6. During the same period, Denel reportedly also earned an additional ZAR400-million through the sale of non-core assets. Denel during 2007 also earned an amount of ZAR606-million for the sale of property (land) adjacent to Oliver Tambo airport to the Airports Company of South Africa (ACSA).

The DTI has also been drawn into the DRI debate and took steps to create the Aerospace cluster, made up of mainly DRI companies, together with South African Airways Technical (SAAT). DTI collaborated with the Department of Science and Technology (DST) and the CSIR to create the so-called AMTS initiative, all in an effort to increase manufacturing output on a value-add down-stream beneficiation basis. In 2005, Denel requested (with the support of the DPE, the DoD, and the collective support of all other AMD members) the DTI to structure a DRI cluster in

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168 Author’s note: Analyzing Chapter 13 of the Defence Review, 1998, it is abundantly clear that if Denel has to close down the whole of the SANDF will also come to a standstill. (The latter analysis was done by JJ van Dyk for Denel in 2004/5 to facilitate discourse with DPE on the importance of the survival of Denel)

169 Business Day, 26 July 2006. (Denel was instructed by DPE (approved by Cabinet in 2005) to sell-off all its non-core business and to focus as part of its turnaround strategy on its core defence-related business only, accepting dual-use products will remain as part of its core business).

170 Denel infogram 20 Sep 2007 and various media reports following the announcement.

171 Advanced Manufacturing Technology Strategy
order for the DRI to share in certain DTI development incentive schemes. All indications are that the DTI may implement such a strategy in 2008/9.

However, the continued lack of adequate R&D expenditure from the DoD’s side, and the continued lack of a coordinated collaborative technology management between the DoD and DST, result in the repository technology base of the DRI deteriorating, with a result that certain types of equipment from abroad become more attractive to the DoD, and probably less expensive, as there is now no longer an added non-recurring development and industrialisation cost included in such off-the-shelf procurements.

Since the drafting of the WP on the DRI, the Armaments Development and Production Act (Act 57 of 1968) was repealed in total by a new Act, known as the Armaments Corporation of South Africa Act (Act 51 of 2003)\(^{172}\). Armscor’s role has been limited to defence acquisition and managing defence technology, acting as a research and development agency. There is, however, a new role included, that allude to the prospect of “exploitation of commercial opportunities as a result of the corporations duties”. The new Act provides for a formal cooperation structure between Armscor and the DoD in the form of a “Service Level Agreement”. The Act also contains provisions allowing Armscor to procure for other government departments, as well as the ‘legal’ mandate to manage the defence industrial participation(DIP) programme of the DoD.

4.2.3 **Chapter 3 of the DRI WP** addresses the process of acquisition and technology management between the DoD and the SANDF (user), with Armscor as the acquisition and procurement agency, participating in the DoD process that covers the user requirement, through to planning, scheduling, budgeting, tendering, approval, contracting and subsequent management, control, and accountabilities.

\(^{172}\) **Author’s note**: Although this new Act 51/2003 was consented to on 20 April 2004, it was only promulgated into law on 8 May 2006. There are strong indication since 2006 that Act 51/2003 is going to be repealed and that Armscor with be incorporated under the Secretary for Defence. This process is anticipated to be completed by the 2008/9 financial year or earlier.
Support for the DRI (referred therein as a ‘subsidy’) refers to the funding of key technologies in order to maintain key capabilities in the DRI. Armscor will assist with the international marketing activities to promote the DRI’s products, by subsidising international shows and exhibitions. It is, however, categorically stated that public money should not be used to subsidise the DRI.

Comment - The observation is being made that the basic arguments contained in Chapter 3 of the DRI WP, are based on sound acquisition and procurement practices that have over a period of some twenty years been ‘perfected’ by Armscor. Defence technology and related acquisition management as applied by the DoD (and Armscor) aim to identify those technologies that will in time create capabilities in the DRI, on a long-term basis, taking into account the SANDF’s threat analysis, required operational capabilities and force structure. The assessment is done, accepting the life-cycle support requirement of the local DRI.

The author is of the opinion that the following flow diagram, which aims to depict the DoD’s technology management process schematically, can also be used effectively as an additional tool to implement of the DPE’s CSDP plans under the anticipated infrastructure upgrade expenditure of the SA government:
The RSA DoD’s technology and acquisition process

Jointly and severally, the SANDF as user dictates requirements, the DoD plans and budgets and Armscor manages the acquisition contracting process.

<table>
<thead>
<tr>
<th>Planning process</th>
<th>Management process</th>
</tr>
</thead>
<tbody>
<tr>
<td>Advice</td>
<td>Inputs &amp; results</td>
</tr>
<tr>
<td>Guidelines</td>
<td>Contracting</td>
</tr>
</tbody>
</table>

Figure 10 (Source: Author’s view of the DoD technology policy as contained in its Acquisition policy VB1000.)

However, after eleven years the roles of the DoD vis-a-vis Armscor have been sorted out to a large extent, and there is now a need to review the present acquisition and procurement practices of the DoD and Armscor.

Armscor, on the other hand, took deliberate steps to strengthen its role and secure its legal mandate, as can be seen in the new Act (51/2003). The DRI, on the other hand, remains rather pessimistic about the “new additional role” Armscor secured for itself and it appears as if Armscor may be competing with the DRI, benefiting from a substantially subsidised basis. These concerns specifically relate to Armscor’s decision to sell the surplus SANDF stock, establishing a travel agency as well as a freight forwarding company, and make money from DIP.

The DRI expresses a specific need to be involved in a well-structured acquisition process, collaborating with the user (SANDF), the DoD and Armscor, when discussing the needs and requirements of the user. During the past ten years the
communication and liaison between the DRI and the user deteriorated, as did the contact and collaboration between the policy maker, and purse carrier (DoD), and the acquisition agency (Armscor). The result is that user requirements tend to not take local capabilities into consideration, favouring off-the-shelf foreign solutions, and resulting in the deterioration\(^\text{173}\) of the local DRI at all levels of technology, capability and capacity). The SANDF becomes more dependant on foreign support. These aspects make for a totally undesired state of affairs as warned against in all defence policy papers. The DRI is also concerned about the long periods that are needed to finalise decisions regarding the award of contracts.\(^\text{174}\)

The Armscor acquisition procedures contain, by all standards, a very comprehensive set of rules and requirements, and as earlier stated, constitute a well-structured and professional process. This process was developed over many years and has been tried and tested. Unfortunately, it requires some time to grasp the complex process and with black empowerment enterprises (BEE) entering the defence-related industry wishing to tender for any SANDF goods, equipment, or services, the tenderer may be at a disadvantage if the procurement process is not well understood. Questions are being raised as to whether SA truly needs such a sophisticated acquisition process, and whether the country can indeed afford the luxury and cost of such an elaborative programme that contains parallel processes – if the DoD and Armscor are considered It is estimated that Armscor annually receives ZAR280-million (2003/4) from the defence account.

The follow structures and functions appear to be still duplicated within Armscor and the DoD refer to:

- contract management;
- financial control and management, especially in terms of the PFMA\(^\text{175}\);

\(^{173}\) The Defence Industrial Participation (DIP) policy on the other hand endeavors to neutralize the negative effect of foreign procurement on the DRI (See Section 3).

\(^{174}\) **Author’s note**: In this instance the example is used of the SANDF’s requirement for a new generation infantry fighting vehicle. The request for information went out in 2002, closing Feb ’03, followed by a comprehensive request for proposal sent out in March 2004, closing date Feb ’05—the DoD awarded the contract in two Phases (first development then production) late 2006. Contract signature was in May 2007.

\(^{175}\) Public Finance Management Act, Act 29 of 1999.
- reporting (the Secretary for Defence is the accountable officer, but Armscor still report to the Minister of Defence and Parliament);
- legal services;
- communications and public relations;
- security;
- human resources and payroll;
- administration and printing services; and
- project management.

The DRI WP draws heavily on the studies executed by a joint DoD/Armscor team (MODAC), commissioned\textsuperscript{176} by the former Minister of Defence, Joe Modise (deceased), shortly after the establishment of the DoD and the Secretary for Defence in 1994. The MODAC team prepared four reports\textsuperscript{177} for the former Minister Modise. These reports are up to this day the primary basis of collaboration between the DoD and Armscor.

4.2.4 **Chapter 4 of the DRI WP**, extensively relies on arguments as contained in the White Paper on Defence and the Defence Review, and highlights the technology and systems capability needs of the SANDF, while acknowledging its dilemma to satisfy such needs against the threat of an ever-decreasing defence budget.

It was furthermore anticipated that the internationalisation of defence production would affect the DRI, and that the latter’s initial independency would actually lead to a state of interdependency, ostensibly on international suppliers.

Recognition is given to the ‘dual challenges’ facing the DRI, in the sense that it has to satisfy the some times unique demands from the local user, while simultaneously fulfilling similar or other demands from their export customers.

\textsuperscript{176} This task team was known as the Minister of Defence Acquisition workgroup, MODAC for short.
\textsuperscript{177} MODAC Reports no 1, 2, 3 and 4
It is furthermore stated, that the determination of local needs has to be guided by SA’s defence policy, ostensibly as contained in the Defence White Paper and Defence Review.

Academic discourse follows, discussing various aspects related to global developments in defence, such as the concept of “Revolution in Military Affairs” that predicts technology advancements in the fields of C4I (command, control, communications, computing and intelligence) as the future way in which wars will be fought; the challenges facing the SANDF in its anticipated extended role in peace-keeping; and the realities of other diverse threats (such as piracy, international terrorism, international crime syndication, cross-border crime, illegal immigrants). These tasks are highlighted in the context of maintaining sufficient levels of technology and capacity in the local DRI.

The WP is imploring the stakeholders to put the DRI in a position to plan better. If the SANDF could categorise its requirements in order of strategic essential capabilities, allowing competition on non-strategic requirements, the DRI would be in a position to assess future requirements. It was categorically stated that, “due to an already established local capability, or where South Africa has a global competitive edge, certain niche systems are more cost-effective, over the life-cycle of systems, to secure locally rather than to buy from foreign suppliers”.

With regards to the arguments supporting the idea of “must have locally at all cost”, this chapter continues by describing the needs for specific local defence-related technologies and capabilities in fair details, mainly stating that these already exist in South Africa.

A strong argument is put forward to support the retention of a local defence technology base, which is mainly of a scientific and engineering nature. The establishment of a Defence Evaluation and Research Institute (DERI) is one of the propositions of the WP for the DRI, ensuring that the DoD maintains its “leading
edge, high-risk research”, which is not considered as part of the DRI’s responsibilities. Such research work is expected to be sub-contracted to the DERI.

Aspects such as ‘diversification’, ‘outsourcing’, ‘industrial participation’, and ‘export marketing facilitation’ are just briefly touched upon.

Comment - The general content and basic arguments contained in chapter 4 of the DRI WP, are based on a rationale of real needs. It underwrites the DoD’s requirements as contained in Strategic Business Plan (for 2005/06 to 2007/08). However, due to accelerated international developments and needs in the command and control arena has transformed to a ‘C $^4 I ^3 R S’ approach, which constitutes a ‘systems type of configuration’, involving all aspects of command, control, communications, computing, information, intelligence, infrastructure, reconnaissance and surveillance, which is highly sensorically and electronically sophisticated in its nature.

An improved level of skills and expertise is required in the fields of sensoric and electronic systems. However, something that remains a constant concern to the DRI, is the continuous lack of adequate spending in the above fields in the form of R&D, and technology demonstrators in order to satisfy these needs of the SANDF. The current scenario, however, is one where Armscor tenders may be awarded to international competitors, because the technology gap between what the user wants, and what the local DRI can readily offer, is too vast – a gap that widens in quantum leaps.

The local DRI resists 178 the Armscor/DoD’s open tender approach where tenderers are invited to bid for equipment or sub-systems in cases where a local capability and solution exist. The solution may have been created by the DRI, with the support of the DoD’s technology funding. An example is the Armscor open tender for the Oryx

178 Denel CEO, Shaun Liebenberg has been prominent, since his appointment at Denel in 2005 through the aid of DPE to push the DoD and Armscor towards a local procurement focused approach.
helicopter midlife upgrade (2004/5). The reality is that Denel is the design authority in SA, under license of Eurocopter. DRI players waste a lot of time, effort and money in such a process, as there is be little sense in appointing any other contractor than Denel. But one has to accept that Armscor has a sound understanding of costing, and calculating man-hour rates, and any concerns over exorbitant prices are totally unfounded as this tender has not been awarded yet. Production work that relates to some engine parts has been awarded to Denel in 2005, with phase 2 planned for award in 2008.

Regarding the DERI concept179; although it was proposed and generally accepted in December 1999, not much has actually been implemented as yet. During late 2005, as a result of Denel’s proposed restructuring, this issue came up for consideration by the DoD, because the test facility at OTB, Bredasdorp, is part of Denel’s responsibility. As a strategic test facility, OTB should resort under those existing “strategic defence test and evaluation facilities of the DoD”, such as Alkantpan (artillery test) and Gerotek (high mobility endurance tests), for example. The DoD has subsequently requested the CSIR (Defencetek) to investigate the matter and make proposals to the DoD on how such a DERI should be structured and managed. Presently, all the test and evaluation facilities of the DoD are managed by Armscor, with some subsidies being paid by the DoD, reportedly complemented by Armscor through the selling of surplus defence stock.

On the issue of ‘logistic support’ there is a growing concern among members of the local DRI that relates to the equipment bought under the Strategic Defence Package deal (SDP) seven years ago (Dec ’99). The equipment are now being commissioned into service, but there is no clear picture as to how Armscor the DoD and the respective users anticipate to maintain the equipment. Although all the foreign suppliers ‘committed’ to transfer technology to establish logistic support capabilities within the local DRI, there is not much evidence, if any, indicating that

179 Author’s note: It sounds like the DERI concept had been agreed on by the DoD and that it would be established under and at the CSIR with the DoD the custodian. This process is reportedly to be finalized by the 2007/8 financial year as presented by the CSIR at the Dec ’07 AMD board meeting.
these commitments have been honoured. Due to the non-disclosure agreements between Armscor/DoD and foreign suppliers, it is almost impossible to get clarification on these matters. There is the prospect of the SANDF becoming totally dependent on the various foreign suppliers for logistic support, while they are located thousands of kilometers from where the actual support need will develop after the warranty period is over.

4.2.5 Chapter 5 of the DRI WP addresses government’s role and ‘responsibilities’ in supporting the promotion of DRI defence exports. This argument is rooted on the premise that the declining local defence expenditure makes it crucial for the DRI to ensure exports to guarantee that defence companies maintain those strategically essential technologies and capabilities required by the SANDF. It is also a means of generating additional income that can complement local R&D spending.

Pro-export arguments defend this scenario by drawing on statements contained in the Defence White Paper, recognising the need for the DRI to have access to international markets “in order to facilitate cost-effective performance and reduce the unit cost of producing” items for the SANDF. Government will support the export initiatives of the DRI by permitting it to contract and honour obligations, which have been duly approved.

The complexities and multi-dimensional nature of defence deals are explained, requiring the involvement of government and other stakeholder to support the marketing and sales efforts of the local DRI.

The control process, procedures and proposed structures for marketing support and facilitation, as well as the anticipated roles of each party are described. The location and coordination of this proposed structure (referred to as the Marketing Support Board) is destined to form part of the DoD and needs to be coordinated by this department.
Comment - A general observation in respect of the contents of chapter 5 of the WP reveals that the general content and basic arguments contained therein, are based on assumptions that the SA government will take visible steps to support defence exports, ostensibly through a Marketing Support Board (MSB), that forms part of the DoD.

Although the MSB did make an effort and recorded some achievements in promoting and facilitating DRI marketing initiatives in the initial stages of its existence, it is apparent that due to the different agendas of all the respective government representatives, it was never easy to reach any constructive consensus on anything related to defence exports. Towards 2002/3, and as a result of the ineffectiveness of the MSB, Armscor initiated the creation of the South African Export Service Organisation (SADESO), based on a similar model applied by the UK Ministry of Defence (MoD). The latter initiative however dismally failed to deliver any significant results, while some of the DRI role players regarded SADESO with suspicion due to concerns pertaining to ‘inside trading’. Armscor was made aware of DRI sales and could use such information to promote the use of surplus stock sales to compete with new products on offering from the DRI.

From the DRI side, especially Denel complained about Armscor’s marketing role. Most DRI companies (with the exception of the smaller and micro enterprises) established dedicated marketing structures and advertising campaigns that at one stage serviced some 70 countries. Armscor was on many occasions blamed by the DRI for ‘interfering’ in ‘their’ markets, by using inside information obtained via its role in the MSB, and later in SADESO.

Any worthwhile government support to a SOE, such as Denel, was described as “at best erratic, sporadic, unplanned, uncoordinated” and if and when some support did occur “actions were never followed through, resulting in a zero effect”.
However, as a result of the financial chaos in Denel by 2004/5, the SA government made specific announcements regarding the strategic importance of retaining Denel, with National Treasury allocating a substantial amount of money to recapitalise Denel. Government, especially through the Minister of Public Enterprises, in collaboration with the MoD, started making visible efforts to support Denel in its endeavours to secure additional contracts, both locally (e.g. the A400M, the new infantry fighting vehicle for the SA Army, the A-Dater air-to-air missile development) and abroad, with Denel’s bid in Turkey to sell the Rooivalk helicopter (2006) - a deal Denel eventually lost to AgustaWestland of Italy.

It is, however, anticipated that due to the internationalisation of the DRI, the need for direct government support (which did not exist in any event) will reduce, as market access will theoretically be driven by other market forces, and governed and directed by the efforts of foreign equity partners in the DRI.

This approach is very much in line with that of the UK government, through the Defence Export Services Organisation (DESO), aiming to secure the support of the UK defence industry.\footnote{DESO Policy – see \url{www.deso.mod.uk/policy}. \textbf{Author’s note:} During an interview with the Executive Director of AMD in May 2007 he confirmed that AMD is intended on improving its representative position of the DRI and would play a more active role in future.}

4.2.6 Chapter 6 of the DRI WP addresses the issues of “regulation of armaments production and transfer”. A detailed description is given of each of the international control regimes to which South Africa was a signatory/subscriber/participant, followed by an equally detailed overview of all the control processes in place in South Africa, covering all aspects of armament, arms/guns, ammunition, explosives, missiles related technology, dual-use and nuclear-related matters.

Reference is made to the various overlapping legislation, control measures, process governing the various aspects of legislation, and a host of not-so-apparent interactive roles of all agencies involved.
Measures used to govern conventional arms control are portrayed to be in line with the principles of the United Nations Charter and International Law, recognising the obligation of countries in respect of effecting responsible arms trade.

The whole process and practice governing the conventional arms control process in South Africa, under the auspices of the National Conventional Arms Control Committee (est. 1994/95) are explained, while the legal basis of such control measures is done in terms of Act 57 of 1968 (Section 4C, with the responsible line Minister being the Minister of Defence).

