EMPIRICAL TESTS OF CHANGING PRODUCTION STRUCTURE AND LABOUR INPUT CHANGES IN SA TEXTILES

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ABSTRACT

The clothing and textile sector in South Africa has forever been a contentious sector insofar as its historic labour augmenting capabilities are concerned. The paper questions the ability of the sector to compete internationally in certain product lines and surveys the performance of the sector both in terms of employment and output. The sector has also for many years been subsidised by South African taxpayers and therefore, in terms of cost per job created, been one of the most expensive sectors in which to sustain jobs. The paper does not find justification for further subsidisation of the sector at the expense of the employees and the taxpayer.

This paper explores production and employment trends in the sector and takes a deep look at those factors that are not always reflected in analysis of the sector. Although some important variables are not available first hand, they are implied in other figures readily available.

Finally, the paper runs some empirical tests to test the strength of the relationship between key variables in the sector and considers the results within the framework of a changing production structure in the South African economy.

1. INTRODUCTION

Employment in South Africa has generally been on a downward path since 1996. In the textile and clothing industries in particular, substantial job losses had been experienced in the formal sector since 1996. The decline in employment in the textile, clothing, footwear and leather industry from 261 480 workers in 1996 to 188 290 in 2003, and subsequent variations in employment within the sector necessitates an inquiry.

The effect of structural adjustment on the demand for labour in general makes it necessary to look at the South African trade and investment policies with the aim of improving productivity and competitiveness. By the same token however, it is necessary to know what structural adjustments have contributed in the clothing and textile industry and for what reason. Only once this enquiry is successfully concluded would it be possible to evaluate industrial, trade and investment policy for the sector.

The problem statement can therefore be summarised as providing new information on the structural adjustments that took place in the clothing and textile industries over the last few decades as a result of globalisation, liberalisation of trade, international shifts in clothing

[1] The author wishes to express his sincere gratitude to JJ Nzewanga & NEM Molatsana for their inputs in an earlier draft on this paper.

demand and supply, exchange rates and government intervention and how it impacts on the sector's ability to sustain its position as a key employer.

The problem statement has to be extended to pertinently include the dynamic nature of world markets for clothing and textiles and acknowledge that the South African clothing and textile industry does not function in a vacuum but is part of a highly integrated world market.

2. CAUSES OF STRUCTURAL CHANGE IN CLOTHING AND TEXTILES SINCE THE EIGHTIES

The main events that helped shape the industry since the 1980's are briefly outlined in this section. It should be emphasized that the magnitude of the intervention in this industry is so wide-ranging, that only the factors that had the most profound impact are considered here.

(a) The General Agreement on Tariffs and Trade (GATT) and World Trade Organization (WTO)

Against the background of increasing protectionism and politicisation, GATT and later WTO, not only devoted attention to industrial products, but also devoted attention to domestic subsidies for agriculture, non-tariff barriers, services, textiles, trade related investment measures (TRIMs), and trade related intellectual property rights (TRIPs). The most profound impact of South Africa's commitment to the phasing down of import tariffs, has been the fact that South Africa, stayed with its commitment, whilst developed countries in America and Europe backtracked on their commitments, leaving playing fields uneven with respect to traditional markets.

The bilateral agreements that South Africa hold with Europe and America, seems to dominate South African export-determination over the WTO arrangements. On a global level, markets had however been so dynamic over the last ten years that the Far-eastern markets now seem to upset all traditional exports, be it from developed or developing nations.

Developing countries have much to gain from the negotiations on services, TRIPs, TRIMs, and textile and agriculture.

In order to follow the structural adjustment process in Clothing and Textiles, it is necessary to extend this analysis back a few years. The reason is rather trivial, but quite obvious: structural adjustment takes years to accomplish.

(b) Export incentives

During the 1980s, the South African government argued that the South African Clothing and Textile industry suffered from an anti-export bias. This bias was present as a result of high import duties on raw materials, which made it difficult for South African manufacturers to compete internationally. What followed was a range of distortive measures aimed at correcting this bias and stimulating South African exports of clothing and textiles. During the 1980s a structural adjustment programme (SAP) was introduced in the clothing and textile industry and (mostly as a result of trade sanctions), supplemented with the so-called Category A- and B-export incentive scheme for the rest of the sectors in the economy.

By using the 1993 wholesale trade figures on clothing and textile of R3 900 million, and accepting a conservative price premium of 40 percent, Wiese (1994: 15), estimated the cost to the tax payer to be a total premium of R1 560 million per annum to maintain SAP. Based on the approximately 200 000 job opportunities in the clothing and textile industries, the premium amounts to R7 800,00 per worker vs. an average salary of R18 600,00 per worker per annum.

The clothing and textiles industry earned import certificates (under the SAP) based on their export performance, which they then could used to counter for the anti-export bias present in the high import duty structure of imported inputs. Category A incentives were paid against import duties incurred and Category B incentives rewarded value added in the form of a cash payment percentage (the higher the value added, the higher the incentive paid). Category A- and B- export incentives were replaced with the General Export Incentive Scheme.

