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# Offsets in practice: The experience of South Africa

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**Abstract**

Numerous countries require that defense manufacturers commit to substantial offsets when defense materiel is purchased. However, there is extremely limited data regarding the economic efficacy or rationality of offsets. Recent disclosures related to South Africa's controversial 1999 "Arms Deal" about the economic performance of its sizeable offset obligations provides solid evidence that the manipulation of offset scoring systems allowed defense manufacturers to invest far less than originally contracted. The South African experience indicates that there are likely to be structural features inherent in all civilian offsets flowing from defense contracts that exert a downward pressure on the actual economic investments delivered by defense manufacturers.

Offsets are a major part of the global trade in weapons, with total global offset obligations known to be substantial. While no hard figures are available, one estimate suggests a global offset obligation of over USD 73bn for the defense and aerospace sectors in 2013.[1]

However, the importance of offsets is not matched by their degree of transparency, with offset programs being almost entirely shrouded in secrecy. As a result, it is both difficult to estimate the total size of outstanding offset obligations and to establish whether the economic benefits they promise actually materialize. Nevertheless, recent disclosures in South Africa related to its infamous and controversial 1999 "Arms Deal" provide a unique window into the day to day management of offset programs, their economic impact and the means by which offset-specific scoring systems can be abused. The manner in which the offsets data were manipulated necessarily implies that the positive economic impact of the Arms Deal offsets was considerably less than anticipated.

## The 1999 South African Arms Deal

In December 1999, South Africa completed the purchase of a range of sophisticated military equipment. This included: Fighter and trainer jets supplied jointly by British Aerospace (now BAE Systems) and Saab; light utility helicopters supplied by Agusta; submarines provided by the German Submarine Consortium; and corvettes provided by the German Frigate Consortium. These purchases, and the scandals associated with them, have collectively come to be known colloquially as the "Arms Deal" in South Africa. Although the all-in costs of the deal remain opaque, the most recent credible estimates indicate that it is likely to have cost between ZAR 61.50bn (approximately USD 6bn) and ZAR 71.69bn (approximately USD 7bn) between 2000 and 2020.[2]

The Arms Deal was, and remains, extremely controversial, largely due to widespread and persistent allegations that corruption tainted all of its contracts and embroiled South Africa's most senior and powerful politicians.[3]

## The importance of offsets in the South African Arms Deal

Offsets were central to the Arms Deal for three reasons. First, the Arms Deal was opposed by elements of civil society that questioned the need for post-apartheid South Africa to undertake the deal at a time of severe socio-economic strain. This argument had particular strength because South Africa's 1998 Defence Review, which set out the country's defense posture, confirmed that the greatest threats to the security of ordinary South Africans were crime, poverty and unemployment. The offset program was at the heart of the government's response to this criticism. Disclosures from the Government Communication Information Services (GCIS), the government body tasked with briefing the media on the deal, shows that placing offsets at the center of the announcement was the explicit strategy of the government. The announcement emphasized that the deal would generate over ZAR 100bn (approximately USD 10bn) of economic activity and create 65,000 jobs.[4]

Second, offset programs formed a large part of the discriminating criteria in choosing preferred bidders in the Arms Deal. Briefly, bidders were assessed according to three equally weighted domains: Technical suitability; the quality and terms of loan financing offered to cover the costs of purchase; and offsets. In a number of cases, the winning bidders relied on fulsome offset programs to boost their overall score and secure contracts, even though they were not considered to be the most technically suitable or the best value for money. It later emerged that in several cases (especially in relation to two steel mills that formed keystone projects for two bidders), the government had been advised that the promised offset projects were unviable. The government ignored these findings.[5]

Finally, offsets were expected to mitigate the potentially serious economic impacts of the import-heavy nature of the purchase. In August 1999, a team seconded from the Ministry of Finance produced an Affordability Report examining the long-term macroeconomic consequences of pursuing the Arms Deal. This report identified two major risks, namely, a negative market response that would lead to an increase in interest rates, and the non-fulfilment of offsets. Extensive modeling showed that the fulfilment of offset obligations was necessary in order to avoid severe negative economic consequences. In particular, the modeling showed that, if offsets were not substantially fulfilled, it would lead to the loss of 138,000 jobs, and reduce annual GDP growth by between 0.1 percent and 0.4 percent between 2001 and 2008.[6]

