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TIPS RESEARCH REPORT FOR

The DEPARTMENT OF PLANNING, MONITORING AND EVALUATION

LOCAL CONTENT PROCUREMENT STUDY

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Executive summary

Macro-economic modelling suggests that a substantial reduction in the import content of state procurement could increase GDP growth and raise employment. If it were possible to eliminate all imports in government procurement outside of petroleum and electricity, the GDP would climb the order of 0,7% and employment would grow by 0,5%, or 75 000 jobs. These developments would in turn increase government revenue by around R8 billion, assuming no change in the ratio of tax to GDP. Cutting imports by half would proportionately reduce the benefits, with GDP growth at 0,3% and employment climbing 0,2%.

The modelling exercise shows that the economic benefits of local procurement in the abstract. In practice, however, implementing measures to reduce import leakages from government spending has proven difficult. The reasons are rooted both in systemic biases in procurement procedures and in the difficulty of developing competitive local suppliers for some products.

To understand these issues, this study first reviews the structure of local procurement by industry, and models the impact of increasing it. It then analyses blockages that would have to be overcome to achieve the anticipated benefits through a combination of regulatory analysis and case studies of affected industries.

The concept of local procurement can take on a range of meanings, particularly in the absence of a label of origin for South African products. For this study, the term “local procurement” means goods produced at least in part in South Africa. It does not mean either procurement from nearby producers, or goods that are produced fully in South Africa.

The study found that the critical blockages to stronger local procurement on the demand side – that is, in terms of decisions by state agencies - included the following.

- Most procuring agencies were not required to track their use of imports over time, with the partial exception of the state-owned companies (SOC). As a result, it was impossible to include local procurement consistently in performance indicators for most supply-chain managers. Few supply-chain managers consequently made local procurement a top priority, effectively ranking it well after ease of procurement, price and black ownership.
- A tendency to over-complicate the measurement of local content contributed to the failure to measure and prioritise it. A rough and ready approach, at least initially, would for instance include as “local” products merely assembled in South Africa, not only those with a higher percentage of value add. Starting with a very inclusive definition could lay the basis over time for more specific requirements for particular products and, over time, development of a practical label of origin for South Africa. Even a rough measure appeared preferable to the complete lack of a common indicator, which meant that most state agencies did not have any way to track local procurement.
- Stakeholders who wanted to report violations of designation requirements were often effectively stonewalled by supply-chain managers. The system neither facilitated nor promoted inputs from potential suppliers or their workers (including through their unions), for instance where tenders ignored designations. The tradition of extreme secrecy around tendering aggravated this situation. It would help to establish a hotline

at the dti with the capacity to contact supply-chain managers with concerns and ensure they were taken seriously.

For suppliers, the main obstacles were the following.

- Outside of heavy equipment for infrastructure, procurement was fragmented between hundreds of departments, agencies, municipalities and institutions, without a single channel or standard specifications for many products. That in itself made it difficult for potential suppliers to learn about tenders and determine whether, in the aggregate, improved access to government demand would justify developing or upgrading capacity. The problem was worsened by the fact that each state agency developed its own specifications, often without taking into account local capacity or the benefits of local procurement. In addition to the centralisation of procurement for major products by the National Treasury, efforts to standardise specifications and develop single-channel tender advertising at least for designated goods would help.
- Outside of the SOCs, efforts to promote local procurement were not generally linked to direct support for new kinds of production. As a result, some potential producers could not obtain the finance required to establish local production. The situation was worsened by the fact that government contracts typically cannot provide bridging finance for new contractors.

Despite the challenges around local procurement, success in a number of areas pointed to its potential for adding to the stimulus effect of government spending. Critical areas for improvement included:

- Ensuring it was a top priority for supply-chain managers across the state, in part by including it in audited performance indicators and in part by make tender processes more transparent and accountable to stakeholders;
- Linking local procurement to supplier development, for instance through a dedicated facility at the dti, backed by IDC finance, that supply-chain managers could contact for assistance; and
- Simplifying and standardising tender processes as far as possible, at least for designated products.

1 Mandate and overview

1.1 Mandate

DPME published a tender for an analysis of local procurement in November 2017. The tender focused on obtaining an analysis of:

- Core areas of state procurement and, as far as possible, the import intensity of the main products, and
- The external benefits as well as the direct costs associated with local procurement.

The study aims primarily to identify and quantify the external costs associated with the procurement of goods with high levels of imported content by the state. In addition, the case studies will analyse blockages to local companies that seek to supply government agencies.

Specifically, the study seeks:

- To identify the main categories of goods procured by state agencies
- To estimate overall import dependence and of the relative cost of imports and local products for each category
- To assess the impact of state procurement from local manufacturers instead of imports on local production
- To evaluate the implications of local-content procurement for tax revenues.

The study was expected (a) to use the SEIAS approach to describe and as far as possible quantify costs, benefits and risks to different stakeholders, specifically procuring agencies, local suppliers, importers and workers; and (b) as far as practically possible with the available data, to model the indirect impacts of state procurement through a simulation of the direct and indirect impacts on the economy of the procurement of imported and locally produced goods for different categories procured by the state.

On the basis of these outputs the study should provide recommendations to enhance local content procurement.

1.2 Approach

The study essentially aims to estimate the benefits and costs of increasing state procurement of goods with greater local content. In that context, it identifies areas where the procurement process may bias decision making against local products. Because most services are, by their nature, provided locally, even if by foreign companies, they are mostly excluded from this analysis.

The analysis is complicated by the fact that the concept of local procurement can take on a range of meanings. Divergent interpretations are particularly easy because there is no label of origin for South African products. For this study, the term “local procurement” means goods produced at least in part in South Africa. It does not mean either procurement from nearby producers, or goods that are produced fully in South Africa. The share of local

content may vary from almost entirely South African, as with most agricultural products, to entail only local assembly of primarily imported parts, as with much equipment.

The benefits and costs of local procurement can be summarised broadly as follows.

Benefits of local procurement: Raising the share of local products in government consumption and investment stimulates demand for local suppliers. That in turn leads to job creation, high incomes, and ultimately has a multiplier effect that further grows the economy.

In effect, this conceptualisation indicates define three core areas of benefit:

- Local procurement limits the leakages on government spending, strengthening the economic stimulus of a given amount of spending.
- The growth in production and incomes resulting from local procurement raises tax revenues, offsetting any additional costs to the state that may result from a conscious effort to support local suppliers.
- By procuring more advanced products locally, the state stimulates industrial deepening as local manufacturers invest in or develop new technologies and know-how.

Costs of local procurement: The main costs associated from increasing local procurement are the following.

- If we assume rational markets, then departments must buy imports because they are of higher quality and/or cheaper than the local equivalents.
- Changing procurement systems to find or develop local suppliers typically entails a transaction cost for the procuring agency, even where local products would ultimately be competitive. The cost may prove prohibitive where agencies have limited supply-chain management (SUPPLY-CHAIN MANAGEMENT) capacity and do not engage regularly with local producers.
- Local procurement requires that procuring agencies discriminate between bids on a criterion other than cost effectiveness and quality, which may open the door to unfair tender processes.

A particular challenge arises because the benefits of local procurement are usually externalities for the procuring entity. Society as a whole may benefit from faster growth and industrial deepening, but those gains often lie outside the mandate of the procuring agencies. They main gain no visible benefits at all from favouring local producers. As a result, they will not take the benefits of local procurement into account in procurement decisions, focusing instead on ensuring easy, minimum-cost procurement of the goods they require.

Furthermore, the value of external benefits is, by definition, often hard to determine. As a result, it is difficult to determine when local procurement is warranted in cases where local suppliers require a price premium or modifications in the initial specifications.

In theory, local procurement should be decided based on quantification of the actual benefits and costs, in terms specifically of the price and quality, on the one hand, and the impact on economic development and government revenues on the other. It is, however, easier to conceptualise the quantification process than to actually undertake it.

First and foremost, the nature of externalities is that they do not appear in an easily defined market price. Instead, they take the form of opportunity costs to local producers, on the one hand, and the economy and industrialisation, on the other. To quantify externalities, economists generally evaluate the direct impact on production and employment, which requires an understanding of the supplying industry, combined with modelling to assess the multiplier effects. Outside of the state-owned corporations (SOCs), very few supply-chain management units in government have the capacity to undertake this kind of analysis.

Furthermore, the impact of local procurement also evolves over time. It typically takes several years or even decades to establish new productive capacity that can compete with international products. By extension, while the costs of changing to local suppliers typically emerge up front, the benefits of local-content procurement may only emerge later on. Moreover, they face the risks that normally attend efforts to develop new lines of production.

Finally, the evaluation of local procurement faces some specific systemic and informational challenges.

- The state procures through multiple channels, which are not captured centrally and none of which track imports consistently. The South African government spans three spheres and a host of different agencies, accounting for around a fifth of the GDP and of employment. Estimates suggest over 700 different state-owned entities issue tenders of various kinds, from national and provincial departments to local governments to universities and other autonomous agencies.[1] A central challenge for this study has been to identify the products procured by the state and to develop reasonable methods to estimate their import content.
- South Africa does not have a uniform benchmark or a coherent regulatory system to record and validate local content. As discussed below, a South African Bureau of Standards (SABS) standard indicates how to calculate local content, but it is essentially only used for products formally designated for local procurement. The bulk of state procurement is not assessed for local or import content at any point.
- Tender regulations impose extensive secrecy, with the exception of Gauteng's open tender process, and do not require that bidders indicate local content except for products designated by the dti. Secrecy about bids in itself makes it difficult to identify the extent of the price premium for local content, or even if there is one.

Evaluation of the net benefits of local procurement also faces the challenges inherent in any impact assessment. As with any set of costs and benefits, the impacts will differ between stakeholders. Amongst others, they vary between:

- Import agencies and local producers;
- Potential suppliers and the direct beneficiaries of state spending, who may experience curtailed services if inputs cost more; and
- Departments that are struggling to meet their mandates within limited budgets, and the economics departments tasked with promoting economic growth and development.

[1] Interview with Simon Eppel, SACTWU, September 2018

The study has four main parts. The first section analyses total government procurement of goods and services based on estimates from Statistics South Africa for the Supply Use Tables, and estimates the potential impact on the GDP and employment of reduced import dependence. The second section reviews the regulatory framework for local procurement. The third provides a number of case studies to flesh out the experience with various local procurement arrangements. The final section uses the SEIAS approach to evaluate the costs and benefits of local procurement for the various stakeholders.

The study involves a combination of economic data, transactional information obtained from state agencies, interviews with key informants, and three case studies based on products that are procured by the state.

The mapping exercise depends primarily on the Supply Use Tables and on information on procurement provided by the National Treasury, the dti (with regard to designations) and the main SOCs for procurement purposes – that is, Eskom, Transnet and Prasa. The study as a whole also uses published budgets, tender documentation, Annual Reports from national departments and SOC, and reports to Parliamentary hearings, as well as interviews with the relevant departments and local producers.

2 The structure and impact of local procurement

This section first analyses the main products procured by general government, and their overall import content. It then indicates the implications for growth and employment of import dependence in general government spending through a modelling exercise. The rest of the section review trends in procurement by national and provincial departments, municipalities and state-owned companies, to the extent permitted by the available data.

2.1 General government

General government comprises the spheres of government plus extra-budgetary institutions such as universities. It excludes state-owned enterprises. In 2015, general government procured just under R100 billion in goods, and around twice as much in services.

Statistics South Africa's Supply Use Tables provide estimates for general government procurement, in the series on the use of intermediate inputs by different subsectors ("activities"). The estimates distinguish 104 products, aligned largely to Standard Industrial Categories (SIC), that are used as intermediate inputs by 62 activities.

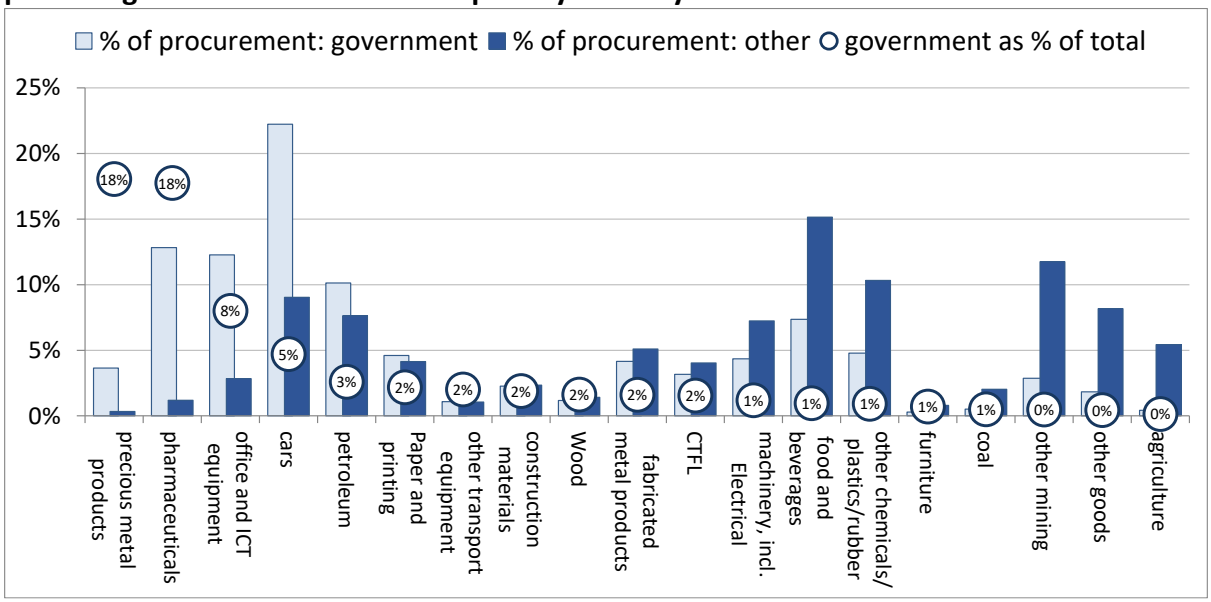
2.1.1 The structure of general government procurement

According to the Supply Use Tables, in 2015 goods accounted for 11% of government spending, and services for a further 30%. The cost of labour comprised virtually all of the remaining government spending. This pattern of procurement is common for services, which constitute most of government, in both the public and private sector. Infrastructure is government's largest output of goods, but it largely relies on contractors and state-owned companies to supply it. Contractors provide a service to government, not goods, and state-owned companies are included under the business sector, not government, in the Supply Use data.

General government agencies in the aggregate procured almost R300 billion in goods and services, or around 2,6% of all intermediate inputs. For goods alone, the figure was R100 billion, or 2% of intermediate inputs.

As the following graph shows, cars constituted the largest single area of general government procurement, followed by pharmaceuticals and then office and ICT equipment. General government accounted for between 5% and 18% of procurement of these products. For other products, its purchases came to less than 2%.

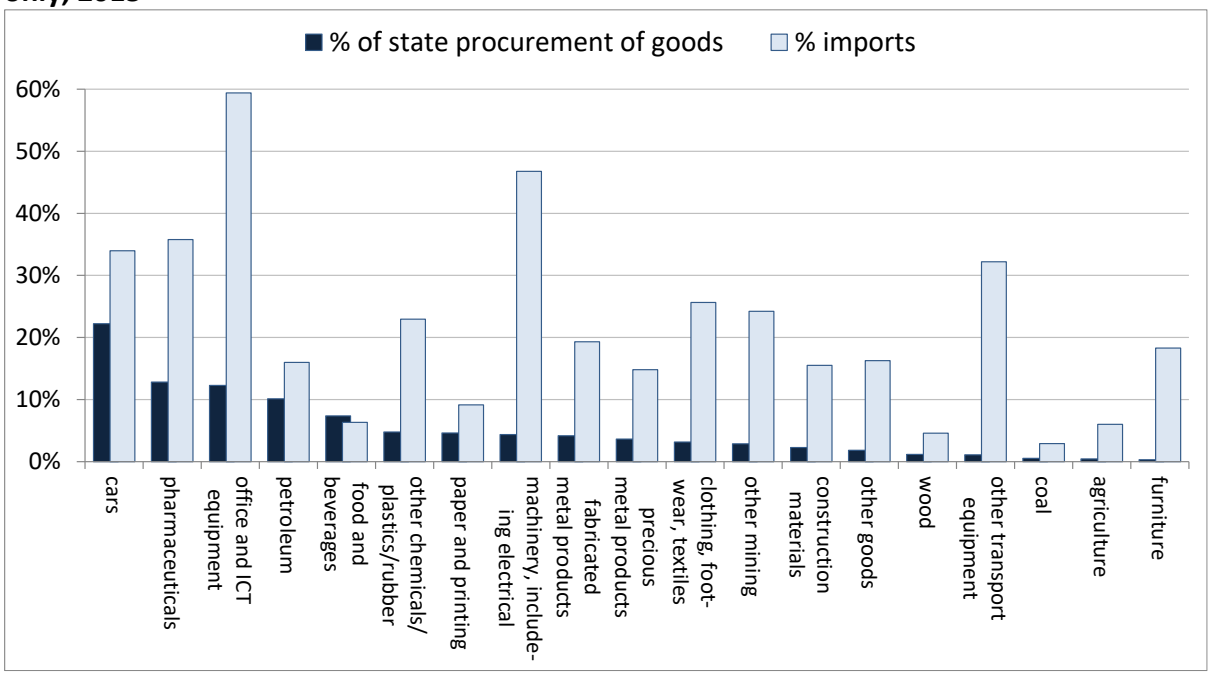
Graph 1. Government procurement by product compared to other entities, and as a percentage of total intermediate inputs by industry



Source: Calculated from Statistics South Africa. Supply Use Table 2015.

Graph 2 indicates the share of imports in products sold by industries from which government procures in 2015. The share of imports ranged from almost 60% for office and ICT equipment to under 5% for commodities like coal, wood and agricultural products. It is not possible to determine the extent of imports in government procurement, but in the absence of policy interventions it is likely to be fairly close to the industry norm.

Graph 2. Imports by industry and share of industries in government procurement, goods only, 2015



Source: Calculated from Statistics South Africa. Supply Use Table 2015.

Two thirds of state procurement related to services, which reported just 2% imports on average. Data on trade in services are however notoriously unreliable, largely because the shortcomings in the international statistical system for trade in services.

From 2010, multilateral agencies defined four modes of services exports: cross-border trade, for instance through the internet or for transport; spending by foreigners within a country's border, as with tourism or business travel; provision of services in a foreign country, for instance through a subsidiary of a bank or construction company; and services provided by individuals working as independent contractors (but not as employees) in a foreign country. (See U.N. 2011)

For virtually all of these modes, the data both internationally and for South Africa are inadequate. As a result, the trade data tend to understate the extent of government imports of services. In part, the shortcomings result from the failure to re-align balance-of-payments data with the modes defined for trade in services. In particular, income from the provision of services abroad by individuals and companies is recorded as factor income (remuneration, profits or interest payments) rather than as services exports. If a foreign consulting firm provides services for government and then repatriates the profits, its fees would count as payment for an import, but its profits would fall under factor incomes.

2.1.2 Modelling the impact of local procurement

Reducing the share of imports in government procurement affects demand both directly, through increased sales by local producers, and indirectly, as these local producers in turn increase their purchases of inputs. A simple input-output model based on the Supply Use Table for 2015 indicates the possible extent of the full direct and indirect impact.

The model enables a simulation of the effects on the GDP and employment of a reduction in import dependency compared to the existing level of imports, which forms the baseline scenario. Employment figures are derived from the impact on GDP using industry figures for

elasticity of demand for labour. (Moolman 2003) Since there are no figures for imports by government, the baseline scenario effectively posits that the share of imports in government procurement is the same as for the economy as a whole. On this basis, it is possible to compare how the effects of government procurement on the growth and employment differ depending on the extent of import leakages. The methodology of the model is explained in detail in Annexure A.

The model enables simulations using different levels of imports for different goods. In the most extreme case, government imports can be set to zero except for petroleum and electricity. The simulation posits that the suppliers of inputs to government suppliers do not reduce their import dependency. In other words, the restrictions on imports affect only direct government procurement of goods, not the full value chain for those goods.

While it is not practically possible to reduce imports to this extent, the simulation indicates the maximum possible impact of greater local procurement. Specifically, it finds that if government did not import any products, GDP growth would accelerate by 0,7% and employment by 0,5%. That would indicate an additional 75 000 jobs.

Table 1. Headline Results of a Switch to Local Suppliers in Government Procurement with 100% import reduction (except electricity and petroleum purchases)

		First Round Impact			Total (all rounds) Impact		
		Standard	Alternative	Alt-Stnd (pp%)	Standard	Alternative	Alt-Stnd (pp%)
		1	2	3	4	5	6
1	% of GDP	3.0%	3.2%	0.2%	5.6%	6.2%	0.7%
2	% of Employment	2.0%	2.1%	0.1%	3.9%	4.4%	0.5%
3	% of Imports	3.0%	0.1%	-2.9%	5.9%	6.5%	0.6%
4	% of Import duties	2.3%	0.1%	-2.2%	4.5%	5.0%	0.5%

If full local procurement could be achieved, the stimulus effect of government procurement could be increased only by higher spending. It could, however, be reduced by increasing the share of imports, even if government spending remained unchanged.

If government procurement of imports were reduced by half for all goods except petroleum and electricity, the direct and indirect effects would come to:

- 0,3% for GDP growth, and
- 0,2% for employment, or around 30 000 jobs.

The model presented here does not consider obstacles to local procurement, including the effects on prices. It assumes that domestic suppliers can in fact meet government needs, and that the prices of domestic products will be the same as those of imports. More detail is provided in Annexure A.

In 2017, taxes accounted for 28% of the GDP. Using that ratio, we can calculate the potential increase in tax revenues from the acceleration in GDP due to higher levels of local procurement. Specifically:

- A shift to 100% local procurement except for electricity and petroleum would increase the GDP by 0,7%, and tax revenues would climb by R8 billion in 2017 rand. That equals 8% of the total cost of goods procured by the state.

- A 50% reduction in procurement of imported goods by government would increase the GDP by 0,3%, raising tax revenues by R3,4 billion in 2017 rand.

The model, while simple, indicates the significant indirect effects of local procurement by the state, despite its relatively small share in sales of intermediate goods. The external benefits appear significant for both GDP growth and employment. Realising those benefits in practice, however, requires an understanding of the blockages to local procurement as the basis for effective policies.

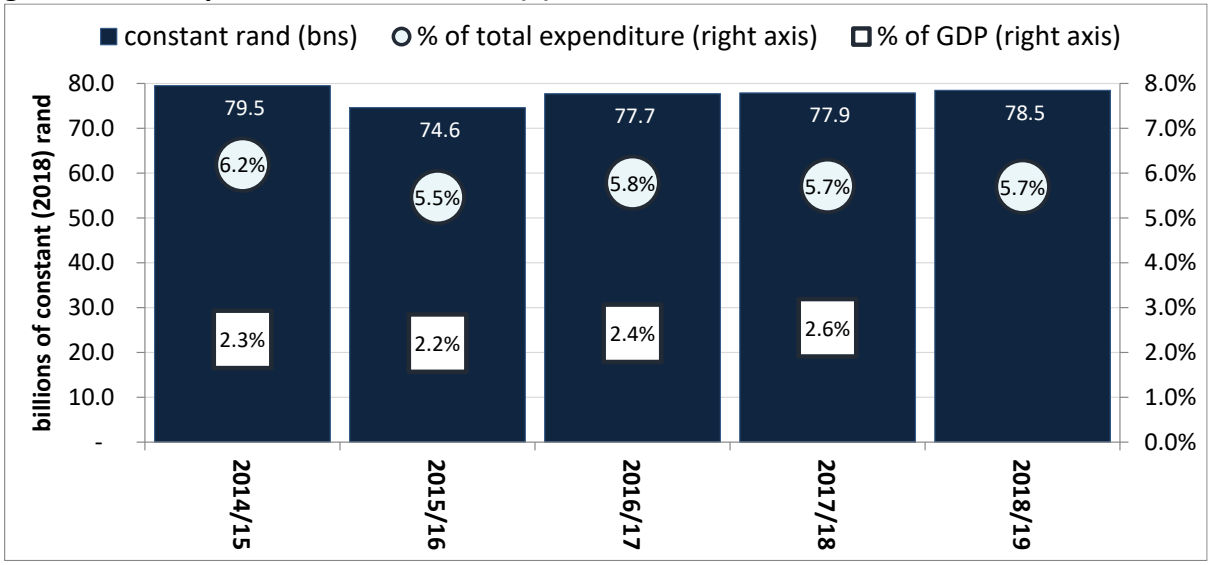
The rest of this section first provides more detail on the structure of procurement by the various spheres of the state and by state-owned companies. Sections 3 and 4 then indicate some of the systemic and economic blockages to local procurement..

2.1.3 National and provincial budgets

Published budgets do not provide as much detail on procurement by industry as the Supply Use Tables. They permit an analysis over time, however.

From 2014/5 to 2018/9, procurement of goods averaged 5,8% of national and provincial government expenditure, or 2,4% of the GDP. These figures exclude procurement of services, rentals, buildings and land. They also exclude procurement funded indirectly by the state through contracts, transfers and incentives – around 18% of the budget, with almost half of this amount going for the municipal share.