In respect of the conventional arms control process, mention is made of the establishment of an independent oversight entity, referred to as the “Inspectorate for the DRI”, reporting its findings on a regular basis to the NCACC.

An explanation is provided for the control measures governing weapons of mass destruction and non-proliferation. This control process is managed by separate sets of legislation and the control is vested in a Non-Proliferation Council (NPC) that operates independently of the NCACC, with a reporting line directly to the Minister of Trade and Industry.

The interactive roles of the various controlling bodies, under all the various sets of legislation are discussed. As a result of having identified the fragmentation and duplication of legislation and the diverse range of control processes in South Africa, government was requested to streamline the process. Proposals were subsequently made on how government could address, approach and implement an integrated arms control structure.

Comment - The content and basic arguments contained in chapter 6 of the DRI WP, are based on practical experience gained as a result of the Cameron Commission of
enquiry in 1994/5 and the latter’s recommendations on arms control, as well as the fact that by 1999, the NCACC was a well-established functional organ of state.\textsuperscript{181}

Since the approval of the WP on the DRI, the new Armscor Act (Act 51 of 2003), repealed Act 57 of 1968, as amended in 1980, which for almost 25 years formed the only legal basis for effecting control over the armaments industry, and all commercial transactions involving armaments.

The NCACC passed legislation specifically related to the control over conventional arms (Act 41 of 2002), as well as the Regulation of Foreign Military Assistance Act (Act 15 of 1998). The legislation proposed for the implementation of an Arms Control Inspectorate, which is reportedly in process.

As a point of criticism, the SA government did not succeed, as yet, in removing and consolidating any of the fragmented legislation and control structures and processes. This may be because of the protectionist power-base interests of the respective controlling entities. The existing arms control process in South Africa is perceived to constitute over-regulation and “hyper-bureaucratic rule”, which fails to comprehend the commercial, financial and legal effect of such a process on the business of the DRI. The DRI has on numerous occasions publicly stated that it did not have a problem with control per se, but required a process that actually understands the competitive nature of defence business and the importance of a credible supplier reputation.

Although the WP on the DRI contains a statement declaring that “Government will support the export initiatives of the DRI by permitting it to contract and honour obligations, which have been duly approved\textsuperscript{182}”, there are many examples where this was NOT the case! No industry can operate in such an uncertain environment. However, having said this, statistics of defence exports have been “growing steadily

\textsuperscript{181} The Author of this Paper, JJ van Dyk spend from 1991 up till 1996, with managing and implementing changes in the arms control process, whilst with Armscor, then seconded to the DoD (1994-96) and was actively involved with the NCACC, up until May ’96.

\textsuperscript{182} Defence White Paper – Chapter 8 par 11.
since 1994”. According to statistics from the Directorate of Conventional Arms Control, export approvals valued at ZAR1.74-billion\textsuperscript{183} were granted in 2001, against a figure of R854-million (nominal Rands) in 1996. However, this apparent increase has to be calculated in US Dollar nominal terms, which then does not reflect the same picture at all.)

4.2.7 Chapter 7 of the DRI WP provides a synopsis of the restructuring and the transformation of the DRI, against the backdrop of government’s views (in 1995) on the restructuring of state assets, and in line with the parallel development of sectoral policies.

Mention was already made of the prospects of restructuring, including the privatisation of Denel, specific Armscor subsidiaries or other facilities of the DoD, the SANDF’s own industrial facilities (e.g. Simons Town Dockyard, managed by Armscor; but with the incorporation of Armscor into the DoD, it is not clear how this facility will be managed in the future, as well as other government research facilities, such as the CSIR, which has since 2005 also undergone several restructuring changes.

The goals for the restructuring of the proposed entities are arguably based on assumptions related to benefits associated with the:

- maximisation of revenue and economic benefits for the state;
- improvement of efficiencies and economy in business processes;
- exploitation of industrial strengths and the enhancement of competitiveness;
- redistribution of wealth and support of BEE strategies; and
- ensuring retention of strategically essential capabilities and technologies.

The prospects of increasing international joint ventures, as well as levels of government-to-government agreements, are similarly anticipated.

\textsuperscript{183} Institute for Strategic Studies, RSA. Occasional Paper no 78. Sep 2003.
Concerns are, however, expressed over the safeguarding of intellectual property rights (IPR) of the DoD. As the DoD has for many years been funding research and technology development in the DRI, such technologies, over time, became the sound building blocks of most of the DRI’s business activities. A position was adopted by stating that IPR should stay vested in the DoD and that any subsequent sales would require the written approval of the MoD, in cases where such sales would result in the transfer of technology. It is also stated that the state may, in certain cases, invoke royalties on exports where technologies belonging to the DoD are used.

On the issue of ‘conversion and diversification’, these requirements are viewed in line with the global declining defence market. Conversion is seen as a defence company stopping defence production altogether, and focusing on civilian products only; but still using the infrastructure brought about by its previous engagement in defence business. Diversification on the other hand, is seen as an ‘adjustment’ strategy, where a company will keep on pursuing defence business, but in parallel will also be involved with non-defence-related manufacturing, arguably to maintain levels of sustainability and capability by cross-subsidising its defence business during lean times.

It was, however, stated that government would not interfere or intervene in any individual defence firm’s conversion and/or diversification efforts, although it is anticipated that government may provide ‘measure’ (not defined) to support such initiatives.

Comment -The content and basic arguments contained in chapter 7 of the DRI WP, are ‘predictions’ made, based on internationally trends, as well as happenings on the local front, especially since the mid '90s. In putting this in context, one has to take cognisance of what happened in the DRI since the late '80s:

- **Denel**: from the date of its inception (April 1992), the company operated independently and during the first six to eight years of its existence, Denel
survived quite well. The demise started as a combined result of the major reduction in local defence spend, international competition, not being able to timely exit non-core non-profitable businesses (blocked by Labour Unions because Denel as an SOE was supposed to retain jobs at all cost), as well as poor senior management interventions in traditional business practices. Denel’s responsible government department; Public Enterprises, was, however, forced to intervene after Denel’s reported a record loss in the 2004/5 financial year. The loss amounted to ZAR1.6-billion, while the 2005/6 loss was reduced to ZAR1.3-billion, with an actual loss of ZAR549-million for 2006/7. The company’s liquidity base remains sound. Denel was subsequently (during 2005) instructed and mandated to exit all non-core business and to unbundle its business operations into various smaller, independent companies, preferably with foreign equity partners. This process was initiated in late 2005, and will be completed by 2009/10. The entities that will not be able to establish a sustainable business by 2009, may be considered for closing down, unless the DoD provides for a sustainable order flow.

- **Specific Armscor entities** (such as the DERI), are the subject of an ongoing debate relating to the establishment of an independent evaluation and test institute, under which all the existing DoD test and evaluation facilities (as managed by Armscor), as well as OTB under Denel, and Defencetek\(^\text{184}\) under the CSIR, can be amalgamated under one single entity. The initial question, as to who would be in charge of this new facility, seems to have been resolved.

- Regarding **Simons Town Dockyard**, the DoD, in 2001/2, basically ‘offered’ the facility to Armscor to assess economically viable “privatisation and optimisation” options, and a type of Public Private Partnership (PPP) model was envisaged.

- At **the CSIR** there were a number of consolidation actions and, all the defence-related business units (e.g. Aerotek, Aeroflo and Defencetek) merged into one unit, called Defencetek (recently again renamed and now known as the Centre for Defence, Peace, Safety and Security), with further restructuring anticipated, especially in the light of the new DERI concept mentioned earlier.

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\(^{184}\) **Author’s note**: The CSIR has renamed Defencetek during 2007 to “Peace, Safety and Security”
When considering the conversion the DRI, Altech poses an example of a traditional defence-related company converting into a civilian business. The Altech Group was one of the ‘Big Five’ in the defence industry arena in South Africa. The company transformed into a civilian, electronics business.

On the topic of diversification, there are more examples, especially within Denel, with its factories, until fairly recently (2004/06), producing plastic, injection-mould products, drill bits for the mining industry, commercial ammunition and hunting rifles, as well as soy bean protein extraction, and anodes for the aluminum smelters. The Grintek Group, on the other hand, excelled in its business in the field of commercial telecommunications. However, not all diversification activities are necessarily success stories and Denel has, over time, recorded major losses in most of these areas, mainly due to the fact that these businesses were inadequately funded and could as a result not attract a sustainable market share. Instead, the businesses started draining Denel’s reserves.

On the topic of joint ventures and partnerships, the predictions and anticipations of the White Paper on the DRI in 1999, are coming true, and there are indications that the ‘traditional DRI’, as it was known by the mid ‘90s, will in the not too distant future, be absorbed by the global defence industrial base, ostensibly and primarily from Europe, as discussed in the following section.

5. Defence-related industry players as in 2006/7

Engineering News in 2006 published a comprehensive report on the local DRI, reporting the state of affairs during the past couple of years. The report draws information from a variety of sources, such as academic papers, media reports, official government statements and government departmental reports from the DPE, DoD, DTI, Denel, AMD and Armscor. The following is an excerpt from the report as it relates to this chapter, as adapted and expanded on by the author.

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In 1994, South Africa’s defence-related industries were dominated by Denel and three private-sector companies – Grintek, Altech and Reunert. In 2005, Saab raised its interest in Grintek and became the majority owner the company. The company is now called Saab Grintek. Altech has, however, left the defence market, and Reunert’s involvement in the sector has lessened. In 2006, Reunert announced that it was considering the disposal of most, if not all, of its defence businesses. The majority of private-sector turnover in the defence market is spread over several companies – Grintek, Reutech (the defence arm of Reunert), Advanced Technologies & Engineering (ATE, partly owned by BAE Systems), African Defence Systems (ADS, partly owned by Thales of France), OMC (formerly known as Alvis-OMC, now partly owned by BAE Land Systems) and Tellumat - it is anticipated that further consolidations will be seen in the next two-three years, especially in the light of Denel’s unbundling strategy.

The South African Aerospace, Maritime and Defence Industries Association (AMD), has 43 members and claims to represent, from a total turn-over point of view, over 90% of all defence-related business in South Africa, and over 97% of defence-related exports.

State-owned Denel has been included in the restructuring plans of the DPE. In 2002, the British firm, BAE Systems, announced that it wanted to acquire a 30% stake in the Denel group, but this never came to pass. Turbomeca, forming part of the French group Snecma, has acquired a majority shareholding (i.e. 51%) in Denel’s Airmotive division, which has been renamed Turbomeca Africa (TMA). Despite these restructuring efforts, the South African government has indicated that it intended to retain control of Denel, as it regarded the company as a strategic asset.

Denel is by far the most significant contributor to South Africa’s defence-related sector, both in terms of the value of its defence sales, and its dependence on these
sales – averaging 48% of the local defence-related market, with the private sector’s share averaging 52%. Although this is less than the almost 70% held by Armscor subsidiaries during the ‘80s and prior to the formation of Denel, the company continues to dominate most of the seven main sectors of the market, particularly aerospace, ammunition (small, medium and large caliber), weapons systems (including infantry artillery and turret systems and missiles), as well as electro-optical sub-systems.

The three main sectors of the market not controlled by Denel – electronics, maritime and support equipment – are dominated by Saab Grintek, Reutech, ATE, ADS/Thales and now BAE Land Systems OMC, together with a large number of small and medium sized companies, none of which focuses exclusively on defence work. The defence-related industries contain a number of small skills-based entrepreneurial companies that subcontract to the larger companies, and tend to also find other work, both locally and abroad, migrating defence industry skills to other industry sectors.

Denel’s financial performance has been volatile since its establishment in 1992. Between 1992 and 1996, its turnover dropped by nearly six percent a year in real terms, while the three largest private sector companies – Reutech, Altech and Grintek – recorded increases in their turnover during the same period.

Mainly as a result of the financial predicament of Denel, the DPE, with the backing of the DoD, the DTI and AMD took the initiative in 2006/7 to initiate an independent audit of the status of the DRI. The local based research agency, McKinseys, was contracted by DPE\textsuperscript{186} during late 2006 to do an analysis and to prepare a report on the DRI\textsuperscript{187}, which was to form the basis of the DRI Sector strategy for the DTI to implement in collaboration with the DoD.

\textsuperscript{186} Interview with Mr Arthur Oates of Denel at the time at the Strategy Implementation section - Corporate.

\textsuperscript{187} The research report done by VuXaka for AMD in 2005 were reportedly seen as being too bias and not objective enough.
6. **In conclusion**

As a *general observation*, it can be safely stated that the WP on the DRI is the result of a well-defined, researched framework that eventually reflected on a number of position papers and research reports generated by experts, stakeholders and interest groups. The process took from August 1996 to December 1999 to complete.

An implementation strategy for an aerospace industry support initiative (AISI) was completed at the end of 2005 by the DTI - implementation was announced late 2007. The strategy recognises that the ability of the South African industry in the defence arena should be used as a platform, ensuring that technologies, skills and internationally-recognised products are retained and ultimately accept civilian aerospace manufacturing opportunities. Asia’s objectives are to enhance the global competitiveness of the South African aerospace industry, to provide an institutional platform to facilitate partnerships, to identify and develop South Africa’s aerospace industry, and to accelerate the achievement of government strategic growth and equity.

The National Aerospace Centre of Excellence (NACoE)\(^{188}\) is seen as the government’s first steps to advance a growth path and further develop the aerospace industry in South Africa. The NACoE was registered in the first quarter of 2007 and that it hopes to attract membership from various local and major foreign aerospace companies. The center’s vision is that by 2010, it should be recognised and supported as a valuable and integral part of the SA aerospace industry. It intends to act as a facilitator to effect meaningful partnerships between industry and universities and to also contribute to the government’s goals of establishing a competitive industrial base and realise the long-term growth objectives for the aerospace industry. Local aerospace companies, such as Denel Saab Aerostructures and Aerosud are seen as first tier suppliers to international

\(^{188}\) As reported by Francois Denner of the NACoE, who was, whilst at the DTI responsible for the establishment of the DTI’s aerospace cluster strategy. Engineering News. Feb 9-15, 2007. (The Author also participated in the initial start-up process, from Denel’s side.)
aerospace companies, such as Airbus and Boeing. Partnerships with Brazil’s Embraer and Canadian Bombardier are also envisaged.

Concerns are raised by the defence industry over the DTI’s industrial development plan for the aerospace sector, and more specifically the new generation military transport aircraft, commonly referred to as the A400M. The latter programme is a DTI-initiative and some argue that the funds for the programme should come from the DTI, instead of from the defence budget. The A400M programme is posing a financial threat to other local defence programmes as it has weakened the cash flow of the DoD budget. The DTI maintains that the programme was a strategic and essential investment and that South Africa’s Air Force will reap the benefits in the long run. Many jobs are supposed to be created and South Africa’s involvement will ensure that skills acquired while working on the A400M, would be retained in the country. There is still, however, an ongoing argument over the short-term benefits of the A400M for the SANDF. What is also not clear, are the stringent commercial contractual conditions that Airbus included in the contract, with Denel (SA government) facing a substantial penalty if the parts of the aircraft are not delivered on time and within specifications, especially some stringent weight limitations 189.

There is a feeling among certain DRI players that work on the DIP projects may have obstructed other potential aircraft and other projects, owing to the fact that many small parallel activities resulted in an overloading of the production facility and that DIP activities called for multi-tasking, making the logistic management of labour problematic.

Another suggestion is made, stating that government has decided to preserve 190 the DRI as an extension of European companies, as the bigger picture of the arms

189 Author’s note: The A400M was not a scheduled DoD acquisition programme till 2012. The work that Airbus is putting in South Africa has advanced industrial participation prospects for local companies, such as Denel. Aircraft weight is a critical requirement and Airbus is slapping heavy penalties on companies not achieving the maximum required weight specifications.

190 The DPE, in agreement with the DTI, the DoD and AMD had tasked the research company McKinsey s in late 2006 do prepare an extensive report on the DRI in order to inform a decision on how best to draft a DRI Cluster Strategy for DTI to implement. It is anticipated
deal could also be interpreted as South Africa buying an admission to a corner of the Western-dominated international arms industry. South Africa is in need of a defence industrial strategy that favours the local defence industry, ensuring that the industry is sustainable, according to AMD executive director, Simphiwe Hamilton. (In 2006, the DoD\textsuperscript{191} confirmed the strategy followed in the footsteps of countries such as Canada and the United Kingdom.)

In a recent presentation\textsuperscript{192} made to the local defence-related industry, UK-based Ernest and Young, elaborates on the UK’s defence industry strategy stating that the defence industry needs insight into defence spending, that there must be an industrial support strategy in place and that it is government’s responsibility to keep such an industry alive. The industry, on the other hand, must get their act together and become efficient, more streamlined and optimise collaboration by working together to ensure successful deals that will strengthen the industry to become financially strong. Hamilton comments that without such a strategy, “South Africa will, at best, be left with a fragmented and unsustainable defence industry”. At worst, however, he says “the South African National Defence Force (SANDF) may find it increasingly difficult to maintain, modify and upgrade externally sourced equipment, while also becoming dependent on foreign suppliers”.

A strategic defence industrial strategy that identifies the country’s strategic capabilities, long-term acquisition plans and creates a home market of preferred suppliers would prevent what Hamilton calls ‘open competition’, which can lead to the further fragmentation of the industry and will result in too many small competitors in a small market. It will also prevent the negative impact on the country’s balance of payment, owing to expensive maintenance and support options associated with foreign equipment.

\textsuperscript{191} Engineering News. November 3-9,2006
\textsuperscript{192} Presentation on 5 Feb ‘07 at the CSIR by Amin Mawji, a partner and expert in Aerospace & Defence industry from the Ernest & Young London office.(Manje.Padi@za.ey.com)
A further issue is the higher maintenance costs of the new equipment. For example, it is argued that the highly sophisticated nature of the German vessels will entail higher operating costs and an increased reliance on maintenance arrangements with overseas contractors. Generally, concerns were raised about the use of offset (DIP and NIP) deals as a means to justify the acquisition of weapon systems by economic rather than systematic benefits, as the true price of the weapon systems may be disguised through offset agreements. It is being alleged by certain entities and individuals, that offset provide a platform for corruption and policy confusion, and compromise debates concerning alternative paths of security and development.

During and post the SDP contracting process, various allegations surfaced, hinting that the South African procurement process was flawed, and that bribes, influencing the awarding of contracts were accepted by government officials. Such allegations prompted a joint investigation by the Auditor-General, the Public Protector and the National Director of Public Prosecutions.193

Government welcomed this investigation’s results, which concluded that “No evidence was found of any improper or unlawful conduct by the government. The irregularities and improprieties point to the conduct of certain officials of the government departments involved and cannot be ascribed to the President or the Ministers involved in their capacity as members of the Ministers’ Committee or Cabinet. There are therefore no grounds to suggest that the government’s contracting position is flawed”. The report states that the procedures in the acquisition process are in line with international best practice. (At the start of 2008, there was an announcement by the ANC that they will re-open the SDP investigations.)