**The poor economic outcomes from South Africa's 1999 "Arms Deal" illustrate structural features inherent in civilian offsets that exert a downward pressure on the actual economic investments delivered by defense manufacturers. The adoption of "package deals", the aggressive manipulation of multipliers and an overly generous interpretation of causality allowed the defense manufacturers to claim offset credits far in excess of the total investment in the economy.**

## The "Seriti" Commission of Inquiry into the Arms Deal

In 2011, President Jacob Zuma appointed a Commission of Inquiry into the Arms Deal with Supreme Court Judge Willie Seriti as its chair. The commission was empowered to investigate all aspects of the Arms Deal, including its rationality, allegations of irregularities and corruption, and whether contractors delivered on their offset obligations.[7]

In 2016, the Seriti Commission of Inquiry released its findings. They found that there were no irregularities or corruption in the Arms Deal and that the offset programs had been substantially fulfilled. The findings were widely regarded as a cover up. In August 2019, the High Court ruled that the commission had made no attempt to investigate the deal. Consequently, the High Court ordered that the commission's final report be set aside and disregarded.[8]

Despite the failure of the Seriti Commission of Inquiry to investigate the Arms Deal, it nevertheless provided a hitherto unforeseen level of disclosure regarding the civilian offset programs attached to the deal. Employees of the Department of Trade and Industry (DTI), which oversaw the civilian/indirect offset programs, were called to testify in public. Their witness statements and supporting documents were placed in the public domain. In addition, certain Commission employees attempted to properly investigate particular aspects of the Arms Deal (in the face of considerable institutional reluctance). The result of this was that, in relation to the offsets program, additional evidence was gathered from the DTI and



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subject to scrutiny. As a subpoenaed witness to the Commission, the author was entitled to access certain of these documents; this has enabled an informed analysis of the extent to which offset obligations were meaningfully fulfilled.

## An overview of offset obligations and credits awarded

In December 1999, the primary contractors in the Arms Deal entered into contracts with the South African government that set out their obligations in terms of the offset program. The offsets were divided into the Defence Industrial Participation (DIP) program and the National Industrial Participation (NIP) program. DIPs referred to the use of local contractors to produce elements of the purchased weapons systems (often referred to in the relevant literature as "direct" offsets). NIPs referred to investments into the civilian economy (known as "indirect" offsets).

NIPs accounted for the vast majority of the offset obligations incurred by Arms Deal contractors. Table 1 shows the total offset obligation incurred by each of them.

**Table 1: NIP/indirect offset obligations by contractor in the 1999 arms deal**

| *Contractor* | *Investments* | *Local Sales* | *Export Sales* | *Total* |
|---|---|---|---|---|
| BAE Systems/Saab | $2,000m | $1,560m | $3,640m | $7,200m |
| German Frigate Consortium and Thomson-CSF | $700m | $2,000m | $2,000m | $4,700m |
| Agusta | $185m | $115m | $468m | $768m |
| **TOTAL $** | **$2,8845m** | **$3,675m** | **$6,108m** | **$12,668m** |
| German Submarine Consortium | €960m | €251m | €1,642m | €2,852m |
| **TOTAL €** | **€960m** | **€251m** | **€1,642m** | **€2,852m** |

*Notes*: $ values are USD. All currency values are rounded to millions.

**Table 2: Offset credits awarded to Arms Deal contractors including jobs created**

| *Obligor* | *Jobs Created* | *Investment Credits* | *Sales Credits* | *Total* |
|---|---|---|---|---|
| BAE/Saab | 7,172 | $2,012m | $4,859m | $6,872m |
| GFC (Corvette Platform) | 1,700 | €517m | €1,545m | €2,062m |
| Thales (combat suite) | 2,213 | $199m | $591m | $791m |
| GSC | 10,250 | €961m | €2,156m | €3,118m |
| Agusta | 958 | $185m | $619m | $804m |

*Notes*: $ values are USD. All currency values are rounded to millions.

In evidence presented before the Commission, DTI employees stated that all of the major contractors in the Arms Deal had materially met their offset obligations. By the time the Commission had been appointed, the DTI had awarded the contractors the offset credits matching their obligations. The DTI had also verified that the contractors had created a large number of direct jobs, as shown in Table 2.[9]

## Separating fact from fiction: The manipulation of the offset credit system

An uncritical examination of the figures in Tables 1 and 2, would suggest that the Arms Deal was an economic boon to South Africa, generating substantial investments, sales, and jobs. Sadly, the figures presented



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are not an accurate reflection of any economic reality.