In April 1990, GEIS was introduced to help the firms offset the price disadvantage that the country's exports faced in the international markets, including that arising from the anti-export bias inherent in the import protection system. Belli et. al. (1993) quotes a study by the South African Chamber of Business (SACOB) in 1991 which showed that the manufacturing costs in South Africa was 15 percent higher than the OECD average because South African manufacturing firms pay 24 percent more than their OECD counterparts for their inputs, and their capital and productivity adjusted labour costs were higher as well. GEIS, which replaced the input and value added compensation to exporters, provided tax free subsidies to exporters based on the value of exports, the degree of processing of the exported product, the extent of local content embodied in exports, and the degree of overvaluation of the exchange rate. Whereas both SAP and Category A- and B- export incentives rewarded value-added, and were tainted with fraud, GEIS and DCCS were based on the level of beneficiation. The higher the level of beneficiation, the higher the level of incentive paid to the exporter. Clothing and textile manufacturers that exported final goods from local inputs or from imported inputs on which the full duty had been paid, earned on average a tax-free cash reward of around 18 percent of the free-on-board (FOB) value of their exports.

According to the Board on Trade and Tariffs (BTI), SAP proved to be an ill considered and highly disruptive export incentive that ultimately led to the destruction of certain sectors of the textile and clothing (i.e. Jerseys) industries. This was aggravated by excessive dumping of textile products from the East into South Africa, as well as fraud and inadequate customs control. In 1994, the SAP was replaced with a Duty Certificate Scheme (DCCS) that offers a customs duty credit reward for export performance, and was phased out on 31st March 2005 (DTI, 2005). Following on the heels of DCCS, was the Interim Textile and Clothing Industry Development Programme (TCIDP), which is in all respects similar to DCCS.

(b)(i) TCIDP

A brief summary of the latent features of TCIDP that is used in the analysis of distortionary impacts in the sector is given below.

(b)(ii) Level of Benefit

The level of benefit depends on the export product. There are four product categories namely clothing, household textiles, fabric and yarn. The benefit level differs for each category and is fixed for the duration of the interim TCIDP. The percentages are as follows:

TABLE 1: LEVEL OF BENEFIT

PRODUCT EXPORTED	BENEFIT LEVEL
Clothing	25%
Household Textiles	17.5%
Fabric	12.5%
Yarn	8%

Source: Dti, 2007

(b)(iii) Products on which Duty Credits are Earned

The following products will qualify as exports under the TCIDP:

TABLE 2: QUALIFYING EXPORTS

PRODUCT	**TARIFF HEADING**
Clothing and clothing accessories	61.01 to 61.17 62.01 to 62.17
Household textiles	57.01 to 57.05 58.05 63.01 to 63.04
Fabrics and other textiles	50.07 51.11 to 51.13 52.08 to 52.12 53.09 to 53.11 54.07 to 54.08 55.12 to 55.16 56.02 to 56.03 58.01 to 58.05 58.06 to 58.11 59.01 to 59.03 59.06 to 59.07 60.01 to 60.06
Yarn	50.04 to 50.06 51.06 to 51.10 52.04 to 52.07 53.06 to 53.08 54.01 to 54.06 55.08 to 55.11 56.04 to 56.06

Source: Dti, 2007

(b)(iv) Products that may be imported utilizing a Duty Credit Certificate

Based on their exports, participants will be allowed to <u>import</u> the following products as set out in Table 3, classifiable under the tariff headings as per Table 2 (above):

TABLE 3: ALLOWED IMPORTS WHEN UTILIZING A DCC

Exporter	**Product exported**	**Product allowed to be imported**
Manufacturer of Woven and Knitted Clothing and Clothing Accessories	Clothing Clothing Accessories	Fabric Clothing Clothing Accessories
Manufacturer of “knit-to-shape” Clothing and	Clothing Clothing Accessories	Yarn Clothing

Clothing Accessories		Clothing Accessories
Manufacturer of Household Textiles	Household Textiles	Fabric Household Textiles
Manufacturer of Fabric and Other Textiles	Fabric Other Textiles	Yarn Fabric Other Textiles

Source: Dti, 2007

(b)(v) Determination of the Value of the Certificate

The value of the certificate is calculated as a percentage of the *export sales value,* where the export sales value will be reduced if the full invoice value has not been repatriated. As such the export sales value in Rand may be more than the amount repatriated in Rand. This means that currency fluctuations after invoicing will not influence the value of the certificate.

(c) Other exogenous factors

Certainly not all the structural adjustment in the clothing and textile industry can be attributed to the various interventionist and distortive policies outlined above. International markets had been extremely dynamic and over the last twenty years, giving rise to new manufacturers in other parts of the world and especially domination of the sector by countries in the Far East. Section 4 covers some of the international market environment changes that impacted on the South African textile sector. An example of market dynamics impacting on the sector is probably that of Norway, where the clothing and textile industry accounted for some 20 percent of GDP just a decade or two ago; now accounting for less than 2 percent of GDP.

3. SELECTED TRENDS IN THE CLOTHING AND TEXTILE SECTOR

This section briefly explores some trends in the clothing and textile industry. Section 5 explains the reasons behind these trends.