This joint investigation is controversial as it displaced a process that included parliamentary oversight in the form of the Standing Committee on Public Accounts.

(SCOPA). The now-dismantled investigating unit headed by Judge Heath, may have lifted uncertainty regarding the deal as a whole, but left a question mark regarding the conduct of certain government officials and arms contractors. Since then, there have been a few ‘high-profile’ arrests and prosecutions, and investigations continue.

A local aggrieved businessman, Mr Richard Young, of the company CCII, claimed that the DoD did not honour promises relating to his company’s participation in the Corvette programme, but instead allowed ADS/Thales (supplier of the combat suite), to award the sub-contract (allegedly intended for CCII) to another French foreign supplier to provide certain parts of the command and control system. After a legal battle of almost seven years, Mr Young eventually “made peace” with the DoD in return for a ZAR15-million settlement payment.194

Government emphasises that countries such as Australia, Britain, Canada, Denmark, Finland, the Netherlands, Norway, Sweden and Switzerland all require offsets when they procure defence equipment from abroad. The joint task team that investigated the strategic defence package on behalf of the Standing committee on public accounts (SCOPA) surveyed countertrade practices in a number of countries and found that South Africa’s policy compares favorably with international practice, although in most countries the threshold for requiring industrial participation is lower – in some cases as low as USD1-million.

Beyond the criticisms and defence of the decision to include offset arrangements in the procurement of defence equipment, lies a larger complaint against the decision to procure defence equipment as a rule. At the center of these arguments lies the opportunity cost of spending more than R30-billion on defence capacities, when social services continue to be under-funded, and poverty alleviation and development issues continue be neglected or ignored. It is anticipated that, despite the fact that payment for the procurement package was spread over a number of

194 As reported in the local newspaper BEELD of 28 May 2007
years, it will increase the share of the budget allocated to defence, and reduce the percentage allocated to infrastructure and public works programmes. This, in turn, will undercut the provision of more funds for poverty relief and will affect the more peripheral provinces, such as the Eastern Cape. In terms of regional development, there are promises of important contributions, but they are not categorised into a clear policy framework.

Despite the initiative being project-driven, there is not much being done to provide public awareness of the investment possibilities on offer. To some extent, it appears as if government attempts to create the impression that, because of the offset deals, South Africa actually will not pay for the weapons. This is not the case, and for every decrease in the value of the South African Rand, the cost of the package increases. Of course, for every such increase in the cost of the contract, the converse effect of the valuation of the industrial participation packages should be taken into account. While this sounds positive, it is dependent on whether the primary contractors deliver on their industrial participation commitments.

In defending its decision to procure defence equipment, however, government emphasises the need for South Africa to be able to defend itself against threats to national security. Such threats include regional instability, cross-border banditry and coastal piracy, and affect the country’s ability to develop its economy and attract investment.

The Minister of Public Enterprises also defends the arms deal and stating that it will be vindicated. “We would not be able to dictate the political development of Africa, and you will not be able to prevent small military powers from accumulating weaponry, therefore to protect your own democracy… we have to be at the leading edge of military technology. That is why we went for the fourth generation fighters, submarines, Hawks, etc.”
But, regardless of whether the contractors deliver on the industrial participation obligations, and regardless of whether the promised benefits to the country and the defence industry result, a number of significant indirect benefits to the defence industry can already be seen. For example, in the process of procuring the equipment for the strategic defence packages, the local defence industry is showcased to a large numbers of senior representatives from the European defence sector that would otherwise not have been aware of South Africa’s defence capabilities. Also, during the selection and bidding process, gaps in local capabilities are identified and tackled. As a direct result of this, several South African companies increased their exports, much of them are not involved in DIP efforts.

There is also a growing need for additional purchases for the Army, demanding large quantities of armoured vehicles. It is expected that these needs will be met in the next decade or so through a mix of imports and South African manufactured goods. The debate on the SDP and its resultant offset package caused much controversy, but offered some valuable lessons for South Africa to learn. As the debate continues, it has yet to be seen whether the cost of the programme had a positive or negative effect on the economy as a whole. This approach is already visible, mainly as a result of pressures from Denel, collaborating with the DPE, to secure privilege access for Denel and the rest of the DRI in local defence contracts. Lately, Denel received two major development contracts: A-Dater, a 5th generation air-to-air missile195 and a new generation infantry combat vehicle196.

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195 Author’s note: The A-Darter will be a main weapon system on the Gripen aircraft of the SA Air Force.
196 Author’s note: The DoD’s project is named Hoefyster and is meant to replace the aging fleet of Ratel Infantry Fighting vehicles that dates from the mid 70’s.
CHAPTER 6 - THE DEPARTMENT OF DEFENCE’S DIP POLICY

1. Introduction

This chapter reflects on the DoD’s policy that was approved in May 1997, for the implementation of a defence industrial participation (DIP) process governing all defence procurements with an imported content of USD2-million and more. This policy is an independent policy from that of the DTI’s formal policy on National Industrial Participation (NIP), approved by Cabinet in the same year. NIP is relevant to those government contracts with an imported content of more than USD10-million. Comment is thus made in the context of the present relevancies and possible improvements of this policy document, ONLY in respect of the DIP element.

The aim is to provide an analytical review of the DoD’s DIP policy, which is a ‘subset policy to the Department of Trade and Industry’s National Industrial Participation (NIP) policy of 1997.

The DoD’s policy document is therefore assessed, analysed and subsequently discussed and commented on, against the background that led to its inception, in May 1997, with some reflection on the rationale that governed the thought process that actually guided the drafting of the DIP policy, as well as how the latter compares against international benchmarks citing those international practices as mentioned in chapter 2.

Almost ten years have passed since the writing of the DoD’s DIP policy. Therefore some attention is given to the prevailing applicability of this policy, especially against

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197 The Author of this had been employed in the defence-related fraternity since 1 September 1980 (Armscor) and was actively involved in the countertrade process since May 1996 (till date). Mr van Dyk was the “drafter” of the DIP policy as approved by the Secretary for Defence (P.D. Steyn) in May 1997. The DoD DIP policy formed the basis for the subsequent Armscor DIP process. (He was also involved with the early stages of the DTI NIP policy and provided various inputs (1996) as well as being actively involved with implementation of the NIP process during the strategic defence package deal (SDP) between 1997 to 2000) and with subsequent monitoring from within Denel since 2001.
the events associated with the huge defence package deal concluded in December 1999.

2. **An introduction to the history of countertrade in South Africa**

This chapter on the South African DIP Programme aims to explain how South Africa intends to use the principles of government procurement to leverage countertrade (industrial participation) in a very structured manner, with a view of securing industrial and economic benefits for the industry, which ultimately create jobs and contribute to social upliftment. The author, however, wishes to state upfront, that the SA DIP regime is *not* flawless, nor are any of the role players – whether it is Armscor, the DoD, the DTI, the obligors, or industry participants, innocent when it comes to procedural inadequacies and subsequent performance and execution of the DIP requirements. On the other hand, it must be stated that South Africa’s programme is not the exception at all!

3. **The origin of DIP– Defence Industrial Participation**

DIP, as it is commonly referred to today, was initiated in 1988. Between 1988 and 1996, Armscor’s countertrade programme included direct offsets, indirect offsets and countertrade. The latter mainly in the form of counter-purchased goods for export, excluding all raw materials, precious and semi-precious metals, gems and related stones and diamonds, but including the export of tyres and wine.

Until 1996, Armscor was the only organisation in South Africa requiring countertrade for foreign procurements. The initial percentages were low and based on a best effort. The scenario later changed to a performance-based penalty, mainly because Armscor realised that best effort undertakings have (and still do have) the potential of becoming a ‘never-never’ process. As the percentage of countertrade was gradually increased by Armscor (in 1996 it was intended to be 80%) the percentage penalty also increased. By late 1996 Armscor required a 30% penalty, resulting in –
major international rebuke. The penalty now sits at between five percent and 15% and is applied on a sliding scale.

4. The National Industrial Participation Programme (NIPP)

It was not until 1996, that the DTI started considering the reciprocal benefits offered by government purchases abroad, as a means to secure business through investments and exports for the country.

Towards the end of 1996, the DTI made a submission to Parliament and requested approval to implement countertrade – referred to as industrial participation (IP) applicable to all SA government and parastatal organisations. Whenever purchases are made, and the imported content value equals or exceeds USD10-millon, either in one contract or a number of contracts to the same supplier over a two-year period, there is a 30% mandatory requirement for NIP.

During the first half of 1997, Cabinet ratified Parliament’s late 1996 decision to allow the DTI to impose the National Industrial Participation process – referred to as the NIP guidelines, as a mandatory government procurement requirement. The policy made provision for other government departments (and parastatals, including SOEs) to impose their own industrial participation or local content requirements – such as the case for defence procurements – as Armscor already had a process and an established track record in place. This is why there is currently a parallel process in place, for defence contracts, requiring DIP (managed by Armscor on behalf of the DoD), as well as NIP (managed by the DTI)\textsuperscript{198}.

\textsuperscript{198} Author’s note: It is interesting to observe that no other Government Department nor SOE had been practicing any similar approach to that of Armscor’s DIP programme, although they do resort to specified minimum levels of local content in their tenders which does not qualify for DTI NIP credits. One can basically assume that “local content” in such instances, is the equivalent of “DIP”. This position may now drastically change because of the newly imposed policy on the Competitive Supplier Development Programme (CSDP) of the Department of Public Enterprises as described above or even a possible replacement by another mechanism is possible.
5. **DIP policy - key players**

- **The DoD: The Secretary for Defence** is the accountable officer for defence. The DoD is *inter alia* the civilian oversight, policy, planning and budgeting authority for all defence matters, the procurement and acquisition approval authority, as well as the custodian of the DIP policy. In terms of the latter policy, the DoD has a monitoring role, through the office of the Chief of Acquisition, having appointed Armscor to manage the process through a dedicated DIP Division for, and on behalf of the DoD. This process is now a legal requirement.

Once the Arms of Service (AoS) of the SANDF has submitted its user staff requirement (USR), the DoD processes the requirement in a very structured manner. Once the DoD has secured approval for a project, the Chief of Acquisition issues an instruction to Armscor for the issuance of a tender (whether RFI or RFP, or other).

- **Armscor**, as the formally appointed acquisition agency of the DoD, has a dedicated DIP Division responsible to effectively implementation and manage the DIP process, ensuring that tenders invited contain the necessary stipulations regarding both DIP and NIP, whenever applicable.

- A formally constituted **DIP Committee**, co-chaired by the DIP Division’s head and the Chief of Acquisition (or their nominated proxies), is still responsible for approving all DIP requirements for tenders, as well as subsequent proposals, agreements, amendments, substitutions, credit claims and reduction of guarantees. The DIP Committee ultimately makes recommendations on penalties to the Armscor Board, especially on sizable contracts and/or contentious issues, i.e. issues not in line with existing policy.

- **The DTI** operates independently and whenever there is a requirement for NIP, prospective bidders are required to liaise directly with the DTI’s Industrial
Participation Secretariat, to discuss NIP concepts and requirements for compliance. The NIP input to the tender response must be forwarded to Armscor as part of the total tender response, which has to be presented with a technical and commercial proposal, as a separate DIP proposal (and a NIP proposal).

6. **Confusions regarding countertrade terminology**

Quoting Coetzer\(^{199}\), he expresses the opinion that despite the growing presence of countertrade in international trade transactions, there is a lack of standardisation of countertrade terms (see in this respect the author’s depiction in Figure 6) and that “…a number of different expressions are often used to mean the same thing and sometimes the same expression is used with several different meanings…” In this context there is still confusion today as to what exactly constitutes imported, foreign content and foreign contract values. This is especially true for those contracts placed with local companies, acting as prime contractor. The latter has to import parts, components, sub-assemblies or services from overseas suppliers. Aggravating this problem is importing products on a ‘commercial-off-the-shelf’ basis. A number of relatively small contracts collectively accumulate, which causes the DIP (or NIP) thresholds to be reached.

Coetzer continues by stating that the matter becomes even more perplexed as countertrade transactions can actually assume infinite forms, varying from country to country, aggravated by a lack of conforming definitions and the application of a diverse set of terms to such transactions.

7. **Countertrade and defence procurement – an international perspective**

Defence equipment represents very expensive commodities and defence budgets, especially in the light of constant calls to rather spend money on social and socio-economic programmes rather than on defence, often do not have adequate funding

to satisfy operational demands. Such constraints cause difficult decisions, and off-the-shelf procurement has to be compared with the cost of indigenous development programmes.

Due to cost considerations, linked to the capacity and capability of local industry, as well as to the time it takes to develop a specific piece of defence equipment, decisions ultimately result in a choice to buy off-the-shelf solutions. The mechanism used to involve local industry, is industrial participation programmes (or commonly referred to as ‘offset’). Martin for example thus observes 200 “…governments have followed procurement forms, which yielded benefits for the domestic economy, as well as being less costly than an indigenous program”. Governments otherwise choose to create collaborative co-operation models, especially in aerospace. 201

The exact number on countries applying the concept of countertrade procurements (whether defence only, or also civil or public programmes) varies from source to source and seems to range between 75 to 100. The Quarterly Bulletin of CTO Data Services UK, contains a write-up on each country applying some form of countertrade. This list presently (April 2007) contains records of 77 countries with active countertrade policies, especially for defence programmes.

“Although commonplace, offset 202 requirements vary considerably from one country to the other… and policy differences will reflect different experiences… and objectives”. Martin 203 actually observes that this international diversity makes for an interesting comparative study, but at the same time he alleges that “economists have long neglected defence matters although the level of resources devoted to defence spending, as well as the offset element attached to it, warrant substantially increased research effort”. He also remarks that due to the relatively unavailability of reliable data on offsets, researchers have to rely on the goodwill of those in the

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201 An example of this is the Airbus A400M aircraft which is being developed and built on such a model. Airbus signed a deal with the DoD in 2004, whilst South African and Brazil are also looking at such a joint development program on an air-to-air missile(2006).
202 Author’s Note: Academic literature and research studies constantly use the term “offsets” which is normally associated with defence procurements. “Offsets” as such is however a sub-set of Countertrade, which is used as the collective term.
defence industry and the controlling authorities. M. Rowe\textsuperscript{204} for example remarks, “\textit{many companies hide their countertrade commitments as they would secret vices”}. (\textit{This appears to be true for government’s as well}.)

Martin (see also Chapter 2) reflects on the various arguments used for having or using countertrade, these include aspects/arguments such as:

- offsets are used as a tool by various governments to transfer new technologies into the domestic economy, which ultimately diffuses throughout the economy;
- to ensure savings on foreign exchange (analysts such as Mirus and Yeung (1986)\textsuperscript{205} are not convinced of this);
- offsets enhance the local defence industrial base and improve on capabilities, mainly through work-share agreements;
- offsets are used as a tool to force market entry and improve on labour conditions;
- offsets can overcome protectionist sentiments by overseas exporters; and
- offsets reduce the adverse impact on the balance of payment.

8. \textbf{Analytical review of the DoD’s DIP policy}

The formation of the (new) DoD with an accountable officer in the person of the Secretary for Defence (appointed in 1994 by the President), resulted in Armscor (and the SA National Defence Force) losing their autonomous functioning on all matters pertaining to defence-related policy, acquisition and procurement matters.

As defence industrial participation is regarded as a sub-set of the acquisition and procurement process, the former Secretary for Defence (PD Steyn) adamantly insisted that only the DoD could make and issue policy, and hence the DoD in 1996 became the custodian of the DIP policy that was initially vested in Armscor since 1988.

\textsuperscript{204} \textit{ibid p3}
\textsuperscript{205} \textit{ibid p19}
In terms of the newly-structured and published DIP policy, the Secretary for Defence mandates Armscor to continue managing the DIP process for, and on behalf of, the DoD. This ruling is now also encapsulated in the new Armscor Act (Act 51 of 2003).

The introduction of the DoD’s DIP policy reflects on the Constitutional rights of South Africa to defend itself, and the need to have a defence force that can be deployed in a certain manner. Reference is made to the fact that defence-related acquisition and procurement are governed by SANDF needs, implying that a local defence industrial base should be retained and maintained, not only for satisfying equipment needs, but also to provide for life-cycle logistic support. It is stated that the DIP process will be used to leverage benefits on a reciprocal basis for the local DRI, whenever purchases from sources abroad are to be made. Reference is also made simultaneously to the co-existence and co-applicability of the non-defence/national industrial participation (NIP) policy of the DTI.

The principles that were, at that time, considered for the DIP process, (in parallel with similar announcements by the DTI) relate to the following main issues:

**Price.** The departure point today, is still that DIP must not contribute to an increase in price (of the goods acquired). The assumption that prevailed at that time was that any cost of execution would be an integral part of programme cost and that it would not be reflected as an additional, below the line, cost element.

Comment - In reality, countertrade does not, and cannot happen for free, and suppliers constantly use this argument to ‘fight off’ any DIP requirements by offering discounts. Discounts are sometimes attractive to the DoD due to budgetary constraints and it therefore can create a level of conflict. The DoD may in some

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206 In parallel to the drafting and approval of the DIP policy, the DOD with the SANDF were engaged with Armscor in the drafting of various MODAC (1-4) papers, which together with the DIP policy formed the basis of many of the “informed” inputs and arguments to the Defence Review (1998) and subsequent White Paper on the DRI (1999).

207 The NIP policy was approved in parallel, first by Parliament in November 1996, followed by Cabinet’s ratification in April/May 1997. (Author was involved in the latter process.)
instances decide not to invoke DIP on contracts, but this will be the exception and not the rule.

Whether the DoD, or Armscor prefers it or not, the programme eventually pays for the implementation of DIP, and the penalty guarantees required eventual performance. However, the question that needs to be asked is ‘what level of cost’ the programme is prepared to carry and what benefits the intrinsic and/or economic elements of DIP offer.

DIP requires that at least 50% of the imported content value of a foreign contract (of USD2-million or more) become the DIP requirement. Normally, between 30% and 40% of this 50% involve some form of direct work-share activities, with an additional ten percent for technology transfer. If, for argument sake, the cost of executing DIP is between 2.5% to 5% of contract value, the net benefit will still be considerable.

On the other hand, almost all Armscor tenders are assessed on a competitive bid basis, and prospective suppliers can ill afford to load their prices to ensure that DIP (and NIP) get executed.

**Mutual benefit situation.** This principle requires DIP to be profitable for the seller and beneficial for the SA economy, and the DRI at large. This in itself means that DIP (and NIP) is not expected to have any detrimental impact on any party involved.