The figures provided in Table 2 refer to the award of "offset credits" rather than actual sales or investment figures. Offset credits were awarded to contractors by the DTI based on evidentiary documents submitted to them by the Arms Deal companies. However offset credits were not awarded on a USD 1:1 basis—in other words, the award of USD 100m in investment offset credits did not mean that the obligor company had actually invested USD 100m.[10]

This was always the intention of the original negotiators of the Arms Deal contracts. According to one senior DTI official, Paul Jourdan, it was widely understood that investment credits were to be awarded on a USD 1:1 basis. Indeed, the underlying NIP contracts between the Arms Deal companies and the South African government stipulated a USD 1:1 scoring system. This was undertaken because the South African government negotiating team believed that if the USD 1:1 system was scrapped, "the targets would require little effort to be achieved."[11]

Very shortly after the December 1999 contracts were signed, the USD 1:1 system was abandoned. The Minister of Trade and Industry, Alec Erwin, directed that offset credits could be awarded based on multiple criteria. Erwin justified this approach by arguing that requiring obligors to meet their contractual obligations would lead to them recouping their outlay through hidden charges included in maintenance and lifecycle contracts. This startling admission is discussed in more detail later.

The introduction of a "floating" credit dollar introduced two primary means of inflating the offset credits awarded to the Arms Deal companies. First, was the use of "multipliers". Multipliers could be applied to the underlying investment or sale to produce a multiplied offset credit. Multipliers were offered for a range of reasons, such as the investment being designated as "strategic" by the DTI.

Second, was the introduction and use of what became known in the DTI as "package deals". These deals involved offering Arms Deal companies both large multipliers and upfront offset credits if the companies invested in a strategic project chosen by the DTI. The DTI justified this system by arguing that it could be used to convince the companies to invest in strategic projects that might carry an unusual level of risk. The DTI made package deals particularly attractive by stipulating that the offset credits would both be awarded upfront and would be irrevocable, regardless of actual economic performance of the project.[12]

The introduction of these two incentive schemes allowed Arms Deal companies to choose projects in a manner designed to maximize the offset credits that they were awarded. According to one investigation into Ferrostaal, a member of the German Submarine Consortium, it was reported that offset projects were explicitly chosen on the basis of their ability to earn multiplied credits, and not their underlying economic viability.[13]

The inflation of offset credits was also achieved through another mechanism, i.e. an incredibly generous interpretation of causality. All offset obligors were required to show that their investments "caused" a certain amount of economic activity. However, such causality and economic activity was open to wide interpretation and is demonstrated in the case studies described later in this article. Briefly, Arms Deal companies often invested in projects that had multiple sources of investment. Nonetheless, the Arms Deal companies argued before the DTI that the project would not have happened without their involvement. As a result, the obligors were awarded credits related to the total sum of investment in the project, rather than that portion for which the obligor was responsible.

The consequence of this was a clear and profound disjuncture between the number of offset credits awarded and the underlying economic activity that was generated. This was recorded by the DTI, which retained the underlying investment figures upon which the offset credits were calculated. Set out in Table 3, certain figures are worth highlighting. First, the total actual investment in civilian offsets amounted to USD 435m and EUR 104m, against which USD 2.39bn and EUR 1.47bn in investment credits were awarded. This is a multiplication factor of 5.49 for dollar-denominated offsets and 14.18



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for those in euro.

Second, there was some notable variation in the success of different obligors in maximizing their credit dollars while minimizing their actual economic investment (highlighted in Table 4). The contractor who achieved the highest offset credit against actual investment was the German Submarine Consortium (GSC). GSC was awarded EUR 961m investment credits against EUR 59m in actual investment, a multiplier of 16.07. Thales, which provided the corvette suite for the corvettes as a partner to the German Frigate Consortium achieved the lowest multiplier of 1.42.

Finally, when added to local and export sales credits (see Table 5), the totals are even more striking: USD 8.46bn and EUR 5.1bn in total offset credits were awarded against actual investments of USD 435m and EUR 104m. This amounts to a total multiplication factor of 19.42 for dollar offsets and 49.69 for euro offsets. Again, the German Submarine Consortium achieved the highest multiplication factor: 52.13. Thales, the smallest offset obligor, achieved the lowest multiplication factor of 5.66.