Figure1: Clothing and Footwear monthly CPI: 2002 - 2007

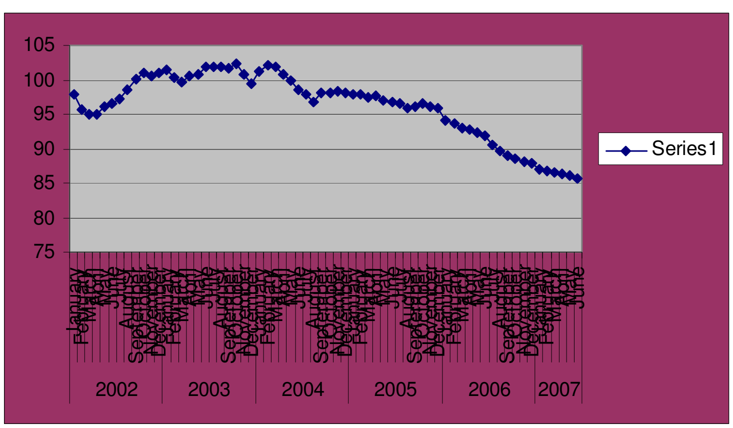
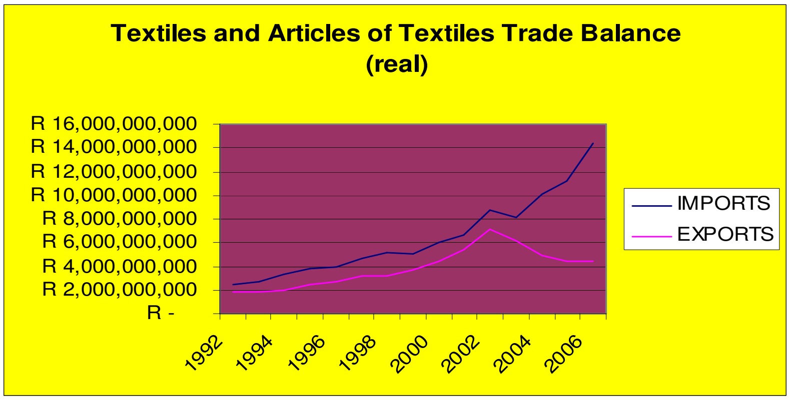


Figure 1 plots the monthly CPI for clothing and footwear for the period January 2002 to middle 2007. The continued down ward trend in the CPI for the sector is attributed to price deflation as a result of increasingly cheaper imported product in the sector. The upward trend in imported product is confirmed when looking at Figure 2, which confirms an increase in imported product since before 2002.

Figure 2: Textiles and articles of textiles – trade balance; 1992 - 2006

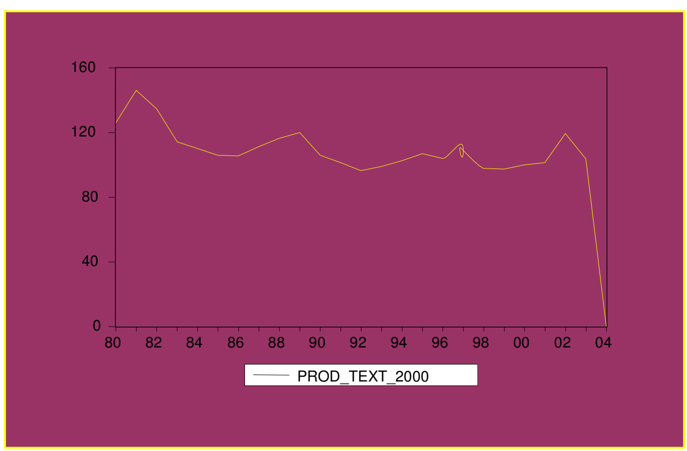


Source: Compiled form SSA, 2007

Figure 2 shows the trade balance of textiles and articles of textiles for the period 1992 to 2006. Even the textile sector, which is considered more competitive than clothing due to its more capital intensive nature, has been experiencing a deteriorating trade balance with the rest of the world since 1992. Exports in this sector have been on the decline since 2002.

The remainder of this analysis focuses on the stronger textile industry, as a proxy for what is transpiring in the industry as a whole. Figure 3 plots the total production the textile industry. From Figure 3 it is clear that despite the many interventionist policies of government, production levels have been on a constant decline since the start of the review period.