Graph 3. Procurement of goods in constant (2018) rand, and as a percentage of government expenditure and the GDP (a)

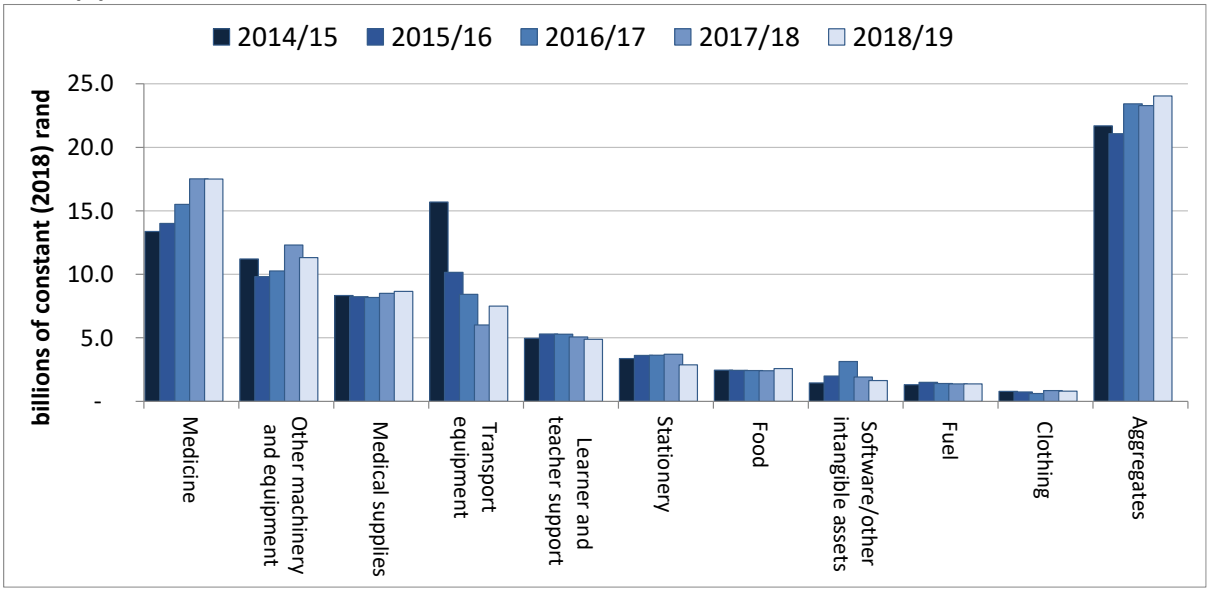


Note: (a) Deflated with March CPI, rebased to March 2018. *Source:* Calculated from National Treasury. Consolidated accounts of government. Excel spreadsheet. Series on Econ4 and Fin Year. Downloaded from 2018 budget section at www.treasury.gov.za in March 2018. GDP data from Statistics South Africa. GDP P0441 Annual quarterly and regional fourth quarter 2017. Excel spreadsheet. Downloaded from www.statssa.gov.za in March 2018.

Goods procurement was identified using the categories of products in the published budget, which are highly aggregated. A quarter of goods spend fell into broad and diverse categories (such as "consumables supply"), which cannot be meaningfully analysed. The categories included as goods in this analysis are listed in Annexure B.

Of the goods identified in the budget, by far the largest amount spent was on medicine. Moreover, in constant rand expenditure on medicine climbed 30% above inflation from 2014/5 to 2018/9. Other major products categories were machinery and equipment, which includes furniture; medical supplies; school books and other materials ("learner and teacher support material"); transport equipment, which includes police cars and ambulances; and stationery.

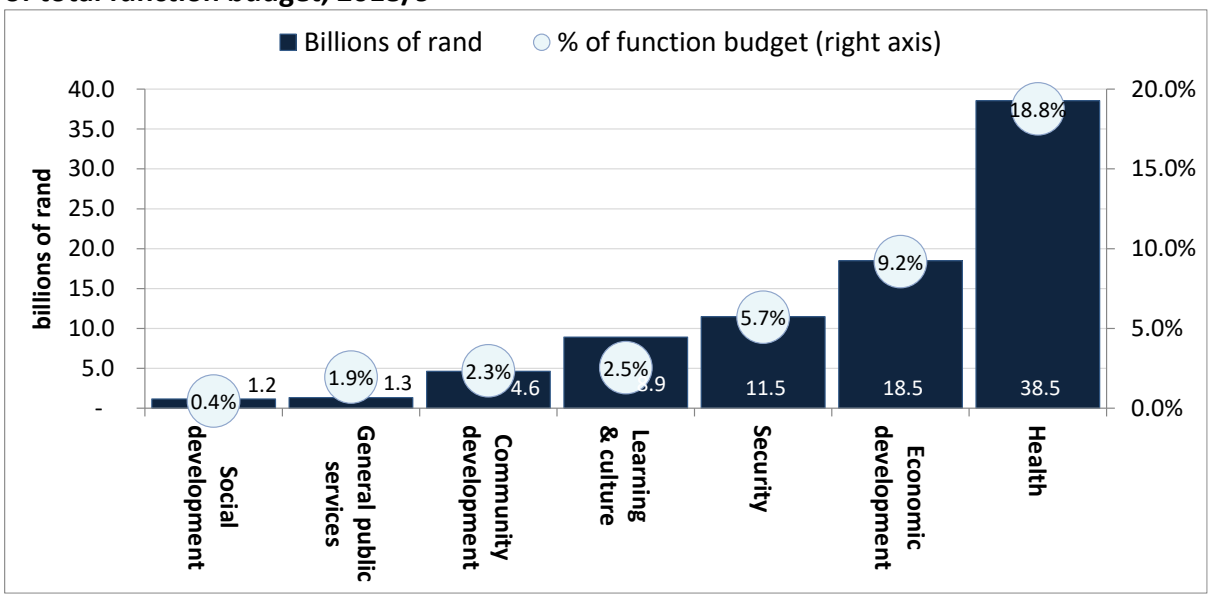
Graph 4. Procurement of major goods according to published budgets in constant (2018) rand (a)



Note: (a) Deflated with March CPI, rebased to March 2018. *Source:* Calculated from National Treasury. Consolidated accounts of government. Excel spreadsheet. Series on Econ4, Fin Year and Function group. Downloaded from 2018 budget section at www.treasury.gov.za in March 2018.

Four functions - health, economic development, security and education - account for 92% of total goods procurement, compared to just 63% of the budget. Of these, health represents the lion's share of goods procurement, at 46% of the total.

Graph 5. Budgeted procurement of goods by function in billions of rand and as percentage of total function budget, 2018/9



Source: Calculated from National Treasury. Consolidated accounts of government. Excel spreadsheet. Excel spreadsheet. Series on Econ4, Fin Year and Function group. Downloaded from 2018 budget section at www.treasury.gov.za in March 2018.

The products procured vary substantially by function. In health, goods procurement is 45% medicines, 23% medical supplies and 8% equipment. In economic development, which is dominated by infrastructure functions, 21% of goods spend comprises machinery and equipment, while 64% falls into diverse aggregated groups that cannot be further analysed until more detailed information is available. In the security functions, 19% of goods spend goes on transport equipment (mostly for policing), while other machinery and equipment, stationery and food absorb a further 12% to 15% apiece. For education, 55% of goods spend is on learner and teacher support material.

Government paid more for services than for goods, with a budget of R93 billion in 2018. Of the services budget in 2018,

- R18 billion was for computer services
- R16 billion for "agency support and outsourced services"
- R12 billion for travel
- R12 billion for fleet services and department transport
- R9 billion for business consultants
- R7 billion for laboratory services.

In services nationally, employment costs come to around 80% of value add. Most of these costs are necessarily local. Still, the services procured by the state may in turn use significant amounts of manufactures, for instance computers, cars, laboratory equipment and chemicals. In addition, where services are provided by foreign enterprises or individuals, profits and remitted salaries may ultimately flow abroad.

The budget provides only broad indicators on the character of goods spend by national and provincial departments. For an in-depth analysis of procurement, the main challenges are the following.

- The budget lists a large share of goods only in aggregate categories. When the underlying database is made accessible, a more detailed analysis will be possible.
- The budget cannot track goods procured using transfers and payments to contractors, which total almost R300 billion or almost a fifth of total expenditure. In this category, 43% is the municipal share; between a seventh and a tenth each goes to universities, non-profits and contractors; and the rest is split between departmental agencies, private enterprises, and SOC.
- The budget provides R18 billion for "computer services"; it is not clear if this amount includes procurement of hardware or only maintenance and design.
- Economic analysis generally depends on industry and product categories classified in the Standard Industrial Classification (SIC). In contrast, the budget uses accounting categories defined in the Standard Chart of Accounts (SCOA). The categories do not always align, which means some approximation is required to benchmark expenditure against economic indicators.

Despite the shortcomings in the budget data, it provides some useful indicators for a strategic approach to local procurement. In particular, it suggests a focus on four functions – health, education, policing and economic development. In terms of products, it points to an emphasis on medicines, transport equipment, school furniture and other educational materials, stationery and infrastructure inputs. Of these products, transport equipment and stationery are not designated for local procurement.

2.1.4 Municipal budgets

Treasury publishes municipal budgets in a consolidated form, but the expenditure figures are not as detailed as the Estimates of National Expenditure. Treasury has been trying to get the municipalities to report in national SCOA categories for some years. Municipalities were expected to comply by 2017, but face capacity limitations particularly in the municipalities that were only established after 1994 (that is, mostly in the former so-called “homelands” and other more rural areas).

In the event, the five largest metros account for almost 60% of municipal spend, although only 36% of the national population. These metros spent R203 billion in operating expenditure in 2017/8. Of that, R65 billion went for goods and services outside of bulk water, electricity and waste. For comparison, that is around a third of the value of goods and services procured by national and provincial departments.

In addition, the metros budgeted R33 billion in capital expenditure. That included R9 billion on reticulation of water, sewerage and electricity, and R9 billion on engineering works. These projects used significant amounts of capital equipment and inputs, but details on the products procured are not available.

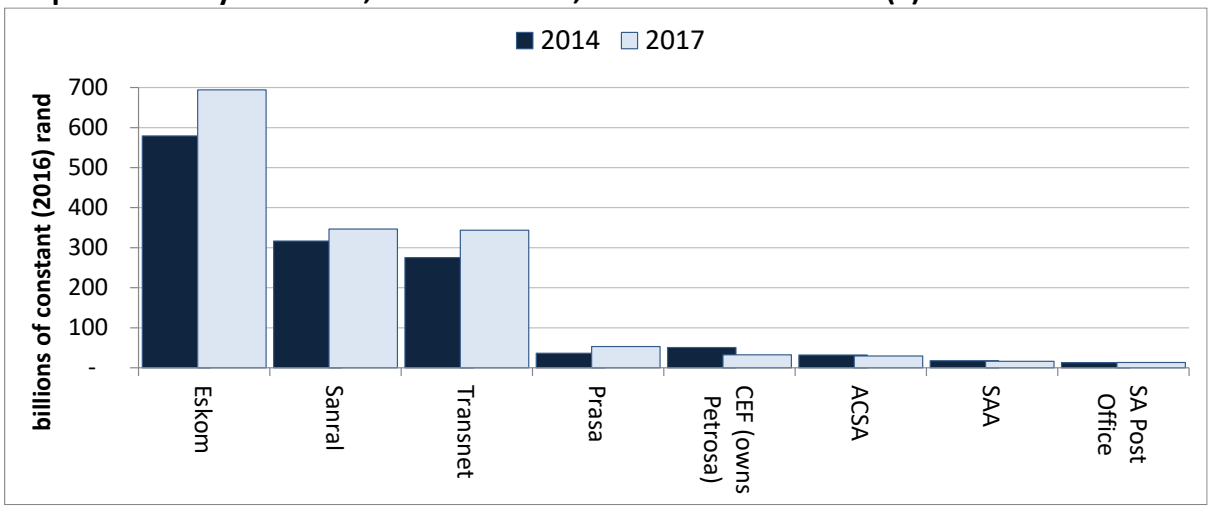
2.2 SOCs

SOCs are generally included under business in most economic data, with the exception of investment and infrastructure. That makes it difficult to assess the nature and impact of

their total spending on goods, although they provide substantial information on local procurement for their investment programmes.

As the following graph shows, the SOCs varied widely in size. Eskom, Transnet and Sanral are by far the largest. Prasa and SAA also have substantial equipment procurement programmes.

Graph 6. SOCs by asset size, 2014 and 2017, in constant 2016 rand (a)

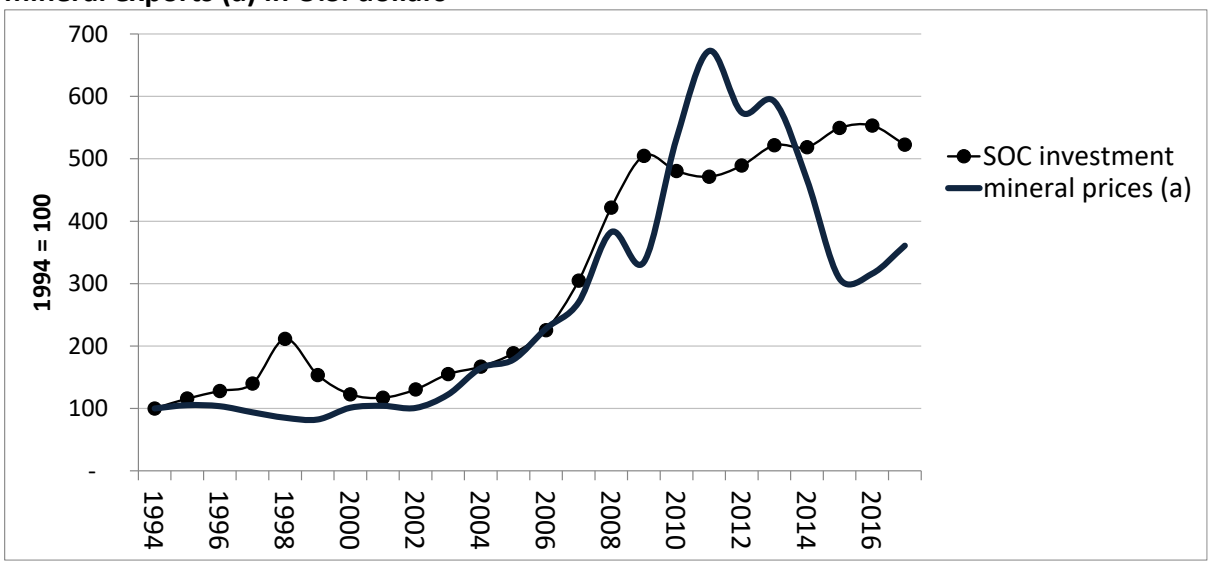


Notes: (a) Includes only the largest SOC, excluding DFIs, water boards and specialised agencies such as SETAs. Figures deflated with CPI. *Source:* Annual reports of listed SOC for relevant years.

From around 2002, the SOCs rapidly increased their investment. This in turn led the government as shareholder to strengthen its emphasis on local procurement. The process initiated local production of some transport equipment and capital goods.

SOC investment grew only slowly from 1994 to 2002, then rose sharply with the start of the commodity boom in 2002. It flattened out under pressure from the slump in 2008/9 and the end of commodity boom in 2011. Still, the SOC share in national fixed assets, for the economy as a whole, rose from 14% in 2003 to 19% in 2016.

Graph 7. Indices of SOC investment in constant rand and prices of South Africa's top mineral exports (a) in U.S. dollars



Note: (a) Index of mineral prices is average, weighted by share in exports, of gold, platinum, iron ore and coal. *Source:* Calculated from, for SOC investment, South African Reserve Bank. Interactive data set. Series on gross fixed capital formation by public corporations in constant (2010) rand. Downloaded from www.resbank.co.za in March 2018; for platinum and gold, Kitco. Historic data on platinum and gold. Annual average figures. Downloaded from www.kitco.com in March 2018; for iron ore and coal, IMF. Monthly data on commodity prices ("external data"). Excel spreadsheet. Annual averages of monthly indices of prices for iron ore and coal. Downloaded from www.imf.org in March 2018.

There is no central public repository of information on SOCs' procurement. Still, as discussed in section 3.3 below, in 2010 the Department of Public Enterprises established a programme, the Competitive Supplier Development Programme (CSDP), to encourage local procurement especially of capital goods. Under the programme, the affected SOCs provided a substantial amount of detail on their procurement, largely in the form of Parliamentary reports. These figures are not fully reliable because:

- The CSDP requirements work through contracts with suppliers, rather than direct procurement, which means the SOCs are effectively reporting on third-party procurement;
- The Annual Reports combine reporting on local content with BBBEE procurement reporting, which effectively excludes many imports altogether from "measured procurement"; and
- Auditors consistently say that they cannot verify local procurement claims made in Annual Reports.

The CSDP only applied to SOCs that fell under the Department of Public Enterprises. Of these, the largest by far were Eskom and Transnet.

Eskom reports actual spend on local suppliers between 2012 (when it began to implement the CSDP) and 2017 at R117 billion, out of contracts worth R188 billion as of the end of 2016. For new build, the ratio of local procurement to total ranged between 74% and 86% over the past decade, except for 2014 and 2015. In 2015, local procurement dropped to 34%. Eskom's auditors cannot however certify figures for local procurement in any year.

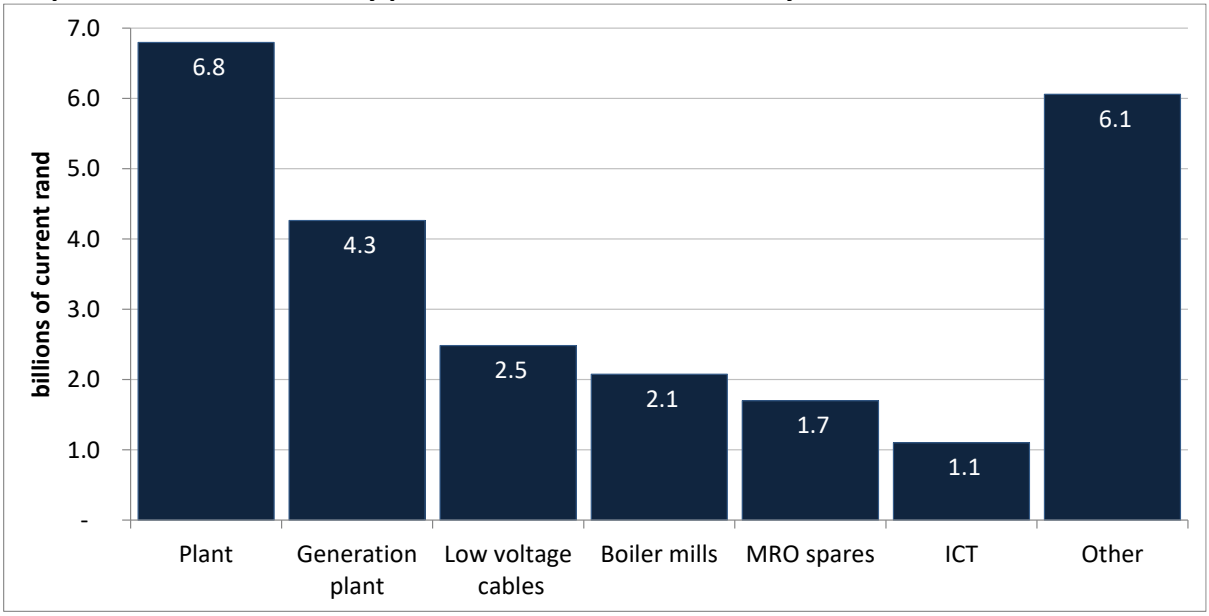
In March 2017, Eskom reported to the Trade and Industry Portfolio Committee that, of R262 billion in contracts from April 2015 to February 2017,

- Around 9% or R24 billion was for goods, almost entirely capital equipment
- 80% was coal and renewable energy from independent power producers – predominantly coal
- 12% was services. (Calculated from Eskom 2017, pp 22-23)

The figures for goods procurement equal around 3% of total sales of machinery and equipment in South Africa in 2017.

In terms of products, in 2010, Eskom said it had developed local supply chains for boiler and turbine parts for the Medupi and Kusile power stations. Other local inputs included air-cooled condensers, major pumps, heaters, main cranes, LP outer casings and feed water tanks. Its more recent Annual Reports are less specific about the impact of local procurement on manufacturing. The figures in Graph 8 below derive from the March 2017 report to the Portfolio Committee, and may include some double counting.

Graph 8. Eskom contracts by product from 2012 to February 2017, in billions of rand



Source: Calculated from Eskom. "Eskom investments into local public procurement." Presentation to the Portfolio Committee on Trade and Industry. 24 March 2017. Downloaded from www.pmg.org.za in March 2018. Pages 22-23.

In 2017/8, Transnet spent R6,8 billion on energy, mostly electricity and diesel; R1,7 billion on maintenance, much of which was subcontracted and therefore included labour as well as goods procurement; and R1,1 billion on other material inputs, which it does not further specify. From 2008/9 to 2017/8 its payments for energy and materials rose over 150% in constant rand (deflated with CPI), while the cost of maintenance climbed 55%. Transnet's capital investment came to R32 billion in 2017/8, down 40% from 2012/3 but more than 10% above the figure a decade earlier. (Transnet Annual Reports for the relevant years)

Since 2010, Transnet has spent R31 billion on local suppliers. Transnet's suppler development programme is focused on major procurement of locomotives and rolling stock. Investment in locomotives and rolling stock is around a sixth of total investment in freight

rail (R93 billion out of total planned R600 billion over seven years from 2014). Details are provided in section 4.4 below.

Increasingly, Transnet has sought to link local procurement to support for black industrialists, in line with the dti's policy initiatives. Its priority value chains for black industrialists include the following.

- Rail: locomotive procurement; manufacture and supply of rails, rail Infrastructure sub-components and on-track machines; other components
- Contracting for rail supply to ensure establishment of plant within 3 years and use of local steel
- Yellow goods/materials handling: Engagement with Bell and the dti about support for black industrialists
- Vessel building and repair: Ship and oil rig building and repairs; supply of consumables to vessels; tugboat manufacturing and supply (Transnet 2017, p. 8)

Where the value chain description refers to supply, it may entail imports rather than local manufacture.

3 Procurement systems

This section analyses factors in government procurement systems that may block local suppliers. It finds that obstacles arise from both

- Inappropriate procurement procedures and weak capacity in the state's supply-chain management systems, and
- The combination of complex procurement methods and inadequate support for capacity development that limit the ability of local producers to meet government requirements.

The following subsection provides a brief overview of the legal framework for procurement by state agencies and some associated supplier-development programmes. It is followed by subsections on the system of designations, which identifies products for local procurement, and the CSDP.

3.1 The overall regulatory framework

The procurement of goods by the state, like any government activity, is expected to meet a range of social aims. The evolution of these aims since 1994 is reflected in the changes in the legal framework. Generally, however, they have been mandated as a regulatory requirement, without internalising the social costs and benefits to the procuring department. That is, the procuring department tends to experience requirements based on social objectives, such as local procurement, as a cost, since they do not benefit directly from success.

The social aims of state procurement always include ensuring cost-effectiveness and value for money and preventing corruption. In South Africa, an additional priority historically was to maintain confidentiality for suppliers and decisionmakers. Before 1994, procurement procedures were also used explicitly to promote apartheid economic strategies –

specifically, to exclude black producers and to promote investment in production of capital goods, arms and oil.

The democratic era saw a shift in emphasis toward promoting smaller, black owned and empowered businesses. A central aim of the procurement process became the development of a more diverse supplier base. As a corollary, procurement to promote strategic economic aims was de-emphasised.

The twin aims of ensuring cost-effective and fair procurement while promoting black business was entrenched in the Constitution. It provided that procurement systems must be "fair, equitable, transparent, competitive and cost-effective." But it also authorised national legislation to implement policies aimed at "categories of preference" and the advancement of historically disadvantaged people. (Section 217)

These mandates were implemented at the national and provincial level by the Public Finance Management Act (PFMA) and the Preferential Procurement Policy Framework Act (PPPFA). In terms of procurement, the aims of the 1999 PFMA were limited to efficiency and effectiveness. A year later, the PPPFA implemented the Constitutional requirement for policies to guide the use of procurement for socio-economic objectives.

The PPPFA enabled departments to set aside between 10% and 20% of points in tender decisions for historically disadvantaged people and/or to implement the aims of the Reconstruction and Development Programme (RDP). In 2001, regulations under the Act effectively required some points be provided for ownership and control by historically disadvantaged individuals. They also permitted (but did not require) points for local enterprises, job creation, export production, enterprise size, location, skills development and community upliftment. Local content was not explicitly included in this list. In practice, most departments focused on promoting smaller, black-owned enterprises, using a variety of indicators and benchmarks.

Over time, two factors increasingly affected the implementation of the PPPFA, leading to significant changes in the regulations in 2011.

First, with the growth of public investment from around 2002, the use of procurement to promote industrialisation became increasingly important. The slowdown in the economy in the 2008/9 financial crisis and after the end of the commodity boom from 2011 further increased pressure to use local procurement to multiply the stimulus effects of state spending.

Second, the introduction of the Broad-Based Black Economic Empowerment (BBBEE) Codes in 2007 laid the basis for more consistent administration of points for diversification of suppliers.

In 2011, new PPPFA regulations greatly increased the priority given to local procurement. They were revised in 2017, without substantially changing the requirements around local content. Specifically, the regulations provide the following.

- Where the dti has set a threshold for local content for designated products, departmental tenders must include that threshold as a prerequisite for tenders.
- For other products, departments are empowered, but not required, to set their own thresholds for local content.

- Departments may negotiate prices with short-listed empowered and/or local producers to match the lowest bid.

The new regulations also required that black ownership and control be measured using the BBBEE ranking system. The Codes that guide the BBBEE system effectively require that large enterprises source a quarter of their value add, excluding labour, from local production. This requirement does not apply to small and medium black-owned enterprises, although they can use local value add as a factor in recognition of their BBBEE status.

Although the procurement regulations now include measures to promote local procurement, they also still incorporate some significant barriers to it.