**Table 3: Offset credits awarded to arms deal contractors versus actual investment figures**

| *Obligor* | *Actual Investment* | *Investment Credits* | *Sales Credits* | *Total Offset* |
|---|---|---|---|---|
| BAE/Saab | $225m | $2,012m | $4,859m | $6,872m |
| Thales (combat suite) | $140m | $199m | $591m | $791m |
| Agusta | $71m | $185m | $619m | $804m |
| **TOTAL $** | **$436m** | **$2,396m** | **$6,070m** | **$8,466m** |
| GFC (Corvette Platform) | €44m | €517m | €1,545m | €2,062m |
| GSC | €60m | €961m | €2,156m | €3,118m |
| **TOTAL €** | **€104m** | **€1,478m** | **€3,702m** | **€5,180m** |

*Notes*: $ values are USD. All currency values are rounded to millions.

**Table 4: Investment offset credits awarded to arms deal contractors versus actual investment figures**

| *Obligor* | *Actual Investment* | *Investment Credits* | *Multiplier* |
|---|---|---|---|
| BAE/Saab | $225m | $2,012m | 8.93 |
| Thales (combat suite) | $140m | $199m | 1.42 |
| Agusta | $71m | $185m | 2.60 |
| **TOTAL $** | **$436m** | **$2,396m** | **5.49** |
| GFC (Corvette Platform) | €44m | €517m | 11.62 |
| GSC | €60m | €961m | 16.07 |
| **TOTAL €** | **€104m** | **€1,478m** | **14.18** |

*Notes*: $ values are USD. All currency values are rounded to millions. Multiplier figures are truncated to two decimal places.

## Case study 1: Denel Saab Aerospace

The Denel–Saab offset project was the single largest offset project in the entire NIP program. It accounted for just under a quarter of BAE/Saab's total offset obligations.[14]

The DTI pitched a project to Saab involving the South African state-owned Denel Aerostructures, which had long been a loss maker. The DTI encouraged Saab become a joint owner of Denel Aerostructures and use its expertise to undertake a management turnaround strategy that would guide Denel Aerostructures to profitability. Saab agreed to the project, forming a new entity, Denel Saab Aerospace (DSA).



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The DTI secured Saab's investment by offering Saab an exceptionally generous offsets package deal. Saab was offered upfront and irrevocable offset credits to the value of USD 1.5bn, of which USD 600m would count against BAE/Saab's investment obligation and USD 900m against local sales. Ultimately, BAE/Saab were granted USD 1.7bn offset credits, of which USD 600m was granted in relation to investment, USD 900m in upfront sales credits, and a further USD 204m in calculated sales credits. The amount actually invested by Saab into the project was minimal. Saab's total investment amounted to only USD 6.6m. BAE/Saab thus received a multiplier of 192.[15]

It is arguable that the project was a failure. The restructuring of the company did not lead to a change in the company's profitability, and after three years, the management agreement between Denel and Saab under which Saab would implement its management turnaround was cancelled. A subsequent independent external audit of the project found that if "one utilises the turnaround of the DSA as the ultimate goal and measure barometer for all of Saab's initiatives, then Saab has not delivered on its obligations in terms of the NIP credits awarded to it, which is evidenced by the cancellation of the management agreement and subsequent initiation of a new turnaround strategy."[16]

The DSA case study illustrates that the adoption of a package deal and the granting of upfront offset credits allowed Arms Deal companies to earn extraordinarily large offset credits for marginal economic investment. Moreover, because the offsets were irrevocable, they were granted despite the near total failure of the project.

**Table 5: Total offset credits awarded to arms deal contractors versus actual investment figures**

| *Obligor* | *Actual Investment* | *Total Offsets* | *Multiplier* |
|---|---|---|---|
| BAE/Saab | $225m | $6,872m | 30.49 |
| Thales (combat suite) | $140m | $791m | 5.66 |
| Agusta | $71m | $804m | 11.33 |
| **TOTAL $** | **$436m** | **$8,466m** | **19.42** |
| GFC (Corvette Platform) | €44m | €2,062m | 46.40 |
| GSC | €60m | €3,118m | 52.13 |
| **TOTAL €** | **€104m** | **€5,180m** | **49.69** |

*Notes*: $ values are USD. All currency values are rounded to millions. Multiplier figures are truncated to two decimal places.