Figure 3: Production of textiles (real): 1980-2004

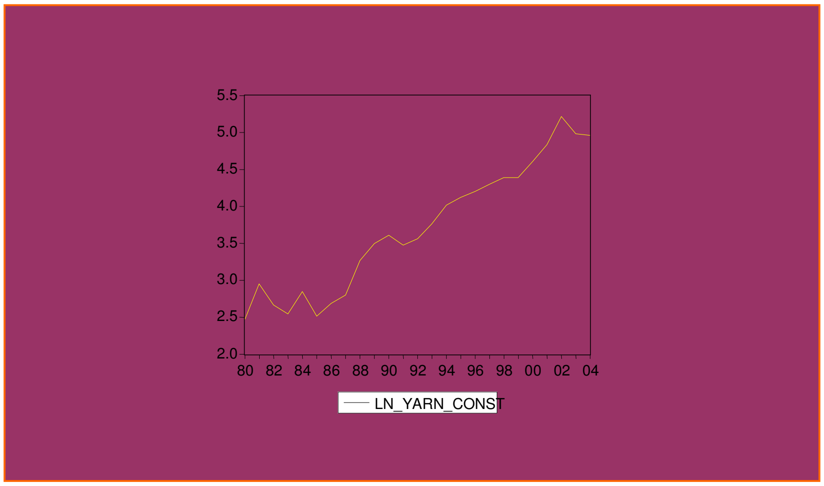


Source: Compiled from Texfed, 2005

A fair question to pose at this juncture is what the main factors were that determined this downward trend in production. Fairer perhaps, would be to question what the factors are that determine the production function in textiles. To this end, Breitenbach et. al, constructed a production function for the industry. Because of a lack of reliable and continuous time-series data of all the relevant inputs in the production function, the model is not the best fit of reality.

The model (see appendix), does however confirm the strength of the relationship between the input variables and the fact that those input variables that were considered, do in large part determine output levels in the industry. These input variables are now briefly discussed, individually.

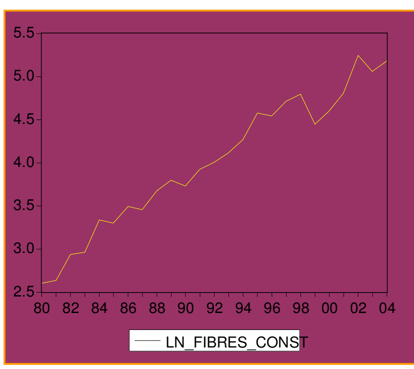
Figure 4: Unit labour costs in the Textile industry – 1980-2004

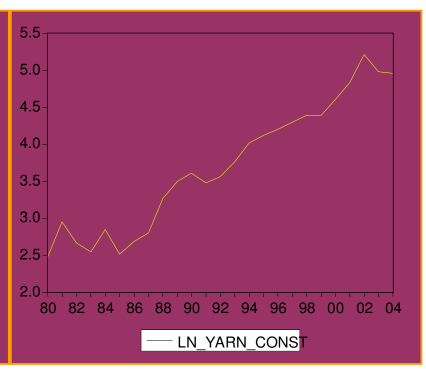


Source: Compiled form Texfed, 2005

As is visible from Figure 4, unit labour costs in the industry showed some volatility around the same levels between 1980 and 1985. Between 1985 and 2004, unit labour costs have continually increased and had, in real terms, doubled by 2004.

Figure 5: Fibres input cost: 1980-2004   Figure 6: Yarn input costs: 1980-2004



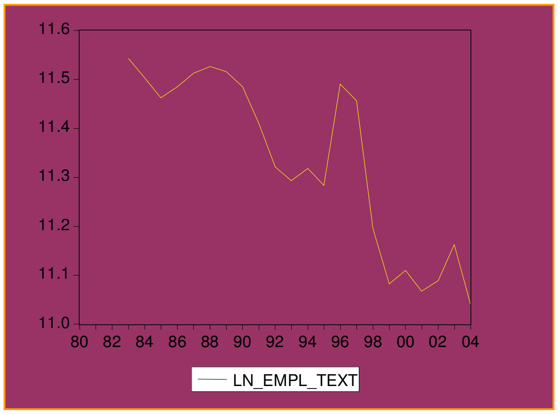


Source: Constructed from Texfed, 2005.

Fibre and yarn input costs are plotted in Figure 5 and 6. Almost an identical upward trend emerges from both figures. Except for a temporary decline in fibre and yarn input costs in 2000, when there was a sharp rise in the real effective exchange rate of the rand, the trend is sharply upward, with a doubling of input costs at constant prices between the years 1980 and 2004.

Continued increases in input costs lead to reductions in production levels and continued labour shedding in the industry. Figure 7 shows the trend in employment in the textile sector for the period 1980 to 2004.

Figure 7: Employment in the textile industry: 1980-2004.



Source: Constructed from Texfed, 2005.

To add weight to the above select analysis, mainly from the textile industry perspective, summary statistics of recent developments in the textile industry is briefly given in Section 4.

4. CURRENT (2007) TRADING ENVIRONMENT IN THE TEXTILE INDUSTRY[2]

The South African textile industry is currently facing extremely difficult trading conditions. Employment in the industry has declined from 70 500 in 2003 to just below 50 500 in 2006. In addition a number of textile mills have recently closed and have been forced to retrench staff.

Imports are at an all time high. Imports of yarns have increased from 77 000 tons in 2001 to 99 000 tons in 2006 an increase of 29 percent while imports of fabrics have remained relatively constant with 94 900 tons in 2001 and 95 300 tons in 2006. Much larger increases were recorded by imports of made up textiles which have increased from 4 900 tons in 2001 to 28 700 tons in 2006 an increase of nearly 500 percent and imports of clothing which increased from 139 million items in 2001 to 567 million items in 2006 an increase of over 300 percent.