To start with, the procurement system neither quantifies nor internalises the benefits of social objectives anticipated by preferential procurement. The cost is borne by the purchasing department, which does not necessarily benefit from successes. The cost may take the form of a price premium, that is, a higher price than the lowest bid in order to support smaller, black-owned or local producers. It may also emerge in transaction costs, for instance

- to identify local suppliers,
- to review specifications to ensure that local suppliers can meet them, or
- to negotiate prices with local manufacturers so that they can match imported goods.

In contrast to the costs, the benefits of local procurement are often diffuse, and frequently distant from the procuring department's mandate. For instance, even if industrialisation is desirable, the Department of Health may resist using its budget and capacity to achieve that aim rather than for healthcare.

The procurement priorities in the regulations – value for money, fairness, confidentiality, support for broad-based BEE and local producers – may prove contradictory at the departmental level. Most fundamentally, the concept of value for money usually does not include external benefits, for instance around industrialisation, that do not relate directly to the procuring departments' service delivery targets.

In addition, managers may have to choose between black-owned or township trading companies that import products, and local producers which have a lower broad-based BEE rank. For instance, in Gauteng, "township procurement" includes purchases of crockery from trading enterprises based in townships, which are essentially intermediaries for producers. The goods themselves were likely produced outside the township, and possibly imported.[2]

Similarly, the strong confidentiality requirements make it more difficult both to uncover corruption and to quantify the costs, if any, of local procurement. In effect, the commercial requirements of bidders take precedence over public scrutiny and accountability in state procurement processes. An exception is Gauteng, which has introduced an open tender process that requires open adjudication of bids for large tenders.

Audits for state procurement are focused on adherence to processes rather than outcomes. This approach is technically easier, but makes it difficult to take external benefits into

[2] Calculated from Gauteng. Health and Education Spend Analyses. Excel spreadsheet. Downloaded from www.gauteng.gov.za in September 2017.

account, and militates against innovation. For instance, changing specifications or diversifying to new suppliers is inherently more risky, and more likely to get an audit query, than returning to proven sources, even if they supply only imports.

In this context, auditors can only assess local procurement where departments adopt relevant performance indicators – a rare occurrence. Even in these instances, auditors generally do not verify local content claims, arguing that they do not have the capacity to check the source of inputs.

The limited information on local procurement reflects the lack of consistency in prioritising it. In particular, departments are not required to track imports. As a rule, they do not know if the goods they procure are imported or not.

3.2 Designations

Overall, designations apparently related to under a fifth of procurement by general government, with a higher share for Eskom, Transnet and Prasa. Designations sought to reduce import leakages in government spending. In addition, in some cases they aimed to revive threatened manufacturing capabilities, for instance for furniture and valves, and to scale up utilisation of existing capacity. At the same time, they sought to avoid opening the door to monopolistic behaviour by local suppliers.

3.2.1 Scope

Under the PPPFA, the dti and Treasury designated 23 products as of 2017. Table 2 below indicates the list of designated products by industry. Under consumer goods the designations applied to canned food; clothing, textiles and footwear; some medicines; and furniture. Cars and office equipment, which are major areas for general government, were excluded. The designations also covered a range of inputs for infrastructure, particularly electrical and rail equipment as well as structural steel goods.

Table 2. Designations by type of product, level of local input required, and date established

Type	Product	Minimum share of local inputs	Year
consumer goods	canned/processed vegetables	80%	2012
	textiles, clothing, leather and footwear	100%	2012
	furniture products	office: 85%; school: 100%; beds: 90%	2012
	selected medicines	Oral solid dose tender - 70% (volume); family planning - 50% (value)	2011
	wheelie bins	100%	2016
structural steel products	solar water heaters	70%	2012
	steel conveyance pipes	80-100%	2015
	Structural steel for construction	100%	2017
	rail permanent way	70% to 100%	2017
	power pylons and substation structures	100%	2012

Type	Product	Minimum share of local inputs	Year
pumps and motors	pumps, medium voltage motor and accessories	units: 70%; frame, rotor core, accessories and assembly: 100%	2017
electrical machinery	electrical and telecom cables	90%	2013
	residential electricity meters	normal: 70%; smart: 50%	2014
	valve products and actuators	70%	2014
	solar pv components	laminated modules: 15%; inverter: 40%; module frame and DC combiner boxes: 65%; mounting structure: 90%	2016
	transformers and shunt reactors	10-100% depending on class	2015
ICT	two way radio terminals	units: 60%; components: 20%-100%	2016
	rail signalling system	65%; components: 40% to 100%	2016
	set-top boxes	30%	2012
transport equipment	rail rolling stock	65%	2012
	bus bodies	80%	2012
	working vessels (boats)	vessels: 60%; components: 10-100%	2014
	fire fighting vehicles	vehicles: 30%; cabins, superstructure and assembly: 100%	2016

Source: The dti. "Industrial Procurement." downloaded from www.dti.gov.za in March 2018.

For national and provincial departments, the main designations related to some medicines; canned goods; clothing and textiles; and furniture. For municipalities, important categories included include structural steel for infrastructure and street lights, electrical equipment, buses, fire-fighting vehicles and wheelie bins. SOCs were affected by the inclusion of a range of infrastructure inputs, from working boats to a range of rail and electrical equipment.

Because designations were often narrower than the economic categories used in the Supply Use Tables and government budgets, it is impossible to estimate the share of procurement covered with much accuracy. Still, at a generous estimate, they applied to less than 20% of procurement by general government, and to 6% of total sales of intermediate products. The share for SOCs was likely larger, although the lack of comprehensive information on SOC procurement makes it impossible to estimate.

3.2.2 Justification of designations

The dti recommended designations to the National Treasury, which in turn issued a practice note requiring that procurement processes across the state include the local content requirements as a precondition for bids. To support its proposals on designations, the dti undertook research on the likely extent of demand and capacity for supply, as well as the risks of abuse of market power by local producers. Typically it saw price differentials as a constraint or a risk, however, rather than a reason not to designate a product.

A challenge for the designation process was the lack of information on actual and prospective procurement by state agencies. SOC demand for capital goods could be

projected fairly accurately based on their investment plans, although suppliers often complained about unanticipated delays. In contrast, government demand for consumer goods proved difficult to quantify or forecast. Even with designations, local suppliers could not be sure they would get tenders, which meant they were sometimes reluctant to invest in new capacity for that purpose.

For instance:

- The designation for set-top boxes was set in 2011, based on government's plan to subsidise them for five million households as part of the migration from analogue to digital broadcasting. In the event, as of 2018 the digital migration had not taken place due to debates about its modalities. Furthermore, the widespread shift to streaming services in the interim meant that demand might not reach the anticipated heights.
- The designation of canned and processed vegetables was based on a rough estimate that around a tenth of government food procurement consisted of canned vegetables. That equates to the share of all vegetables in household food consumption, but much of that would have been fresh rather than canned or processed. By extension, the impact of the designation on local demand was likely significantly less than anticipated.

On the supply side, the quality of information also varied substantially by product. The SOCs often procured through OEMs, and had a fairly strong overview of potential suppliers. In contrast, for consumer goods the information was less reliable, although production processes were easier. For set-top boxes, the designation process apparently interviewed only one potential producer; for canned vegetables, four suppliers were contacted.

The designation for solar water heaters was reportedly based on an overestimate of the potential for local supply of more advanced inputs. Several local manufacturers of the basic container argued that they could not find competitive local producers of photovoltaic inputs. As a result, they could not benefit from the designation. Moreover, they found the cost of product approval under the designations was unsustainably high. For example, manufacturers had to pay between close to R100 000 to have a system tested by SABS in order to qualify for the Eskom rebate programme. In case of a single component change, the entire system had to be re-tested at the same cost.

Designation reports did not consistently compare the price of imported and local products. In several cases, however, they anticipated that local goods would cost up to 30% more, due in part to higher tariffs on components than on completely imported products; the fact that foreign companies were larger and more established; and fluctuations in the exchange rate. Apparently price differentials were not seen as a major obstacle in designations, however, as long as local firms could supply the product at all.

Designations typically included some conditionalities for suppliers. Explicit conditions varied by industries, relating for instance to increased employment and expanded exports. It appears that conditions were not strongly monitored or enforced, however. The dti also sought to ensure that suppliers would not be able to charge monopoly prices in the absence of foreign competition. For that reason, it initially found against a proposal to designate transformers, although it ultimately introduced the designation in 2015.

3.2.3 The exemptions process

Supply-chain managers could be exempted from designations if they could show that no local supplier in fact existed for the specific product they required. In some cases, however, supply-chain managers required materials or inputs that were not produced locally, but that could easily be replaced by other goods without a loss of quality.

The exemptions process was designed to identify situations where local producers truly could not meet designation requirements. Supply-chain manager could apply for an exemption if it could not identify suppliers able to meet the level of local content in a designation. In response, the dti proofed both whether the tender specifications were excessively narrow, and whether any local producers could supply them. In practice, it appears that the dti rarely questioned specifications, but it did consult with industry to identify potential local suppliers.

The number of requests varied greatly by industry. From 2015 to 2017, clothing, textiles and footwear accounted for 80% of requested received, as Table 3 shows. According to dti data, 28% of requests were from municipalities; 17% from the Department of Health, largely on behalf of individual hospitals; and another 23% from other government departments. The remaining requests were submitted by SOC, educational institutions, and other agencies.

Table 3: Exemption requests per financial year

Industry/sector/subsector	2015/16	2016/17	2017/18
Clothing, textile, footwear, leather	1 117	1 080	1 314
Furniture products	43	6	1
Power pylons	0	17	1
Rail rolling stock	43	186	30
Set top boxes (STB)	0	8	0
Electrical and telecom cables	4	4	1
Valves products and actuators	0	28	11
Working vessels/boats (all types)	6	3	1
Transformers and shunt reactors	0	8 (all not granted)	0

Source: the dti (2018)

The clothing, textiles, footwear and leather (CTFL) sector desk in the dti tracked which inputs were not currently available but could be manufactured for sufficient demand. For instance, it encouraged the replacement of imported fire retardant fabrics by local manufacturers through a partnership between Gelvenor and DuPont, using DuPont technology.

The exemption process appeared reasonably efficient and accessible for supply-chain managers and their suppliers. The turnaround time on applications was supposed to be 48 hours, but where consultations were needed it might take a week. Analysis of the process and interviews with participants indicate the following concerns, however.

- There was no legislative prescript for exemptions. When bidders applied for an exemption, the treatment differed depending on which sector desk received it.
- The method of calculating local content also varied between sector desks. The CTFL sector desk did not include the exempted portion in its calculation of local content, but other sector desks did.
- Each sector desk within the dti created its own database of exemption applications, making it difficult to track trends across designations or to access the information easily.

Moreover, they did not track the rand value of exemptions, so the share of total expenditure could not be ascertained.

- Sector desks apparently did not track when local manufacturers started to produce previously imported items. The CTFL desk removed items from the database of exemptions when an item became available locally, but it did not note the change in the database.

3.3 The Competitive Supplier Development Programme (CSDP)

The CSDP provided local content incentives for the SOCs that the Department of Public Enterprises oversaw – that is, Eskom, Transnet, Denel, SA Express and Safcol. Under the CSDP, when the SOCs entered into large procurement deals with major suppliers – mostly branded equipment producers (called original equipment manufacturers or OEMs) and contractors – they included requirements around local content as well as procurement from local and empowered suppliers, skills development, technology transfers and rural development. These requirements were typically linked to the designation of products for local procurement.

From 2012, the DPE included performance indicators for the CSDP in its shareholder compacts with the SOCs that it oversees. Some SOCs that do not fall under the DPE initiated their own programmes, notably Prasa for rolling stock. Of the three largest SOCs, the CSDP did not include Sanral, which spent R8,5 billion on maintenance and R8,2 billion on investment in 2017/8.

As with national and provincial departments, prioritising local procurement relative to other aims proved a challenge for SOCs. For instance, Eskom's 2011 CSDP framework would typically give local procurement only 25% of total points, with a further 25% for skills, and the rest rewarding broad-based BEE.

The advantages of promoting local procurement by the SOCs included the following.

- The SOCs had greater capacity than most departments for supplier development because of their long-standing ties with local and foreign equipment producers.
- Eskom, Transnet, Prasa and Denel were dominant in their industries, giving them leverage to insist that suppliers increase local content.
- The SOCs' rapidly growing capital programmes provided a basis for industrial deepening.

Local procurement by the SOCs also faced significant challenges, however. They included the following.

- The SOCs procured largely through OEMs and contractors. The CSDP therefore relied on providing points for local content and suppliers in broader contracts. That made oversight and impact assessment more difficult.
- SOC programmes and reporting tended to focus on the share of expenditure going to local suppliers, rather than on the desired outputs and outcomes – that is, increased local production of inputs. An exception was Prasa's work with Gibela, as discussed in the case study below.

- The SOCs undertook some complex, very large-scale projects. That made contracting and oversight difficult in general, and even more so when local content was included in specifications.
- The SOC experienced significant changes in policies and regulations from 1994, from the introduction of the Public Finance Management Act (PFMA) to the CSDP to designations and broad-based BEE. They had to manage nuances in priorities and trade offs while maintaining efficiency in very large-scale investment projects.

A particular challenge for local procurement of capital goods is to achieve economies of scale. Slower economic growth from 2012 led to some scaling back of SOC investment, notably at Transnet but also at Eskom and the associated renewables producers. Moreover, in the longer run suppliers' survival often depended on the ability to find export markets after completion of the SOC contracts.

For suppliers of heavy equipment, however, constrained export finance available from the South African government made it hard to compete with better-funded rivals from other countries. In addition, the limited coordination between the major SOCs to promote production of products sometimes reduces the scope for viable local production. In particular, there appears to be little alignment between the Transnet and Prasa procurement programmes.

A further challenge arose around the audit and verification process. The definitions of local content, and reporting against them, were complex and appeared to differ between SOCs. Overall, they focused on expenditure rather than outcomes and outputs. In this context, auditors virtually invariably said they could not assess performance against indicators for local procurement. SABS was supporting Prasa in validating local procurement, but it was not clear how the other SOC managed the verification process.

3.4 Enforcement

Enforcement of local procurement was plagued by the lack of positive incentives for compliance by agencies and supply-chain managers combined with the difficulty of monitoring tenders where many agencies procured a wide variety of products within a designation. The CSDP appeared to be reasonably effective in this context, because it involved relatively few entities that incorporated its requirements in their KPIs. In contrast, implementation seemed least effective for designations of consumer goods, which were procured by a wide variety of agencies in a host of different forms.

Designations were essentially designed as a regulatory requirement for supply-chain managers. They did not, however, provide any systemic incentives for most supply-chain managers to comply to offset the inherent transactional and possibly financial costs. In contrast, the CSDP was integrated with SOC performance requirements.

Outside of the SOC, local procurement was not generally included in agency KPIs. For instance, the Annual Performance Plan for the National Department of Health for 2017/8 contained no targets relating to local procurement.

Yet facilitating local suppliers virtually always entailed significant transaction costs for supply-chain managers as well as, in some cases, a price premium. There was no provision to compensate agencies for these costs. Research leading to designation of products for

local procurement in some cases noted substantial price premiums, up to 30%, but the designation went forward nonetheless.

In short, supply-chain managers had little reason to comply with designations beyond pressure to adhere to the overall regulatory environment for procurement, which was notoriously complex and hard to oversee. But particularly for small-scale tenders, they were unlikely to face much oversight.

Monitoring whether procurement complied with designations was further complicated by the large number of public entities involved. That did not apply to bulky capital equipment, such as rolling stock and electricity pylons, that was purchased primarily by a few SOCs. But it affected most consumer goods, which were acquired by a host of small institutions such as hospitals and universities, as well as smaller infrastructure inputs bought largely by municipalities.

Where many agencies were involved, monitoring could in theory take three forms:

- oversight of tenders as they were published, to ensure that they included designation requirements without over-determined specifications;
- tracking changes in import content in procurement of designated products over time; and
- reports through auditors and standards agencies.

It appeared that neither the dti nor Treasury established mechanisms to implement any of these approaches consistently, although they responded more or less vigorously to complaints from local producers where state agencies ignored designations.

The experience of the clothing union, SACTWU, demonstrated the challenges of monitoring procurement across the public sector for widely distributed products. SACTWU identified over 700 web-pages of government agencies that advertised tenders for clothing, textiles and/or footwear. Tracking these web-pages obviously represented a challenge. While it managed to establish a technological system that identified changes in relevant web-pages, indicating new tenders, the process remained a significant burden.

Ensuring appropriate specifications was particularly difficult, because of both the wide variety of requirements involved and the need for a technical evaluation. Distinguishing truly necessary specifications from irrelevant restrictions was often a value call.

Some cases were obvious. In a few instances, supply-chain managers specified foreign-manufactured brands, for example for safety boots. In others, they relied on U.S. rather than South African standards, automatically disqualifying local producers. As discussed in the case study in section 4.3, in the case of school desks some tenders specified veneers that were not manufactured locally, but that could easily be substituted with a similar product.

In terms of auditing outcomes around local procurement, two systems existed: the regular audit process, and reports by SABS against its local-content standard. These systems were, however, hampered by the lack of clear performance indicators except for designated products and SOC shareholder compacts; and the difficulty of checking information provided by suppliers.

Auditors generally did not audit the application of designations by national and provincial departments, in part because they did not appear in departmental performance indicators. Moreover, they generally said they were unable to verify claims about local procurement by SOC.

SABS became officially responsible for local-content verification in 2011. It published the SATS 1286 standard for local content in November 2011 (essentially local value add as a percentage of the total). The standard placed the burden of verification on the tendering entity, meaning the supplier must provide documentation and pay for the process. Undocumented inputs were counted as imports. It was not clear, however, whether the standard required on-site validation of suppliers.

In practice, very few designated products were verified. According to SABS's own reports to Parliament, only electricity pylons were fully validated as of 2017; less than half of cables, clothing and set-top boxes; and virtually nothing for other designated products.

Business complained that SABS costs for verification are often high. For instance, for solar water heaters, the quotes for verification sometimes exceeded the value of the tender. For the Cape Town heater programme, verification quotes reportedly reached R1 million. In some cases, the high cost of verification reportedly led departments to drop local content requirements.

It is instructive to compare the verification process for broad-based BEE. In that case, the regulatory body certifies private companies to undertake verification. The result has been relatively easy access, although the quality and cost vary substantially by company.

Finally, reviewing trends in import content for designated products would require a change in accounting systems both

- To clearly indicate line items for designated products in reporting forms, rather than relying on supply-chain managers to select them from the full list of possible goods in the SCOA system; and
- To require supply-chain managers to indicate the share of inputs in line with designation requirements, which sometimes applied to the percentage by volume and sometimes by value, and sometimes varied between different components of designated products.

3.5 Implications for suppliers

From the perspective of local suppliers, the designation process had some fundamental weaknesses, although it also offered important opportunities. Key challenges included the following.

1. Smaller suppliers found it difficult to track tenders, given the multiplicity of organisations and media involved.
2. Tenders were generally not linked to supplier development programmes, and state contracts could not provide up-front payments. As a result, a company could get a tender but be unable to obtain bridging finance or funding for new investment if required.
3. The fragmentation of contracts for many goods between different agencies made it difficult for local suppliers to achieve economies of scale or predict demand in the medium term. That in itself deterred investment in new lines.

4. Agencies often did not respond to complaints about excessively narrow specifications, and neither unions nor companies could be sure that the oversight departments would back them up consistently.
5. In some cases, designations effectively required that local suppliers reduce their own dependence on imports. In some cases, notably with solar water heaters, they argued that they could not effectively comply. In these instances, the designation risks stifling local production rather than furthering it.

3.6 Conclusions

From the side of supply-side managers, the core challenges include the following, although the extent and impact varies by institution and the value of the procurement process.

- Mandates for supplier-chain managers are complex and contradictory. They require strict adherence to complex decision-making and reporting procedures; respect for the quality requirements demanded by their agencies; a bias toward the lowest cost provider, irrespective of other considerations; a high degree of secrecy; and some weighting of various social and economic factors, including broad-based Black Economic Empower requirements. By comparison, aims around local procurement are often more nebulous and poorly communicated.
- Most supply-chain management units have limited staff, with skills centred on book-keeping and compliance. They do not have on-going contact with most suppliers or an understanding of how to support them in meeting requirements, either by ensuring specifications are not unnecessarily complex or by assisting with access to industrial finance and upgrading. Where very large procurement processes are involved, as with state-owned companies or major tenders for instance for pharmaceuticals, it is easier for managers to engage with suppliers. In contrast, for most consumer goods, such as stationery, linens or furniture, a host of potential suppliers are involved and the sums involved are too small to warrant much effort in contacting them.
- There are neither institutional nor personal incentives to buy local for agencies that are not primarily concerned with the economy. On the one hand, it would often impose considerable additional transaction and sometimes financial costs, which would not be paid back directly even if the process led to higher growth and job creation. On the other, only a few supply-chain managers have unambiguous KPIs to encourage local procurement. They are not required to track whether or not goods they procure are imports if they are bought from intermediaries.

Potential suppliers to government also face a number of challenges, although again the effects vary depending on the agency and the size of the tender.

- State procurement is largely fragmented between over 700 institutions, making it difficult for potential suppliers to track demand. The National Treasury runs transversal tenders for some major products, valued at around R16 billion in 2015 and including pharmaceuticals, cars and school uniforms and furniture. Taken together, in 2015 these products equalled less than 20% of all goods procured, although Treasury planned to expand the list substantially. Products not included in transversal tenders are advertised separately as required through a variety of media, including websites, tender gazettes, the media and requests for quotes.

- Some products are designated for local procurement, but especially for consumer goods the requirements are often ignored or not known about by supply chain managers. In some cases producers argue that the local content requirements are too onerous for them to meet. Moreover, producers are usually expected to pay for the verification process for designations, which is frequently costly and slow.
- Suppliers would often have to modify products or expand production to meet government requirements. State demand is, however, often not reliable enough to justify the investment and effort, because it is fragmented between many agencies or because it depends on winning periodic tenders with no guarantee of success over time. Suppliers also face the obstacles that typically constrain new industries, particularly around access to industrial finance, technologies and skills.
- For most suppliers, government procurement processes are unpredictable and unaccountable, making the effort of engagement less worthwhile. Supply chain managers are not required to respond to suppliers' concerns, for instance around unnecessarily burdensome or exclusionary specifications. Nor do they have to enable local suppliers to match the price of imports. In these circumstances, some potential producers simply lose interest in applying for state tenders.

4 Industry case studies

This section provides an initial assessment of the impact on industrial development of state procurement of four products – cars, rolling stock, medicines and school furniture. In each case, it first reviews expenditure trends, then describes the relevant industry, and finally indicates the potential impact of state procurement on it.

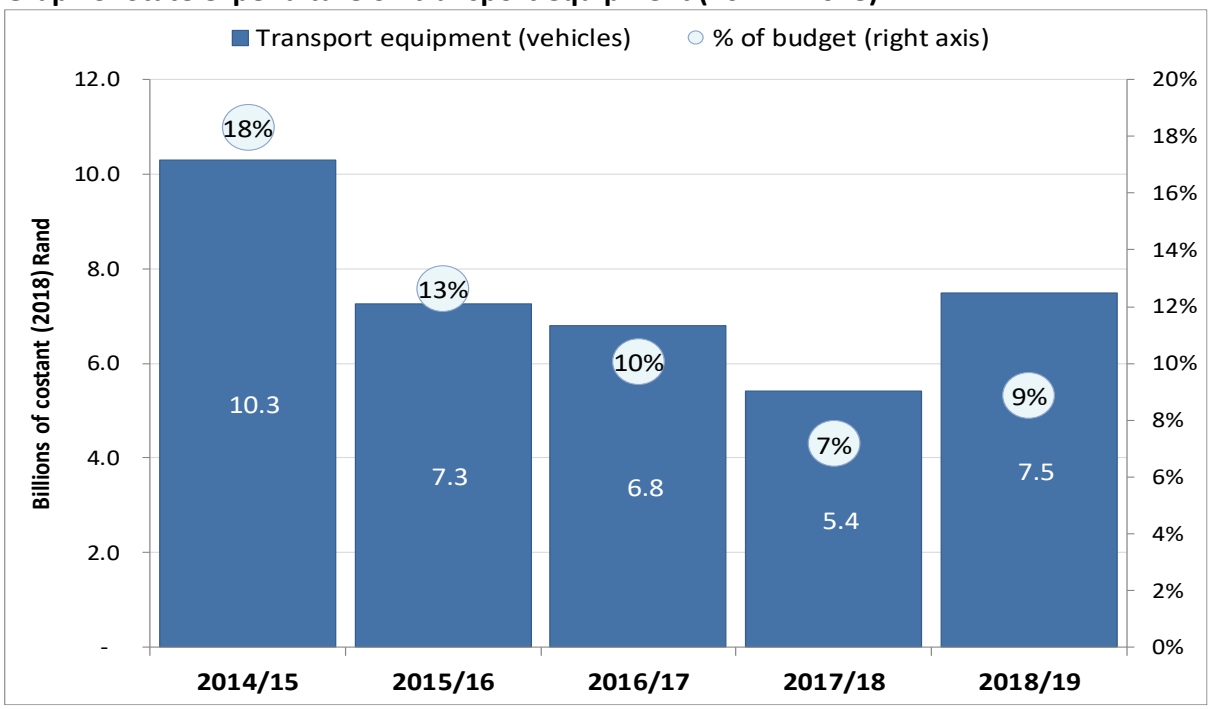
4.1 Road-based transport equipment

4.1.1 Expenditure trends

Under SCOA, transport equipment includes: motor vehicles, trucks, buses, cycles, emergency vehicles, mobile clinics, library, mobile school, mobile homes and offices, aircraft and airport transport equipment, railway rolling stock and ships/ marine vehicles and equipment. Aircraft, railway rolling stock and marine vehicles are more likely to be purchased by SOCs. In contrast, it appears that national and provincial expenditure goes primarily for motor vehicles.