## Case study 2: MacArthur Baths and the package tourism project

The MacArthur Baths and the package tourism project is one of the most notable and well recorded examples of how the offset credit award system had almost no rational or justifiable connection to underlying economic reality.

This project involved two separate but related elements. First, Saab would invest in the rehabilitation of a heated swimming pool in the city of Port Elizabeth, a minor holidaymaker destination in the Cape. Second, Saab would engage a marketing company to advertise South Africa to Swedish audiences with the aim of increasing the number of Swedish tourists to the country. Saab invested USD 1.4m in the rehabilitation of the swimming pool. The amount Saab spent on the advertising campaign remains unknown as this was never disclosed to the DTI.

The pool aspect of the project was eventually awarded just over USD 1.4m in investment credits. The marketing aspect of the project was awarded USD 627m credits in respect of export sales. The sales credits were calculated on the differential increase in tourists from Scandinavian countries visiting South Africa up until 2011. It was estimated that each tourist visited for approximately 17 days, and that each tourist would spend USD 150 per day. The DTI agreed with Saab's contention that this increase was entirely due to the marketing campaign, which ran from 2002 to 2003. This was particularly problematic as South Africa hosted the 2010 FIFA World



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Cup during the period under consideration.[17]

Moreover, the DTI and Saab made no effort to establish how many tourists visited Port Elizabeth, or if any of the tourists were aware of the marketing campaign. Considering that South Africa is globally renowned as a holiday destination, that the marketing campaign ran for no more than a year and only ran in Sweden, it is highly implausible that the differential increase in tourists from Scandinavia during the period between 2002 and 2011 was entirely based on this campaign.

### Case Study 3: Evertrade Medical Waste

In 2001, a new company by the name of Evertrade Medical Waste was formed. The company was part owned by local South African shareholders and the United States company Stericycle. Evertrade aimed to introduce South Africa to a new medical waste processing technology, developed by Stericycle. The technology would treat medical waste with radio waves, precluding the need for the incineration of medical waste.

Evertrade received investment backing from the Industrial Development Corporation (IDC), a state-owned investment incubator. It also received a USD 4m grant from Thales as part of its offset obligations. As a result of this investment, Thales was granted substantial offset credits. In total, Thales was awarded over USD 171m credits, of which over USD 63m were investment credits and over USD 107m were sales credits. This was a total project multiplier of 42.[18]

Thales was granted the credits upfront and on an irrevocable basis, with no regard for whether the project was a success or not. Unusually, Thales' grant was recorded in a memorandum of understanding entered into between Thales and Evertrade, according to which the grant was given on the condition that Thales received the full upfront credits on an irrevocable basis. This was curious as Evertrade was not responsible for awarding credits; this responsibility lay with the DTI. Nevertheless, this agreement was retrospectively approved by the Minister of Trade and Industry. This was highly irregular and strongly suggests that the Minister was convinced to accept this figure by Evertrade or Thales, without the DTI engaging in any feasibility or other studies.

Evertrade collapsed soon after it was founded. In 2004, Stericycle sold its shares in the company. Shortly thereafter, authorities in Johannesburg and Cape Town found that Evertrade had failed to properly dispose of the medical waste it was supposed to have treated under contract. Waste including used needles, amputated limbs, soiled bandages and fetuses was found abandoned in plastic bags outside of Evertrade's premises. By the end of 2004, Evertrade had ceased to operate.[19]

### Other failed projects: A calculation

The Evertrade case was sadly not the only failed offset project that, for various reasons, still received a vast quantity of offset credits. Over and above DSA and Evertrade, five further projects materially failed as going concerns (as far as the DTI was willing to disclose)—usually in extremely controversial or criminal circumstances. Excluding DSA, the six remaining identified projects were granted USD 1.3bn in offset credits. When DSA is included, this calculation increases to a figure of just under USD 3bn. This is equal to 35 percent of all the dollar-denominated offset projects.