Comment - Only a detailed transaction analysis of each DIP-related transaction will prove or disprove this assumption. Access to research data is an extremely onerous task, as both Armscor and suppliers and beneficiaries, are not prepared to share such information, based on commercial confidential considerations. Denel gained much experience as a beneficiary of DIP (and NIP), and received some level of insight into the DIP principle. It is the author’s view that the DIP programme did indeed result in work-share and the transfer of technology that resulted in exports. Although DIP boosted turn-over, until now it remains, at best, marginally profitable
Another concern, based on Denel’s experience, is that the DIP policy does not regulate aspects related to capital equipment requirements, infrastructure improvements/upgrading, non-recurring cost and learning curve constraints and that there are resultant negative influences on the local DRI, resulting from obligor demands to the local DRI to secure its own investment into these areas in order to receive DIP work. Although the policy implies that DIP activities must be sustainable, Denel’s experience is that on many occasions, obligors are offering DIP activities that are non-sustainable, resulting in work packages that cannot be offered on a competitive price basis, due to too short production runs. Industry (especially Denel) is furthermore risk adverse and cannot sustain itself on promises of additional work-share packages. DIP obligors unfortunately use such non-competitive, or non-compliant examples to discredit the DRI, Armscor and the DoD. There are exceptions to the rules as is the case for Aerosud, a privately owned aircraft component manufacturing concern.

**Additionality:** this principle requires the obligated party to create, or ensure new, or incremental new business in order to prevent historic and or ongoing business to be claimed as DIP.

Comment - This principle appears to be working well in practice, although obligors constantly submit claims to Armscor, especially based on pro-active transactions that fall in the “marginally acceptable/non-acceptable category”, depending how good an argument the obligor can put forward. In most cases such claims fall outside of the ‘effective date conditions,’ stipulating that only those DIP transactions entered into after the effective date of a DIP agreement will be considered.

Another concern from the controlling authorities (Armscor/DoD) is to what extent the obligor colluded with a local beneficiary in ‘creating additionality’. (Armscor of course
has the right to initiate any audits if there are any substantive reasons to suspect the validity of any claim.)

**Sustainability:** this principle anticipates that DIP transactions will not be implemented as once-off activities, but will result in a medium (three to seven year) to long-term (seven to ten years) economic activity between foreign obligated parties and local DRI companies.

Comment - Although this principle, as a policy statement, is a fair assumption, the DRI (especially based on Denel’s past six years of experience as a DIP recipient/beneficiary), is of the opinion that the issue of sustainability of specific DIP transactions, becomes rather suspect when assessing the micro level. Many DIP activities reflect transactions that constitute relative short production runs, based on once-off contracts, and this is particularly true when considering the direct work-share element of DIP.

One of the main reasons why DIP obligors are perceived to be unwilling to award long-term work-share contracts, lies in the relative uncertainty of such suppliers’ own markets, as well as the challenge to satisfy other offset demands while attending to multiple co-production expectations if all the other clients insist on similar demands. This phenomenon unfortunately results in a very fragmented approach, although certain suppliers are much more efficient in their planning of work-share, and Denel is increasingly witnessing an approach where foreign suppliers reduce the scope of activities, selecting only a few that could be developed on a long-term sustainable basis (an example of this is Denel Aviation (now Denel Saab Aerostructures), together with Saab and Boeing, cooperating as DIP and NIP obligated parties).

Short production runs constantly cause the DRI to be non-competitive, as the financial impact of non-recurring cost and learning curve cannot be recovered economically. A stop-start manufacturing process is also problematic, mainly due to capacity constraints related to available facilities, skills and materials. Some
materials take up to twelve months and longer to procure, especially if it is prescribed aircraft grade aluminum that can only be procured from certain accredited foreign suppliers.

The principle of causality assumes that a DIP obligor will be the effective cause of any claimable DIP transaction. Armscor (and the DTI) still applies this principle very strictly.

Comment - Although the principle is sound, there remains a concern on either side of the process that relates to the extent that such an obligor is required to prove causality in a transaction.

When it comes to especially non-core business activities, which are claimable as DIP (primarily indirect), the DIP obligor often has no choice but to use a third party to actually give effect to the execution of such a DIP element, and it is in these instances that ‘causality’ sometimes becomes blurred and extremely difficult to prove to the satisfaction of the controlling authorities (Armscor/DoD/DTI).

Causality and ‘instrumentality’ are sometimes used as synonyms. There is, however, a distinct difference between the two when it comes to the level of involvement of an obligated party in a transaction. One can be instrumental in a deal by merely making a telephone call, sending an e-mail or writing an introductory letter to a deal. In such instances, although one was instrumental, one has not necessarily ‘effectively caused’ such a transaction. Effective cause is seen as some level of ‘physical and direct’ involvement of the obligor in any claimable DIP transaction.

As in the case of additionality, there is a similar concern at Armscor that DIP obligors may be colluding with DIP beneficiaries to ‘create causality’, but again, Armscor has the right to effect any audits if it so wishes.
**Responsibility:** this principle requires that the obligated DIP party will at all times be solely responsible to give effect to the execution of its obligation and that such obligation cannot be attended to by, or transferred to, any third party.

Comment - Although this is a sound principle, it often does happen that obligors have to resort to ‘transfers’ due to the prospect of multi-dimensional, cross-linked international transactional business opportunities.

The DIP policy, in principle, requires that any DIP obligor fully discharges its obligation in the country. If this principle is to be applied too strictly it could restrict the ability of cross-linking, which is a useful tool to 'trade-off' or ‘swap”’ DRI commitments in other countries, with local DIP obligors. Until now, it is, however, the DRI’s experience that Armscor keeps an open mind in such matters, although the same can unfortunately not be said about the DTI.

The **terms and conditions**, regarded as the ‘ground rules for DIP, cover the following principles:

DIP is applicable to all imported content where contracts of USD2-million or more are awarded, and when such contracts exceed the USD10-million threshold, the DTI requirement for NIP also becomes applicable. However, the practical problem with these threshold levels comes to the fore when local DRI becomes the prime contractor in an Armscor contract.

Comment - Almost all defence equipment manufactured in South Africa, contains some level of imported content, and based on Denel’s experience, such imported content can vary between ten percent and 30%. The imported content in major systems contracts is even higher, and is usually represented by a fair amount of smaller contracts, comprising items bought off-the-shelf. It is not always practical, or possible, to require foreign sub-suppliers to participate in the DIP (and NIP) programme, due to the nature of their supply to South Africa, being in the form of
commercial off the shelf. Although Armscor and the DTI have agreed to some relaxations for the local DRI in this regard, approval must be requested on a case by case basis.

South Africa is the only country in the world that applies a dual approach to offset. This may be because Armscor has been applying countertrade to all of its foreign procurements since 1988, developing expertise and a solid track record in industrial participation. The DoD recognised Armscor’s achievements and expertise in this field and instituted the DIP policy as a sub-set of the National DTI NIP policy, also allowing Armscor to continue managing the DIP process.

From an international benchmark point of view, the combined 80% requirement is not excessive.

**Discharging** the DIP obligations must happen over a period not exceeding seven years, in total.

Most other countries link the discharge period to the duration of the main supply contract. However, when an obligor plans its discharge schedule, it tends to do it by adopting the ‘hockey stick’ principle, meaning that the bulk of the activities are move as far into the future as possible. From an obligor’s point of view, this offers the best possible discharge model, posing the least risk, but from an industry perspective, the discharge period becomes too long, causing uncertainty in business and making any planning on the local DRI side regarding order cover, almost impossible. They are constantly on the look-out for ‘easy opportunities’ and consequently resort to substitutions and diversions that are removed from local DRI companies’ capabilities and from the beneficial solutions initially identified. For Armscor, this practice also represents some concern, as it becomes a fairly difficult process to manage, with obligors compelling Armscor, closer to the end of their programmes, to extend the discharge period in order for them not to pay penalties, which could damage their reputations and future business opportunities with Armscor. The DRI, on the other
hand, will welcome a more structured discharge process, with specific minimum levels of performance at closer intervals. This will also contribute towards the DRI order cover.

**Penalties** for non-performance in the execution of the DIP (and NIP) commitments are set at five percent. On the DIP side, there is a sliding scale penalty, calling for penalties of up to 15% when the obligations are between USD2-million and USD9.99-million.

Comment - If one compares the trend internationally, the SA penalty appears to be at the lower end as the norm, which is closer to ten percent. The international scale of penalties ranges from a ‘best effort, no penalty’ (for e.g. UK) to a 100% penalty (for example Poland).

Paying penalties is not a viable option for either of the parties, as nobody wins. In most instances the regulating authorities will consider extensions to discharge periods, and such extensions are granted occasionally by both Armscor and the DTI.

Many governments may blacklist non-performing obligors, although this fact is not always openly published, and even if penalties had been imposed, such facts normally are not made known due to strict non-disclosure agreements governing commitments. However, such information does get circulated in communiqués between governments and they increasingly insist, even at the pre-tendering stage, that bidders provide details of previous and current countertrade commitments, reporting on their achievements. The countertrade element of a tender is in many instances (as is the case in South Africa specifically) used as a discriminating criteria in the tender adjudication.

In providing for penalties, obligors have to secure bank guarantees that have to be issued in favour of the regulating authorities. Corporate guarantees are not acceptable, regardless of the standing of the company. The bank guarantee is a
form of surety, and is valid until such time as the obligor has fully discharged its commitments. Guarantees is recorded on a company's balance sheet, reducing prospects of borrowing and influencing its liquidity. Guarantees cost money to establish and to maintain. It is thus in the interest of the obligated party to discharge its commitments as quickly and effectively as possible.

**Evaluation of DIP proposals** are still today assessed “…to the extent [that] they support defence, industry, skills, products/services…” All Armscor tenders include a specific value system, informing all potential bidders of what the considerations for tender adjudication will be. The DIP commitment (and to the extent that it is applicable to the NIP commitment) is used as a discriminating factor, and in some instances, especially with large acquisition programmes, the DIP offer will translate to a specific score in the tender value system. For example, in the tender for the SA Army’s new infantry fighting vehicle (2004) the DIP commitment had a weighted value of 30%.

Comment - Other countries use a similar approach on major programmes. Turkey’s tender for the attack helicopter (2006), allocated a consideration value of 50% to the offset portion of the tender. For example, in the Strategic Defence Package (SDP) deal of 1998/99, the consolidated DIP and NIP results counted 33%.

**DIP credits** are still expressed in monetary terms and normally in the same foreign currency used in the main supply agreement.

Comment - In South Africa’s case, the ‘offset credit model’ predominantly in use, is referred to as the ‘input model’, implying that credits are earned at the time of an event, referring to the award of the order to a local company, or completion of an investment, or transferring technology, or contractual payment being made. This approach is meant to assist obligors to realise their milestones quicker, resulting in a certain benefit to the local industry. The ‘output model, on the other hand, only grants credits once a specific activity has materialised in a tangible result. In this
instance the credit is only granted once the foreign obligor have awarded a contract to a local company, and that company has produced the stated goods, delivered it, and invoiced for the work done.

Only when the obligor (claimant) submits proof of payment, will the credit be granted. However, irrespective of which model is chosen, one sees that obligors plan their discharge on the ‘hockey stick’ model, where most of the credits only realise in the latter quarter, or latter third period of the programme. This practice may to be too liberal, offering too much freedom to the obligors in discharging their obligations. Although flexibility is the key to a successful discharge, it is unfortunately true that it may be detrimental to the local DRI, as obligors award contracts very late, and for much lower quantities than originally agreed to. Individual local companies continuously run the risk of losing the prospective business that was offered, as obligors are quick to realise the ‘low hanging fruits’, diverting business to entities not originally identified as beneficiaries. No local company can include any DIP promise in its business plan, due to the uncertainty of such a promise and the obligor’s right to opt for another route. Unfortunately, Armscor does allow substitutions, but not always in collaboration with the local DRI, as the factors that did spark such a substitution, may be presented from only the obligor’s position and not from the originally nominated company point of view.

**Investments** are still one of the anticipated results of DIP activities, either the form of foreign equity capital, or foreign loans with a beneficial interest rate.

Comment - The DIP process differs from the NIP policy in this regard, as NIP initially required that at least a 70% (of the 30% NIP commitment) be discharged as a foreign direct investment. It does, however, appear as if the DTI has changed this requirement and although foreign direct investment remains a mandatory requirement, the percentage is decided on a case-by-case basis depending on the size and nature of the NIP project.\footnote{Interview with Teresa de Risi of the DTI's IP Secretariat} As DIP requires no minimum level of
investment, and the fact that there are no incentives linked to such investments, very few DIP commitments have been made in this category. However, on a more positive note, quite a number of equity partnership deals have been announced since the inception of the DIP policy in 1997. Examples of these are Thales and ADS, Saab and Avitronics, BAE Systems and ATE, EADS and Reutech Radar Systems, Saab and Grintek, BAE Systems and OMC, and most recently Saab and Denel Aviation. It is presently not clear how Armscor assesses such deals when granting credits, or how the issue of additionality is addressed. In the case of Saab/Denel Aviation, it was reported that the DTI granted Saab (as part of its SDP investment obligation that it committed to, together with BAE Systems) a NIP credit to the value of USD2-billion, in return for a 20% equity shareholding in Aerostructures, worth about USD10-million, including a firm turn-over of about USD30-million over five years. It is not known how either Saab, or the DTI, came up with such a credit ratio. Also of interest is the fact that the DTI still refuses to allow any exchanges between NIP and DIP commitments. The DIP policy on DIP investments, in the absence of any investment incentives, has to my mind, thus failed.

Technology transfers are still required to improve defence-related industrial efficiencies, and assist the local DRI with product development and after-sales life-cycle support. The number of credits is determined by the appointed DIP committee (consisting of members from Armscor and the DoD) and no multipliers are allowed when credits are granted.

Comment - As technology validation is globally viewed as a difficult subject to grasp, and the concrete benefits tricky to determine. Armscor implemented a fairly elaborative and systematic evaluation and validation process involving all parties in a transparent procedure that leaves auditable traces. This process compares favourably with international practices and is probably the most pragmatic and fair process of them all. Other countries resort to the use of multipliers for certain types of sought-after technologies. Transfer of technology, as part of one DIP (or offset)
commitment, is normally used as a tool to minimise the company’s exposure and loss of work-share, to others. Most obligors will be content to resort to a process whereby they can readily transfer their older technologies (which have already ‘wrote off’) to lesser-developed countries.

**Strategic considerations** require DIP to also focus on areas of national ‘strategic concern’, such as the CSIR, Gerotek and OTB (Denel’s ‘Overberg Toets/Test Baan/Range’).

Comment - However, there is no mention made of any incentives for doing so, with the result that very little DIP business is allocated to these areas. Unless the DoD and Armscor can implement attractive incentives, such entities will remain at the mercy of the DoD in trying to maintain and sustain their capabilities, resulting in an eventual considerable cost to the defence budget and the tax payer. This goal of the DIP policy has largely failed, although some DIP commitments were made in these areas.

**The legal basis** pertaining to the DIP (and NIP) commitment prescribe separate agreements, subject to South African law – one managing the supply, one for DIP, and the third (if applicable) for NIP.

Comment - South Africa is the only country in the world with such a requirement. The SA government should seriously consider the consolidation of the DIP and NIP processes, streamlining the process of arms acquisition and procurement. Using the legal basis of the DIP agreement does not present a criterium for an obligor to place DIP contracts with local nominated companies – this puts local industry at a disadvantage.

**The regulatory environment pertaining to the DIP process**, is still today vested in the form of a constituted DIP committee (DIPCOM), which is a joint committee consisting of representatives from the DoD’s Acquisitions Department, Armscor DIP
Division and other supporting Armscor divisions (e.g. legal, finance and technical and technology). This DIPCOM is mandated to consider all DIP claims and to grant credits, as well as releasing obligation on achievement, reducing bank guarantees, and making recommendations to the Armaments Acquisition Council (AAC) of the MoD, whether to invoke penalties, or not. This process appears to be working well in practice and the DIPCOM meets every four to six weeks, depending on the number of claims. The DIPCOM is managed by the DIP Division, which also appoints a chairman for such meetings.

**Imported content cannot be claimed as DIP.** The rationale behind this policy statement is found in the fact that imported content does not represent any economic benefit to the local economy, or the DRI. This is still the case today.

Comment - From an obligor point of view, there is an ongoing plea to get Armscor to allow at least a portion of imported content to count as a 100% credit. Most other countries do accept such an approach. Armscor requires all local companies to certify a DIP claim as correct, providing information on imported content, which is then deducted from the claim. The problem that the DRI is that it is not always possible to identify, or calculate of the value of imported content, nor substantiate each and every element of the contract deliverables; as such imports may not be identifiable as they end up in processed materials, parts, components and sub-assemblies. There is merit in adopting a more flexible and pragmatic approach, and some policy changes in this respect may be worthwhile considering.

The **pro-active approach** to DIP is still, to a large extent, a concept that is unique to South Africa, as it allows prospective obligors to claim DIP credits for pro-active activities, using such credits to ‘offset’ a part of a future DIP obligation.

Comment - As the tender process is an open, competitive process nobody can certify any outcome, but to grant credits to foreign companies for pro-actively awarding contracts to the local DRI, without them having a definite and defined DIP
commitment, place them in a position to trade or transfer such credits if they do not win the tender. The recipient of such traded credits can use them to partially discharging its obligations. The pro-active (or banking) agreements are used as a means to collect excess credits, which can in future be used to satisfy DIP shortfalls. Banked credits must be used within four years after award – this is to prevent the pooling of credits that can result in the elimination of new business prospects. This preventative measure is working well in practice. Furthermore, it creates an incentive to any prospective obligor, giving him a head-start when he eventually commits to a legal obligation. (The DTI applies a similar process in concluding a ‘Strategic Partnership Agreement’ with prospective obligors. The rules are, however, restrictive, especially when it comes to the use of such credits.)

**Liaison between Armscor (the DoD) and the DTI,** is crucial in order to ensure a comprehensive approach and the IP requirements are included in every tender, ensuring that prospective bidders fully understand the requirements and conditions for compliance. Although this process appears to work fairly well, it does appear from time to time that communication processes, especially between the Armscor DIP Division and the DTI IP Secretariat, do fail during the bidding phase – which is incidentally the most crucial part of any tender. Armscor and the DTI seem to be aware of this and are working on improving communication during the tender process. The sequence of the tendering event is actually described in more detail in par 6 of the DoD DIP policy, and still closely resembles the process as described back in 1996. Some additional control measures have, however, been implemented subsequent to the Auditor General's report on the Strategic Defence Package deal (SDP).

9. **Armscor’s role and responsibilities in the DIP process**

As already alluded to, Armscor is the officially mandated entity responsible for the day-to-day management of the DIP process. This management process, is as contained in three specific Armscor DIP policy documents, still governs Armscor’s
responsibility, and relates to the other various acquisition process policies of Armscor.

- **DIP policy: A-POL-6000** [Issue 1. Base date 1/4/97. Rev 11/02/02] - The policy was officially approved by the Armscor Board on 2 April 1997. It is basically a repeat of the DoD's DIP policy, including the relevant responsibilities and procedures on how to establish a dedicated DIP Division and a joint DoD/Armscor DIP Committee. It also establishes broad terms and conditions for contracting of certain obligations on foreign imports.