The government budgeted R7,5 billion to procure transport equipment in 2018/9, down from R11,4 billion in 2013/4, in constant terms. Transport equipment represents about 9% of the budget spent on the state's total purchases of goods, which makes it the fifth largest product procured in this category.

Graph 9. State expenditure on transport equipment (2014 – 2018)



Notes: Figures have been deflated to 2018 CPI constant rand. Figures are for the fiscal years, 01 April to 31 March. Total expenditure excludes expenditure on housing and land. *Source:* National Treasury (2018) Estimates of National Expenditure 2018. Downloaded: March 2018

The lion's share of transport equipment is purchased under the Community Development function (45%), followed by Police (27%) and Health (12%). Community Development at a national level includes Human Settlements, Water and Sanitation, Transport and Energy. At the provincial level, it includes cooperative governance (local and provincial conditional grants). By extension, community development includes expenditure on vehicles used mainly for bulk infrastructure and housing, electricity and water, service delivery and maintenance.

The state procures vehicles primarily through a transversal tender, RT57 for the "Supply and Delivery of Sedan Vehicles, Light and Heavy Commercial Vehicles, Busses and Motor Cycles to the State". National Treasury manages and negotiates the tender on behalf of all three spheres of government as well as other state entities. It is issued every two years. Once the tender has been awarded, however, it reverts to the National Department of Transport (NDOT) for management.

The vehicle tender is adjudicated on the 90/10-preference point system. The preference points are apparently awarded solely according to the BBBEE status of the bidder.

In addition, the RT57 tender reflects the dti's designation of buses at between 70% and 80% local procurement. A description of the local contents requirements for buses is shown below. If bidders want to supply buses, they have to use the SABS approved standard (SATS 1286:2011) and submit a Declaration Certificate for Local Production and Content that has been audited and certified correct.

Table 4. Local content requirements for buses and bus bodies

Product	Threshold
4X2 Commuter bus, 36 seater or more, 8500kg GVM or more	80%
6X2 Commuter bus, 56 seater or more, 18000kg GVM or more	80%
4X2 City bus, 21 seater or more, 8500kg GVM or more	70%
6X2 City bus, 50 seater or more, 18000kg GVM or more	70%
4X2 Semi- luxury coach bus, 50 seater or more, 18000kg GVM or more, DVD player, parcel racks, luggage lockers, saloon heater, tinted windows and curtains, cloth seats	70%
General clause: Any other bus/ bus body whether it be commuter, city or semi luxury coach not fitting a specific descriptions, whether mono-coque structure or not	80%

Source: National Treasury. "Invitation and Evaluation of Bids Based on a Stipulated Minimum Threshold for Local Production and Content for the Bus Sector." 2012. Downloaded from www.treasury.gov.za in March 2018. Page 2.

Treasury compiles the winning bidders' vehicles into a schedule that includes the model specification and prices ranked by points. Prices are adjusted every four months. Vehicles are placed into two categories, general purpose (GP) vehicles and subsidised vehicles (SUB). For GP vehicles, departments are obliged to order the highest ranked contractors first. Subsidised vehicles can be ordered based on the user's choice, subject to approval of the department.

Once the tender has been awarded, departments can order vehicles off the schedule. To that end, they send a requisite to the NDOT, which in turn places an order with the manufacturer, maintenance contractors and finance house. The National Treasury expects a full audit trail for all vehicles purchased off the RT57 contract at the end of each month.

The latest RT57 tender for the period 1 July 2016 to 31 March 2018 was awarded to 44 different suppliers for 1452 different models of vehicles. The figures included 15 local suppliers. As shown in the table below, 248 models of cars, buses and commercial vehicles are locally manufactured, compared to 1103 fully imported models. Outside of buses, however, there are more non-locally manufactured models than local ones. Motorcycles and other vehicles are excluded from the table because we do not have information on which are locally produced.

Table 5. Analysis of model specifications for RT57 vehicle tender

Vehicle type	Local manufactures	Fully imported	Total
Passenger vehicle	41	279	320
Light commercial vehicle (< 3,501kg)	113	423	536
Medium commercial vehicle (3,501-8,501kg)	10	106	112
Heavy commercial vehicle (8,501-16,500kg)	-	209	209
Extra heavy commercial vehicle sales (> 16,500kg)	-	86	86
Bus (> 8,500kg)	84	-	84
Total	**248**	**1103**	**1347**

Note: Based on original Contract Circular. *Source:* National Treasury. 2018. RT57-2016 Supply and Delivery of Sedan Vehicles, Light and Heavy Commercial Vehicles, Busses and Motor Cycles to the State. Downloaded on http://www.treasury.gov.za/divisions/ocpo/ostb/contracts/default.aspx March 2018

Buses are reported as locally manufactured because of the local content requirements for bus and bus bodies. It is assumed that all buses meet the prerequisite criteria. In the event, the dti has not reported any requests for exemptions in this regard.

An analysis of tender specifications indicates that for passenger vehicles and light commercial vehicles, the average price for the locally manufactured model is less than the non-local model. Local medium commercial vehicle models are however more expensive than their non-local counterparts.

Table 6. Average price comparison for the RT57 vehicle tender

	Average price of Locally manufactured vehicle	Average price of non-locally manufactured vehicle	Average price across all suppliers
Passenger vehicle	R213 841	R379 902	R358 626
Light commercial vehicle (< 3,501kg)	R316 478	R472 320	R439 466
Medium commercial vehicle (3,501-8,501kg)	R548 239	R475 023	R481 560
Heavy commercial vehicle (8,501-16,500kg)	-	R723 004	R723 004
Extra heavy commercial vehicle sales (> 16,500kg)	-	R1 567 556	R1 567 556
Bus (> 8,500kg)	R1 829 217	-	R1 829 217
Motor cycle	-	R160 286	R160 286
Other transport equipment	-	R2 174 089	R2 174 089

Note: Based on original Contract Circular. *Source:* National Treasury. 2018. RT57-2016 Supply and Delivery of Sedan Vehicles, Light and Heavy Commercial Vehicles, Busses and Motor Cycles to the State. Contract Circular. Downloaded on http://www.treasury.gov.za/divisions/ocpo/ostb/contracts/default.aspx March 2018

It is notable that locally produced models have, on average, lower rankings than fully imported models. On passenger and light commercial vehicles, the local models have an average ranking of eight and four, respectively. In comparison, non-local passenger and light commercial vehicle models have an average ranking of 11 and 9, respectively. For medium commercial vehicles the average is four for the local and 11 for the non-local model.

4.1.2 Industry analysis

a. Production and employment

The motor vehicle industry is one of the largest and most internationally competitive manufacturing sectors of the South African economy. The auto sector accounts for 25% of South Africa's manufactured exports, up from 19% in 2010 despite only accounting for around 6% of total manufacturing value add in 2015. Auto share in manufacturing value add has declined from a high of 10% in 2000. It is reported that the vehicle manufacturers employ about 31 000 people and the components sector employs a further 82 000 (BMA, 2018).

South Africa's automotive industry is well-established, with seven major passenger and light commercial vehicle (LCV) OEMs with local manufacturing operations, as depicted geographically in the table below. The industry has total installed capacity of approximately 740,000 units, although recent announcements of investments by Ford, VWSA and Toyota look set to raise capacity to around 800,000 units in the short term. The industry is

dominated by Toyota SA Motors and Volkswagen SA who account for 19.9% and 15.9% of LV production respectively.

Table 7. Automotive manufacturing in South Africa 2016

Indicator	Gauteng	KwaZulu-Natal	Eastern Cape
OEMs	BMW, Nissan, Ford Motor Company of Southern Africa	Toyota South Africa	VW, Mercedes-Benz, General Motors Southern Africa, Ford Motor Company of Southern Africa
Medium, heavy, extra heavy and commercial vehicle and bus companies	Babcock, Eicher Trucks, Fiat Group, Ford, Iveco, JMC, MAN Truck & Bus, MarcoPolo, Motus (Hyundai), Peugeot Citroen, Powerstar, Scania, Tata, VDL Bus & Coach and Volvo Group Southern Africa	Bell Equipment, MAN Truck & Bus and Toyota (Hino)	FAW Trucks, General Motors/Isuzu, Mercedes-Benz SA (Freightliner and Fuso) and Volkswagen Group SA
No. of automotive component companies	200	80	150
Passenger car sales as percentage of total (361 289 total)	34.2%	12.6%	3.5%
LCV car sales as percentage of total (159 107 units total)	32.8%	12.8%	5.3%
MCV/ HCV sales as percentage of total (27 010 units total)	37.0%	16.3%	3,9%
Light vehicle production by OEMs as percentage of total (570 890)	31.6%	21.4%	47%
Light vehicle exports by OEMS (342 702)	33.8%	23.4%	52.6%

Source: NAACAM, NAAMSA Automotive Export Manual, 2017.

Some 18 models are produced locally by the seven major passenger and LCV OEMs in South Africa.

Table 8. Models produced in the South Africa

Passenger Vehicles	Light Commercial Vehicles
Volkswagen Polo Vivo/ Classic	Toyota Hilux / Fortuna/ Quantum
Toyota Corolla/ Corolla Quest	Chevrolet Utility
Chevrolet Spark	Nissan NP200 /Hardbody NP300
Mercedes C-Class	Isuzu KB
BMW 3 Series	Mazda BT-50
	Ford Ranger/Everest
	Hyundai H100

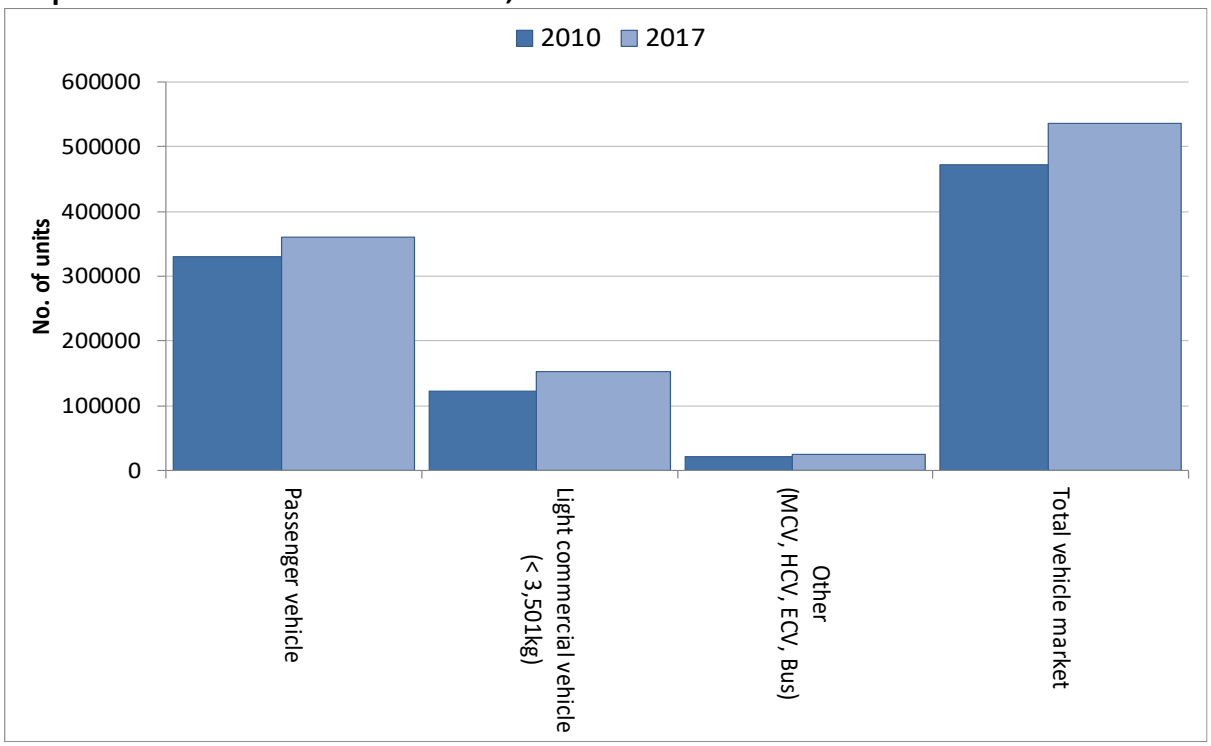
Source: Benchmarking and Manufacturing Analysts SA (Pty) Ltd. Phase 1 report: An analysis of the South African automotive industry status quo: An input into the development of a South African automotive industry Masterplan to 2035

Local production has been supported by a production incentive from the Department of Trade and Industry (the dti), the Automotive Production Development Programme (APDP). The APDP was designed to help the South African automotive industry expand its manufacturing capability and become globally competitive.

b. Sales

South African domestic sales of cars come to around half a million units a year, down from 600,000 in 2014. Passenger and light commercial vehicles dominate South Africa's new vehicle market accounting for 95% of unit sales.

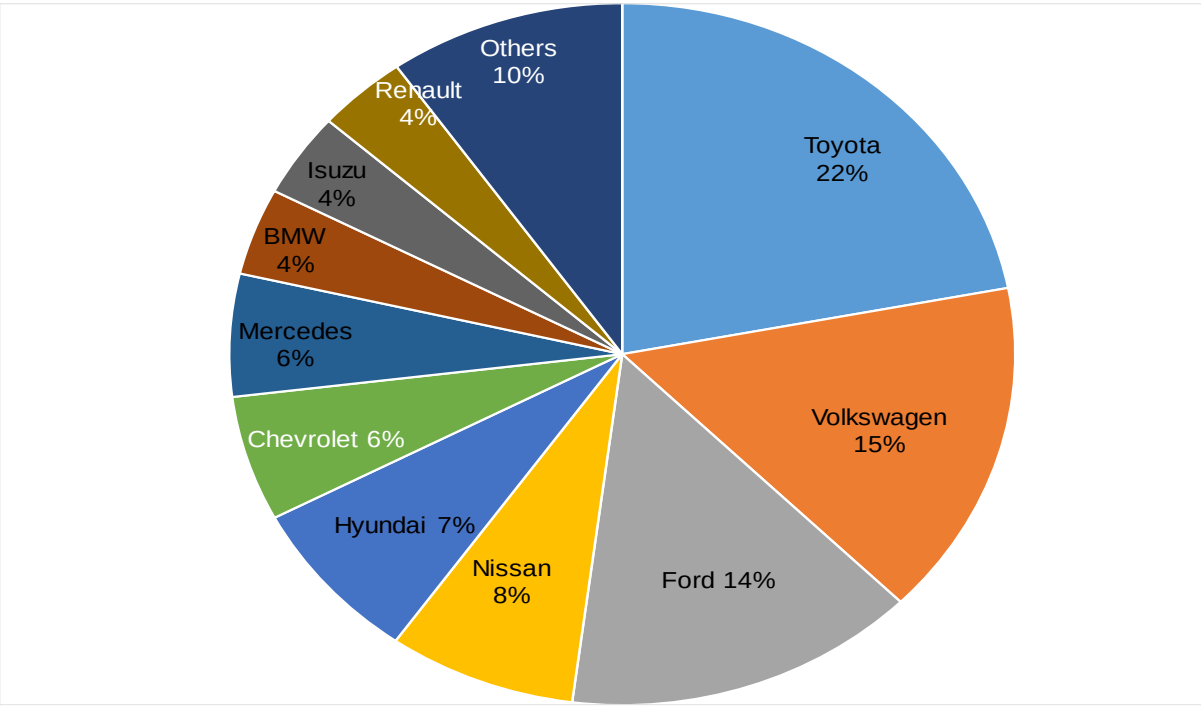
Graph 10. South Africa domestic sales, 2014 and 2017



Source: NAAMSA, Calculated from Quantec EasyData. Standardised regional data. Downloaded from https://grid.easydata.co.za in March 2017.

Sales by brand indicate that the leading brand in South Africa is Toyota with 22% of market share, followed by Volkswagen and Ford with 15% and 14%, respectively in 2015. Together these three brands were responsible for just about half of South African market sales. The next tier of leading vehicle brands in South Africa included Nissan, Hyundai, Chevrolet and Mercedes-Benz.

Graph 11. Market share of South African brands, 2015

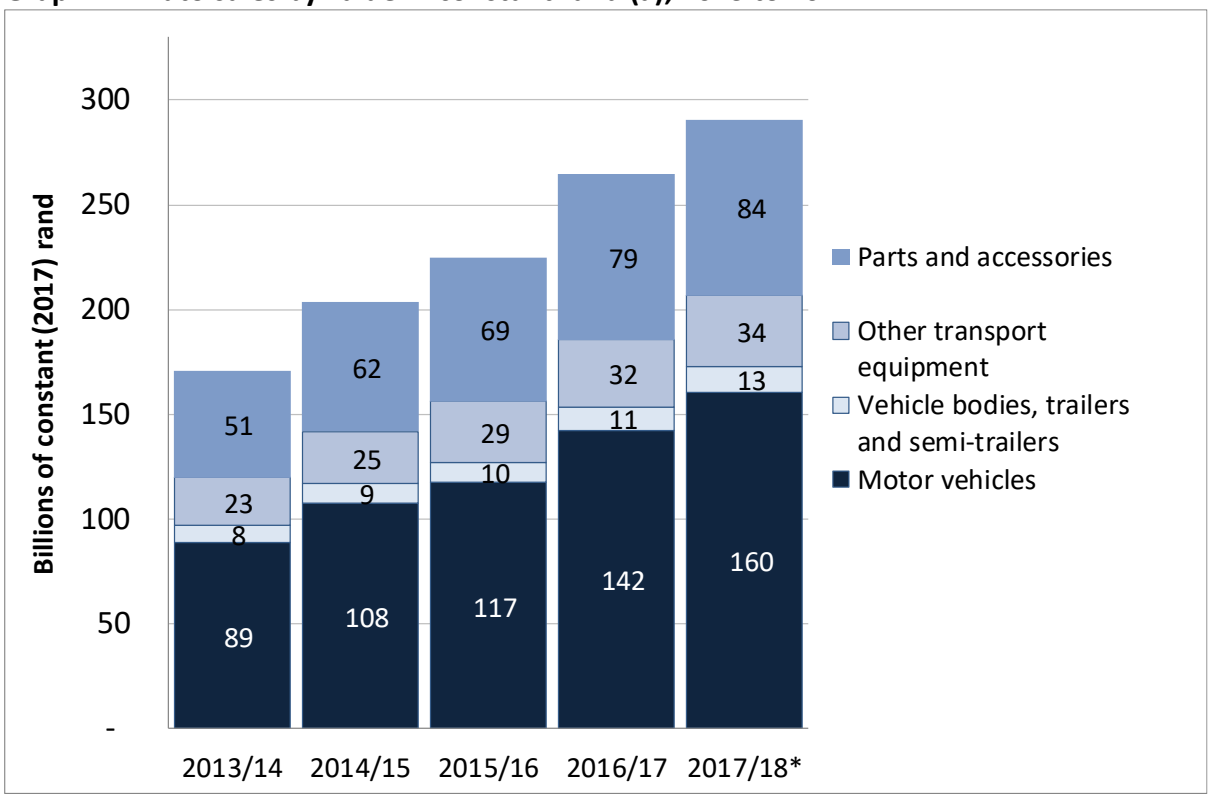


Source: Benchmarking and Manufacturing Analysts SA (Pty) Ltd. Phase 1 report: An analysis of the South African automotive industry status quo: An input into the development of a South African automotive industry Masterplan to 2035

In value terms the whole auto sector is valued at R291 billion rand in 2017/18, which includes, motor vehicles at R160 billion (55%), parts and accessories at R84 billion (29%), other transport equipment at R34 billion (12%) and vehicle bodies at R13 billion (4%) The auto industry accounts for only 13% of manufacturing sales.

Motor vehicle sales have growth on average 16% from R89 billion in 2013/14 to R160 billion in 2017/18. Motor vehicle sales account for 7% of manufacturing sales. Overall, the domestic market for new vehicles has been struggling due to low GDP per capita growth and pressures on consumer disposable income.

Graph 12. Auto sales by value in constant rand (a), 2013 to 2017



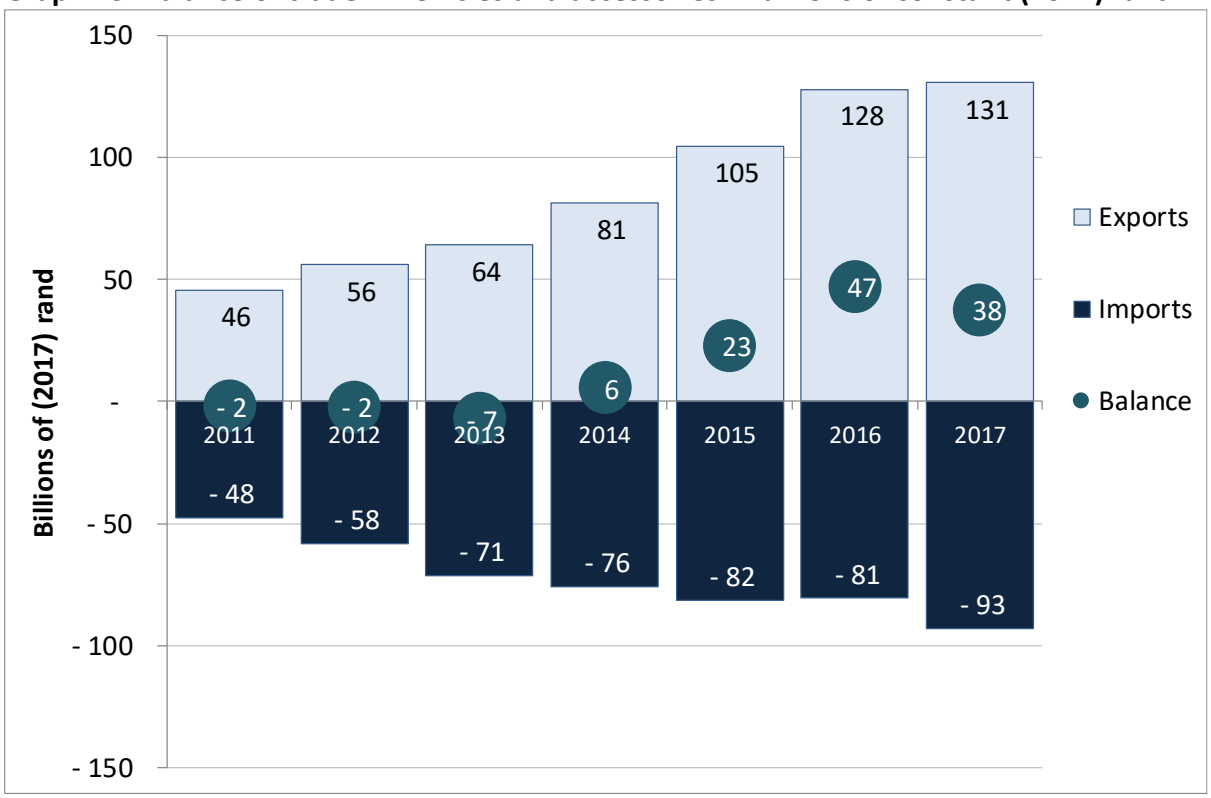
Note: (a) Figures have been deflated to 2017 CPI constant rand. *Source:* Statistics South Africa. Manufacturing Production and Sales. Excel spreadsheet. Downloaded from www.statssa.gov.za in March 2018.

c. Trade

According to Statistics South Africa's Supply and Use Tables, the motor vehicles and parts industry currently has a localisation quotient of 58%, and import dependence of 42%. Imports supply around two fifths (by value) of South African market and the rest is assembled locally. Exports come to about 360 000 units.

In 2017, South Africa exported approximately four times as many vehicles and accessories as it imported. In 2017, it imported R93 billion and exported R131 billion.

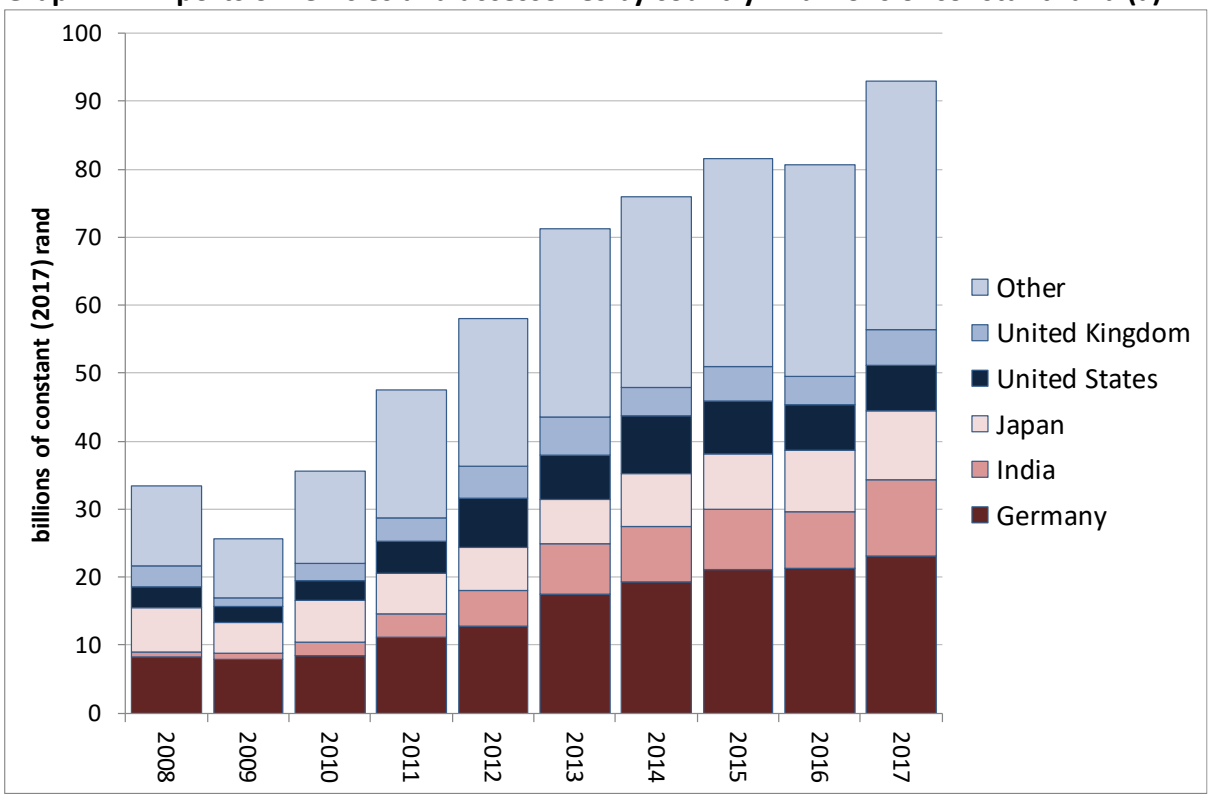
Graph 13. Balance of trade in vehicles and accessories in billions of constant (2017) rand



Note: Deflated with 2017 CPI. *Source:* Calculated from Quantec Easy Data. Standardised trade data. Downloaded from https://grid.easydata.co.za/ in March 2017.