### The politics of offset compliance: Rent and reputation

During the Seriti Commission of Inquiry the former Minister of Trade and Industry, Alec Erwin, sought to justify the introduction of multipliers and package deals in relation to civilian offsets. In so doing, Erwin ironically, and possibly unwittingly, developed a powerful critique of the economic and political rationale behind offsets, and therefore deserves being quoted fully:

> "NIP is essentially a form of commercial partnership where the obligor and the DTI (on behalf of the buyer) are attempting to achieve differing objectives. The obligor wants to maximize the 'credit dollar' with the minimum amount of money it has to put forward and the DTI is trying to maximize investment with no real interest in who supplied the investment. In theory, for



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the obligor the maximum amount of money that it would be prepared to pay in is what it values as the economic rent of being the equipment supplier. For the DTI it wants to maximize investment (and other objectives as I will deal with later) but it cannot push this too far otherwise the obligor will seek redress in finding means to increase price over the lifecycle of the equipment in order to secure its required profit level."[20]

This admission on the part of the Minister in charge of all Arms Deal offset obligations about the *realpolitik* calculations in the management of offset programs is worthy of consideration. It could form a useful frame of reference when examining the global experience of offset credits. Certainly, it strongly suggests that there is a potential power imbalance between arms purchasing countries and offset obligors as the former may be held captive to punitive escalations in cost should the latter decide its offset obligations are too onerous.

However, Erwin's characterization fails to consider another material factor that further tilts the scale in favor of arms companies—the potential embarrassment or political difficulties caused by the failure of offset programs. In the Arms Deal, it is highly likely that informal pressure was placed on DTI employees to ensure the award of the largest number of offset credits possible.

These two concerns of punitive cost escalation and the threat of reputational damage are inherent in the nature of offset agreements; although the relative weights of reputational damage vary depending on the political importance placed on offsets in the prelude to the agreement of new purchases. These concerns are therefore *structural* and *acute* elements of all indirect offsets around the world. Together, they combine to exert a downward pressure on the real economic investments that can be achieved by arms procuring countries.

## The actual economic impact of the Arms Deal offset program

The information unearthed as a result of the Seriti Commission of Inquiry raises a number of questions that extend beyond the scope of an article such as this. But perhaps the most pressing question is whether a determination can be made as to the actual economic impact of Arms Deal offset programs.

Two facts are immediately apparent: First, the Arms Deal offset program did lead to investment in the South African economy. The direct investment figure was equal to USD 435m plus EUR 104m over the course of approximately 11 years, or roughly USD 40m and just under EUR 10m per year.

Sadly, the sales figures are so opaque and based on such distorted and confused data that it is almost impossible to extract any realistic sense of the true value of total sales. However, it would be fair to believe that some sales did indeed materialize.

Second, as a counterpoint, the investment made by Arms Deal companies was considerably less than what was originally envisaged by the DTI negotiators (who had attempted to exclude multipliers and other distortions from the program). Indeed, it was over USD 2.4bn and EUR 856m less than originally agreed upon (15 percent of the intended dollar value investment and 10 percent of the intended euro value).

These two facts allow one to draw two inferences. First, there was money flowing into the South African economy due to the inflow of investment funds. As such, it would be reasonable to expect that this would have had some economic impact, even if measuring it would be difficult based on the available data.

The second inference is based on the fact that government modeling prior to the Arms Deal indicated that there would be severe and profound economic repercussions should offset obligations not be substantively met. This modeling was performed on the basis that multipliers and package deals would not be used in awarding offset credits. It is reasonable to conclude that the amount of offsets delivered was a fraction of what the modeling predicted as necessary to avoid negative economic impacts. Assuming the correctness of the modeling, it would also be reasonable to infer that whatever economic benefit accrued to the government, through the inflow of investment funds, would have been insufficient to offset the negative economic effects of pursuing a major domestic acquisition that was both import-heavy and non-productive.

That said, this is a matter requiring a deeper and more intensive study that would include attempting to establish the success and failure of individual offset projects on a case-by-case basis.

## Conclusion

The disclosure of offset data following the Arms Deal's NIP programs shows that there was major and profound disjuncture between the offset credits awarded to Arms Deal companies (the purported economic impact) and the actual and material investments made by those same companies into South Africa's economy (the actual economic impact). The adoption of "package deals", the aggressive manipulation of multipliers and an overly generous interpretation of causality allowed the defense manufacturers to claim offset credits far in excess of the total investment in the economy. Existing data does not allow a full calculation of the real economic impact of the civilian offsets program attached to the Arms Deal. However, it is incontrovertible that the existing data shows that the economic impact was far less than had been promised, and a fraction of the total value of offset credits awarded.