- **DIP practice: A-PRAC-6030** [Issue 1. Base date 11/11/02] - The DIP practice refers to various Armscor acquisition process policies and practices, applicable to defence procurement and acquisition projects, governed under The Armscor Acquisition Management policy (A-POL-1000), as well as the Defence Review and the White Paper on the DRI.

  It further defines the responsibilities of the DoD, Armscor Acquisition Divisions, the DIP Division and the DTI, during the tender process. The practice details the roles and responsibilities of the DIP Committee and the process related to the levying of non-performance penalties. It makes provision for the Armscor DIP Division to charge certain facilitation fees for arranging any swap (credit trade-off deals). This revenue is used to complement Armscor's income.

- **DIP procedure: A-PROC-6031** [Issue 1. Base date 19/03/01. Implementation 11/02/02] - The DIP procedure focuses on process issues and reiterates the basis for implementation of DIP (and NIP) obligations, referred to as the ‘threshold value’ of procurement/acquisition contracts with foreign suppliers.

  This procedure specifically and still states that "DIP shall be applied in such a manner that it contributes to independence, as far as it is practically possible, as regards the maintenance and advancement of South Africa’s defence industrial
capabilities… DIP programmes will provide for a planned, organised and controlled approach, and are to support the DoD/MoD goals regarding *inter alia* the promotion and coordination of the development, manufacture, standardisation, maintenance, acquisition or supply of armaments and related products and services”.

The procedure still makes a clear distinction between three sets of contracts, namely:
- the Main Agreement that governs the scope and conditions of supply;
- the DIP agreement that governs the 50% DIP obligation; and
- the NIP agreement (if applicable) that governs the 30% NIP obligation.

10. **In conclusion**

The DIP process still requires obligated entities to include the local industry (DRI) in the execution of their activities, and award contracts to them for:
- direct work-share (for example production, assembly, integration, testing);
- receiving and assimilating various levels of technology, skills development and training;
- executing export contracts;
- establishing joint ventures, with associated financial considerations (investments and loans); and
- promoting SMME and BBBEE (broad-based black economic empowerment) activities.

It dictates the relevant terms and conditions, the criteria for earning credits, and the use of pro-active agreements as a mechanism for banking credits for future use in the absence of any contractual obligations.

It also describes the generic process of tendering (as per Figure 11) and the sequence of events that leads up to assessment, evaluation, award and subsequent contracting management and oversight. The DIP process requires specific business
plans that are used initially for evaluation purposes, and subsequently for contracting the obligation. Each tender contains the evaluation criteria and the weighting scale for requirements pertaining to technical requirements, price, BBBEE and DIP/NIP. In certain instances, DIP/NIP is used only as a critical criterion, and does not carry any specific weight. Normally, only the DIP weighting portion is expressed as a percentage, which could be one-third of the total weight. Armscor’s DIP process is still subjected annually to both an internal, as well as an external audit, to ensure that all processes, approvals and recordings were done in accordance with the prescribed and approved policy, procedures and practices. The Armscor annual report also reflects on all DIP obligations and approvals granted for each year.

![Diagram of Defence Purchases USD 10 Million](image)

**Figure 11** *(Source: the DTI NIP guidelines of 1997)*
CHAPTER 7: KEY FINDINGS OF THIS DIP RESEARCH

1. Introduction - data gathering and analysis.

Data and information were gathered through an extensive literature search on the subject of industrial participation in South Africa as applied by Armscor, complemented by selective interviews over time, feedback from questionnaires, and the author’s personal and daily experience in DIP activities (over a period of 11 years), and how these manifest in the South African DRI.

The integrity of information and data was ensured by using only reputable sources as a basis for quotations, and arguments relevant to applicable data and observations/findings. The information was also cross-verified, where possible, taken due cognisance of the constraints placed on this research as the result of various non-disclosure agreements between Armscor, foreign suppliers (obligors) and the local industry.

Questionnaires were sent to most of the DRI members registered with AMD, who have been exposed and involved in the DIP programme for the past six to seven years. *(Refer to the findings in Table 2.)*

Data was subsequently analysed by using descriptive analytical statistics and qualitative analyses, whereas the classification of the collected data and the correlation analysis were both used for qualitative and quantitative analyses.

Considering also Habernas’ theories on development, it is in this respect that the White Paper on the DRI is the subject of a structured process that aims to derive the proposed and desired result, namely to create an understanding and an acceptance of the DRI as part and parcel of the industrial base of South Africa.
2. **How did DIP actually benefit the DRI, since 1999**

Considering chapter 4 on development discourse, as well as having studied the views of Babbie and Mouton, and the assessment of the DIP policy, it is clear that the policy actually represents four major building blocks (which is termed by them as the “multivariate analysis approach”), When presented schematically, it looks as follows:

![Diagram of the DIP strategy](Source J.J. van Dyk)

3. **The DIP strategy is based on four very distinct building blocks, namely**

   - **“Defence strategic”** – relates to those capabilities needed by the SANDF to satisfy its defensive, offensive and peace keeping operational needs.
   - **“Systems hierarchy”** – reflects on the lowest level of material procurement (e.g. armour steel - level 1) up to level 9, which represents the complete integrated joint defence capability in the SA. Equipment requirements are normally submitted to the respective Arms of Services by a Level 5 prime contractor base.
   - **Defence sectoral** – relates to the sectoral structure of the DRI in disciplines such as mechanical, electro-mechanical, electrical, electronic, electro-optical, chemical, metallurgy.
• **Skills and capabilities** – reflects on the industry’s ability to adequately provide for skilled manpower to execute acquisition, procurement, support, maintenance, refurbishment and upgrade programmes related to the SANDF’s operational requirements.

4. **Statistical data.** The reader’s attention is drawn to the fact that DIP has been in existence in the Armscor procurement process since early 1988, although the research for the drafting of this dissertation, only focuses on the period from late 1999 to mid 2007.

During an international Offset Conference in Vienna\(^{209}\) the following statistical data was presented to demonstrate how the DIP programme’s aims and objectives, as depicted in the DIP strategy diagram above, were in practice underwritten by the DIP proposals that were received from the various bidding companies at that time.

\(^{209}\)SMi Conference in Vienna, Austria on International Offsets on 18-19 June 2001. JJ van Dyk from Denel (having just joined Denel from Armscor in April 2001) made a presentation on the “Implementation of offsets in South Africa”
In the Armscor annual report of 1999-2000 it was subsequently reported\textsuperscript{211} that Armscor was managing a DIP portfolio of some 17 contracts to the value of USD5.1-bn – an amount of USD4.5-bn was accordingly discharged at that time.

At the time, it was also reported by Armscor that six additional contracts were signed as part of the SDP deal, amounting to USD2.3-bn in total, although the Lynx maritime helicopter contract was only officially ratified on 14 August 2003, due solely to the DoD’s budgetary constraints. In the 2000-2001 report it was only reported that for that year, an amount of USD1.226-million in credits were granted, and in the period 2002-2003, credits amounted to USD594-million. No mention was made of the criteria applied to grant these credits. In the subsequent reports the following table (also referred to as a “multivariate

\textsuperscript{210} Source: Presentation made by the Author at the SMi conference, International Offsets, Vienna. 18 -19 JUNE 2001

\textsuperscript{211} Author’s note: The reported information related to various aerospace-related projects, which included missiles, fighter aircraft, the Astra PC7-trainer aircraft from Pilatus, Switzerland and the refurbishment of the C130 transporter aircraft under main contract with Marshalls of Cambridge in the UK, as well as some heavy transporter vehicles and fire fighting vehicles.
table\textsuperscript{212} is used to reflect on composition and spread – refer also to the table on Denel, further down that was used to report on the SDP – no further mention was made of to the status of any other contracts. In the Armscor report of 2005-2006 it was, for example, reported that some 25 BEE companies benefited from the DIP process. (The conversion rates that were reportedly used for reporting on progress versus commitment are: USD1:ZAR6.25; Euro1:ZAR6.40 and GBP1:ZAR10.00)\textsuperscript{213}

### DIP performance related to the SDP up to 2006/7:

<table>
<thead>
<tr>
<th>Project</th>
<th>Year</th>
<th>Obligation Rm</th>
<th>Planned performance Rm</th>
<th>Actual performance Rm</th>
<th>DIP Categories of performance</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Rm</td>
<td>Rm</td>
<td>Rm</td>
<td>Sales &amp; Export Rm</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Planned performance Rm</td>
<td>Actual performance Rm</td>
<td>DIP Categories of performance</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Rm</td>
<td>Rm</td>
<td>Rm</td>
<td>Rm</td>
</tr>
<tr>
<td>Meko A200 Corvettes (x 4)</td>
<td>2004/5</td>
<td>2,941</td>
<td>1,632</td>
<td>1,595</td>
<td>1,241</td>
</tr>
<tr>
<td></td>
<td>2005/6</td>
<td>2,941</td>
<td>1,763</td>
<td>1,716</td>
<td>1,319</td>
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<tr>
<td></td>
<td>2006/7</td>
<td>2,941</td>
<td>1,979</td>
<td>1,950</td>
<td>1,423</td>
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<tr>
<td>A209 Submarines (x 3)</td>
<td>2004/5</td>
<td>1,121</td>
<td>703</td>
<td>609</td>
<td>576</td>
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<tr>
<td></td>
<td>2005/6</td>
<td>1,121</td>
<td>717</td>
<td>660</td>
<td>612</td>
</tr>
<tr>
<td></td>
<td>2006/7</td>
<td>1,121</td>
<td>746</td>
<td>741</td>
<td>639</td>
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<tr>
<td>Agusta A 109 – Light Utility Helicopter – “LUH” (x 30)</td>
<td>2004/5</td>
<td>1,194</td>
<td>943</td>
<td>710</td>
<td>356</td>
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<tr>
<td></td>
<td>2005/6</td>
<td>1,194</td>
<td>1,035</td>
<td>905</td>
<td>548</td>
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<tr>
<td></td>
<td>2006/7</td>
<td>1,194</td>
<td>1,194</td>
<td>1,194</td>
<td>676</td>
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<tr>
<td>Hawks 100 (Lead-in Fighter trainers) (x 24)</td>
<td>2004/5</td>
<td>4,252</td>
<td>2,358</td>
<td>2,221</td>
<td>1,922</td>
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<tr>
<td></td>
<td>2005/6</td>
<td>4,252</td>
<td>2,843</td>
<td>2,769</td>
<td>2,289</td>
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<td></td>
<td>2006/7</td>
<td>4,252</td>
<td>3,616</td>
<td>4,001</td>
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<tr>
<td>Gripen JAS39 (Advanced Light Fighters) (x 28)</td>
<td>2004/5</td>
<td>5,050</td>
<td>1,864</td>
<td>2,459</td>
<td>932</td>
</tr>
<tr>
<td></td>
<td>2005/6</td>
<td>5,050</td>
<td>2,459</td>
<td>3,130</td>
<td>1,209</td>
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<td></td>
<td>2006/7</td>
<td>5,050</td>
<td>3,130</td>
<td>3,383</td>
<td>1,461</td>
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<tr>
<td>Super Lynx –Maritime Helicopters (x 4)</td>
<td>2004/5</td>
<td>550</td>
<td>80</td>
<td>93</td>
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<td></td>
<td>2005/6</td>
<td>553</td>
<td>117</td>
<td>103</td>
<td>103</td>
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<td>553</td>
<td>188</td>
<td>149</td>
<td>118</td>
</tr>
<tr>
<td>Total</td>
<td>2004/5</td>
<td>15,108</td>
<td>7,580</td>
<td>7,687</td>
<td>5,120</td>
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<td></td>
<td>2005/6</td>
<td>15,111</td>
<td>8,934</td>
<td>9,283</td>
<td>6,080</td>
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<tr>
<td></td>
<td>2006/7</td>
<td>15,111</td>
<td>10,853</td>
<td>11,418</td>
<td>7,512</td>
</tr>
</tbody>
</table>

Source: Armscor annual reports 2004-2007

Table 1

When comparing the above data to the DIP proceeds as recoded independently by Denel for the period 2000-2007, there is a resemblance in the two sets of statistical data, mainly

\textsuperscript{213} Confirmation was provided by Armscor DIP Division in May 2007. This confirmation included also the DIP progress figures of the Armscor 2006/7 Annual Report.
in terms of the broader percentage of achievement. The main reason for this lies in the fact that Denel was promised more than 50% of the total DIP amount of the SDP.

![Graph: Denel's DIP picture](image)

**Figure 14** (Source: JJ van Dyk, Denel Corporate Office, Pretoria)

5. **DIP's manifestations in practice**

The following types of DIP activities\(^{214}\) were reportedly awarded to the DRI by the respective original equipment manufacturers (OEMs) and their respective foreign sub-contractors. The following quotations and examples mainly come from sources in the media and industry itself, while it was problematic to rectify information from OEMs and Armscor, due to the legal constraints posed by the various non-disclosure agreements in place, (although Dawid Botha’s Institute for Strategic Studies study report published in 2003 does contain many cross references and confirmation of data as herein reported as well):

5.1 **Corvettes (Meko A200 Class)**

- significant technology transfer to Simons Town dockyard (no details provided);
- warranty repair work performed by smaller companies;
- export orders - some 75% of the Corvette combat suite are reportedly sourced from SA suppliers under the prime contractor Thales Naval-France, which forms part of the German Frigate Consortium;
- ADS/Thales locally, was awarded command and control work, with various Denel divisions delivering surface-to-air missiles, the 76 mm gun upgrade, the 35 mm naval dual purpose gun and ammo;
- Saab Grintek provided radios and communications, and Reutech Radar Systems (RRS) the tracking, surveillance and target acquisitions systems;
- other companies, such as MTU Africa (previously Prokura Diesel), Booyco Engineering and BAES Land Systems OMC Gear Ratio were involved; and
- Hyflo Southern Africa specifically designed controllable pitch propellers;
- Several other beneficiaries included companies such as DCD Dorbyl, Siemens KZN, Booyco Engineering and Bennet Engineering\(^{215}\).

5.2 **Submarines (Class 209 Type 1400 MOD)**

- technology transfer related to the manufacture of parts and components of periscopes;
- marketing assistance for export of optical equipment and components;
- development of the submarine combat suite software;
- transfer of technology for local manufacture and export of a 40 mm self destruct fuse under license from Junghans, Germany to Laingsdale Engineering;
- Grintek Avitronics (now owned by Saab) provided the electronic warfare system and the optronic mast;
- Siemens delivered the main switch gear;

\(^{215}\) According to U. Scheel the ThyssenKrupp offset manager – reported by CTO in December 2007.
local company Tellumat collaborated with German STN Atlas on an integrated sonar system; and

Denel Optronics, under a USD45-million contract from Zeiss, was tasked with the complete design and manufacture of the high precision periscopes – it was this contractual relationship that actually led to Zeiss acquiring a 70% equity stake in this Denel division in 2006/7. 

Ferrostaal, one of the German Submarine Consortium members, was reportedly responsible for awarding a contract to Denel OTB for weapons flight tests on the German Air Force Tornado’s.

5.3 **LUH- Light Utility Helicopter (A109)**

- license for the local manufacture of the A109 helicopter for the SA Air Force from aircraft 7 to 30, by Denel;
- export of armoured vehicles by the now-owned BAE Land Sysems OMC;
- Grintek was awarded the a multi-sensor warning system and self protection electronic warfare suite, as well as a comms sub-system and navigation;
- local ADS/Thales delivered a procedural cockpit trainer;
- Denel Optronics (old Cumulus) delivered the Argos 410 observation system;
- Chelton supplied antennas and direction finding equipment;
- FBS supplied certain logistic support elements;
- Aeroflo (at that time part of Defencetek at the CSIR) was awarded the contract for a new sand filter system;
- TMA produced the Makila engine and did the design and integration of the Arrius gearbox. (as a result of an undertaking from Turbomeca, France, as contained in the Agusta Westlands offer, acquired a 51% equity stake in Denel's Airmotive Division in 2002); and
- Tellumat reportedly supplied the IFF systems (‘Identify friend or foe’).

5.4 **Hawk 100**

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216 *The Zeiss Denel Optronics company should be officially registered towards mid 2007*
certification of BAE Systems of various local companies as aerospace suppliers;

- transfer of technology to Aerosud and securing Airbus orders for the delivery of 240 ship-sets of wing components with a value of R500-million;

- companies that received orders from BAES, include Denel Aviation (final integration and manufacturing of components), Denel Optronics (for helmet sights also for the Eurofighter), Saab Grintek for power supplies and displays and Saab Grintek (Electronic Systems – GES) for communication subsystems;

- TMA was involved with the Hawk’s engines and gearboxes, under subcontract from Rolls Royce;

- ATE (in which BAES holds a 20% stake) was involved with the design, development and integration of the Hawk mission systems (valued at R500-million), with AMS (now also part of Saab) tasked with the design and development of the health usage and monitoring systems (HUMS), which subsequently led to various export contracts;

- BAE Systems procured export business for its OMC company by supplying the US Marines with the RG33 armoured, mine-protected personnel carrier (order value USD55-million, with reportedly more contracts forthcoming);

- British defence giant BAE Systems awarded South African company Aerosud, a USD20-million (R137-million, €15.6-million) contract to make components for the European Eurofighter programme. Under the contract for Eurofighter parts, set to run for at least six years, Pretoria-based Aerosud is to manufacture up to 3 500 detailed parts and minor assemblies for Eurofighter Typhoon, Europe’s biggest defence programme. "While strengthening our partnership with Aerosud, this contract also illustrates BAE Systems ability to deliver new export business opportunities to South African industry," said BAE Systems' South Africa chief executive Mike O'Callaghan217; and

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217 Mail & Guardian. Johannesburg, South Africa. 4 Aug 2006
AMS is a focused defence industry electronics company and at an early stage of its development it got involved in health and usage monitoring systems (HUMS) for all types of military aircraft, getting its first big opportunity with the development, manufacture and support of a comprehensive HUMS system for Denel Aviation’s Rooivalk helicopter in a programme that was initiated in 1987. AMS developed and manufactured HUMS systems for a wide variety of aircraft-types, including all versions of the C-130 (Hercules) transport aircraft as used by the SAAF, the unique turboprop version of the DC-3 (used locally for maritime surveillance), the BAE Hawk lead in fighter trainer, and the Augusta 109 helicopters that form part of the local defence acquisition programme. As the work undertaken by AMS forms a very important part of BAE’s DIP programme, all future Hawk aircraft for other buyers will include the AMS system. The value of this business for AMS is huge, and in addition to the 24 aircraft ordered by the SAAF, the Royal Air Force is expected to take 44 new Hawk aircraft into service before 2008, while India ordered 66 aircraft. The AMS HUMS system is already operational on the 22 aircraft delivered to the NATO Flight Training Centre in Canada and the 33 aircraft being delivered to the Royal Australian Air Force. Although the supply of the HUMS system to the international market began as a DIP project. The standing that AMS now has as a supplier to such giants as BAE and Thales, speaks for itself, and the local company is receiving orders from other countries and companies.