Germany accounts for a quarter of imported vehicles. Imports from India, comprising largely of small passenger vehicles, have however expanded much more rapidly. Indian vehicle imports have grown on average 30% between 2011 and 2017.

Graph 14. Imports of vehicles and accessories by country in billions of constant rand (a)

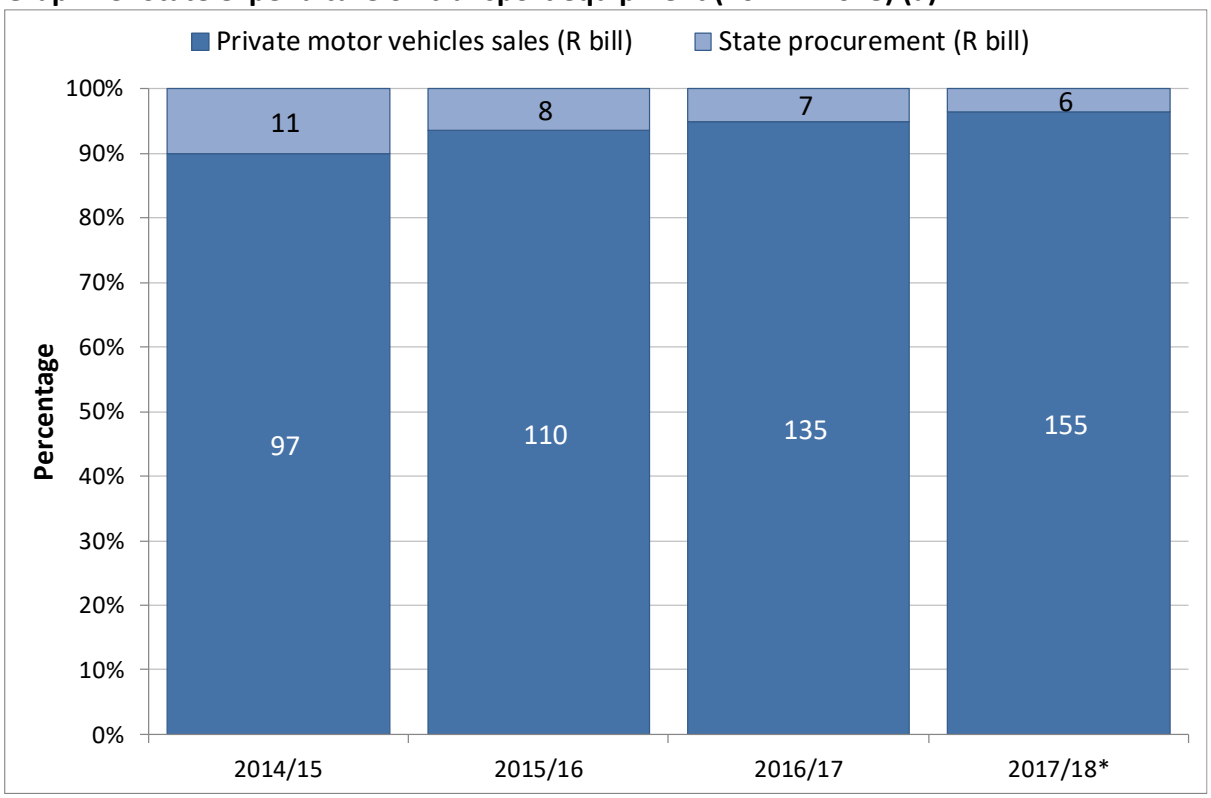


Note: (a) Deflated with 2017 CPI. *Source:* Calculated from Quantec EasyData. Standardised trade data. Downloaded from https://grid.easydata.co.za/ in March 2017

4.1.3 The impact of state procurement

The share of state procurement in total sales of vehicles has declined over time, as government purchases of vehicles fell while sales overall increased. State procurement as a share of total sales fell from 10% in 2014/15 to 3,6% in 2017/18, in constant rand terms. State procurement of transport equipment in 2017/18 was R5,7 billion compared to total motor vehicle sales of R160 billion.

Graph 15. State expenditure on transport equipment (2014 – 2018) (a)



Notes: (a) 2017/18 figures include forecast sales. *Sources:* For state expenditure, National Treasury. 2018. Estimates of National Expenditure 2018. Downloaded from www.treasury.gov.za in March 2018; for motor vehicle sales, Statistics South Africa, Manufacturing Production and Sales. Excel spreadsheet. Downloaded from www.statssa.gov.za in March 2018.

The state is unlikely to increase state spending on vehicles in the foreseeable future due to fiscal consolidation. Therefore, the proportion of local procurement to total sales is likely to remain low. However, the transversal tender indicated that locally produced models have, on average, lower rankings than non-locally produced models. This indicates that the tendering process is favouring non-local models despite them being less expensive on average. That said, the price comparisons do not control for the size or quality of the vehicle.

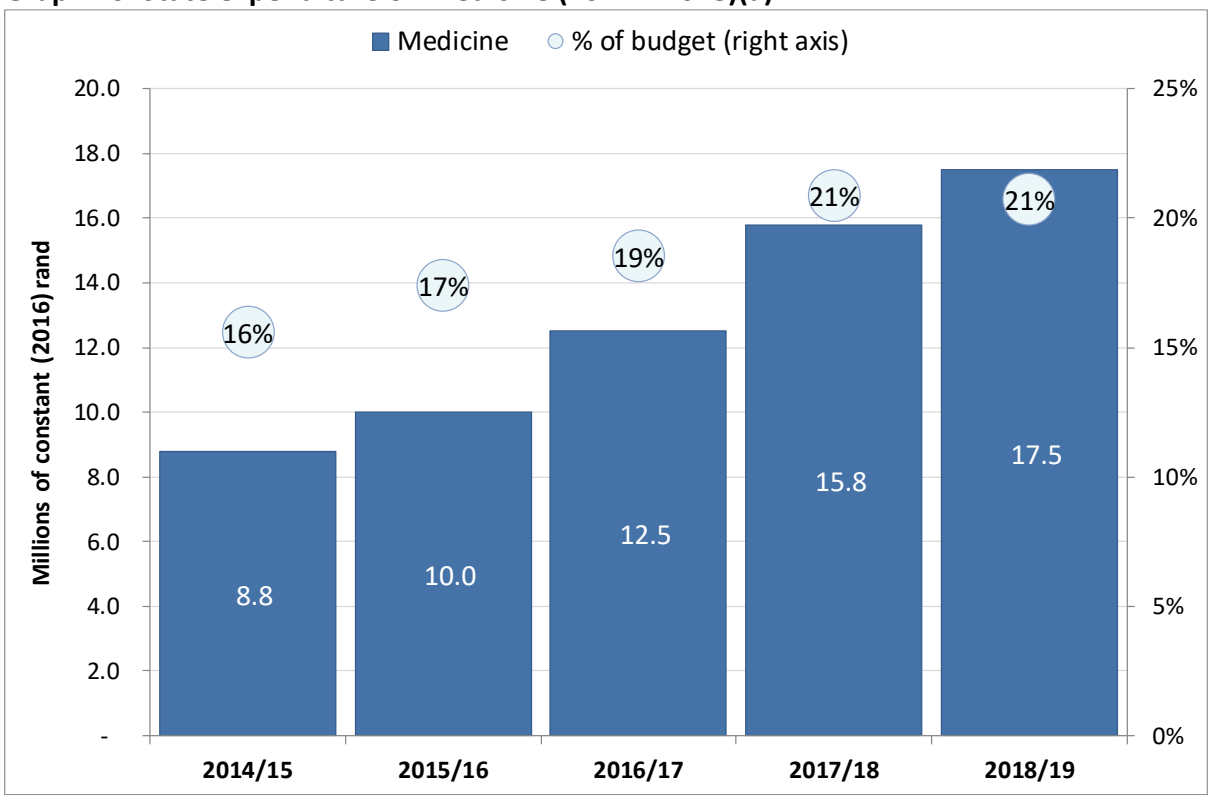
The available evidence suggests, in sum, that it would make sense to designate vehicles for local procurement, essentially at the existing rate for locally assembled cars. The tender analysis suggests that while this will not increase domestic demand by a very large amount, it will generate a significant stimulus to the local vehicle industry. That is particularly important because the auto industry is an IPAP priority, and by far the largest export industry in South African manufacturing.

4.2 Medicine

4.2.1 Expenditure trends

The state has budgeted to purchase R17,5 billion worth of medicine in 2018/19, up from R9 billion in 2014/15 in constant rand terms. Medicine now represents about 21% of goods spend, compared to 16% in 2014/15. Public procurement of medicine is critical as approximately 79% of South Africans population are not members of medical aid schemes.

Graph 16. State expenditure on medicine (2014 – 2018)(a)



Notes: (a) Figures for expenditure in billions of constant rand are deflated with CPI. *Source:* National Treasury. 2018. Estimates of National Expenditure 2018. Downloaded from www.treasury.gov.za in March 2018.

The Health function, which comprises the national Department of Health and provincial health departments, accounts for virtually all state medicine procurement. Agriculture departments, Correctional Services and Defence account for 1% of medicine procurement.

4.2.2 State procurement

The state procures medicines and pharmaceutical products primarily through various transversal contracts managed by the Department of Health and National Treasury. There are currently 13 tenders active for medicine which in aggregate amount to R32 billion. Generics account for four fifths of government procurement, with only 20% original branded medicines. In contrast, almost two thirds of privately procured medicines are branded.

Table 9. Current medicine contracts by the national Department of Health and National Treasury

Code	Description	Estimated contract value	Latest awarded
HP13	Supply and delivery of antiretroviral medicines to the Department of Health	R16 billion	1 April 2015 to 31 March 2018 (every 3 years)
HP09	Supply and delivery of solid dosage forms to the Department of Health	R4.8 billion	1 August 2016 to 31 July 2018 (every 2 years)
RT301	Supply and delivery of anti-infective medicines (antibiotics, antifungal, antiprotozoal and antiviral agents) to the state	R2.3 billion	1 October 2017 to 30 September 2020 (every 3 years)
HP06	Supply and delivery of small volume parenterals to the Department of Health	R1.7 billion	Period 01 March 2017 to 28 February 2019 (every 2 years)

Code	Description	Estimated contract value	Latest awarded
HP07	Supply and delivery of pharmaceutical products: drops, aerosols, inhalers and inhalants to the department of health	R1.2 billion	01 May 2017 to 30 June 2020 (every 3 years)
RT300	Supply and delivery of pharmaceutical liquids, alcohol, ether, glycerine and methylated spirits to the state	R1 billion	1 October 2017 to 30 September 2020 (every 3 years)
RT78	Supply and delivery of anti-tuberculosis medicines to the state	R950 million	1 October 2017 to 30 September 2019 (every 2 years)
HP10	Supply and delivery of Biological preparations to the Department of Health	R800 million	01 October 2016 to 30 September 2018 (every 2 years)
RT299	Supply and delivery of large volume parenterals to the state	R790 million	1 October 2017 to 30 September 2020 (every 2 years)
HP08	Supply and delivery of semi-solid dosage forms to the Department of Health	R740 million	01 May 2017 to 30 June 2020 (every 3 years)
HP04	Supply and Delivery of Oncology and Immunological Agents to the Department of Health	R450 million	1 April 2014 to 31 March 2016 (every 2 years)
RT283	Supply and delivery of contraceptives and hormone modulating agents to the state	R270 million	1 October 2017 to 30 September 2020 (every 3 years)
HP05	The Supply and Delivery of Diagnostic Agents and Contrast Media to The Department of Health	R60 million	01 April 2016 to 31 March 2018 (every 2 years)

Note: Contract value is calculated by multiplying quantity awarded by delivery price. Quantity awarded is not guaranteed for the tenders, thus it is an estimated contract value. *Source:* Department of Health. Master Procurement Catalogue 5 February 2018. Downloaded from www.health.gov.za in March 2018.

As with other transversal tenders, the tendered quantities are estimates, with actual procurement depending on the requirements of the health departments. The bidders have to guarantee that they will maintain sufficient stock to meet demand throughout the duration of the contract. The state often awards the same item as a multiple award to two or more contractors in order to deal with volume requirements as well as to ensure security of supply.

The Department of Health has a long experience of negotiating for medicine, and its tenders at least leave open the option of using all the available levers to promote both broad-based BEE and local content. The mechanisms used include the following.

- Medicine bids are typically adjudicated on the 90/10-preference point system. The Department of Health publishes a Reference Price List and a single exit price for most medicines, which effectively sets a ceiling on bids.
- Bidders are required to distinguish the cost of local and imported inputs across five components of the price. The components are active pharmaceutical ingredients (API); formulation; packaging; logistics (includes transportation, warehousing and distribution); and gross margin (remaining portion).
- In line with the PPPFA, in the tender documentation government reserves the right to negotiate prices for bidders whose bids come within 10% of the price of the highest point scorer.

A challenge for medicine is to ensure timely delivery and distribution to health facilities. Ensuring that hospitals and clinics have the necessary medications has proven a challenge even where there are adequate funds. In this context, the tenders entail substantial

monitoring and reporting on the supply system. The Department of Health holds quarterly meetings with suppliers to review the next quarter's demand, as well as supplier performance. It maintains a scorecard for successful bidders that includes delivery lead times; percentage of orders supplied in full the first time; and compliance with a regular, defined reporting schedule and mechanism. As a minimum, suppliers are required to submit the following information:

- All transactional data relating to order;
- A monthly age analysis;
- Pipeline data;
- The status of outstanding orders.

According to the Department of Health master procurement catalogue, the suppliers who have won the highest share of the medicine tenders are two locally owned companies – Aspen Pharmacare and Adcock Ingram – and Mylan (US), Sonke Pharmaceuticals (India), Cipla Medpro (India), Abbvie (US) and Sanofi-Aventis (France). Together they account for about 70% of the contract value of medicine tenders. Abbvie, Mylan, Ranbaxy and Sonke Pharmaceuticals have no local production facilities, while Cipla and Sanofi-Aventis have small local plants. Although Aspen and Adcock started as South African companies and are still based primarily in South Africa, they now undertake some manufacturing overseas.

Table 10. Main contractors for the medicine tenders

Supplier	Profile	Local production	Contract value (R bn)	Percentage of total
Mylan	Mylan engages in the import of raw materials, finished pharmaceutical products and generic medicines. It is 100% owned by Mylan Laboratories of the US.	No	R5,4 bn	17%
Aspen Pharmacare	Pharmacare manufactures, markets and distributes pharmaceutical, branded, consumer, OTC and nutritional products. It has four manufacturing facilities in South Africa and employs 3900 people.	Yes	R5 bn	16%
Sonke Pharmaceuticals	Sonke Pharmaceuticals (Pty) Ltd is involved in the import, export and distribution of pharmaceutical goods with a focus on generic anti-retroviral medication. It has no local production facilities. Sonke is 70% owned by Ranbaxy (SA), a subsidiary of an Indian company, Sun Pharmaceuticals, through its Dutch Ranbaxy subsidiary, and 30% by Community Investment Holdings.	No	R3,7 bn	12%
Cipla Medpro	Cipla Medpro South Africa imports, manufactures, distributes and packages tablets and other pharmaceutical and nutraceutical products. It has a manufacturing plant and 700 employees in South Africa. Cipla is 100% owned by Cipla Ltd of India.	Yes	R3,3 bn	10%
Adcock Ingram	Adcock Ingram Critical Care (Pty) Ltd manufactures and distributes critical health care products such as medication and intravenous solutions as well as over-the-counter products. It has three manufacturing facilities in South Africa and employs 2400 people.	Yes	R2,1 bn	7%
Abbvie	Abbvie has no local production facilities. It is 100% owned by United States firm AbbVie, which was formed when the medicines division of Abbott Labs split off in 2011.	No	R1,7 bn	5%

Supplier	Profile	Local production	Contract value (R bn)	Percentage of total
Sanofi-Aventis	Sanofi-Aventis South Africa imports, manufactures and packages pharmaceutical products. It has one manufacturing facility and 350 employees in South Africa. It is 100% owned by Sanofi-Aventis SA of France.	Yes	R1,3 bn	4%
Other companies			R9.1 bn	29%

Note: Contract value is calculated by multiplying quantity awarded by delivery price. Quantity awarded is not guaranteed for the tenders thus it is an estimated contract value. *Source:* Department of Health. 2018. Master Procurement Catalogue 5 February 2018

4.2.3 Industry analysis

a. Production

Because pharmaceuticals is a subsector of the much larger chemicals industry, Statistics South Africa does not publish a regular series on its production and sales. Estimates for the value of pharmaceuticals production in South Africa generally come to between R45 billion and R50 billion for 2015/16. (See Statistics South Africa 2017, Supply Table 2015)

Table 11. Market profile of the South African pharmaceuticals industry

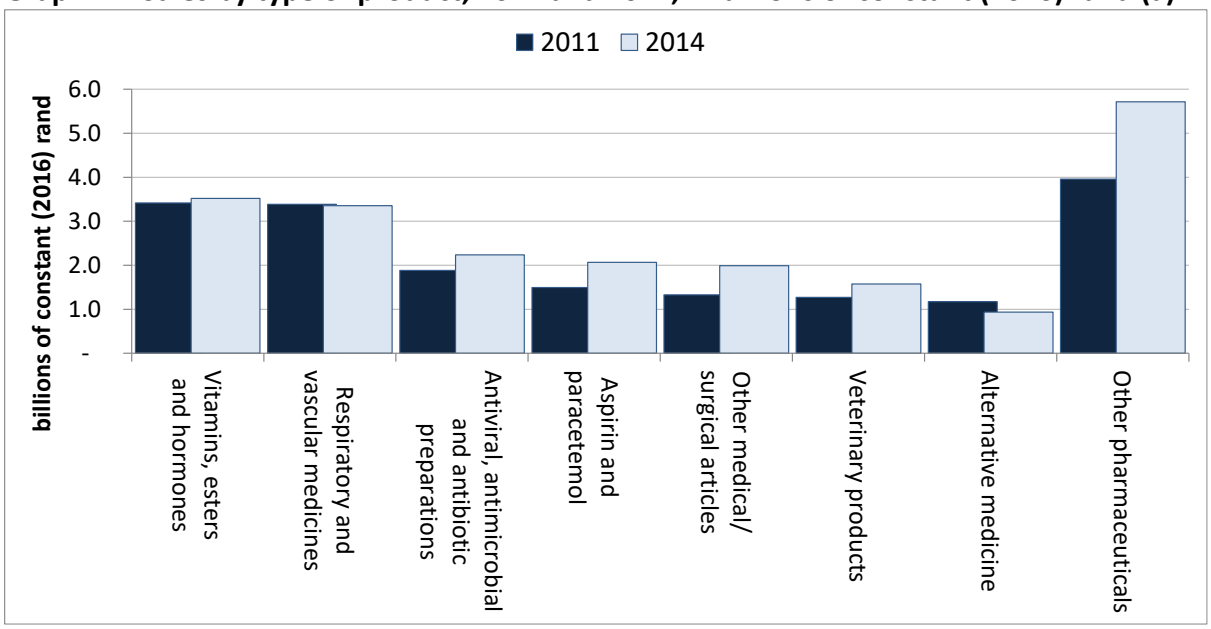
Variable	2014/15
Sales	R45 billion (estimate), of which R4 billion is biologics and vaccines
Contribution to GDP	Less than 1% (estimate)
Employment	9 500 in the industry; 25 000 in the value chain (logistics, retail and hospital pharmacies)
Annual average growth rate	4.5% from 2015 - 2020

Source: Department of Trade and Industry. 2017. The dti's involvement in the State's procurement of ARV's. Presentation to the Portfolio Committee on Trade and Industry.

The main pharmaceutical activities in South Africa are around formulation and packaging, with no high-volume API production capabilities. South Africa has specialised clinical trial capabilities and some companies have patents for high-level global niche medicines that they produce locally and in overseas subsidiaries. Local pharmaceutical formulation capabilities are geared towards the production of vitamins, circulation medicines, antibiotics, antiretrovirals and analgesics, based primarily on licences from foreign brand-name and generic companies.

As Graph 17 shows, the main products in terms of the value of sales were vitamins, hormones and antibiotics at an eighth of the total, with a similar amount for circulatory medicines. These categories were followed by anti-retrovirals, antibiotics and analgesics, which together accounted for about a fifth of the total.

Graph 17. Sales by type of product, 2011 and 2014, in billions of constant (2016) rand (a)



Notes: (a) Deflated with CPI. *Source:* Calculated from Statistics South Africa. 2016. *Manufacturing Industry: Financial.* Pretoria. Table 4.

The Department of Health and the Medicines Control Council have licenced almost 300 companies to import, manufacture, distribute or export pharmaceuticals. Aspen and Adcock Ingram dominate manufacturing. In 2015, Aspen's market share came to 15%, and Adcock Ingram's to 9%. (WOW 2017a, p. 6)

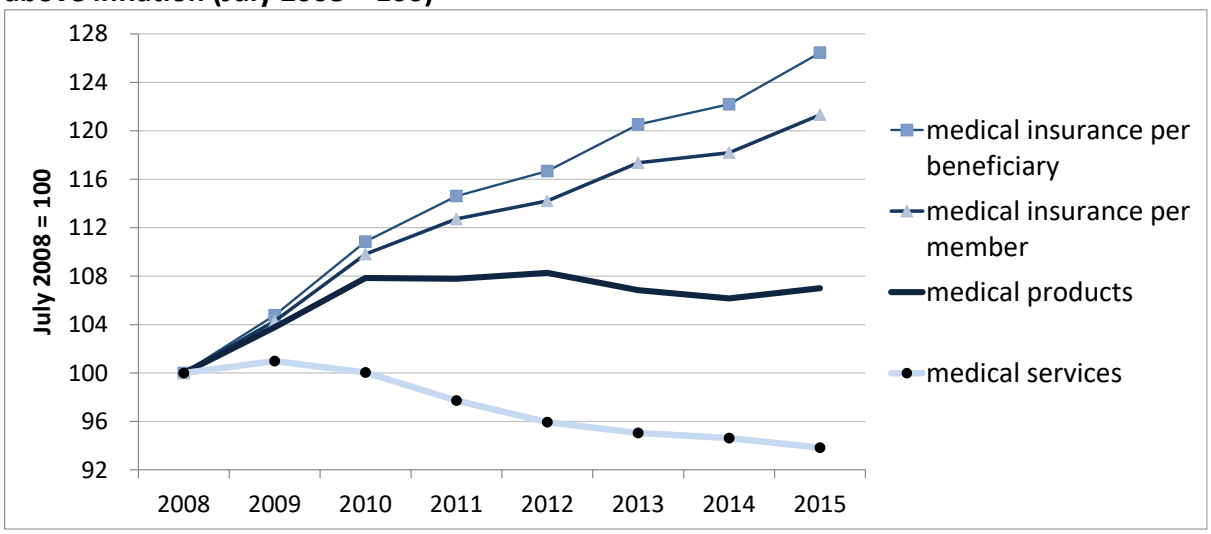
b. Sales

Although 80% of the population depends on public healthcare, estimates suggest that the state accounts for under a fifth of pharmaceutical sales in South Africa. State pharmaceutical purchases are centred on essential medicines and equipment. In contrast, between a quarter and a third of private pharmaceutical sales appears to have been over-the-counter, which includes most vitamins and nutritional supplements. The remaining sales go through the medical schemes.

Private demand is dominated by the upper-income group. In 2010/1, the richest decile of households bought over half of all over-the-counter pharmaceuticals and paid 80% of medical scheme membership fees, by value. (Calculated from Statistics South Africa 2012, Table 2.45)

The state has managed to hold down the margin on public-sector tenders. In contrast, the available evidence suggests that private medicine prices are high compared to the rest of the world. (See Bangalee and Suleman 2016, p. 62) In 2003, the South African government introduced a single exit-price system for private medicine in an effort to reduce costs to consumers. In addition, generic drugs have become increasingly common. These two trends mean that in constant rand the price pharmaceuticals sold over the counter to individuals has remained fairly stable, as the following graph shows, even as the cost of medical schemes has risen at rates well above inflation.