Historically textile and clothing imports into South Africa originated from a wide range of countries chief amongst which were Taiwan, South Korea and Europe. However since 2001 imports have increasingly been sourced in the main from China. In the case of clothing imports, 89 percent currently originates from China, 3 percent from India and the remaining 8% from the rest of the world while 60 percent of all made up textiles (blankets, bed sheets, towels and curtains) originate from China.

(a) Strategic Issues

(a) (i) China Restraint Arrangement

This arrangement was introduced on 1 Jan 2007. There have been subsequent changes to the original quota regulations and these were introduced on 27 March 2007. The changes included the following:

- A tightening of the definition of "foreign brands";
- A provision for additional quota for special purpose clothing e.g. firemen's gear and specialised sporting gear; and

[2] This section is taken from the Texfed Internet homepage, viz. www.texfed.co.za

- A provision for additional quota for special strategic circumstances whereby increased quota will be granted subject to written commitments by importers to increase local procurement over a 5 year time period and to support technology upgrading and skills development in the local industry.

The latest import statistics on quota usage for the first two months of 2007 show the following (Table 4):

Table 4: Quota usage on China imports, 2007

Category	Quota Usage
Textiles	6% utilized (range 2% to 15%)
Clothing	10% utilized (range 2% to 31%)

Source: Texfed, 2007

The low quota usage is due to imports being brought in ahead of the quota regime during November and December 2006. The quota has had positive effects. Some sectors of the textile industry have seen an upturn in business as a result of the quotas but this is not universal across all sectors of the industry. Much stock is being laid on the special strategic circumstance provision (third bullet point above) whereby it is envisaged that benefits beyond the two year term of the quotas will be leveraged. A summary of the quotas is set out in Table 5 below:

Table 5: China Quota Summary, 2007

Description	Units	Imports	Quotas		Quota %	
		Jan 05-Jun 06	2007	2008	2007	2008
Total Fabric	'000kg	17 384	13 930	16 304	120%	141%
Knitted Clothing	'000No.	170 684	74 907	81 666	66%	72%
Woven Clothing	'000No.	211 297	101 084	109 931	72%	78%
Curtains	'000kg	6 122	4 778	5 151	117%	126%

Source: Texfed, 2007

(a)(ii) Customised Sector Programme (CSP)

The CSP was finalised in August 2006. However since that time the Retail Sector has withdrawn its support for the CSP and consequently the programme has not yet been introduced. The CSP is intended to develop and modernise the textile and clothing industries and to put them on a path to higher competitiveness. It embraces the following aspects:

- Domestic market development;
- Promoting exports;
- Competitiveness by upgrading technology and investments;
- Upgrading skills;
- Empowerment; and
- Pursuing a partnership approach.

At this stage the only progress under the CSP is that some of the projects contained within the programme are being advanced. These are:

- Country of Origin labelling;
- Replacement for the DCC Scheme.
- Developing a capital upgrade provision for the sector.

(a)(iii) Clothing and Textile Interim Development Programme (CTIDP)

The previous export promotion scheme for the textile and clothing industries, the Duty Credit Certificate Scheme" expired at the end of March 2007. No replacement scheme has yet been introduced. The resultant uncertainty has a negative impact on exporters.

Trade Agreements

The following trade agreements are currently in effect.

- Africa Growth and Opportunity Act
- South Africa/European Union (EU) Trade Development and Cooperation Agreement
- Southern African Development Community (SADC) Free Trade Agreement

The following trade agreements are under negotiation.

- South African Customs Union (SACU)/European Free Trade Association (EFTA) Free Trade Agreement (soon to be implemented)
- SACU/Mercosur Preferential Trade Agreement
- SADC Free Trade Agreement Mid-term Review
- SADC(8)/EU Economic Partnership Agreement (EPA)
- World Trade Organization Doha Development Round
- SACU/India Preferential Trade Agreement

(b) Textile Industry Statistics

Summary statistics for the textile industry is given in Table 6.

Table 6: Summary statistics of the textile sector, 2007

	2001	2002	2003	2004	2005	2006
Volume of Production (2000=100)	103.1	111.7	98.8	101.3	92.8	92.3
Sales (R'billion)	16.9	20.4	19.2	19.7	19	18.4
Employment ('000)	64.1	65.5	70.5	61.7	52.8	50.5
Imports (R'billion)	5.2	6.9	5.9	6.5	6.4	6.9
Exports (R'billion)	3.4	4.5	3.8	3.2	3.2	3.1

Source: Texfed, 2007.

5. DISCUSSION OF TRENDS IN PRODUCTION AND EMPLOYMENT

In Section 3, a number of trends are identified in relation to the textile industry. Input costs have been rising (both labour cost and raw material cost), production has been declining and so has the trade balance been deteriorating, with increased imports of textiles and a relative decline in textile exports. On the domestic front, government has continued its support of the industry through the TCIDP. However, TCIDP has not been successful in developing the textile (or clothing) industry, or so it seems. Before taking a deeper look at how TCIDP had been successful/unsuccessful in achieving its aims, first a bit more obvious and on-the-surface observation around the input-output relationship in the industry. When Figure1 and 2 are viewed together, the picture that emerges is that imports have been rising, but getting cheaper. On the domestic front, as is evident from the sectoral CPI, this has put downward pressure on consumer prices of textiles. At the same time the continued upward trend in input costs has put local manufacturers in a cost-price squeeze, resulting in rationalisation or labour shedding behaviour.