5.5 **Gripen JAS39**

A major skills transfer activity, including a design and development centre, have been established by Saab at Denel Aviation (now to become Denel...
Saab Aerostructures\textsuperscript{219}. This entity is tasked with several production contracts for the NATO standard pylons, rear fuselage and main landing gear. (The Eastern Cape-based company Comau-AIMS was reportedly involved under a sub-contract for the design of the NATO pylon.);

\begin{itemize}
  \item Denel OTB will be tasked with various flight tests;
  \item Denel Optronics (now part of Zeiss) also secured contracts (in 2003) for its helmet-mounted display/tracking system (HTS) for Gripen, also for the export market. This eventually led to an export contract to the value of ZAR200-million being awarded in May 2007 for the Eurofighter-Typhoon aircraft.\textsuperscript{220}

Some 450 units of the HTS will be manufactured over the next four to five years.\textsuperscript{221} Denel Optronics (now Carl Zeiss Optronics) is a pioneer in headtracker systems, having designed and produced operational pilot helmet-mounted sighting and tracking systems the early ‘70s. Evaluations have reportedly shown the Denel system to be superior to any other similar systems available in the world;

\item Denel’s Munitions group (PMP) received, via BAE Systems, a number of contracts for the export of brass parts and components of ammunition. This was the largest single contract ever awarded to PMP in its 68-year history, and it occurred in late 2006, and amounted to ZAR296-million. PMP is reportedly increasingly recognised as a producer of world class ammunition and related components; and

\item Saab also secured equities, first in Grintek Avitronics, then in Grintek Holding, while acquiring AMS. Saab Grintek is now engaged in the development of a civil aircraft missile protection system (called ‘CAMPS’). Critics say the ‘real rot’ in the arms deal lies in the way the offset part of the deal was structured. In effect, they claim that “investments” such as SAAB’s recent purchase of a controlling 80% stake of Grintek was done using R600-million of South
\end{itemize}

\textsuperscript{219} \textbf{Author’s note}: Denel, as part of its unbundling and establishment of foreign equity partners had engaged Saab in 2005/6 with the view of them acquiring an equity stake in Denel Aviation. This equity is set at an initial 20% growing (circa USD10m) over the next couple of years to a majority share. The new company would probably be registered in 2007. Saab had been promised some USD2bn in NIP credits in return, whilst Saab is also insisting on a ZAR1.6bn indemnity from the SA Gov on Airbus A400M work. See also Countertrade & Offset Volume XXV No 3. Feb 12, 2007.

\textsuperscript{220} Business Day report 1 Jun 2007, as well as a Denel internal "Infogram" dd 31 May 2007.

\textsuperscript{221} Engineering News June 15-21, 2007. “Looking out and up” Keith Campbell
African taxpayers’ money and was simply a scam under which Grintek’s entire product range had been “stolen” – but for which the DTI awarded SAAB with offset credits amounting to R14-billion\(^\text{222}\). It was also reported that Saab was promised a USD2.2-billion waiver on its offsets in return for a meager ZAR66-million equity investment in Denel Aviation in late 2006 early 2007. Saab is at the same time insisting on a ZAR1.6-billion indemnity from the SA government for risks for the Airbus A400M production contracts.

5.6 **Maritime Helicopter – Super Lynx 300**

- Agusta Westland (AW) reportedly funded a new material cutting machine for the manufacturing of tents and canvas items;
- AW reportedly secured several export contracts for infrared suppression systems, armoured helicopter crew seats, electronic warfare items and related countermeasures; and
- Denel Optronics’ (Cumulus, now Carl Zeiss Optronics) stabilised observation systems were procured at the request of the SA Navy.

6. **In conclusion**

As a general observation in respect of abovementioned activities within the DRI, the 2005 Engineering News defence report concluded that DIP had indeed provided a life-line for the DRI, although the impact appears to be concentrated in the aerospace sector, with limited benefit to the struggling maritime and electronics industries. It was also remarked that the DIP involvement was mainly in the manufacturing side, at a level that was not regarded as high-tech, considering the local industries capabilities in this regard.

In the present international environment, the requirement for offsets has become a major part of the arms trade. There are few importers of arms who do not make strenuous attempts to gain some form of offset, directly and indirectly, linked to a

\(^{222}\) *Such a strategy is more often fraught with failure* This article was originally published on page 6 of Pretoria News on October 07, 2006
major arms procurement. There is, however, some debate on the concrete benefits of offsets and countertrade. Questions have been raised as to the actual value-add, the linkages with the economy, and the accuracy of the estimated benefits to the economy. This debate is particularly noticeable in South Africa, where the large defence offset deal announced by the South African government in 1998 (signed in December 1999), and subsequently restructured and refined, is now in the final stages of completion – with the single seater Gripens to be delivered between 2008-2011.

As a key component of government’s Industrial Participation (IP) strategy, the defence procurement exercise includes both defence-related countertrade investment, (DIP), and non-defence related investment, (NIP). These two forms of offsets are seen by public and private sector protagonists as providing a major boost to industrial and development investment, and job creation. Of particular interest, is the role that such schemes can play in the development of particular regions in South Africa. The degree of public debate and the availability of information make South Africa a particularly interesting case study when considering the economics of offsets and their effect on regional development. In the current rethinking of industrial policy, the question of industrial participation and specifically the defence offset investment interventions, should be the subject of inquiry.

A tendency to marginalise environmental concerns in policy considerations and to opt for project interventions that consolidate rather than challenge the discourse of the mineral-energy complex, needs to be recognised and reconsidered. The DIP and NIP schemes need to be planned and evaluated within a wider sub-national context that considers the spatial inequalities in the South African economy. Policy-makers need to address the question of using natural resources in a sustainable and equitable fashion, and explore the potential synergies between such resources

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and broader-based industrial and high technology development. This would require a proper and much clearer understanding of the regional implications of national policy with a serious attempt to develop a coherence between national and sub-national planning, allowing them to be mutually reinforcing.
CHAPTER 8: CONCLUSION AND RECOMMENDATIONS

1. In conclusion on the White Paper on the DRI

It is thus the author's view that as a ‘development and regulatory policy’, the White Paper on the DRI remains a well thought-through policy statement that succeeds in explaining the DRI for what it was at the time of drafting the paper, while putting the DRI's position in South Africa in context, assessing its contribution to high-technology development, and manufacturing and exports opportunities, offering associated economic and socio-economic spin-offs. The White Paper thus establishes a general acceptance for the continued existence of the DRI.

What is, however, clearly visible, is that despite the government’s declared support for the DRI, nothing major has actually come of these intentions, although there have been, since late 2005, some very positive developments insofar as it relates to the restructuring and recapitalisation of Denel, specifically.

Other areas of concern to the DRI are:

- a marked deterioration in the arms trade control administrative processes governing the DRI commercial actions requires and urgent streamlining/consolidation of arms control legislation and processes;
- a lack of local industry’s involvement in determining and agreeing on user requirements when decisions are made on the equipment needs of the SANDF, the DoD and Armscor;
- a lack of visibility in the acquisition planning and budgeting for requirements by the DoD;
- a lack of adequate local defence spend, or delayed equipment renewal programmes;
- the failure of the DoD to establish the DERI;
- no visible changes to the rather complex procurement process of Armscor in order to ensure that SMME and BEE enterprises entering the defence market;
- no visible effort to create a defence-related industrial cluster at the DTI, although initiatives related to the Aerospace cluster (by the DTI) and the AMTS (by DST and the CSIR) are indeed commendable;
- streamlining the roles of the DoD and Armscor to eliminate costly duplications;
- Armscor’s continued involvement in commercial business and the perceived conflict of interest in the selling of surplus defence stocks;
- an absence of any measures to ensure the retention of strategic capabilities in the DRI, such as increasing the funding of R&D and technology building blocks, and consolidating the technology development between the DoD and DST; and
- the lack of implementation of a proper, unbiased marketing support structure.

However, it is worthwhile noting that the DoD’s strategic business plan for the financial years 2005/06 to 2007/08, contains specific deductions that are made as a result of a systematic environmental analysis and review process, which considers aspects such as the political, economic, social, and technology impact on the SANDF’s abilities to perform its functions. The DoD specifically infers that a local defence industrial base was accepted as a given and that the DRI will by ‘default’ almost, always be there to attend to its strategic needs, BUT nowhere in the DoD’s strategic plan is there any reference as to the steps they intend taking to ensure that the DRI will still be there when they need it. The DoD may one day wake up and realise that the DRI they thought existed, was no longer.

The restructuring actions of Denel, since 2004/5 and the threats to summarily close down certain factories, such as PMP, were rude awakenings to the DoD and the SANDF, as well as to the SAPS. There appears to be very specific actions underway to ensure a minimum base-load at PMP to prevent it from being closed down. This is just mentioned as an illustration of how complacency may eventually bite one in the back – the DoD and Armscor (and government) cannot keep on paying lip service to the DRI, but need to take active steps to ensure a healthy, local supplier and support base, to be able to attend to heightened security needs, albeit of a non-conventional defensive nature.
In the DRI study report prepared by VuXaka (Pty) Ltd in 2005/6\textsuperscript{224} they allude to the fact that the local DRI is still a very important element in the local industrial base, with a contribution of around 3.42% to the manufacturing GDP of the country, and creating exports in the region of R4.3-billion.

The VuXaka report on the DRI states further that this industry is already well-entrenched in the international supply chain network, with defence electronics being the biggest element. The importance of having a dedicated DRI sectoral strategy similar to other government sectoral schemes (such as the MIDP, the AMTS and the Aerospace cluster) is again stressed, and the report further recommends various steps to be taken by government and AMD.

The new executive director of AMD, Mr Simphiwe Hamilton, was quoted early in 2007,\textsuperscript{225} having expressed similar views on the need for a specific strategy that would favour the local DRI. Otherwise he states that the DoD will be faced with serious problems brought about by a too fragmented industry, which will no longer be in a position to fully support the needs of the SANDF for maintenance, repair and upgrades, or refurbishment of equipment. He concludes by stating that the DRI has to respond to transformation expectations, which are in line with government’s objectives for BBBEE development, and to assist, generally, in achieving the government’s aims for a six percent GDP growth. The City Press (in early June 2007) quoted Hamilton as having said that the DRI was out there to claim its rightful place in the broader South African society as it was one of the sectors with the most prominent technology-intensive characteristics, contributing immensely to the country’s innovative capabilities.

\textsuperscript{224} Author’s note: The 2006 South African Defence-related Industry Study was done by VuXaka (Pty) Ltd under contract from AMD. The later however categorically stated that the VuXaka report does not represent the views of AMD but that the Report is intended as source of researched information on the DRI which could be used to further that aims and objectives of the DRI strategy.(Available at: www.AMD.org.za)

\textsuperscript{225} Interview conducted and reported on by the Engineering News of Feb 23-March 1, 2007.
Dan Henk\textsuperscript{226} an associate professor at the Department of Leadership and Ethics at the US Air War College, expresses the view that the White Paper on the DRI gives the armaments industry the opportunity to collaborate with government in defining its role in the new South Africa, tying the industry into a comprehensive national security vision.

Henk goes on by saying that employment and other economic benefits derived from the industry extend into a considerable proportion of the country’s economic base. Many of the old structures and organisational cultures are, however, still evident, but both evolved in significant ways, he states. The government still coordinates the industry’s efforts to serve national priorities – a legacy of the years before democracy. He expresses the opinion that the motivation of the current ANC government seems to be quite different, as they admit there is no immediate external military threat, yet seek to safeguard defence industries to preserve strategic capabilities, provide jobs for citizens, and economic benefit to the state through arms sales and trade agreements. He also expresses the view that partnerships between South African companies and foreign arms producers, will increase access, for both parties, to state-of-the-art technology, and to the international arms market. Such circumstances are economically desirable, yet these same connections included a degree of foreign influence, and even control over South Africa’s industries that may perhaps limit the country’s options. Potentially a gradual loss of strategic autonomy is the price one has to pay for ensuring integration into the global economy.

2. \textbf{The academic, empirical and practical discourse on DIP.}

It is thus the author’s humble conclusion that both policy documents reflect on the Keynesians way of thinking, while dealing with Bezuidenhout’s views on neo-liberalism, and at the same time, conforming to Michael Porter’s view of “shaping industrial structure”, as is also echoed by Ben Fine and Zaf Rustomjee (in 1996)

reflecting on South Africa’s industrial policy. It however, is also worth noting what other academics found and researched and wrote on the subject of South Africa’s industrial participation policy and programme in the context of international benchmarking and other development considerations. What follows hereon is a comprehensive review of the various scholars, academics and interested parties on the subject of DIP in relation to its economic, socio-economic and industrial development value for South Africa as perceived at the time.

In a research paper done by Prof R. Haines and G. Wellmann on the industries' experience in the Western Cape associated with the proclaimed benefits of the strategic defence package offset programme, they focus on the an apparent lack of investments in what they term “an emerging high-technology knowledge industrial sector in the region”. They observe that the DTI may have given some consideration to its value-chain approach as proclaimed in their ‘Integrated manufacturing strategy that is to group and consolidate the various industrial participation projects and the alignment of investments to provide a link-up to the Spatial Development Initiatives (SDI). They, however, conclude that the industrial participation net impact on the Western Cape region as part of the DTI’s SDI, cannot be seen as anywhere near substantive, whether in its nature or scope, or whether through investment, technology, exports or job creation.

Paul Dunne and Richard Haines also convey a message of doubt to national economies on the net value of defence offsets and the influence it has on industrial and economic development at sub-national level. The observation they make is that the South African offset scheme may have been able to play a possible role in the development of particular regions in South Africa. The degree of public debate and the availability of information make South Africa a particularly interesting case study for the economics of offsets and its impact on regional development. They observe,

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228 Defence Procurement and Regional Industrial Development in South Africa: A Case Study of the Eastern Cape
Paul Dunne and Richard Haines. Middlesex University and University of Port Elizabeth. August 2001
however, that it is extremely problematic to measure the overall impact of the South African offsets in terms of job creation, the strengthening of backward and forward linkages, and technology enhancement (as also echoed by Martin). They refer to a study of Saudi Arabia’s defence offset programmes, proclaiming that tens of thousand of jobs will be created, while the various programmes generated employment in the region of only 2000 (quoted from Matthews 2000). They furthermore express the view that only a few countries appear to have been successful in using defence offsets.

Dunne and Haines, also quote Robin Bloch, arguing that despite a relatively sophisticated set of local and regional plans, there is some lack of integration between the relevant actors and structures, coupled with ad hoc interventions in South African ‘space economy’. In the latter instance they refer to problems, mainly in deeply entrenched core-periphery systems of industrial location regions, which are not aligned and will therefore not attract the anticipated levels of investments as envisaged by the DTI. Nor will these create any new growth centres. According to their findings, only a few companies in these so-called IDZs have actually received some offset-related (DIP) work. Dunne and Haines state that due to the relatively ad-hoc and project-oriented nature of DIP, that the industrial participation projects from the large defence procurement package are unlikely to benefit the Eastern Cape much in structural terms. They express a cause for concern that it may, instead, lead to further contractions and undermine alternative and more sustainable macro development options for the province.

Dunne and Haines strongly advocate that the DIP and NIP schemes need to be planned and evaluated within a wider sub-national context that recognise the spatial inequalities in the South African economy. Policy-makers need to address the

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question of utilising natural resources in a sustainable and equitable fashion, and explore the potential synergies between such resources and broader-based industrial and high-technology development. In order to do this properly, they need to create a clearer understanding of the regional implications of national policy and attempt to develop a coherence between national and sub-national planning, that will allow them to be mutually reinforcing. The implication of their view is that government should become more prescriptive with their industrial participation demands – this view is incidentally supported by the author and AMD.

In a research paper on “arms trade offsets”, Jurgen Brauer and Paul Dunne share their views on this subject matter in what they refer to as a “so-called state of the art review of empirical knowledge regarding arms trade offsets”. Reportedly, extant evidence suggest that offset arrangements do not yield net benefits for a country’s economic development. They state that arms trade offset deals are more costly than ‘off-the-shelf’ arms purchases, and create little by way of new or sustainable employment. They also propose that such offset do not appear to contribute in any substantive way to general economic development, and with very few exceptions, do not result in significant technology transfers, not even within the military sector.

Brauer and Dunne state that politicians, especially in democracies, must justify expenditure of public funds, usually in the face of crying social needs. The logic way of going about this is to use offset demands to motivate arms deals, and this practice has thus become universal. The use of offsets is by no means restricted to the field of arms trade, nor even to intra-government procurement. They observe that offsets, and related forms of countertrade, constitute a vast, pervasive business practice – involving tens of thousands of people around the globe, reaching far beyond the market for military-related items – and is variously estimated at ranging between five percent and 30% of world trade. Similar to some other academic researchers’ (e.g.

Rowe and Martin) views, they also find that nations do not track the value add of offset trade separately. All estimates are guesses and it is by no means clear how estimates are arrived at either.

Brauer and Dunne acknowledge the fact that arms importing countries’ offset objectives evolve over time and their strategies change as their objectives evolve. They conclude by criticising the fact that only a few countries now, such as South Africa, still seem to believe that offsets can result in across-the-board, generalised economic development and job creation and that South Africa also has yet to learn from the prevailing experience that general economic development can not be attained through the offsets mechanism. Its officials seek to link offset projects “with other national economic and industrial policy initiatives, such as Spatial Development Initiatives and Industrial Development Zones,” even though analysts suggest that many of the promised investments are dubious, and now seem to have been correct (quoting from Dunne and Lamb).

Brauer and Dunne also acknowledge some indigenous industrial capacity that can be exploited if South African firms are to be integrated into an emerging European global arms production supply chain (quoting from another study done by Dunne and Lamb). But potential need not, and may not, translate into actual experience. As regards the non-defence industry, from an academic empirical point of view they still question the whole ‘offset deal’. For instance, they write that “it is not clear whether South Africa is getting state-of-the-art technology in areas of growth, or old technology in areas of overcapacity (e.g. stainless steel - Dunne and Lamb).

Similar to the experience of other academics and researchers on the subject of international offsets (also shared by the author of this dissertation), Brauer and Dunne observe a total lack of coherent data on the subject matter; the “data situation is poor”, still today, is countries’ unwillingness to allow researchers access to offset-related data, even in democracies. This is difficult to justify. Any country ought to be
interested, whether or not policies work, and what their costs are. Where public funds are expended, public accounting is needed. There is no reason to treat the military any different. The press widely reports on offset deals and that there can be no fear about military secrets being revealed. Even for their own internal use, governments ought to want to know what offsets cost their countries. This will improve decision-making.

Brauer is adamant that audits need to be done on economic principles, counting all economic costs. This will include, for instance, environmental costs associated with weapon production, the cost of manpower training, special infrastructure construction, and other resources used to support offset work, as well as the opportunity cost of directing resources to offset rather than to other areas of work. All this will require a sophisticated set of monitoring tools and abilities by the relevant state agencies, which, especially in developing countries, may not be readily available. Still, expert consultants can be hired to take at least a partial look at things. Offsets should not be excluded from the planning, execution and subsequent feedback loop.