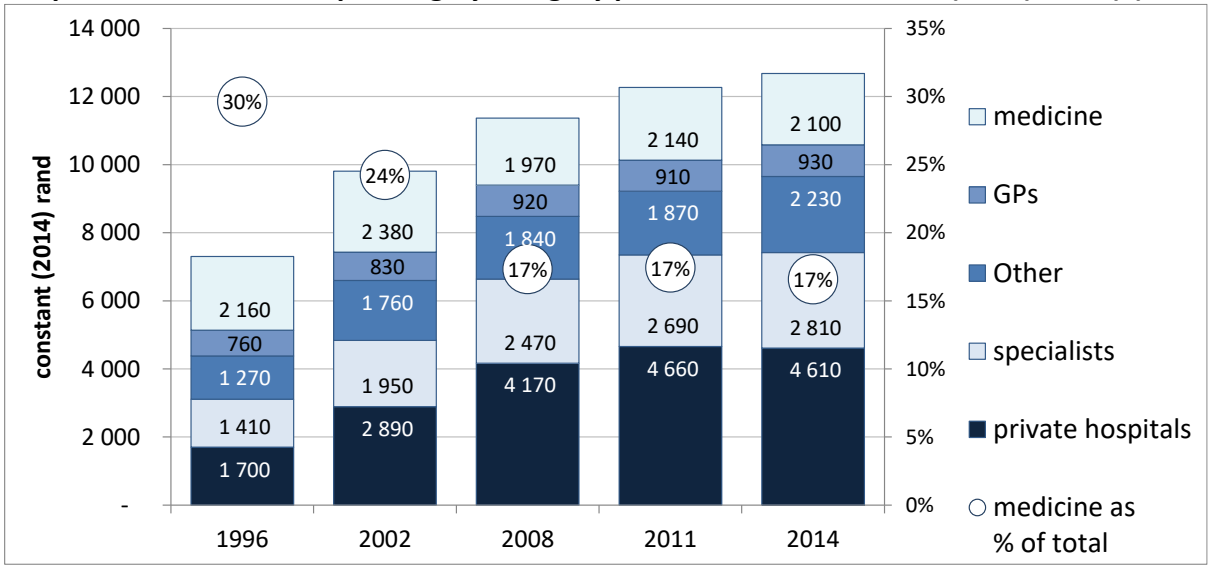
Graph 18. Indices of the changes in the consumer price of major components of healthcare above inflation (July 2008 = 100)



Source: Medical products and medical services: Calculated from, Statistics South Africa. CPI (COICOP) from January 2008. Excel spreadsheet. Series on health for July. Downloaded from www.statssa.gov.za in October 2016. Medical insurance per member and beneficiary calculated from Council for Medical Schemes. Annexures to Annual Reports for relevant years. Downloaded from www.medicalschemes.org.za in November 2016.

The National Department of Health estimated that the single exit-price system reduced prices for generics by 25% to 50%, and for branded medicines by 12%. (Ngwozana 2016, p 236 ff) In constant rand, medical aids' spending on medicine dropped by over 10% from 2002 to 2008, then essentially levelled out. As a result, the share of medicine in medical schemes' spending dropped from 24% in 2002 to 17% in 2008, where it stabilised. (See Graph 19)

Graph 19. Medical aids' spending by category per member, in constant (2016) rand (a)



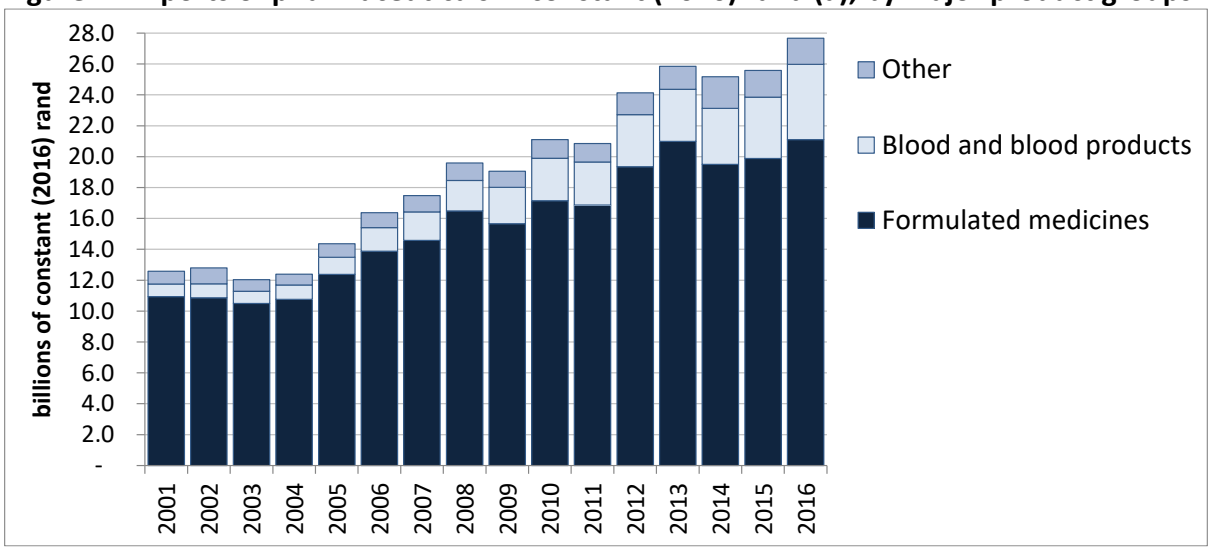
Note: (a) deflated with CPI. *Source:* Calculated from Council for Medical Schemes. Annexures to Annual Reports, relevant years. Downloaded from medicalschemes.org.za in Nov 2016.

c. Trade

According to Statistics South Africa's Supply and Use Tables, the pharmaceuticals industry currently has a localisation quotient of 59% and an import dependence of 42%. Pharmaceutical products, mostly formulated medicines, make up around 2,5% of South

Africa's total imports. As the figure below shows, in constant rand they expanded rapidly when the rand was strong during the commodity boom of 2003 to 2012. When the end of the boom brought rapid depreciation, these imports levelled out. In dollar terms, the value of formulated pharmaceutical imports fell by 20% from 2012 to 2016.

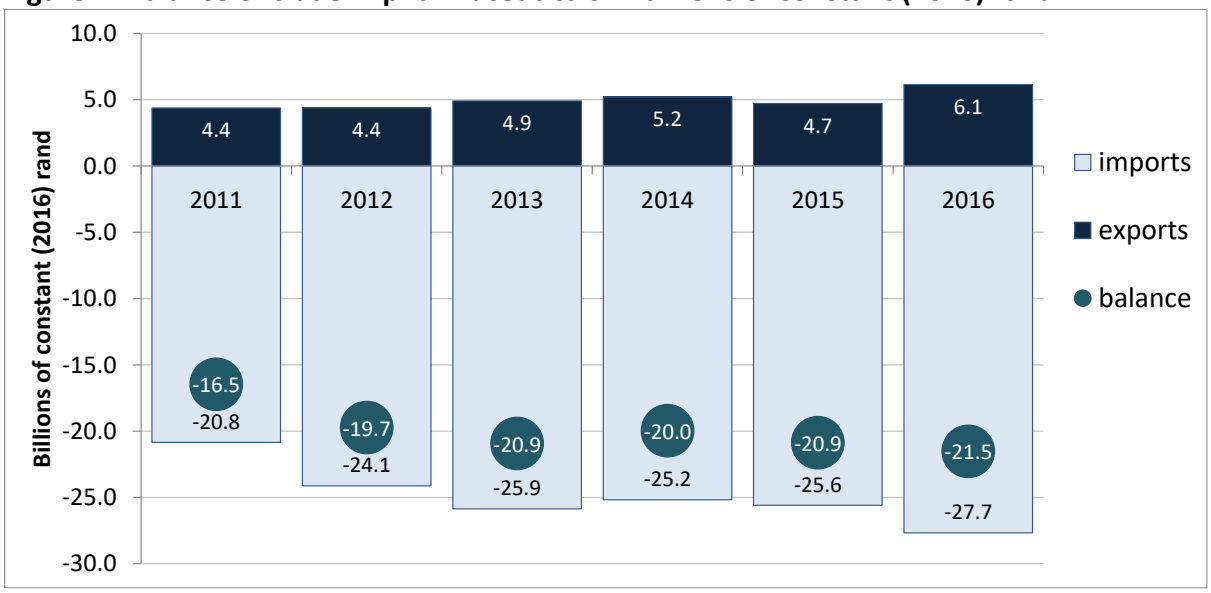
Figure 1. Imports of pharmaceuticals in constant (2016) rand (a), by major product groups



Note: (a) deflated with CPI. *Source: Source:* Calculated from ITC. TradeMap. Electronic database. Series on South African imports at 4-digit HS level. Downloaded from www.trademap.org in February 2017.

For the past ten years, South Africa imported approximately four times as much pharmaceutical products as it exported. In 2016, it imported R28 billion and exported R6 billion.

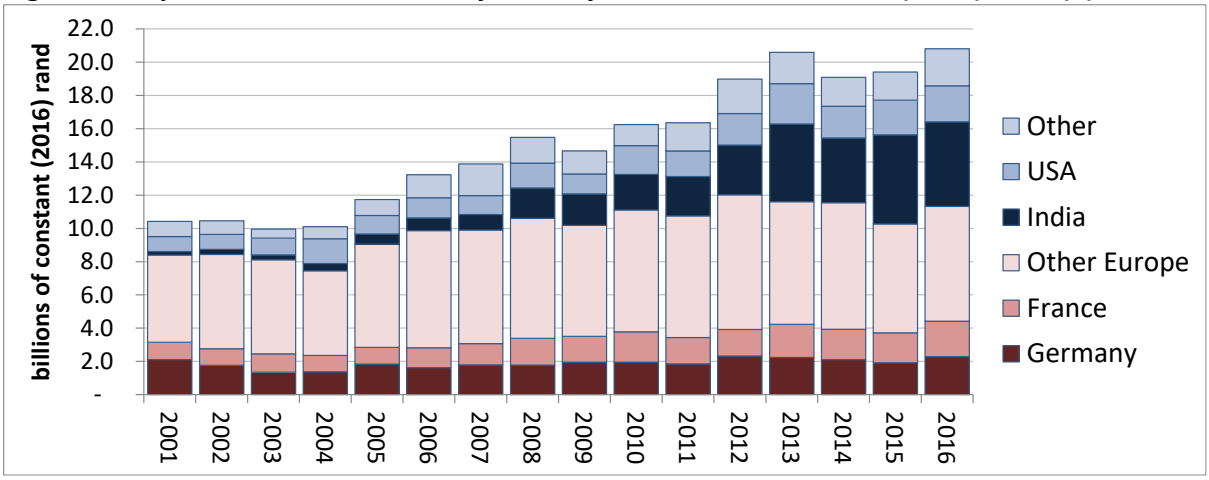
Figure 2. Balance of trade in pharmaceuticals in billions of constant (2016) rand



Note: (a) deflated with CPI. *Source: Source:* Calculated from ITC. TradeMap. Electronic database. Series on South African imports and exports at 2-digit HS level. Downloaded from www.trademap.org in February 2017.

Europe accounts for over half of imported medicaments. Imports from India, principally of generics, have however expanded much more rapidly. From 2001 to 2016, India accounted for half of the growth in medicine imports in constant rand terms. The expansion in Indian imports points to a shift toward generics over time.

Figure 3. Imports of medicaments by country in billions of constant (2016) rand (a)

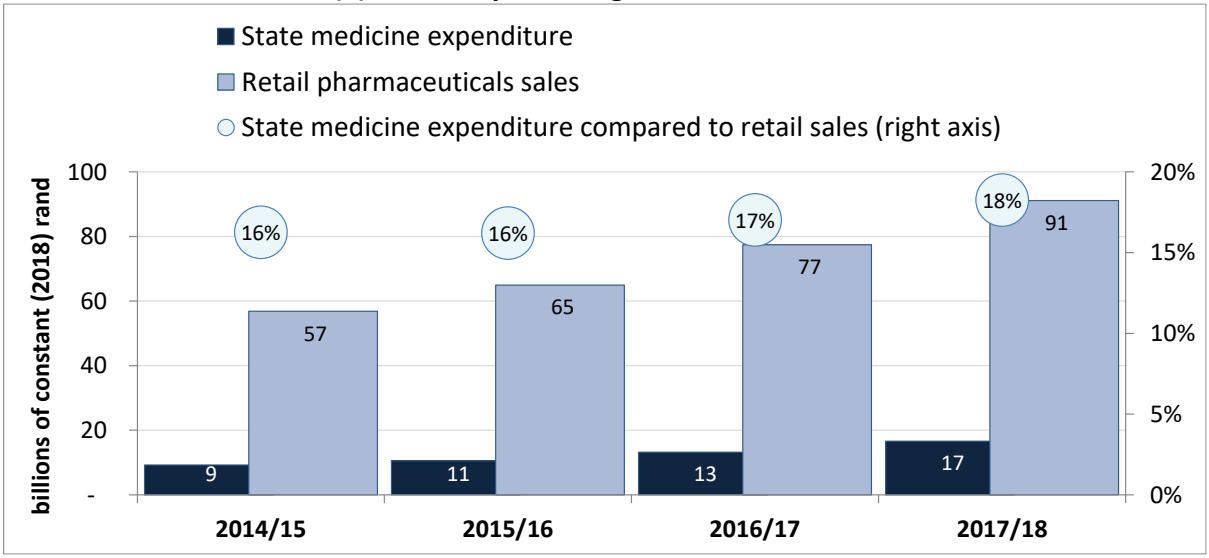


Note: (a) deflated with CPI. *Source: Source:* Calculated from ITC. TradeMap. Electronic database. Series on South African imports at 4-digit HS level by country. Downloaded from www.trademap.org in February 2017.

4.2.4 The impact of state procurement

It appears that, as the medicines budget increased over the past five years, the proportion of state procurement in total sales of pharmaceuticals also increased. It equalled 16% of total pharmaceutical retail sales in 2014/15, and rose to 18% in 2017/18. State procurement of medicine was R17 billion in 2017/18 compared to total retail sales of pharmaceutical products at R70 billion.

Graph 20. State expenditure on medicines compared to total pharmaceutical sales in billions of constant rand (a) and as a percentage



Notes: (a) Deflated with CPI. 2017/18 figures include forecast sales. *Sources:* For state medicine expenditure, National Treasury. 2018. Estimates of National Expenditure 2018. Downloaded from www.treasury.gov.za in March 2018. For retail sales, Statistics South Africa, Retail Trade Sales (New time series) from January 2002_201801. Excel spreadsheet. Downloaded from www.statssa.gov.za in March 2018.

Although the public sector accounts for under a fifth of pharmaceutical sales, its bulk procurement provides an opportunity for local manufacturers to produce at scale. In contrast, private sector demand is more fragmented and more likely to require branded products. In these circumstances, local generic manufacturers have generally seen sales to

the public sector as critical, despite the very low profit margins. They then bolster their profits by charging a much higher margin to private purchasers.

This strategy became increasingly difficult as the public sector imported a growing share of its needs from foreign generic manufacturers, starting in the early 2000s. This tendency reflected the emergence of producers in India and a few other developing economies that can produce on a much larger scale than South African companies. In addition, in some cases they enjoy significant state subsidies in their home countries as well as relatively supportive intellectual property rules.

The depreciation of the rand since 2011 should in theory increase the cost of imports relative to local products. In practice, however, South African manufacturers depend on imported APIs, which constitute a significant share of local production costs. As a result, the benefits have been partly offset by rising rand prices for imported inputs.

To promote local producers, the dti and the national Department of Health designated of two out of the 13 state pharmaceutical contracts:

- Oral Solid Dosage Tender at 70% by volume
- Contraceptives Tender at 50% by value

The Department of Health estimates that the designations led to local procurement to the value of R36,2 billion from 2014 to 2018. (Department of Health, 2016) According to the dti key deals under the designations were the following.

- Four pharmaceutical companies were jointly awarded a R10 billion tender to supply the National Department of Health with anti-retrovirals from 2015 to 2018. Sonke Pharmaceuticals was awarded R3 billion, Mylan Pharmaceuticals R2,8 billion, and Cipla some R2 billion.
- The 2014-2016 Oral Solid Dosage and Transdermal patches tender worth R2,7 billion was awarded to 38 companies, including Aspen (38%), Adcock (2%), Sanofi-Aventis and its subsidiary Winthrop (11%), Sandoz (3%) and Be-Tabs (3%).

In interviews, officials at the National Department of Health argue that they cannot defend paying substantially more in order to promote local production of medications, which are already often in short supply. The designation process does not provide additional funds to support local suppliers. As a consequence, the procurement price often does not internalise the benefits of local production in terms of higher incomes, employment and tax revenue. It is difficult, however, for the national and provincial departments of health to use their scarce resources to promote industrialisation, which lies outside its mandate.

For their part, managers at Aspen have argued in interviews that the uncertainty of local demand has compelled the company to pursue a more international strategy. As a result, in the past five years it has acquired significant intellectual property, markets and manufacturing facilities overseas.

4.3 Furniture

4.3.1 Expenditure trends

The state currently procures a large volume of school furniture through provincial education departments. In the published budget, however, all furniture is included under “other

machinery and equipment". Expenditure trends will therefore only be available when Treasury and the dti have provided more detailed information.

The South African Furniture Initiative estimates that government's total procurement of furniture comes to R2 billion a year, but it is not clear how it derived these estimates. (Interview with SAFI representative, 2017) School furniture includes classroom furniture, office furniture, laboratory furniture, library furniture and boarding hostel furniture. Classroom furniture includes desks, chairs and tables. This furniture should facilitate a conducive environment for learning activities.

The dti has designated all school furniture for 100% local content requirement since 2012, in order to encourage local manufacturing.

Table 12. Designated local content for major furniture manufacturing products

Product	Threshold
Office furniture	85%
School furniture	100%
Bases and mattresses	100%

Source: the dti. 2017. Industrial Policy Action Plan (IPAP) 2017/18 – 2019/20

4.3.2 Industry analysis

a. Production

1 The furniture manufacturing industry produced R13 billion worth of output in 2015. This production represents only 1% of total manufacturing production. Trends of furniture manufacturing production indicate that the industry is highly cyclical.

According to Quantec's estimates, the share of furniture in total manufacturing added fell from around 2% in 2000 to about 1% in 2008, then stabilised.

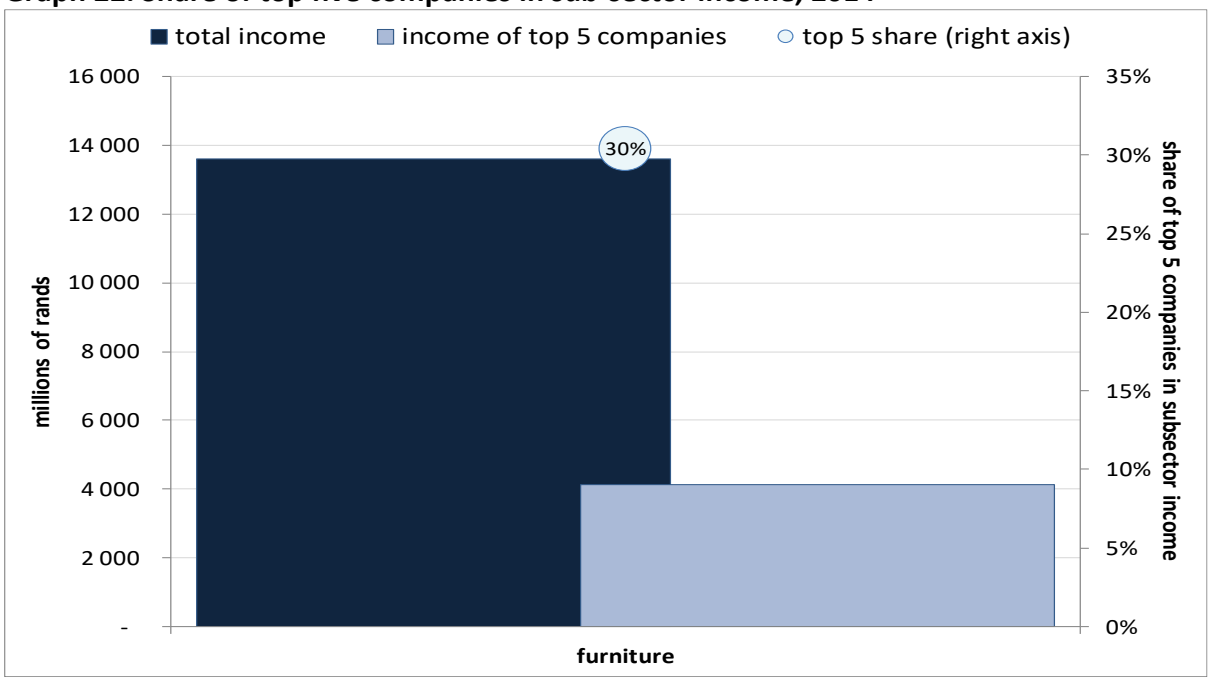
Graph 21. Furniture manufacturing contribution to manufacturing value added

Source: Calculated from Statistics South Africa, GDP P0441. Annual quarter and regional revisions. Q4 2016. Excel spreadsheet. Series on manufacturing subsectors in current rand. Downloaded from www.statssa.gov.za in September 2017; and Quantec EasyData. Standardised regional data. Database in electronic format. Series on value added in current rand. Downloaded from www.quanis1.easydata.co.za in September 2017.

Statistics South Africa Labour Market Dynamics (LMD) survey for 2015 found around 4600 furniture producers, of which only 1100 were VAT registered and therefore considered formal. The Fibre Processing and Manufacturing (FP&M) SETA registered 1700 employers in the furniture sector but only 261 of them were large enough to pay the skills levy. Companies with a payroll of less than R500,000 are exempt from paying skills levies, indicating that most of the Seta-registered furniture companies are small.

According to Statistics South Africa's Manufacturing Financial Statistics, the share in total income of the largest five companies in furniture manufacturing was 30%. The largest furniture manufacturers in South Africa are Steinhoff International, Bravo Group, Bidvest Office (Pty) Ltd and Coricraft Group (Pty) Ltd. The industry also includes a number of small formal furniture producers that specialise in meeting the needs of local retail chains as well as some state departments.

Graph 22. Share of top five companies in sub-sector income, 2014



Source: Calculated from Statistics South Africa. 2016. Manufacturing Industry: Financial, 2014. Pretoria. Table 9, p 33, ff.

Quantec estimated formal employment across the forestry value chain (including paper recycling) at around 261 000 in 2016. Quantec estimates are based on Statistics South Africa findings, but generally contend that the official data undercount informal employment, as well as making other changes based on a proprietary model. According to these estimates, the single largest employer in the forestry sector was forestry itself, with an estimated 72 000 people. About 18 000 people were estimated to be employed in sawmilling, 43 000 in pulp and paper and only around 26 000 in furniture manufacturing.

Table 13. Employment across the furniture to forestry value chain in 2015

Employment	Employment	Percentage of total in the value chain
Forestry operations	71 774	27%
Wood processing	63 103	24%
Sawmilling	18 218	7%
Pulp and paper production	43 247	17%
Paper recycling	38 742	15%

Employment	Employment	Percentage of total in the value chain
Furniture production	26 400	10%
Total	261 484	100%

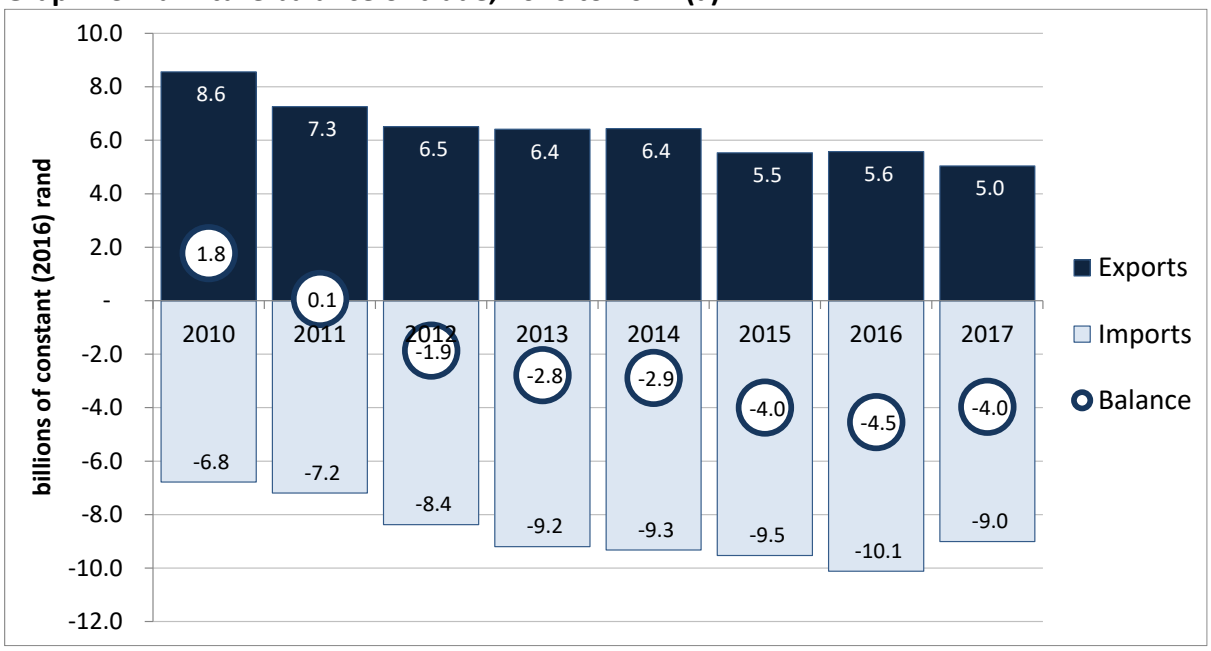
Source: The dti. 2016. Forestry Beneficiation Framework for South Africa. Draft document. Department of Trade and Industry. Pretoria.