Before discontinuation of GEIS, government was partially successful in supporting the industry by effectively subsidising profit margins of export manufacturers, in the case of final product, to the tune of 18 percent on average. With the discontinuation of GEIS, this removal of the 'profit ' subsidy lead to an immediate, but not very large decline in production. Again looking at Figure 3, the abrupt drop in production in 1997, when GEIS was discontinued, is clearly visible. Another confirmation of this continuing trend is visible from Figure 8. Figure 8 shows a situation in which producer prices have been rising at a much faster rate than consumer prices, again confirming a cost-price squeeze, this time in the clothing sector.

Before continuing this analysis, the reader is reminded that there are two main sources of structural change; domestic cost increases (imported and local input costs) and dynamic shifts in comparative advantage, with among others, from China. TCIDP (and DCCS before it), was aimed at developing a competitive clothing and textile sector in South Africa. The question may now be asked why TCIDP has not been successful in rendering South African textiles and clothing competitive. Has any attempt by South Africa (and developing countries) to compete successfully in this sector become superfluous?

Perhaps the answer to the above question is yes, and perhaps we have entered an era in which certain countries would simply dominate certain manufacturing activities and perhaps the international trading fields had been altered for good.

The other question that may be asked is whether TCIDP has not perhaps had undesirable effects as a result of an incorrect structure? Not all evidence is available to prove or disprove this contention. For example, the reader should understand that the department of Trade and Industry (Dti), and the International Trade Administration Commission (ITAC), do not keep and make available accurate records of how the duty credit certificates (DCC) had been used in the industry. Furthermore, producers and export trading houses do not keep accurate records in their financial statements in regard to the impact of DCC on their businesses.

In order to explain the impact of TCIDP and DCCS on production decisions, some basics around the scheme and its aims need to be understood. Firstly, the scheme has the intention to develop the local industry. This is done by encouraging producers to specialise in certain product lines and obtain economies of scale in those lines in which it has a comparative advantage. Certainly, in order to reach those economies of scale, the scheme presupposes that in order to reach those economies of scale and resultant low average cost levels that will provide comparative advantage, producers need to find markets large enough to dispose of those goods. This leads to the secondary aim; that is earning of foreign exchange. Together with economies of scale in production, the scheme aims to secure long run employment growth in the sector For this reason its training requirement.

To attain more specialised and scale production, exporters are encouraged through the scheme to earn certificates that will give them duty credits that they may use to import under a fixed menu, those goods that they are less efficient in producing. Producers ought to thus, pick those items in their diverse product lines that they have a potential comparative advantage in, attain efficiency in its production, export these lines, earn duty credits and apply these duty credits to import those lines that were dropped (less efficient).

For simplicity, an example is taken from Tables 2 and 3 above. Let's assume a producer/exporter manufactures ladies hosiery and undergarments from knitted texturized yarn. The producer decides to specialise and export hosiery in which it has a potential comparative advantage and to stop the manufacture of undergarment, applying the duty credit (DCC) that it earns through its hosiery exports, to import the undergarment free of import duty.

The producer, who has now become a fully fledged exporter, exports R 1 million rand worth of hosiery at FOB value thus earning him DCC to the value of R 250 000 (25 %) and in terms of the menu in Table 3, may use this DCC to import either fabric, clothing accessories or yarn. The exporter may now want to import undergarment to the value of R2 million. In this example, if the undergarment carries an import tariff of 15 percent, the exporter (who has also now in terms of TCIDP become an importer), is eligible to pay a total import tariff of R 300 000, but only ends up paying R250 000, which is the value of DCC.

What happens if the exporter does not want to import the undergarment? What if the exporter wants to instead use his certificate to import texturised yarn instead? In this case, the exporter may import yarn free of import duty until all of its R250 000 DCC had been used. However, none of the product (hosiery) manufactured from imported yarn against which the DCC had been applied, qualifies for future DCC. In this case, the exporter will sell his DCC (as allowed by the scheme) to either another producer in the same industry segment or to a producer in another segment. Often it ends up in the hands of large clothing importers. Without digging our heels in to deep in the possible permutations of where and how DCC certificate is used and where it ends up, the oversimplified illustration given here should explain the fact that DCC could end up anywhere in the market. For the original producer/exporter of the certificate it is sometimes not worth the effort to diversify its business to the extent that it takes its eye off the ball by engaging import activities when he is primarily export focused – the original intention of the scheme. Producers thus more than happily part from their hard earned DCC in exchange for, let's say 80 percent of the value DCC in cash, to improve the bottom-line and get on with business.