Brauer and Dunne, as many other experts in the field of offsets, also hold the view that “Offsets will not disappear”.

In a study done in 1999 (at the starting phase of the industrial participation dispensation in South Africa) by Peter Bachelor and Paul Dunne\(^{233}\) on the subject of industrial participation in South Africa, they state that the downsizing and restructuring of the local defence industry took place in a policy vacuum, and the government adopted a ‘hands-off’ approach to defence industrial adjustment. The announcement of a large procurement order with foreign suppliers in November 1998, according to

them, constituted a major threat to the long-term survival of the local defence industrial base. It is however not clear on what premises did they base this prediction.

While official publications often herald offset agreements as beneficial to the purchasing country, the issue is much more complex and the costs and benefits of such programmes have been the subject of many an ongoing debate. If there is a local defence industry, it is bound to be affected by the procurement orders going abroad, but evidence suggests that maintaining a local defence industry is expensive and uneconomic for a small country (Dunne’s views, 1996). This means that importing arms may be more sensible, especially as there is usually a premium attached to offsets, with the result that the purchase price is normally higher. A study by D.R. Cooper (1999) argues that ‘the costs incurred by arms companies as a result of offset deals are simply passed on to the recipient…the level of job creation and technology transfer over and above that which would have occurred without offsets is generally minimal’ (quoted in Business Times, 25 July 1999).

P. Bachelor and P. Dunne\textsuperscript{234} in yet another study report express the view that the welfare issues related to offsets are unclear. Offsets are supposed to relocate production to the purchasing nation, and if there are to be defence offsets then they can be used for developing civil products and/or to assist with the conversion of defence companies rather than attempt to maintain local defence capabilities.

They state that in the case of South Africa, the decision to procure the weapons, were motivated primarily by offsets rather than price. While there are clear opportunity costs, particularly with respect to the local defence industry, considerable efforts were made to implement offset policies that reflected the experience of other countries, such as the UK. There is also a reasonable amount of information available, which

\textsuperscript{234} Bachelor, P. and Dunne, P. Centre for Conflict Resolution, University of Cape Town, South Africa and Middlesex University Business School, United Kingdom. The restructuring of South Africa’s defence industry. Published in African Security Review Vol 7 No 6, 1998.
allows for the consideration of the likely economic impact of the defence offset deals. Bachelor and Dunne state that the purported benefits of offset agreements are, however, questionable and what little empirical evidence is available, suggest that they tend to have a much smaller impact on the local economy than expected. It is very difficult to judge whether prices are reasonable and whether the work attached to the offsets is actually new work at the same level of technology.

Bachelor and Dunne do acknowledge though (rather contradicting to some of their earlier findings and statements), that the local defence industry will benefit from the deal and while it may struggle to retain the capabilities to produce a range of advanced weapons systems it can become a part of the global industry as subcontractor to some of the major players. There are capacity and capability problems in the areas relevant to the navy orders, which suggest that the sector will probably benefit little. On the other hand, the local aerospace industry has the capacity and capability to benefit significantly from the Air Force orders. They do again question whether South Africa should be maintaining a defence industrial base at all, given the evidence that it can be a drain on the economy. Off-the-shelf purchases would have been cheaper and would have allowed the government to allocate the savings to encourage conversion in defence-related industries and to develop those areas of the economy with the highest potential for economic growth and job creation. They could certainly have contributed towards transforming unemployment figures, by allocating the expenditure differently. They admit that it was not clear from their survey, whether the implications for industrial policy, which are implicit in some of the offset offers, are fully thought through. They state that it is certainly the case that the alternatives have not been given adequate consideration. They fail however to properly argue the consequences of after sales services and support, upgrades, repairs, refurbishments and battle damage repairs.
On the issue of the using the arms trade offsets as a development mechanism, Brauer and Dunne\textsuperscript{235} report that an increasingly important facet of the international arms trade is the so-called offsets arrangements that obligate the arms seller to reinvest (‘offset) arms sales proceeds in the purchasing country. In justifying arms expenditure and in promoting local industrial activity, offsets are claimed to offer significant benefits to developing countries, yet until recently there has been little research on how well offsets work in practice. Their research considered some of the issues and current empirical evidence and reportedly found virtually no case where offset arrangements have yielded unambiguous net benefits for a country’s economic development. As a general rule, arms trade offset deals are more costly than ‘off-the-shelf’ arms purchases, creating little by way of new or sustainable employment, do not appear to contribute in any substantive way to general economic development, and with very few exceptions, did not result in any significant technology transfers, not even within the military sector.

Their study concluded that offsets are an increasingly important part of the international trade in arms. When countries procure defence equipment from a foreign supplier they will look to reduce the cost in a number of ways. They may become involved in the development and (co)production of the product, e.g., joint production, licensed production, or sub-contractor production. Foreign direct investment, technology transfer, and countertrade are other methods of compensation, which might take place in the civilian rather than military sector. Each form of involvement, lumped together under the concept of ‘offsets’, carries its own implications for costs, programme risks, control over specifications and wider industrial and economic benefits.

To justify this decision to purchase from foreign suppliers and to win public support for the arms deal, the South African government stressed the potential positive effects of

\textsuperscript{235} Arms Trade Offsets and Development. Jurgen Brauer, College of Business Administration. Augusta State University, Augusta, GA 30904, USA. And J. Paul Dunne, School of Economics, University of the West of England. Frenchay Campus, Room 3D22, Coldharbour Lane, Bristol BS16 1QY, United Kingdom. January 2005
the proposed industrial participation offers (the local term for offsets) on investment, job creation and growth in the local-defence related industry and the national economy.^[236]

It is generally accepted that arms imports are needed for legitimate defence purposes, although for many countries this may reasonably be disputed (Dumas, 2004). There is nonetheless a crying need for countries to obtain a much better idea of what works under what circumstances, and what does not work. (Taylor, 2004, and Markowski and Hall, 2004, offer some guidelines and ideas in this respect). This is particularly true for developing countries, where the opportunity cost of military expenditure can be extremely high. To date, the evidence does not suggest that offsets advance countries’ long-term economic, or military goals. To summarise this evidence, there is a populist view that offsets do not result in arms acquisition cost reductions, that offsets do not stimulate broad-based civilian economic development, that neither substantial nor sustained job creation occurs, not even within the military sector, that almost no successful technology transfer into the civilian sector is observed, and that only limited technology transfer into the military sector occurs, often over decades and at high cost. Moreover, whatever technology is transferred is quickly outpaced by continuous technology advances in the main developed countries, especially the United States. It seems that developing countries should beware of arms offset deals, as they allegedly have little to gain and much to lose.

Jurgen Brauer^[237] in a presentation at an international offset conference in Cape Town in 2002, advised on how to arrange offset terms into a plausible order, making it

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[^236]: Batchelor, P. and Dunne, P. Centre for Conflict Resolution, University of Cape Town, South Africa and Middlesex University Business School, United Kingdom. The restructuring of South Africa's defence industry. Published in African Security Review Vol 7 No 6, 1998.

possible to proceed with the process. He said one should consider the following issues:

- Ask whether arms trade offsets are part of normal trade relations or whether they are in some sense ‘extra-normal’ and, if so, ask why it would matter?
- Why are arms trade offsets agreed to? There are two aspects to this question: (a) what economic theory will explain offsets? and (b) what are the rationales of buyer and seller when they agree to offsets?
- Are arms trade offset agreements economically efficient? Is social welfare maximized? What is the benefit, net of cost, for whom? What empirical evidence exists to inform decision makers? - and
- is countertrade indeed this vast, pervasive business practice, involving tens of thousands of people, reaching far beyond the market for military-related items?

Brauer expresses the opinion that offset is nothing less than coercion. He feels that the distinction between coerced and voluntary trade is important because in the former case, coerced trade leads to trade diversion and therefore to welfare losses, whereas in the latter case offsets are viewed as part of the negotiation over a complex package of goods and services which include military and non-military items and may well be welfare enhancing, as all voluntary trade is (at least in pure international trade theory). Accordingly, the starting point for Hall and Markowski is whether arms trade offsets are voluntary or mandated. If mandatory and purchasing governments insist on a particular offset percentage, then Hall and Markowski agree that there will be trade diversion, trade distortion, and welfare-diminishing effects. But if voluntary, offsets could be welfare enhancing, at least in principle and even if viewed by some as immoral. Whether they are welfare enhancing would then depend on whether offsets are an efficient means of pursuing government’s multiple objectives.

S. Martin and Hartley\textsuperscript{238}, for example state that “in a world of imperfect markets, oligopoly rents, complex transactions and asymmetrical information, offsets might

enhance the welfare of the purchaser”. All of these academic theories and discourse on offsets can be seen as a means to try and rationalise arms trade offsets, as an after-the-fact event. They merely suggest that, in principle, offsets may entail net benefits when compared to the status quo and that the issue needs to be decided upon based only on empirically founded information. In the view of the author, comparing the welfare effects of arms trade offsets to the status quo of international trade relations remains pragmatic but intellectually dicey. Who is this ‘government’? Who makes decisions for whom? This leads to the next issue, namely who are the players involved in offsets?

Brauer feels that economists cannot but look with great unease at analyses that are limited to one or the other interest group (labor unions, employers, one country). Economists are global public servants. An economic valuation of arms trade offsets must therefore ultimately ask what the contract contributes to the lives of the people that finance it. It must ask this question not only with regard to the flow-back of funds (the offset part of the deal) but also, and especially, with regard to the outflow of funds – the arms deal itself. And so, to pick up the final strand left from the earlier discussion, Brauer squarely questions the notion that developing countries need to import major weapon systems in the first place.

In a research paper done by Haines and Dunne\(^{239}\) in 2005 on the impact of the SDP (Strategic Defence Package Deal) and its offset, as a continuing and considerable factor playing itself out in the defence industry, they question the actual value to the South African economy. While the defence projects seem to have some successes, the experience with the non-defence projects is poor and overall the value of the deals is nowhere near the promises made at the outset. Lack of transparency created an environment where corruption was almost inevitable and successful industrial planning

almost impossible. While there is still some way to go, the skepticism of offset programmes express by Brauer and Dunne seems to be justified by the experience of South Africa.

Interviews reportedly done by Haines and Dunne, during 2004/2005, with a range of defence-related companies, show some dissatisfaction with the administration of the DIP scheme by Armscor. (The reader’s attention is drawn to the findings of the author under par 3 of this chapter.) One of the respondents refers to the bureaucratic approach to credit allocation and investment targeting. There is a general perception, whether implicit or explicitly stated, that insufficient concern is being shown by the DTI in providing state incentives to domestic defence industrial work. Several of the firms express concern over the significant amounts of DIP work and credits, which are not allocated. Indeed, in the words of one of the respondents, DIP/NIP credits are ‘monopoly money’. There are indications that obligors, at times, prefer to set up a new ‘sweetheart’ subsidiary in South Africa for some of their DIP obligations, rather than work through an existing firm. In addition, there is evidence of insufficient linkages between DIP and NIP initiatives in the provinces (Haines and Wellman 2005).

Despite some success stories, they conclude a downside effect, namely that DIP work ‘crowded out’ other potential projects, for example in the aircraft production, as many small parallel activities were abnormally loaded in the production facility and multi-task DIP work became extremely difficult to handle logistically. A single, large volume job would have been easier to handle and more profitable (a report done by Dr R Ferreira and R. Haines 2004/2005). They also state that there is a growing concern about the value of the offset deal to the South African economy. The compact, but growing body of international literature on defence offsets, and their economic effects, does not instill much confidence in eventual, successful outcome of the offsets in South Africa (see Brauer and Dunne 2004). The impact of offsets is often found to be problematic in terms of job creation, the strengthening of backward and forward linkages, and
technology enhancement (Struys, 2004). Nor do they constitute a ‘third way’ for the economic development of the LDCs (see also Brauer and Dunne 2004 and 2005). Few countries appear to have been successful in using defence offsets sufficiently, and embedding and extending technology transfers (Matthews 2000) into any value-added activity.

Haines and Dunne also conclude that government policies on offsets do come under public criticism on a range of fronts. The prices of the systems are severely criticised as inflated by the offset arrangements, while various reports identify beneficiary companies with vested interests. Hidden costs, including unanticipated capital expenditure to activate imported equipment, and the R&D expenditure required to benefit from technology transfers are highlighted and the issue of reported job creations is seriously doubted. Although they concede to the possibility that DIP may have a positive effect on the defence industry, it is at a cost to the economy and a lost opportunity cost to the use of these resources (Dunne and Lamb 2004; Haines 2005; and Haines and Hosking 2005). It is important that research is conducted for the life of the projects, to inform future policymaking and provide important lessons to other countries considering similar policies.

Dunne and Lamb\textsuperscript{240} in 2005 completed a DIP study in South Africa. In their research paper they state that South Africa faces one of the world’s most controversial arms deals involving offsets. They do however fail to mention that as a rule there are many arms deals internationally that are deemed controversial from time to time, for example Poland and India, to name but two recent (2005-2007) cases). The degree of coverage, of both the requirement for transparency and the lack thereof, and the public debate being unprecedented on this issue, have provided both important and disturbing insights into the workings of the international arms trade. This constitutes an important case study for researching the economics of offsets, for which there is, as

\textsuperscript{240} Defence Industrial Participation: The South African Experience. by J.P. Dunne and G. Lamb. In Jurgen
yet, no definite policies, with governments adopting a ‘hands-off’ approach to defence industrial adjustment as military spending declined\textsuperscript{241}.

One of the most important benefits of the arms deal is its positive influence on local industry. Local companies did benefit through direct DIP activities executed by foreign suppliers purchasing sub-systems and components, either under license or in some co-production relationship.

The value of purchases from South Africa’s defence industry is dependent on European defence companies, having the sole discretion to decide whether or not to make investments in South African defence companies, particularly aerospace and information technology companies. Most of this investment will in fact evolved into equity purchases rather than fixed investment in plant and capital. There is also a growing number of joint ventures between European and South African defence firms. These are significant in that they involve technology and skills transfers and should allow South African defence firms to become part of the European’s global supply chains. In addition, some evidence of a significant impact on South Africa’s defence exports is noted. In particular, European governments are ‘prompted’ to purchase South African defence products, despite criticism from European defence industries. Some of the preferred European suppliers also help South African defence firms bid for, and win, other foreign defence contracts, e.g. Finland, Sweden, Italy and the USA.

Dunne and Lamb are however bold enough to conclude that, overall, it is clear that the arms deal had a positive effect on South Africa’s economy, particularly in the DRI – after all, the billions must buy something – but there is little evidence that the predicted level of benefits was, or will be reached. Due to the lack of full transparency and data access, net benefits cannot be assessed properly. There is also the important issue of the opportunity cost of the resources used in the deal. This is considered in the next section. Brauer and Dunne, on separate occasions also acknowledge the presence of

a body of scholarly literature that still suggests that military spending is unproductive and generally yields either no statistically significant or a negative effect on economic growth in developing countries, with the negative economic effects exacerbated by investment in domestic arms production.

On the other hand, Batchelor and Willett argue, “the expansion of the domestic arms industry (during the 1970s and 1980s) distorted the trajectory of the country’s industrial development (and) imposed a number of long-term economic costs on the economy. The absorption of scarce resources (capital, labour and foreign exchange) and the crowding out of non-military public and private investment and of non-military R&D, contributed to the under-development, declining productivity and poor international competitiveness of the civilian economy.”

Despite marked downsizing and restructuring, South Africa’s defence-related industry remains highly capital, skill, import, and research intensive, with very limited links to the civilian economy. The country has retained advanced arms production capacity, although it does not offer any longer a comprehensive range of systems independently of the major international players, as was the case in the mid eighties. Given the nature of the international industry and intense competition among the group of peripheral producers that South Africa finds itself in, it is clear that its prospects are not particularly rosy.

In a paper written by Gillian McEwan on defence offsets in the South Africa Aerospace industry, he states that within this framework, one of the most contested areas to date is the development of an industrial strategy. If the government is to achieve its goals, it is vital that a coherent industrial strategy be structured and properly implemented. His research paper is broadly concerned with whether the government is in fact developing a successful industrial policy. Within this large arena,

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242 Defence offsets and the South African Aerospace Industry. Gillian McEwan. UPE.
the focus will concentrate particularly on the aspect of Industrial Participation (IP). IP is one of the tiers in the South African government's move toward a new and improved industrial strategy. It is concerned particularly with bringing new business into the country, and with it greater investment, improved technology and an increased living standard for all. Development theory proposes that physical and financial resources, as well as organisational capabilities play a significant role in the determination of economic development. A substantial proportion of these resources is in the military sectors of South Africa. Apart from the high defence budget, this sector also attracts a large proportion of highly skilled scientific, technological, managerial and administrative manpower.

McEwan, quoting from a paper published in 2004/5 by the Bonn International Centre for Conversion (BICC) on “Conversion in Africa: Past experiences and future Outlook” (www.bicc.de) states that conversion, or demilitarisation can be looked at from two angles; the human dimension and the material dimension. The human dimension in South Africa manifests itself in the millions of able-bodied Africans who are demobilised en masse from their military duties and careers and who need to be socially and economically reintegrated into their respective communities. The benefits of reintegration may be perceived in terms of the additional stream of goods and services that they contribute to economic growth, as well as the social and political stability resulting from their disengagement from military life.

McEwan then quoting from the works of Kaplan re-iterates that South Africa’s IP strategy should revolve around the acquisition of knowledge, and the best way to achieve such knowledge is through R&D. In this sense R&D is the proxy for knowledge and knowledge is assumed to diffuse via trade flows. Thus the impact of knowledge will be greater the larger the R&D in a trading partner, and the higher the share of trade with that partner. McEwan remarks that ‘offset critics’ also argue that

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international experience indicates that armaments companies first raise the prices of the equipment to compensate for the burden of the offsets and guarantees, and then often walk away from the commitments once the weapons contract has been secured. In addition, if the industrial investments were economically viable they would stand on their own merits rather than be conditional upon armaments acquisitions.

McEwan remarks and observes that some positive results have been achieved through the SDP. For example Grintek in particular, seems to be making progress with DIP. Denel on the other hand, may have acquired new partners and export markets, but this was at a cost. While the company may be partaking in the manufacture of world-class equipment, their own local projects, such as the Rooivalk, touted as internationally competitive, fell by the wayside at great expense to the company. McEwan states that one cannot question whether the restructuring of the SANDF was necessary, although the means though which this was achieved is open to criticism. While there are many theories as to why the government chose this route, and while the SDP and its related IP may be successful to a degree, international experience shows time and again that a peace dividend cannot be achieved by spending money on arms. There are very few examples, if any, where offsets are successful in developing countries. If we are to look forward to a politically stable and economically viable future, he expresses the opinion that government expenditure can be concentrated on other areas of the South African economy, rather than through defence offsets, with more positive results.