Gauteng and KwaZulu-Natal accounted for 63% of employment in furniture manufacturing, compared to 57% for the rest of manufacturing. In contrast, the Western Cape contributed just 8% of furniture employment, but 17% of jobs in the rest of manufacturing.

b. Trade

In 2017, South African trade in furniture showed a deficit, with imports at R9,4 billion in current rand, and exports at R5,3 billion. The deficit climbed from 2010 – the earliest data for South Africa alone, rather than for SACU – as exports fell by 40% in constant terms while imports increased by 33%.

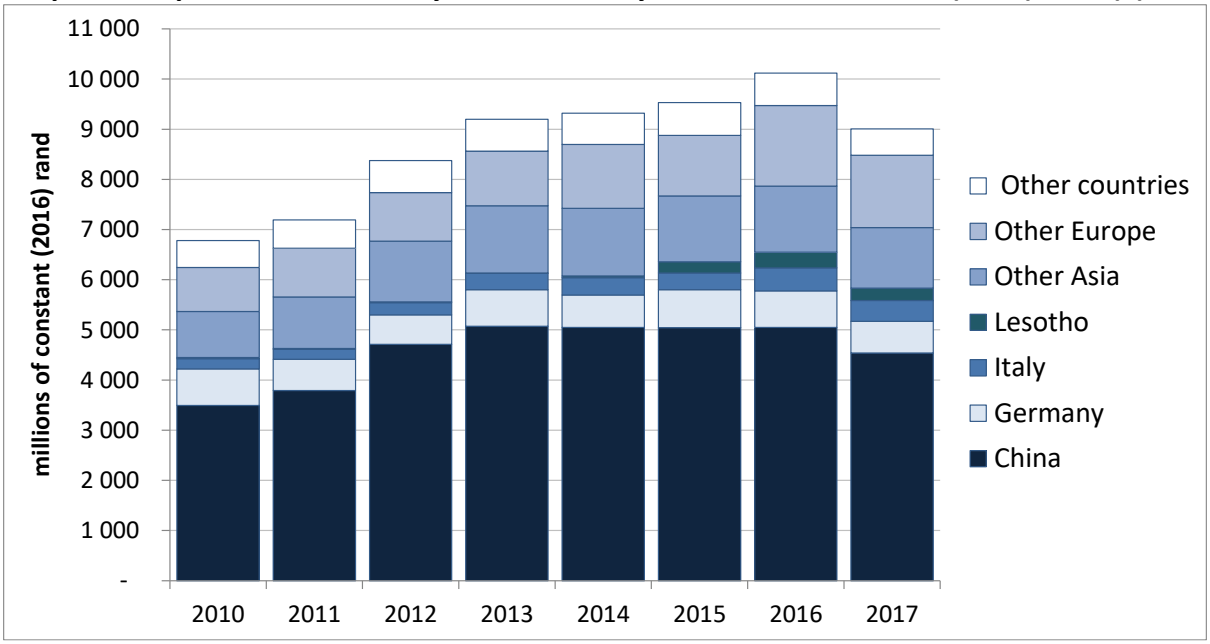
Graph 23. Furniture balance of trade, 2010 to 2017 (a)



Note: (a) Deflated with CPI. *Source:* Calculated from ITC. TradeMap. Electronic database. Series on imports of furniture, toys and sports equipment, jewellery, steel and copper scrap. Downloaded from www.trademap.org in February 2018.

Developed countries, led by Italy, Germany and Canada have traditionally been the main producers and exporters of furniture globally. Over the last decade, however, they faced fierce competition from Asian countries, especially China and to a lesser degree Malaysia, Vietnam and Indonesia. These international trends were replicated in South Africa. In 2017, about half of all South African furniture imports emanated from China, with other Asian countries adding around 15% more. Germany supplied 7% of imported furniture in 2017, and other European countries another 16%. In Africa, only Lesotho was a significant supplier of furniture to South Africa.

Graph 24. Imports of furniture by source country in billions of constant (2016) rand (a)



Note: (a) Deflated with CPI. Source: Calculated from ITC. TradeMap. Electronic database. Series on imports of furniture, toys and sports equipment, jewellery, steel and copper scrap. Downloaded from www.trademap.org in February 2018.

The decline in furniture exports from 2010 resulted principally from a rapid fall in exports to Germany, presumably as a result of the extensive restructuring at Steinhoff. A seventh of furniture exports went to Germany in 2016, down from a third in 2016 – a fall from R1,1 billion in 2010 to R300 million in 2017. Virtually all other South African furniture exports went to other African countries, with a modest decline in value in constant rand from 2014.

4.3.3 The impact of state procurement

National departments, provinces, SOCs and municipalities do not submit all awarded furniture tenders to the dti, making it difficult to track progress in implementation of the designation. According to the 2017/8 IPAP, 59 tenders for furniture were reported to the dti for R220 million. Apparently no tenders were submitted for mattresses or school furniture. These figures appear to represent only a fraction of total furniture procurement across the state. For comparison, R220 million worth of office furniture represents only 2% of Bidvest Office revenues. In addition, virtually no furniture tenders have been validated by SABS.

Interviews with stakeholders suggest that a core challenge for local producers is the nature of specifications in provincial tenders, which often effectively require imported inputs, or even fully imported products. Industry informants argue that tenders by provincial departments often increase the cost, bias procurement toward imports and large manufacturers, and are outdated in terms of furniture manufacturing technologies and school needs. (Interviews with company and association representatives, 2017).

The current standard specification for classroom furniture is determined by South African Bureau of Standards (SABS). The latest standard is the South African National Standard (SANS) 660:2015[3] .

[3] The standard has most recently been revised in 2017-12-08

The challenges in tender specification are epitomised by recent Mpumalanga Education Department school furniture tenders. TIPS analysed the tender EDU/087/15/MP for the "Appointment of Manufactures for the Supply and delivery of School Furniture to Schools to the Mpumalanga Department of Education for a period of three (3) years." The same specifications have been issued in 2012, 2015 and 2018. Problematic features of the specifications in the tender include:

- The specifications for most table top surfaces and furniture include Saligna (eucalyptus grandis) hardwood, which effectively has to be imported because of inadequate supply in South Africa. Other specifications for materials and specified brands also make it difficult for any local supplier to meet the 100% designation requirement.
- The tender seeks to appoint one supplier to supply 131 different items of school furniture over three years. No guaranteed quantities are specified in the tender and orders are placed on a case by case basis by schools to be delivered to four district areas within Mpumalanga. The contract makes no provision for escalation in prices over the three-year award period after acceptance of the bid price and the successful applicant has to deliver the requirements within two months.
- Nearly all the furniture should be supplied in accordance with SABS standards, but the tender uses an outdated standard, SANS 660 2009. That includes non-negotiable specifications of size, materials and finishes, leaving little room for innovation to meet evolving and local needs. Companies are required to provide proof of SABS product approval which is less than a month old.

Provincial education departments may be using outdated standards and generic specifications to reduce the burdens on supply chain management. That in turn points to limited capacity in supply chain management in the provinces. Any changes to procurement specifications should therefore minimise cost of implementation for provincial departments.

There is an opportunity for the dti to make amendments to the SABS school furniture standards and engage with provinces on the specifications of tenders. Tenders can be made to be more amenable to local inputs and SME producers whilst meeting the changing needs of schools.

Possible interventions include:

1. Engaging with provincial departments to develop new tender specifications that:
    a. Incorporate alternative, locally manufactured composite materials for use in the manufacture including various forms of timber and timber derivatives (laminated wood, plywood, blockboard, laminboard, battenboard, particleboard and fibreboard as well as decorative thermoset surfaces).
    b. Encourage more innovation in design to meet new requirements (for instance to facilitate storage and computer use) and to reduce the cost.
2. Developing a subsidy for SABS certification for smaller businesses, for which it is a significant cost.

4.4 Rolling stock

4.4.1 Expenditure trends

As part of the national build programme, both Transnet and Prasa substantially increased their investment in rolling stock.

In 2014, Transnet contracted to acquire over 1000 new locomotives for the general freight business. For comparison, it had fewer than 2000 locomotives in service at the time. From 2014 to 2017, it spent R28 billion on locomotives, with the first deliveries in 2015.

Simultaneously, the Passenger Rail Agency of South Africa (Prasa[4]) initiated its rolling stock renewal programme, replacing equipment dating back to the 1950s. The forecast for fleet renewal estimated the need for 1200 train sets, or 7224 units, at an estimated cost of R123 billion over a 20-year period.

Prasa capex climbed from around R6 billion a year between 2006 to 2012 to R14,6 billion in 2016/7. Most of its investment went to rolling stock, since Transnet is responsible for maintaining rail tracks and signalling. Prasa distinguishes between procurement of rolling stock, for which it has budgeted R59 billion over ten years from 2013, and major maintenance, on which it currently spends around R1,3 billion a year. (Prasa 2018, p. 5)

Prasa's overall business environment is troubled. On the one hand, passenger numbers have been declining over the past five years, in part due to poor equipment (its wagons average 40 years old). Investment in new stock aims to reverse the decline in trips by improving service. On the other hand, Prasa serves only around 5% of all commuters, although the figure rises to 15% in Cape Town and almost 10% in Gauteng, but it gets around 25% of all national transport subsidies.

South Africa has a long history of manufacturing, maintaining and refurbishing rolling stock, although it has always imported many of the more advanced components. In this context, both locomotives and rolling stock were subject to local content designations, as noted in section 3.2.1 above. Table 14 below indicates the details of the designation. For components, the share of local content was expected to increase over time as South African capabilities improved.

Table 14. Rolling Stock Designations

A. Locomotives and wagons

Class	Required local content
Diesel locomotives	55%
Electric locomotives	60%
Electric multiple units (EMU)	65%
Wagons	80%

B. Components

Component	Local content in 3 to 5 years	Local content after 5 years
Assembly of locomotives/EMUs	100%	100%
Car body	100%	100%
Bogies	100%	100%
Coupling equipment	100%	100%

[4] The South African Rail Commuter Corporation (SARCC) was transformed into Prasa in March 2009. Metrorail, Shosholoza Meyl, Autopax and Intersite Property Management Services, all became part of Prasa.

Component	Local content in 3 to 5 years	Local content after 5 years
Suspension	100%	100%
Heat, ventilation and air conditioning	60%	70%
Braking system	70%	80%
Alternators	90%	100%
Traction motors	65%	80%
Electric systems	80%	90%

Source: National Treasury (2014:2)

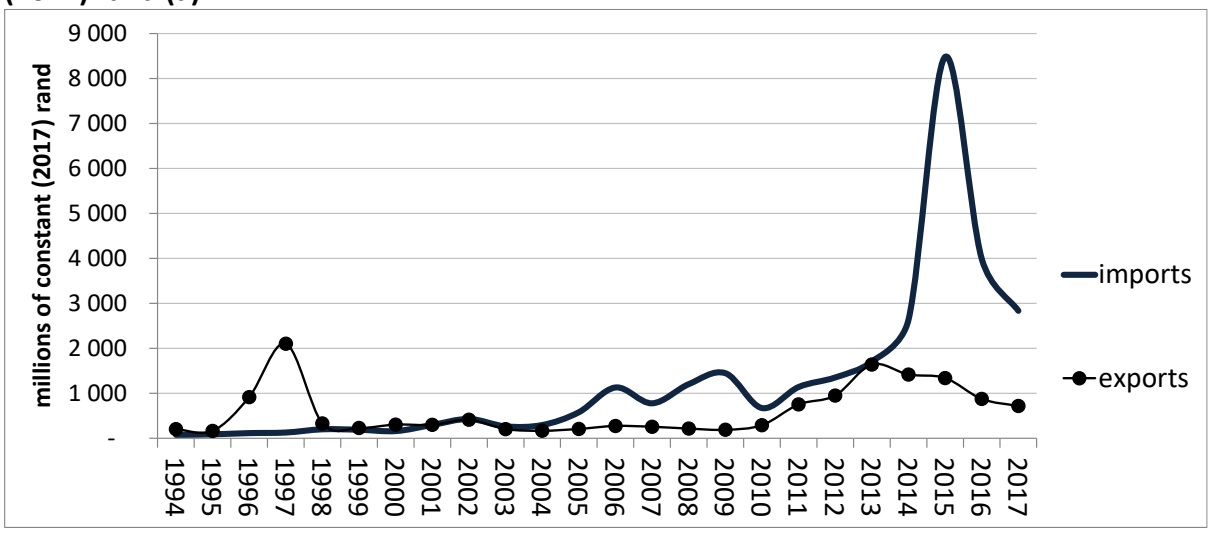
4.4.2 Industry analysis

There is no official data series on production of rolling stock, which forms part of the broader transport equipment industry. Excluding the dominant auto industry, transport equipment comprises rail wagons and locomotives; ships and boats; and aircraft.

Quantec estimates that non-automotive transport employed around 20 000 people in 2017 and contributed 0,3% of the GDP and imports. It accounted for under a tenth of a percent of exports, with boats contributing a significant share. Quantec estimates find that value added and investment by the industry have not growth in recent years, despite the boost to demand from Prasa and Transnet. Given the small size of the industry to the economy, however, the estimates may not be accurate.

Graph 25 shows exports and imports of railroad equipment and parts in constant rand terms. It shows that the first phase of the Transnet and Prasa programmes saw a spike in imports to over R8 billion in 2017 terms, which largely reflected the phasing in of local content requirements. In the following two years, the value of imports fell back to just under R3 billion, still more than twice as high as in 2013.

Graph 25. Exports and imports of railroad equipment and parts in millions of constant (2017) rand (a)



Source: Calculated from Quantec EasyData. Series on exports and imports of railroad equipment and parts in rand. Deflated using CPI rebased to 2017. Downloaded from www.quantec.co.za in September 2108.

In 2017, there appeared to be around 20 companies engaged in supplying, maintaining, repairing and refurbishing rolling stock, most of which have between 100 and 500 employees. Around a third of them were also providing services in other African countries. (WOW 2017b)

In short, South Africa's railway equipment industry was small but had considerable capacity. Still, the increase in procurement with strong local content requirements does not appear to have provided a large boost by 2017, three years after the contracts were signed, although future results might prove more significant.

4.4.3 The impact of state procurement

a. Transnet

Transnet's contract for 1000 new locomotives was shared between China South Rail (CSR), China North Rail (CNR) – which have since merged - General Electric (US) and Bombardier (Canada). In addition, the CSR obtained two separate contracts for almost 200 locomotives, apparently without a local content commitment.

Despite the designations requiring around half of inputs be locally produced, 132 of the locomotives will be fully imported, and 30 assembled from imported knock-down kits. Of the locomotives that meet the dti designation, final production will take place entirely at Transnet facilities in Pretoria and Durban. The resulting strengthening in Transnet's manufacturing capacity is expected to underpin expansion of its engineering services in other African countries.

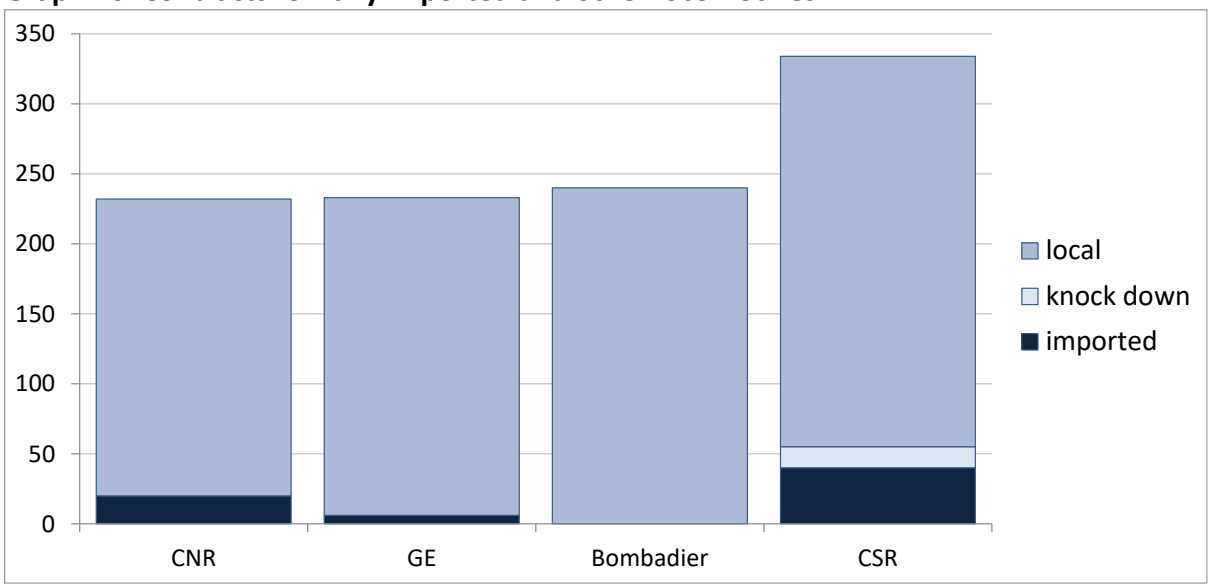
Local components include:

- Brakes
- Axles and wheels
- Alternators
- Structural components and furnishings
- Lighting
- Batteries
- Switches

Some of these are subject to separate designations by the dti.

The contracts reached in 2014 provided for 599 electric locomotives from CSR and Bombardier, and 465 diesel locomotives from GE and CNR. The share of fully imported locomotives varied significantly by supplier, as Graph 26 shows. Reportedly CSR asked for an exemption from the local-content requirements in 2017, on the grounds that it could not find local suppliers, but the dti refused the request.

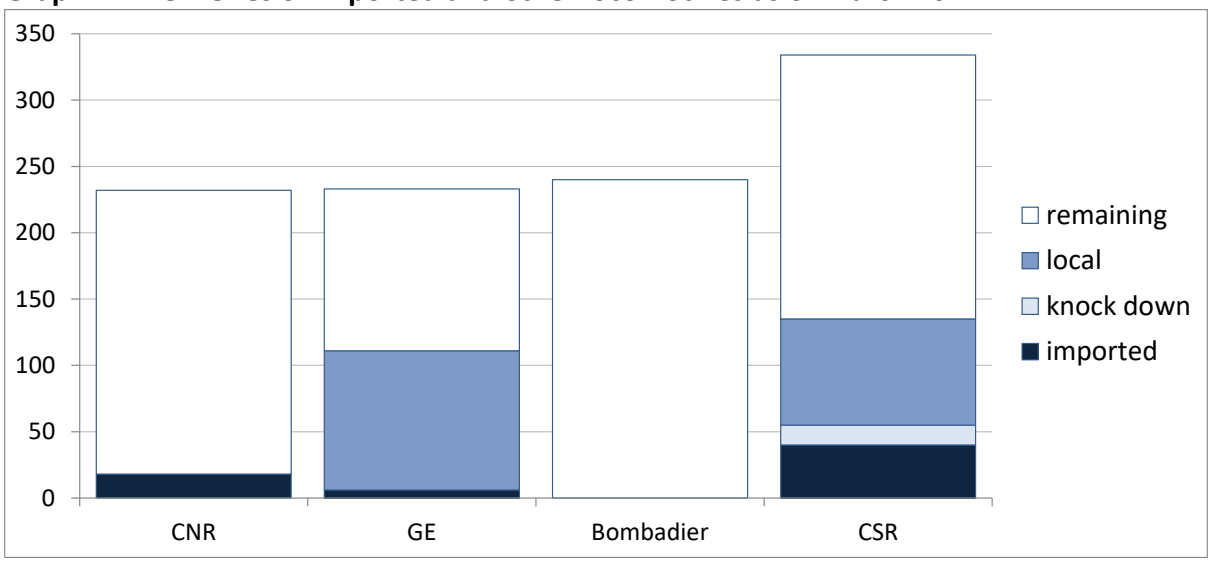
Graph 26. Contracts for fully imported and other locomotives



Source: Transnet. "Transnet Local Public Procurement Feedback: Portfolio Committee on Trade and Industry - March 2017." Downloaded from www.pmg.org.za in March 2018. Pages 11-12.

Most of the imports had been delivered and approved by March 2017. GE and CSR diesel locomotives had started production in Pretoria. The first Bombardier deliveries from the Durban plant were finalised in December 2017, so they are not reflected in the graph below. Bombardier had also established a components plant in Pretoria to meet its local procurement obligations.

Graph 27. Deliveries of imported and other locomotives as of March 2017



Source: Transnet. "Transnet Local Public Procurement Feedback: Portfolio Committee on Trade and Industry - March 2017." Downloaded from www.pmg.org.za in March 2018. Pages 11-12.

Press reports have cited evidence that the CSR contracts were obtained on the basis of political influence and costly (illegal) commissions, and that on earlier contracts CSR was not held to the designation standards for locomotives. In addition, although the dti turned down a CSR request for an official exemption from local procurement requirements, it appears that the company may not fully meet the threshold for local content. (Myburgh 2018)

b. Prasa

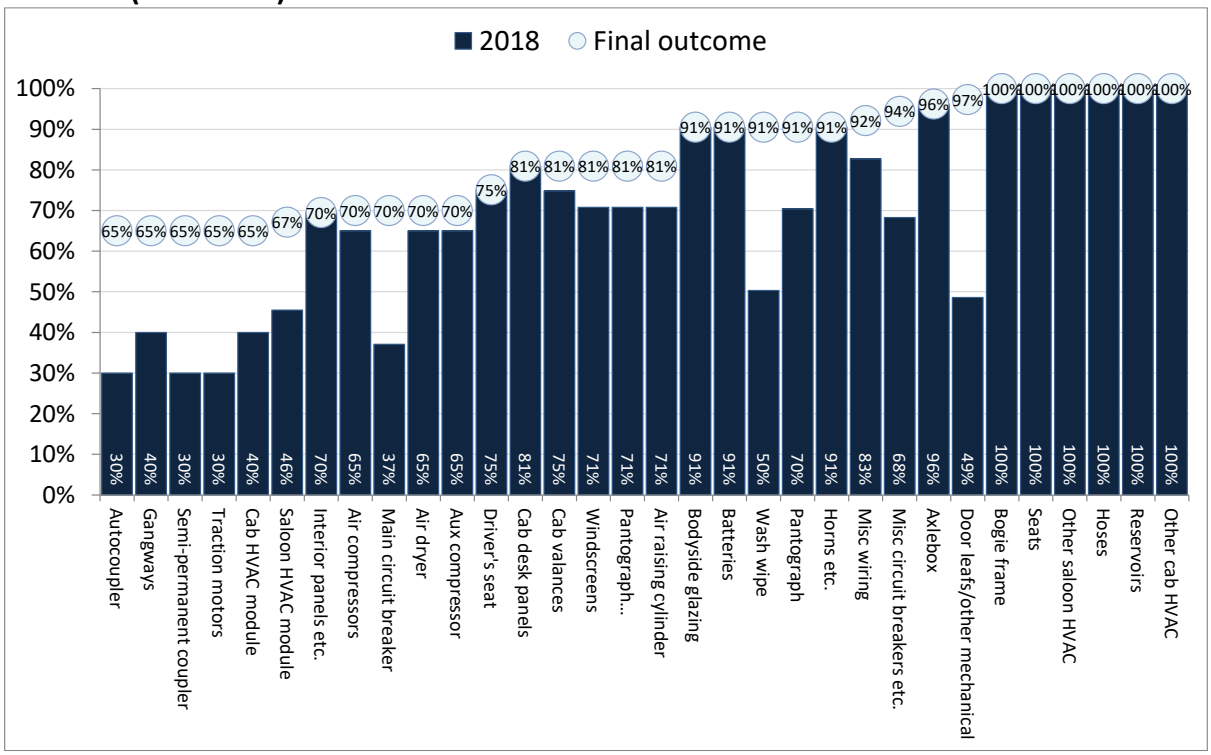
When it was initiated in 2013, Prasa's capex programme foresaw procurement of:

- 70 locomotives imported from Spain for a total of R4,8 billion
- 3500 wagons (equal to 600 trains) over 11 years from the Gibela consortium, led by Alstom.

As of 2016, Prasa had spent R2,6 billion on locomotives. It terminated the contract, however, due to fraud and failure to meet the specifications.

A dti designation from 2016/17 set a local content threshold for rail wagons of 80%. (National Treasury 2016, p. 2) Prasa agreed that the first 20 trains from Gibela would have only 21% local content, and nine had been accepted by February 2017. By 2019, however, the figure was expected to reach 74%. Local components consist largely of structural inputs and furnishings, plus batteries. There is no local content in gearboxes, power wheel sets and a few other major components, and some other inputs are below 65% local input.

Graph 28. Share of local content in local inputs for Prasa trains as of 2018 and final outcome (from 2019)



Source: Prasa. "Follow up on local procurement." Presentation to Portfolio Committee on Trade and Industry. 17 March 2017. Downloaded from www.pgm.org.za in March 2018. Page 8.

In 2014 Prasa awarded the Gibela Consortium an 11-year contract worth R51 billion. The programme was to deliver 600 trains, equivalent to 3600 cars. Prasa also awarded Gibela a 20-year maintenance contract worth approximately R10 billion.

Gibela was a special purpose vehicle specifically created in 2012 to meet the Prasa tender. It was 61% owned by Alstom Southern Africa, a subsidiary of the French multinational. Alstom had a presence in South Africa for over 100 years. Gibela's BEE partners were Africa Rail (NAR) and Ubumbano Rail (owning 9% and 30% respectively), which were included following

an open competitive process to balance skills, experience and broadened participation by black people.