It is not hard to see that what was intended to be a development programme for the industry, building a competitive and foreign exchange-earning sector, employing lots of labour, has become a distortive measure, in the sense that the specialisation (and economies of scale) that has occurred, has by far been outweighed by the import-inducing impacts of the scheme, which served to reduce the overall employment creating capacity of the manufacturing part of industry.

Before concluding, a last important note in order that the reader is fully acquainted with the sector and the probable reason for government's support of the industry, which puts the industry among the top five strategic industry's under the Accelerated and Shared Growth Initiative of South Africa (ASGI-SA). The clothing and textile industry is next to the agricultural sector, the sector with the highest employment multiplier. Apparel and textile manufacture create 9 jobs per R1 million in output against agriculture's 18. Third in line is social and community services at 5,6 jobs per R1 million output (Pollin et. al, 2006). Pollin et. al, also indicate that the apparel and textile industry has an export penetration of 1,0 against an import penetration of 1,9, almost double that of its export penetration. It should however be emphasized that the textile industry's share in GDP is declining and that in absolute numbers, the total sector only employs less than 200 000 out of a total of over 12,8 million jobs (formal sector employment according to the labour force survey) (Stats SA, 2007) in South Africa.

6. CONCLUSIONS

This paper by its very nature is much too limited to make in-depth analysis and concomitant conclusive results possible; the industry is just too diversified and has too much depth too reach an all inclusive conclusion for all in industry.

Even with the usual limitation that applies to this study, common sense over the unlying statistics (especially the fact that it has shown the same trend over the last three decades), prevails.

Final conclusions on this paper are:

- The clothing and textile industry has generally been uncompetitive over the last thirty years, with the exception of some product lines
- The sector has over the last thirty years lobbied for government intervention and have received government support in the form of subsidies, rebates of duties and duty credits
- The sector is an important employer in the South African economy in the sense that it has the second largest employment multiplier; however, it only employs in manufacturing some 200 000 workers out of a total of 12,8 million.
- The sector's contribution to GDP has been on the decline
- DCCS and TCIDP were meant to develop the industry; instead it ended up as was remarked by BTI about SAP, "...it proved to be an ill considered and highly disruptive export incentive that ultimately led to the destruction of certain sectors of the textile and clothing (i.e. Jerseys) industries". Instead of preserving jobs and creating new ones, DCCS and TCIDP ended up destroying jobs. DCC ended up stimulating more streamlined manufacturing through specialization, improved multi-factor productivity, established export markets (albeit small) and improved specialized training of its declining workforce; it also ended up inducing and cross-subsidizing imports of especially final goods, effectively rendering even more individual manufacturing plants uncompetitive.
- DCCS and TCIDP have re-directed government revenue in the form of import duty, (tax payer's money) away from other applications (welfare creating) to a job-destructive intervention

The following recommendations are made in respect of the findings of this paper:

- DCCS and TCIDP have been distortive and served only to accelerate the closing down of marginal producers in the sector; therefore any similar policy that is meant to intervene by means of duty shifting or direct subsidy on exports or imports, should be avoided
- Strategic sector support by government is necessitated – not to preserve or create jobs *per se*, but level playing fields requires that if other governments around the world support industry, so should we. The emphasis should however fall on research, development, technology, innovation, training and market penetration strategies, some of which already exists, like primary market research support. Only, the South African government should aim to position itself alongside business (and labour) out-strategizing its competitors and lending full financial support to strategic programmes.
- Lastly, government should aim to move away form 'blanket' support to strategic industries to support of strategic and competitive business and products instead.

7. APPENDIX

Theoretical model

The production function takes the functional form log Y = c + log X + log W + $\in$ which is the Engle Granger co integration approach (single equation) as series of variables chosen according to the economic theory are linked to form an equilibrium relationship spanning the long-run, even though the series themselves may contain stochastic trends (i.e., be non-stationary) (Harris, 1995).

Figure A.1: Unit labour cost - 1980-2004

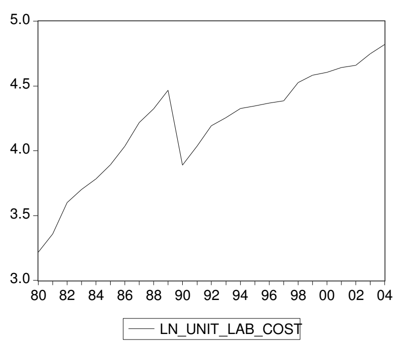
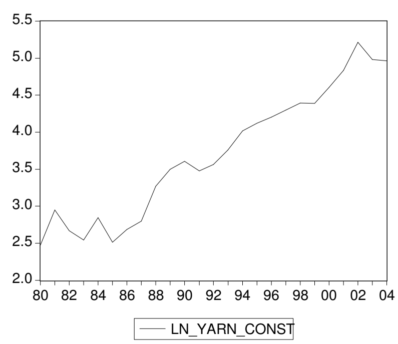


Figure A.2: Yarn prices – 1980-2004



Source: Constructed using Texfed, 2005.

The increasing labour cost since 1980, as reflected by the above graph, has led firms to shift from using more labour to relatively more capital (machines), as indicated by the dynamic short run equation (employment as explanatory variable in the short run equation) with a corollary of increasing imported inputs.