In another paper investigating and commenting on the restructuring of the SA defence industry, Batchelor and Dunne\textsuperscript{244} offer yet another perspective on this subject. They, observe that with the decline in domestic demand for armaments, South Africa’s defence and defence-related companies had to reconsider their corporate strategies, resulting in large changes in the structure of the industry. Denel and the major private

\textsuperscript{244} The Restructuring of South Africa’s Defence Industry. Peter Batchelor and Paul Dunne. August 1998. Centre for Conflict Resolution, University of Cape Town, South Africa and Middlesex University Business School, United Kingdom.
sector defence contractors, such as Reunert, Grintek and Altech have all attempted to integrate vertically, by outsourcing far less of their defence business than in the past. This reduced the demand for the output of hundreds of smaller defence firms, particularly those acting as suppliers and sub-contractors for larger firms. In the past few years many small and medium-sized private defence firms have merged with, or been acquired by, larger defence firms (e.g. Reunert acquired the armoured car division of TFM in early 1997), while others just exited the market. These developments resulted in the domestic defence market (excluding imports) becoming increasingly concentrated.

In South Africa the lack of government policy with respect to defence industry conversion left the onus on individual firms to bring about change. This led to offensive corporate responses whereby defence firms attempted to capture as much of the remaining domestic arms market as possible; to find alternatives to the defence market. The offensive activities of both the public sector and private sector defence contractors led to increased concentration in the market. In addition to the reduced orders, vertical integration by the main defence contractors reduced the value of work that they out-source to sub-contractors and suppliers. Firms have since been taken over, merged or have simply left the market (for example the Altech group).

It is worthwhile to note the Auditor General’s (AG) findings, after a comprehensive forensic investigation into the SDP of December 1999. Not only did the AG investigate the process that led to the recommendations and subsequent appointment of winning bids, but he also analysed several policies, procedures and practices, with one being the DIP policy, as managed by Armscor. Armscor, at that time, used the DOD DIP policy to draft a similar document in the Armscor-prescribed format and standards. The DIP policy was further complemented with a procedural document, which was later augmented by a further ‘practice’ document. The AG could reportedly not find any fault with the DIP process and actually states in par 14.1.23 of his report that the IP obligations awarded by the prime contractors in terms of the SDP, as well as the
performance guarantees in relation thereto, compare favorably with the position in other countries that exercise countertrade practices. However, the one concern raised by the AG in par 14.2.14 of his report, is that the DTI should obtain legal opinion pertaining to the controls in respect of effective implementation of the DIP and NIP programmes, to ensure that prime contractors fully meet their obligations. It is not clear to the author what, if anything, the DTI did to give effect to the AG’s recommendation.

The Pan African Communist Party’s Member of Parliament, Patricia de Lille, (during 2006) delivered a speech at the University of Cape Town (UCT) Graduate School of Business on the “economics of the controversial R50-billion arms deal”. She still maintains that the deal does not make economic sense for South Africa, particularly when it comes to the issue of offsets. Offsets are according to her (and some others) used to refer to a range of industrial and commercial arrangements, including foreign direct investment and technology transfer, that are included as part of an arms deal and help to offset the costs of purchasing expensive weapons. Such offsets, says De Lille, help to “legitimise large outlays by allowing policy-makers to point to apparent economic and eventually social benefits” of a deal. According to her, international examples have shown that returns are rarely that high. "South Africa will indeed be setting an international precedent if even half of what the government is projecting is reached…"

Local defence analyst Leon Engelbrecht in an article on offsets, admits that the SA's defence industry shrank from “shark to minnow in the last decade”, but according to a recent study by AMD, close to 50% of the R10-billion industry is broadly IT-related. An estimated 22% are already foreign-owned, mostly by companies involved in the ‘controversial’ R30-billion Strategic Defence Package Deal (SDP). He shares the view of others that the more “conspiratorial critics” have always decried offsets as ‘voodoo economics’ and hence hints that the arms suppliers include the cost of offsets.

245 “De Lille queries economics of arms deal” http://www.adminnews.uct.ac.za/docs/31d0bfa6d45ff63dbf8c5b4117f37c77.doc
into their asking price. This raises questions around the position of the taxpayer, who may be supporting foreign defence companies that pay for local acquisitions from which they then repatriate profits and claim offset credits. Neither the De Lille, nor Engelbrecht’s allegations are substantiated by any factual evidence.

However, there are also some other arguments concurring that certain DIP components of the offset agreements provide a lifeline to the South African defence industry, although the impact of these appear to be concentrated specifically in the aerospace sector, while the electronics and maritime sectors are struggling somewhat. In addition, much of the DIP involvement of South African companies is in manufacturing operations that are not regarded as hi-tech, when compared to the technological abilities of South African firms.

Some commentators go so far as to suggest that offset agreements represent an attempt to justify foreign procurement, rather than an economic argument in support of the benefits of import replacement, and that the move to justify the procurement of weapons by economic rather than security benefits, is seen as highly problematic.

In the annual report to the US Congress\(^{247}\) on the effect of offsets in defence trade, which is regularly prepared under the direction of the US Department of Commerce. The authority to collect data from US firms involved in offset agreements, in connection with the sales of weapon systems to foreign entities is delegated to the Bureau of Industry and Security (BIS). The ninth annual report to Congress was completed in March 2005. The data collected for the latest report covers offset transactions and agreements entered into during the time period 1993 to 2003. This report, for example, makes the statement that developed countries with established defence industries use offsets to channel work, or technology to their domestic defence companies. Countries with newly industrialised economies use both military and commercial-related offsets that involve the transfer of technology and know-how.

\[^{247}\text{http://www.bis.doc.gov/defenceindustrialbaseprograms/OSIES/offsets/default.htm}\]
The developing countries with less-industrialised economies generally pursue indirect offsets to help create profitable commercial businesses and build their infrastructure. Overall, offsets reportedly continue to be an important and necessary factor in a climate of increased competition for a declining number of international sales contracts. The view is, however, expressed that offsets may be detrimental to the strength of the US defence industrial base, particularly small and medium-sized defence subcontractors. Offsets can reportedly displace US sub-contractors, and enhance foreign competitors, creating excess defence capacity overseas. The US government stance on offsets in military exports is that certain offsets are economically inefficient and market-distorting.

Prof Richard Haines\(^{248}\) at an offset conference in London, UK, in March 2007, expressed the opinion that he did not think that the SA offsets programme to date had any significant impact on the national economy and that specifically in the case of Denel, obligors had failed to help stimulate output and exports of the group. Simphiwe Hamilton, executive director of AMD, in reporting to the Standing Committee on Defence on 27 June 2007\(^{249}\) stated that the countertrade investments as a result of the SDP, were not specifically directed towards the defence sector and that the local DRI should be protected against foreign competition. Industrial participation should be better used as leverage for achieving certain objectives, but that government needed to be less risk-adverse.

In a report published in the international publication on countertrade and offsets\(^{250}\), which commented on a study done by Prof R Haines, it is stated that he observes that especially the DIP process do seem to provide a sustainable lifeline to the local DRI. The report also highlights the fact that he commented on an apparent lack of contact between the obligors, their agents, the DTI and Armscor, on the one side, and organised business and local and provincial governments, on the other. The latter being one of the key issues that, according to his findings needs to be addressed in

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\(^{248}\) Prof R Haines is the Head of Development Studies at the nelson Mandela Metropolitan University in Port Elizabeth, South Africa.  
\(^{249}\) Business Day, 28 June 2007. “Warning on state of SA’s defence industry” Wyndham Hartley  
\(^{250}\) CTO XXIII no 13
order to improve the marketing of the offset programme and to sensibly apply the knowledge gained in the process.\textsuperscript{251}

It was also interesting to observe the views of an independent research report on the DRI that was done by local company VuXaka (Ltd) Pty, under contract from AMD during 2005/6. The report alludes to the fact that the SDP contracts, with the exception of the Hawk avionics suite and the Corvette combat suite, are not guided by the essential strategic requirements as spelled out in the White Paper on the DRI, and are reportedly, and according to most industry players, not in accordance with the objectives of the DIP policy. They further allege that the Latter was unclear about obligations when a foreign entity is to be contracted versus a local entity, as the local content in the case of a foreign contractor counts as DIP, while it is not true in cases where local contractors are appointed.\textsuperscript{252} Yet, in an interview with Dr Paul Potgieter the Managing Director of Aerosud\textsuperscript{253}, he states that his company’s turnover now stands at 95%, all derived from foreign contracts - as a direct result of DIP and NIP.

3. **Recommendations.**

The focus of this dissertation, is whether or not DIP delivered the results and objectives that motivated its instigation and implementation, and whether any changes should be made to the existing process?

*The answer, as a result of this extensive research done by the author, over the past twenty-two months (complimented by his day to day experience in the practical field of countertrade/DIP and NIP over a period of eleven years), has to be a qualified yes, especially if one considers each of the specific comments passed on each factor of the DIP policy, as portrayed in the context of the*

\textsuperscript{251}Author’s note: The findings of Prof Haines are supported by the Author’s own findings, as contained in this dissertation.

\textsuperscript{252}Author’s note: I have been involved with Armscor on this matter extensively during 2005-2007, with a result that they have changed the tender value system that now looks at local content as part of the DIP process, but only for evaluation and not for contracting. This has now put local bidders in the same cadre as a foreign bidder.

\textsuperscript{253}Engineering News. Page 60. September 7-13.
research analysis and subsequent findings of this reciprocal trade phenomenon, with specific reference to chapter 7.

If one further considers whether the policy is effectively introduced and applied in practice, the final assessed assumption, from a procedural and regulatory perspective, supported by empirical data, does indicate that there is indeed room for improvement.

Denel, with the support of the DPE, requested Armscor, the DoD and the DTI in 2005 to review the DIP and NIP policies, in an endeavor to secure a better dispensation for the local DRI. Only time will tell whether the plea will result in tangible benefits for the DRI. It is, however, the author’s firm believe that there will be some changes forthcoming, especially when the DTI introduces the DRI sectoral development initiative, underwriting the proposal to accept the DRI as an industrial cluster. Indications are that this initiative may see the light in the course of 2008/9.

Denel already initiated steps to request the DTI to affect changes to the NIP policy, as it forces non-core activities back into Denel’s business, while Denel is desperately trying to get rid of all its non-core activities. Sareej Mohammed\textsuperscript{254} also, cautions that the government needs to carefully review the development of an industrial policy, which is to be well-aligned with other growth policies to ensure improved performance of the entire economy so that the country does not end up with under utilised infrastructure assets – the DRI is anxiously awaiting further news on the DRI Sector Strategy initiated by DPE and which now apparently sit stuck in the DoD\textsuperscript{255}.

From a development policy point of view, as covered in Chapter 1, the DIP policy and the WP on the DRI make for adequate academic discourse, also in relation to the three research aspects that were alluded to by Martinussen (1997).

\textsuperscript{254} Sareej Mohamed is the Director of Corporate Strategy and Industrial Development research Programme in the School of Economic and Bus Science at WITS. Article in Eng New April 27, 2007: “SA’s new industrial policy”.

\textsuperscript{255} Statements made by Denel CEO and other DRI members during a Denel DRI briefing in Pretoria on 15 Aug 2007.
When considering the views of Graaff and Venter (as per Coetzee, 2001) of what constitutes a ‘system’, both policies reflect a systems or an holistic approach as the environment in which the DRI operates, happens within a macro context, governed by numerous and very complex levels of interaction. The SA government shared a constructive strategy for the further development of the local economy and industry (in this instance the DRI), which is also in line with Coetzee’s views on the subject and which actions should further complement the various other actions of government related to the automotive, aerospace, and advance manufacturing industries, to name but a few.

**DRI DIP survey’s** primary aim was to collect data from DRI companies as targeted beneficiaries under the DIP programme, in order to establish the levels of general perception of the effectiveness of the DIP programme.

A random sample of 40 respondents was taken from those DRI companies that have been exposed to the DIP programme, under the SDP, over the past seven years. A 50% response rate was achieved, which in relation to the levels of DIP participation of these entities, represents an above average return response.

By using the systematic sampling method\(^\text{256}\), the responses were abridged to assess a selected number of key issues. The questionnaire contained some 58 questions, which included double verification statement questions. The following comparative table of findings provides the reader with some sense of the content of the DIP questionnaires’ feedback that came from DRI enterprises involved in testing, services and manufacturing sectors, related to both landward and aerospace products:

Recorded responses from the DIP Survey Questionnaire

<table>
<thead>
<tr>
<th>Statement</th>
<th>Strongly Agree</th>
<th>Agree</th>
<th>Neutral</th>
<th>Disagree</th>
<th>Strongly disagree</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. The DoD/Armscor must keep on using DIP for contracts with imported content</td>
<td>65%</td>
<td>20%</td>
<td>10%</td>
<td>5%</td>
<td></td>
</tr>
<tr>
<td>2. The DIP process works very well in practice</td>
<td>35%</td>
<td>15%</td>
<td>15%</td>
<td>15%</td>
<td></td>
</tr>
<tr>
<td>3. DIP activities are commercially viable and profitable for my company</td>
<td>5%</td>
<td>45%</td>
<td>15%</td>
<td>15%</td>
<td>20%</td>
</tr>
<tr>
<td>4. DIP forced my company to become more competitive</td>
<td>15%</td>
<td>50%</td>
<td>10%</td>
<td>15%</td>
<td>10%</td>
</tr>
<tr>
<td>5. DIP contributes to job retention in key vocational areas</td>
<td>10%</td>
<td>40%</td>
<td>10%</td>
<td>20%</td>
<td>20%</td>
</tr>
<tr>
<td>6. DIP has caused foreign partnerships being formed with my company</td>
<td>20%</td>
<td>30%</td>
<td>25%</td>
<td>5%</td>
<td>20%</td>
</tr>
<tr>
<td>7. The DIP (Armscor) process should be combined with the NIP (DTI) process</td>
<td>20%</td>
<td>20%</td>
<td>50%</td>
<td>10%</td>
<td></td>
</tr>
<tr>
<td>8. The DIP process should implement incentive schemes to secure higher levels of investment</td>
<td>50%</td>
<td>30%</td>
<td>15%</td>
<td>5%</td>
<td></td>
</tr>
</tbody>
</table>

Table 2

In order to put the rationale of the DIP questionnaire in context, it is necessary to observe, once again, what the DIP programme set out to achieve at the time when it was restructured in 1996. The DIP aims and objectives were devised to underwrite the goals of the National Industrial Participation (NIP) objectives, including industry development; specific defence industry needs, such as the retention and creation of jobs, maintaining relevant abilities and capabilities; establishing a sustainable defence industrial and economic basis, with strategic logistic support capabilities; the promotion of exports of value-added defence/dual-use goods; the promotion of technology transfers and joint ventures; the maintenance of skilled indigenous manufacturing capabilities and the provision for a sustainable local defence-related industrial capability.

The DIP questionnaire primarily aimed at measuring perceptions in relation to the acclaimed DIP aims and objectives. It was devised to determine a general view of the DIP programme in six primary categories, as depicted in the Graph 1. (read the ‘series numbering’ in context with the explanation of each hereunder), plotting the assumptions and deductions, namely that:
**Series 1:** The DIP *aims and objectives* were perceived not be fully met. Those in agreement with this statement were marginally less at 36% compared to those who disagreed (39%);

**Series 2:** On the issue of how DIP actually *benefited the DRI*, the response indicated a 49% in favour of the process, with 28% of the respondents feeling that it did not really have any, or much, effect;

**Series 3:** The respondents’ views on how the DIP *process worked in practice* showed a balanced response of 34% – meaning that the respondents either did not know, or had a neutral view on the subject;

**Series 4:** On the question on how did the DIP process achieved *socio-economic* benefits, (the reader’s attention is also drawn to Table 1), a total of 44% of the respondents indicated some benefits were observed, while 34% indicated the opposite to be true. The majority of respondents indicated on the specific question on profitability, that profits of less than ten percent were achieved.

**Series 5:** On the issue of *job creation and skills enhancement*, the general view was that DIP did not contribute much to achieve this goal. Some 53% of the respondents shared this view, with only 17% indicating that some contributions were visible. In the sphere of engineering, respondents indicated that there was NO contribution, although some contributions were observed in the technical areas.

**Series 6:** On the subject matter related to *communication and the sharing of the general objectives, achievements, aims and objectives of DIP*, the general view was mostly negative with 57% of the respondents airing their dissatisfaction with Armscor’s communication strategy. Only 17% of the respondents expressed satisfaction with the level of communication.
Graph 1

As a general observation – respondents were asked to share some of their personal views on the DIP process. The following is a summary of the positive comments, opposed by a range of fairly general negative expressions of dissatisfaction with the DIP process in general.

The more positive views conveyed the message that the DIP and NIP programmes were extremely beneficial and should be retained. There was also a call for a DIP/NIP forum to be established to facilitate ideas. DIP was seen as a positive experience providing ideal opportunities to establish a sustainable business with foreign partners. One respondent proposed, for example, that a national strategy be implemented to guide the DRI.

On the negative side observations were made that Armscor was not a fair broker; the DIP process was messy, marginal and expensive, and that between the DOD and the DRI there was no cooperation and that OEMS made too many promises that they did not fulfill. Some of the respondents felt that DIP and NIP are a total waste of time and a disaster. Others expressed the view that Armscor actually did not have
the capability to manage DIP and that there was not enough support for the DRI in DIP. Skepticism was raised as to whether DIP could really help the DRI. The view was expressed that it would be more profitable for OEMs to pay the penalties. Some respondents felt that Armscor should be much more prescriptive in directing DIP activities. Foreign OEMs were criticised for having little interest in the local DRI – putting their own interests first.

In a report written by local defence analyst Helmoet-Römer Heitman\textsuperscript{257} he expresses the opinion that the real long-term effect of DIP, as also perceived by Reutech chief executive officer Piet Smit, is vested in the fact that the DIP obligations "brought good opportunities to take South African technologies into the world and to establish ourselves in niche areas internationally".

4. \textbf{In conclusion.}

Finally – also read in conjunction with chapters 4 and 8 and considering the various changes happening in and pending for the DRI (with specific reference to various pending equity partnerships, mergers and consolidations), a review of the DoD’s procurement policies (to redress preferential procurement), the possible incorporation of a scaled down Armscor into the DoD, the establishment of a national Defence Evaluation and Research Institute (DERI), the implementation of the SOE CSDP initiative, the role-out of the aerospace cluster initiative and various related supply chain improvement processes driven by the DTI, together with anticipated changes to the NIPF – the time has come for the South African government to consolidate its respective policies and merge it with the various other development initiatives in order to enhance our economic and industrial growth prospects to above the anticipated six percent per annum target.

Final note from the author

I have found this research extremely challenging, yet gratifying and inspiring, as it actually forced me to review and to subsequently criticize and comment on a process, I have been personally instrumental in creating 10 years ago.

Hope you have enjoyed the journey with me!

Johan J van Dyk.
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