The South African experience of offsets suggests that there are structural features inherent in the delivery, management, and monitoring of civilian offset programs attached to large defense procurements. In particular, the threat that defense manufacturers may implement punitive cost escalations if offsets are monitored too stringently, and the potential for political embarrassment where offsets are not delivered, exerts a downward pressure on the actual investments required.

In this regard, the South African example of offsets must act as an information-rich warning that exuberant claims about the economic impact and efficacy of civilian/indirect offsets must be viewed with both caution and skepticism.

## Notes

1. IFBEC (2016, p. 16).
2. Arms Deal: There is substantial literature on the Arms Deal, corruption, and its political implications. Holden (2008); Holden and Van Vuuren (2011); Feinstein (2008); Crawford-Browne (2007); Taljaard (2012); Dunne and Lamb (2004); Dunne, Nikolaidou and Lamb (2019). Cost: Holden and Feinstein (2017, p. 222).
3. Holden and Van Vuuren (2011).
4. Threats: The 1998 Defence Review affirmed that "the government has adopted a broad, holistic approach to security, recognizing the various non-military dimensions of security and the distinction between the security of the state and the security of people. The greatest threats to the South African people are socio-economic problems like poverty and unemployment, and the high levels of crime and violence." South African Department of Defence (1998, paragraph 28). Announcement: The GCIS strategy documents were disclosed as a result of successful litigation brought by Dr. Richard Young to access documents stemming from an investigation into the Arms Deal by South Africa's Auditor-General. They are described in detail in Holden and Van Vuuren (2011).
5. The impact of using offsets as a discriminating criterion in the selection process, and the government's knowledge that certain keystone projects would ultimately be unviable, was made public knowledge after Richard Young's successful litigation to access draft reports from the Auditor-General. The draft reports detailed the problematic handling of offset modeling and scoring, and how offset scores were manipulated to benefit the ultimate winning bidders. These findings are described in detail in Chapters 3, 4 and 5 of Holden and Van Vuuren (2011).
6. The Affordability Report was classified but was eventually leaked, inter alia, to the author of this article. The content and findings of the report are described in considerable detail in Chapter 8 in Holden and Van Vuuren (2011).
7. South African Department of Justice (2011).
8. No irregularities: Arms Procurement Commission (2016). Set aside: Mlambo, Davis and Leeuw (2019).
9. The total credits awarded and jobs "created" by each NIP program was attached as Annexure A to the witness statement of Sipho Zikode before the Inquiry Into Allegations of Fraud, Corruption, Impropriety or Irregularity in the Strategic Defence Procurement Package. This was provided to the author as an "interested party" to proceedings.
10. The manner in which offset credits were assessed and awarded was also addressed in the witness statement of Sipho Zikode and the additional witness statement of

Mr. Zimela—both provided to the author as an "interested party" to proceedings.
11. Jourdan (2014).
12. The use of multipliers and "package deals" were addressed in the witness statement of Sipho Zikode and the additional witness statement of Mr. Zimela to the Seriti Commission—both of which were provided to the author as an "interested party" to proceedings.
13. Debevoise and Plimpton (2011).
14. Extrapolated from Annexure A to the witness statement of Sipho Zikode before the Inquiry Into Allegations of Fraud, Corruption, Impropriety or Irregularity in the Strategic Defence Procurement Package—provided to the author as an "interested party" to proceedings.
15. The Denel Saab Aerospace figures were included in an extended memorandum written by a senior evidence leader to the Seriti Commission of Inquiry, who was in charge of leading an investigation into the offsets program. The memorandum was based on an audit of the underlying DTI files and other materials. The memorandum was handed up in session to Judges Seriti and Musi and was subsequently provided to the author as an "interested party" to the proceedings.
16. Failure: See Note 15. Audit: Holden and Feinstein (2017, p. 237).
17. These figures and the method of calculation were included in an extended memorandum written by a senior evidence leader to the Seriti Commission of Inquiry, who was in charge of leading an investigation into the offsets program. The memorandum was based on an audit of the underlying DTI files and other materials. The memorandum was handed up in session to Judges Seriti and Musi and was subsequently provided to the author as an "interested party" to the proceedings.
18. See Note 17.
19. The full details of the Evertrade story are included in Holden and Van Vuuren (2011, pp. 280–285).
20. Erwin (2014).

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