The combined effect of weaker rand (1995-2002) and increased import of inputs (fibres, yarn) led to increased cost of production in the textile industry.

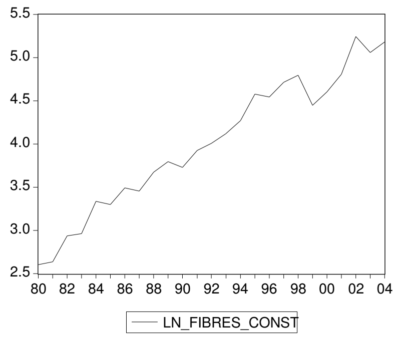
The choice of variables is in accordance with the economic theory that states that production function is dependent on the level of inputs used, both local and imported (fibres, yarn).

The production in textile industry is function of the unit labour cost, employment in the textile industry and the exchange rate.

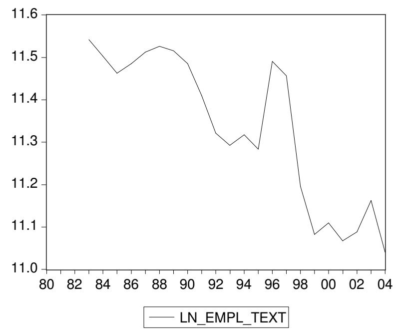
Prod_text_Indus = log_unit_lab_cost + log_emplo_text - log_exch_rates + $\in$

Where $\in$ is the error term.

Figure A.3: Fibre prices – 1980-2004



FigureA.4: Employment (Textiles) – 1980-2004



Source: Constructed using Texfed, 2005.

FigureA.5: Nominal exchange rates – 1980-2004

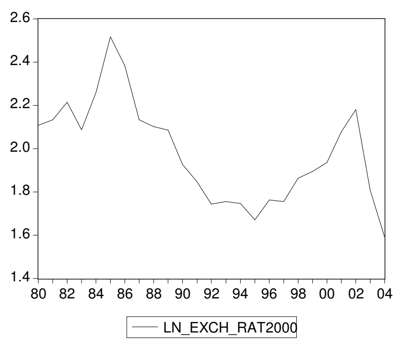
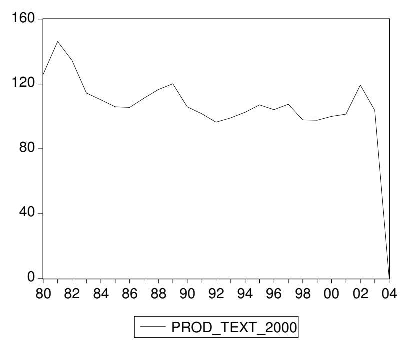


Figure A.6 Production in Textile industry



Source: Constructed using Texfed, 2005

List of variables

- LN_PROD_TEXT_IND = Logarithm of production in textile industry
- LN_UNIT_LAB_COST = Logarithm of unit labour cost
- LN_EMPL_TEXT = Logarithm of employment in textile industry
- LN_EXCH_RAT2000 = Logarithm of nominal exchange rate
- RES_NEW (-1) = Lagged residuals of the co integration equation
- D_LN_PRO_TEX_IN = Differences of the logarithm of production in textile industry
- D_LN_EXC_RAT2000 = Differences of the logarithm of nominal exchange rates
- D_LN_EMP_TEX_IND = Differences of the logarithm of employment in textile industry
- LN_PPI_TEXT2000 = Logarithm of producer price index in the textile industry
- LN_YARN_CONST = Logarithm of yarn input in the textile industry
- LN_FIBRES_CONST = Logarithm of fibers input in the textile industry

Description of variables

All the variables used are expressed at constant 2000 prices. The nominal exchange rate is defined as the number of local currency (Rand) per unit of US $.

Results of Empirical model

a) **Long run equation**

LN_PROD_TEXT_IND = 0.1293288512*LN_UNIT_LAB_COST + 0.298845598*LN_EMPL_TEXT + 0.1325538047*LN_EXCH_RAT2000 + 0.4542317588+

b) **Short run equation**

D_LN_PRO_TEX_IN = 0.1433525568*D_LN_EXC_RAT2000 + 0.3558120377*D_LN_EMP_TEX_IND - 1.000106388*RES_NEW (-1) + 0.003983727649

Model evaluation of the long run equation

The null hypothesis of non-stationary is rejected at 10% establishing co-integration of the long-run equation's variables (see appendix). As stated above, some reservation on the signs of explanatory variables in establishing their conformity to the prediction of theory of production is expressed.

Model evaluation and interpretation of the short run equation

The E.C.M. passes positively the diagnostic test with more than 59 % of the short-run changes explained by the nominal exchange rates and employment in the textile industry in South Africa, and a Durbin Watson of 2.22 indicating a very low serial correlation between variables (11 %) with a very strong coefficient of adjustment *(-1).*

Comments

According to the co-integration equation, unit labour cost, employment in the textile industry and the nominal exchange rates explain 49 % of the estimated production in the textile industry while other factors, which affect the production, are included in the error term of the empirical model.

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