NAR was a new formed rail entrant focused on infrastructure projects including rail, ports, signalling systems, rail logistics, energy-efficient technologies and rail real estate. As of 2018, it was fully owned by a South African entity, EOH. Ubumbano Rail was a black-owned consortium with National Empowerment Fund warehoused shares in Gibela. It was made up of a number of companies including Khipunyawo Rail, the Elgin-Identity Rail Corporation and Community Rail, a new entrant to the rail sector. Other shareholders in Ubumbano included the Prasa Employee Share Option Trust (ESOP), the Gibela ESOP and an education trust.

Gibela submitted to an extensive Economic Development Model that incorporated specific local content and skills training requirements from Prasa and other statutory transformational requirements around ownership, management control, employment equity, preferential procurement, enterprise development and socio-economic development (Gibela 2017, p. 201). Gibela described local content proportion as the proportion of local content expenditure in annual contract expenditure. Specifically, "local content means the monetary value expended in relation to the programme activities comprising local sourcing, local overheads, local raw materials, local assembly, local services, any incurred spend related to the local factory, product evolution facility, railway-related skills development, any other investments that aid the development of the railway or related industries in South Africa and local taxes" (Gibela 2017, p. 7).

Gibela began local production from mid-2017 at a plant in Dunnottar Park, Ekurhuleni on a 78-hectare property. At peak production, the plant will deliver over 60 trainsets a year. In 2018, it had over 600 employees. During peak production, it was expected to employ a thousand more.

The 29-hectare factory included a car-body-shell building, fitting building, warehousing, a testing and commissioning building, a central administration complex and a 1,25 kilometre dynamic test track. The facility also encompassed an adjacent supplier park site with over 20 hectares, being built for R1,3 billion to accommodate component producers. The Supplier Park should enable development of an industrial rail hub in support of localisation. As of 2018, seven companies planned to occupy sites. Gibela's facility also included a training academy with capacity for 18 000 learners, including engineers, artisans and technologists.

As of 2018, Gibela had identified around 100 component suppliers. They were all expected to undergo significant upskilling in order to match Prasa specifications. The supplier base was expected to expand to satisfy plans for rotating sourcing.

Prasa agreed that the first 20 trains from Gibela would have only 21% locally sourced value, after being manufactured at Alstom's Lapa Plant in Brazil. Nonetheless, these trains procured inputs from 32 local suppliers, including doors, seats, structural and stainless steel, cables and luggage racks. Nine trainsets had been accepted by February 2017 (at a cost of R1,3 billion) with 18 trains in service on the Pretoria line by 2018.

Local content was set to increase rapidly after the first 20 trains, peaking at 70% in 2030. The first "local" train was expected to be in service at the end of 2018 with around 43% local content. Most local components would consist largely of structural inputs and furnishings

plus batteries. No local content was anticipated in gearboxes, power wheel sets and a few other major components, and some other inputs were below 65% local input[5].

A key challenge remained the future sustainability of Gibela after its Prasa contract expired. It would be cushioned by its maintenance contract, which would run ten years longer than the manufacturing agreement. However, integration into global supply chains and access to export markets will be key for both Gibela and the suppliers it has developed.

Prasa also commissioned major maintenance on around 500 vehicles a year in the mid-2010s. Its spending for this function fell from over R2 billion in 2012/3 to around R1,3 billion from 2015/6. The process entailed:

- Stripping components/sub-assemblies to constituent parts
- Assessing the extent of wear and undertaking refurbishment to restore worn units to acceptable tolerances
- Re-assembly and testing at sub-system and integrated vehicle level

Major refurbishing was outsourced except for Prasa's 8M fleet. Because Prasa had the trains for so long, permitting extensive reverse engineering, the process was sourced entirely locally. Prasa contracted with seven companies, which is more than it needs but which built capacity. These companies subcontracted specialised work such as overhaul of traction motors and auxiliary machines; wheel sets; specialised repairs in bogies and in control and communications systems.

5 SEIAS

The Socio-Economic Impact Assessment (SEIAS) approach has two characteristics that differentiate it from other impact assessments. First, it reviews risks as well as costs and benefits. Second, it considers impacts explicitly on different social groups, rather than treating them as homogenous.

Table 15 summarises the findings of the SEIAS analysis of local procurement. Its main findings include the following.

- The main trade off arises from the difficulty of ensuring that potential cost bearers in procuring agencies and Treasury also gain from the internalisation of the external benefits of local procurement. If purchasing agencies only see higher costs from local procurement, it will be difficult to enforce at least in its initial phases.
- For suppliers, the main challenges arise from the lack of support to meet government demand initially, the difficulty of finding out about tenders, and in some cases significant fluctuations in procurement over time.

[5] SABS will audit Gibela for BBBEE and local content verification.

Table 15. SEIAS assessment of local procurement

Group	Benefits	Costs	Risks
Employers in industries that could supply the state	Increased demand (able to sell more at the same price, or the same amount at a higher price) Relatively stable market, providing space to upgrade capabilities and expand capacity	Dealing with bureaucratic requirements and verification Meeting conditionalities – the only one enforced is increasing locally produced inputs	Do not find out about contracts. Government contracts are not large enough or sufficiently long term to justify new lines Cost of reporting and verification outweigh increase in revenues Cannot get initial finance to take advantage of contracts
Workers in industries that could supply the state	Create or retain jobs Possibly higher pay	As citizens, may pay more for services if cost to providers go up	Projects fail for reasons given above, leading to job losses or pay cuts Increased cost of services outweighs benefits in terms of work conditions
Unemployed people	Increased job creation both directly (in suppliers) and indirectly through multiplier	As citizens, if cost of procurement goes up then may see reduced services and/or social grants	High costs without anticipated job creation
Procuring agencies	More reliable supply and easier coordination with suppliers Increased budgets over time, if succeed in boosting growth	Transaction costs of identifying and overseeing local suppliers Possible price premium	Transaction costs and price premium may outweigh benefits Unable to identify local suppliers
Economics departments	Instrument to support local industrialisation	Oversight and administration of regime	Alienate other agencies if cost to them is too high Designations are over-ambitious, leading to loss of capacity rather than growth
Treasury	Increased revenue from higher production and employment	Possible price premiums and transaction costs Oversight and administration of regime	Benefits outweighed by costs

6 Summary and conclusions

Macroeconomic simulations point to the potential direct and indirect benefits of local procurement in maximising the stimulus effect of government spending. These benefits were particularly important for South Africa in the late 2010s, as it faced both flatlining growth and a relatively high deficit with depressed revenues.

Given these benefits, the core challenge was to identify the main blockages to local procurement. These could be understood in terms of the factors and systems affecting decisions by supply chain managers in the state, on the one hand, and potential local suppliers, on the other.

On the procurement side, the following issues emerged from analysis here of regulatory systems and case studies of major products.

- Most procuring agencies were not required to track their use of imports over time, with the partial exception of the SOC. As a result, it was impossible to include local procurement consistently in performance indicators for most supply-chain managers. Few supply-chain managers consequently made local procurement a top priority, effectively ranking it well after ease of procurement, price and black ownership.
- A tendency to over-complicate the measurement of local content contributed to the failure to measure and prioritise it. A rough and ready approach, at least initially, would for instance include as "local" products merely assembled in South Africa, not only those with a higher percentage of value add. Starting with a very inclusive definition could lay the basis over time for more specific requirements for particular products and, over time, development of a practical label of origin for South Africa. Even a rough measure appeared preferable to the complete lack of a common indicator, which meant that most state agencies did not have any way to track local procurement.
- Stakeholders who wanted to report violations of designation requirements were often effectively stonewalled by supply-chain managers. The system neither facilitated nor promoted inputs from potential suppliers or their workers (including through their unions), for instance where tenders ignored designations. The tradition of extreme secrecy around tendering aggravated this situation. It would help to establish a hotline at the dti with the capacity to contact supply-chain managers with concerns and ensure they were taken seriously.

For suppliers, the main obstacles were the following.

- Outside of heavy equipment for infrastructure, procurement was fragmented between hundreds of departments, agencies, municipalities and institutions, without a single channel or standard specifications for many products. That in itself made it difficult for potential suppliers to learn about tenders and determine whether, in the aggregate, improved access to government demand would justify developing or upgrading capacity. The problem was worsened by the fact that each state agency developed its own specifications, often without taking into account local capacity or the benefits of local procurement. In addition to the centralisation of procurement for major products by the National Treasury, efforts to standardise specifications and develop single-channel tender advertising at least for designated goods would help.
- Outside of the SOCs, efforts to promote local procurement were not generally linked to direct support for new kinds of production. As a result, some potential producers could not obtain the finance required to establish local production. The situation was worsened by the fact that government contracts typically cannot provide bridging finance for new contractors.

Despite the challenges around local procurement, success in a number of areas pointed to its potential for adding to the stimulus effect of government spending. Critical areas for improvement included:

- Ensuring it was a top priority for supply-chain managers across the state, in part by including it in audited performance indicators and in part by make tender processes more transparent and accountable to stakeholders;

- Linking local procurement to supplier development, for instance through a dedicated facility at the dti, backed by IDC finance, that supply-chain managers could contact for assistance; and
- Simplifying and standardising tender processes as far as possible, at least for designated products.

Annexure A. Notes on Modelling Methodology and Discussion of Results

1 Methodology

A multiplier model based on a 2015 Supply Table (ST) and Use Table (UT) for South Africa (SSA, 2016 and 2018) is used to examine a shift in government procurement toward local suppliers, away from imported suppliers. The ST and UT tables can be combined into a Supply – Use Table (SUT) that identifies 62 activities and 104 products.

Government is represented in the SUT in three different ways:

1) As an **institution** its expenditure is part of National Accounting's final demand. As an institution, Government buys goods and services like households do. However, unlike households who buy many different products, in the SUT, government only buys the product "Public administration".
2) As a **product**, there are no foreign suppliers of Public administration, only the following local activities:
    a. Government
    b. Sewerage and refuse disposal
3) As an **activity**, both Government and Sewerage and refuse disposal activities use a large range products as intermediate inputs as well as inputs from labour and capital. The intermediate inputs are supplied by local producers as well as by imports.

The objective of our analysis is to adjust the degree to which the intermediate inputs of the combined Government and Sewerage and refuse disposal activities are supplied by local producers.

Now, assume that the government activity is able to procure its intermediate inputs only from local suppliers but it cannot control the sources of its local suppliers. For example, it may be possible to procure locally produced computer equipment but the local supplier thereof may still require to source some of its inputs from foreign sources. Government procurement policy is not able to avoid the latter. In order to model this, the following adjustments to the model are required.

1) Split the first round of multiplier knock-on effects off the subsequent rounds
2) Adjust local supply per unit of total marketed supply so that it represents a higher degree of local content or lower degree of imported content

To achieve this, we use product level import reduction factors. For example, in the case of procurement of electricity or petroleum products, the government simply may not be able to specifically select local suppliers. In that case the import adjustment factor would be 0. Either way, local supply per unit of total marketed supply is equal in case there are no imports or import reduction, or higher in case there are imports.

In our illustrative example we assume that procurement of electricity or petroleum products is not subject to local supplier constraints. In the case of all other product, procurement will be fully switched to local suppliers.

In this way we can set up an alternative model with higher local content and can compared the results of government procurement with those of the standard model. The difference between the results of the alternative and standard model can now be interpreted as an upper limit to the impact on gross output for each industry. The impact will be lower if the import reduction factor is less than unity for any of the products procured by government. Note that the model still assumes fixed prices. In other words, the model does not address the possibility that government procurement may now be faced by higher prices charged by local suppliers compared to foreign suppliers.

Policy makers are perhaps more interested in the impact on net in stead of gross output. The former is also knows as value added and the economy-wide concept is GDP. Employment, imports and import duties are other dimensions of interest.

In the case of employment, a further assumption is made in which the average employment – output ratio for each activity is replaced by a marginal employment ratio. The working hypothesis is that the model is applied here to marginal changes. With small impacts, it is unlikely that employment increases by the same rate as output. This may be due to higher labour productivity and / or overtime wages. Either way, the employment – output elasticities are expected to be less than unity. Estimates of such elasticities have been drawn from Moolman (2003).

2 Headline Results

Headline results are shown in the next table. Expressed in terms of GDP (row 1), government procurement contributes 3% in the standard model in the first round (rows 1-3) only. When the switch toward local suppliers is accounted for, the contribution is 3.2%. The impact of the switch itself is therefore 0.2% of GDP.

Table 16: Headline Results of a Switch to Local Suppliers in Government Procurement with 100% import reduction (except electricity and petroleum purchases)

		First Round Impact			Total (all rounds) Impact		
		Standard	Alternative	Alt-Stnd (pp%)	Standard	Alternative	Alt-Stnd (pp%)
		1	2	3	4	5	6
1	% of GDP	3.0%	3.2%	0.2%	5.6%	6.2%	0.7%
2	% of Employment	2.0%	2.1%	0.1%	3.9%	4.4%	0.5%
3	% of Imports	3.0%	0.1%	-2.9%	5.9%	6.5%	0.6%
4	% of Import duties	2.3%	0.1%	-2.2%	4.5%	5.0%	0.5%

Source: own calculations

The impact is smaller on employment for the reasons explained earlier. The switch to local suppliers accounts for about 0.1% of total employment. In terms of imports, government procurement accounts for 3% of imports and 2.3% of import duties during the first round in the standard model. When procurement switches more towards local suppliers (the alternative model), the impact is obviously much lower and directly related to the assumptions that are made at the product level. In our case, some switching was not allowed for electricity and petroleum products. Hence, the impact on imports and import duties drops by 2.9% and 2.1% to about 0.1% respectively.

When direct, first round as well as indirect impacts are taken into account (rows 4-6), the impact on GDP is 5.6% for the standard model and 6.2% for the alternative model that allows for procurement switching towards more local suppliers. The impact of this switch is 0.7%. Compared to the first round effects only, the difference in impacts is 0.5% and can be attributed to the indirect effects beyond the first round. Note that there is no import restriction imposed during the additional round. Therefore, the higher impact is solely driven by the switch in the first round towards more local supply. The same story applies to employment, albeit in a slightly muted way compared to the impact on GDP. The reason is that we use marginal in stead of average employment – output ratios, as explained before.

In terms of imports and import duties the model reveals that in spite of the dramatic drop when procurement is switched to local suppliers during the first round, the total, i.e., direct, 1st round and indirect impacts are larger with the alternative model. Thus, the higher economic activity generated by the switching away from imports ultimately leads to higher imports and import duties collected.

The impact of a switch towards local suppliers so that the imports are reduced by 50% in stead of 100% on headline results is shown in the next table. Note that we still assume 0% reduction in imports for the purchase of electricity and petroleum products.

Table 17: Headline Results of a Switch to Local Suppliers in Government Procurement with 50% import reduction (except electricity and petroleum purchases)

		First Round Impact			Total (all rounds) Impact		
		Standard	Alternative	Alt-Stnd (pp%)	Standard	Alternative	Alt-Stnd (pp%)
		1	2	3	4	5	6
1	% of GDP	3.0%	3.1%	0.1%	5.6%	5.8%	0.3%
2	% of Employment	2.0%	2.1%	0.0%	3.9%	4.1%	0.2%
3	% of Imports	3.0%	1.6%	-1.4%	5.9%	6.1%	0.2%
4	% of Import duties	2.3%	1.2%	-1.1%	4.5%	4.7%	0.2%

Source: own calculations

Although multipliers models are linear, the economy-wide results for the ratio of alternative to standard model shown in the table (columns 3 and 6) are not quite but almost linear in respect of the results in Table 16. Thus, the impact of the switch on GDP in the 1st round in now 0.1% in stead of 0.2% in the case of the 100% import reduction scenario of Table 16. The difference is more marked in when considering all rounds. Column 6 suggests that the impact is more than halved if a 50% in stead of a 100% import reduction is achieved by the local procurement policy. Likewise, the total impact on employment is 0.2% in the 50% import reduction scenario compared to 0.5% for the 100% scenario. Similar impact reductions are reported for imports and import duties.

3 Industry Specific Results for GDP and Employment.

Industry specific GDP impacts of switching government procurement to more local suppliers with a potential 100% reduction in imports during the 1st round are shown in the following tables. The initial first round contribution to GDP is shown in the 1st column of the next table and expressed in terms of the industry's GDP in the 2nd column. In columns 3 and 4 the increase in GDP due to the switch is shown as the alternative impact divided by the standard impact. The industry sorting is based on the initial dependence on government procurement. Row 1 shows that there is significant intra-government transactions but that they are also not much affected by the switch. Interestingly, row 3 suggests that Post and Telecoms rely relatively more on the procurement switch in the 1st round compared to when all other rounds are considered. The subsequent rounds water down the relative impact of the switch. The same applies to land transport (row 6) and publishing and printing (row 20).

In most cases, it is the other way around, in that the added local economic activity rubs off positively. Most pertinently this is the case of Electricity Supply (I35, row 14) as, according to the SUT, government doesn't procure electricity supply (as a product) directly, only electricity distribution services, which in turn requires electricity supply in the 2nd round. A similar story applies to financial services (row 5), real estate services (row 7) and construction services (9). Food and beverages (rows 17 and 19 respectively, show comparable results, although government procurement is less important to these industries. The impact on insurance (row 10) should be ignored as it includes treatment of Cost Insurance and Freight (cif) on imports.

Table 18: Industry Specific GDP Impacts of Switching Government Procurement to More Local Suppliers (100% import reduction except for selected products)

	Industry	Code	Initial Standard Contribution 1st Round	Share of Industry GDP	Alternative / Standard Impact % 1st Round	Alternative / Standard Impact % All Rounds
			1	2	3	4
1	Government	I55	47,845	**7.7%**	0.0%	**0.1%**
2	Other business activities	I54	10,588	**8.5%**	3.1%	**7.3%**
3	Post and telecommunication	I46	8,391	**12.4%**	**17.0%**	**15.6%**
4	Health and social work	I57	5,216	**7.5%**	2.3%	**3.5%**
5	Financial intermediation	I47	5,090	**3.2%**	1.8%	**7.6%**
6	Land transport, transport via pipe lines	I42	4,748	2.3%	**10.4%**	**18.4%**
7	Real estate activities	I50	2,961	1.6%	0.7%	**9.1%**
8	Non-observed, informal, non-profit, househ	I62	2,906	1.0%	6.4%	**19.1%**
9	Construction	I37	1,908	1.6%	2.8%	**9.4%**
10	Insurance and pension funding	I48	1,511	1.9%	-0.8%	**5.6%**
11	Other chemical products, man-made fibres	I19	1,438	**5.2%**	**47.2%**	**36.6%**
12	Computer and related activities	I52	1,200	**15.5%**	3.0%	**6.3%**
13	Motor vehicles, trailers, parts	I31	1,176	**4.6%**	**54.8%**	**45.3%**
14	Electricity, gas, steam and hot water supply	I35	996	0.9%	0.0%	**13.8%**
15	Coke oven, petroleum refineries	I17	968	2.4%	2.3%	**11.1%**
16	Manufacturing n.e.c, recycling	I34	753	**3.7%**	**19.9%**	**20.0%**
17	Food	I08	702	0.8%	5.7%	**8.4%**
18	Fabricated metal products	I26	649	2.4%	**35.1%**	**26.6%**
19	Beverages and tobacco	I09	585	1.7%	2.2%	**7.5%**
20	Publishing, printing, recorded media	I16	516	**3.8%**	**20.1%**	**16.2%**

Source: own calculations

Industry specific GDP impacts of switching government procurement to more local suppliers with a potential 50% reduction in imports during the 1st round are shown in the next table. Similar to the comparison of the results between the 50% and 100% import reduction scenarios of Table 17 and Table 16 respectively, the results are just over 50% lower although the ranking is the same.

Table 19: Industry Specific GDP Impacts of Switching Government Procurement to More Local Suppliers (50% import reduction except for selected products)

	Industry	Code	Initial Standard Contribution 1st Round (Rb)	Share of Industry GDP	Alternative / Standard Impact % 1st Round	Alternative / Standard Impact % All Rounds
			1	2	3	4
1	Government	I55	47,845	**7.7%**	0.0%	**0.0%**
2	Other business activities	I54	10,588	**8.5%**	1.5%	**3.0%**
3	Post and telecommunication	I46	8,391	**12.4%**	7.0%	6.3%
4	Health and social work	I57	5,216	**7.5%**	1.1%	**1.6%**
5	Financial intermediation	I47	5,090	**3.2%**	0.9%	**3.0%**
6	Land transport, transport via pipe lines	I42	4,748	2.3%	4.8%	**7.3%**
7	Real estate activities	I50	2,961	1.6%	0.3%	**3.5%**

	Industry	Code	Initial Standard Contribution 1st Round (Rb)	Share of Industry GDP	Alternative / Standard Impact % 1st Round	Alternative / Standard Impact % All Rounds
			1	2	3	4
8	Non-observed, informal, non-profit, househ	I62	2,906	1.0%	2.8%	**7.2%**
9	Construction	I37	1,908	1.6%	1.4%	**3.8%**
10	Insurance and pension funding	I48	1,511	1.9%	-0.4%	**2.1%**
11	Other chemical products, man-made fibres	I19	1,438	**5.2%**	**18.6%**	**14.4%**
12	Computer and related activities	I52	1,200	**15.5%**	1.5%	**2.7%**
13	Motor vehicles, trailers, parts	I31	1,176	**4.6%**	**21.5%**	**17.7%**
14	Electricity, gas, steam and hot water supply	I35	996	0.9%	0.0%	**5.3%**
15	Coke oven, petroleum refineries	I17	968	2.4%	0.8%	**4.3%**
16	Manufacturing n.e.c, recycling	I34	753	**3.7%**	8.8%	8.5%
17	Food	I08	702	0.8%	2.6%	**3.5%**
18	Fabricated metal products	I26	649	2.4%	**14.3%**	**10.4%**
19	Beverages and tobacco	I09	585	1.7%	1.1%	**3.1%**
20	Publishing, printing, recorded media	I16	516	**3.8%**	6.7%	5.9%

Source: own calculations

Table 18 and Table 19 are repeated below for employment. Due to the linearity of the multiplier model with respect to variables such as employment and GDP, the impacts shown in columns 3-4 of

Table 18 and Table 20 are the same but the order of the industries is different since rankings of absolute values of GDP and employment are not the same. The same applies to the 50% scenarios in the same columns of Table 19 and Table 21.

Table 20: Industry Specific Employment Impacts of Switching Government Procurement to More Local Suppliers (100% import reduction except for selected products)

	Industry	Code	Initial Standard Contribution 1st Round ('000)	Share of Industry Employmnt	Alternative / Standard Impact % 1st Round	Alternative / Standard Impact % All Rounds
			1	2	3	4
1	Other business activities	I54	116	**8.5%**	3.1%	**7.3%**
2	Government	I55	73	**7.7%**	0.0%	**0.1%**
3	Health and social work	I57	21	2.3%	2.3%	**3.5%**
4	Construction	I37	19	1.6%	2.8%	**9.4%**
5	Computer and related activities	I52	18	**15.5%**	3.0%	**6.3%**
6	Non-observed, informal, non-profit, househ	I62	8	0.6%	6.4%	**19.1%**
7	Post and telecommunication	I46	6	**5.3%**	**17.0%**	**15.6%**
8	Financial intermediation	I47	5	2.0%	1.8%	**7.6%**
9	Land transport, transport via pipe lines	I42	4	1.0%	**10.4%**	**18.4%**
10	Motor vehicles, trailers, parts	I31	4	**3.2%**	**54.8%**	**45.3%**
11	Sewerage and refuse disposal	I58	3	**7.6%**	0.0%	**0.2%**
12	Education	I56	3	0.3%	**25.7%**	**16.0%**
13	Fabricated metal products	I26	2	1.4%	**35.1%**	**26.6%**
14	Recreational, cultural and sporting activities	I60	2	1.6%	6.9%	**12.6%**
15	Publishing, printing, recorded media	I16	2	2.7%	**20.1%**	**16.2%**
16	Other chemical products, man-made fibres	I19	2	2.6%	**47.2%**	**36.6%**
17	Hotels and restaurants	I41	2	0.5%	**29.2%**	**22.1%**
18	Real estate activities	I50	2	1.6%	0.7%	**9.1%**
19	Insurance and pension funding	I48	1	1.2%	-0.8%	**5.6%**
20	Machinery and equipment	I27	1	1.0%	**141.7%**	**84.5%**

Source: own calculations

Table 21: Industry Specific Employment Impacts of Switching Government Procurement to More Local Suppliers (50% import reduction except for selected products)

	Industry	Code	Initial Standard Contribution 1st Round (Rb)	Share of Industry Employmnt	Alternative / Standard Impact % 1st Round	Alternative / Standard Impact % All Rounds
			1	2	3	4
1	Other business activities	I54	116	**8.5%**	1.5%	**3.0%**
2	Government	I55	73	**7.7%**	0.0%	**0.0%**
3	Health and social work	I57	21	2.3%	1.1%	**1.6%**
4	Construction	I37	19	1.6%	1.4%	**3.8%**
5	Computer and related activities	I52	18	**15.5%**	1.5%	**2.7%**

6	Non-observed, informal, non-profit, househ	I62	8	0.6%	2.8%	**7.2%**
7	Post and telecommunication	I46	6	**5.3%**	7.0%	6.3%
8	Financial intermediation	I47	5	2.0%	0.9%	**3.0%**
9	Land transport, transport via pipe lines	I42	4	1.0%	4.8%	**7.3%**
10	Motor vehicles, trailers, parts	I31	4	**3.2%**	**21.5%**	**17.7%**
11	Sewerage and refuse disposal	I58	3	**7.6%**	0.0%	**0.1%**
12	Education	I56	3	0.3%	**11.2%**	6.3%
13	Fabricated metal products	I26	2	1.4%	**14.3%**	**10.4%**
14	Recreational, cultural and sporting activities	I60	2	1.6%	3.3%	**5.1%**
15	Publishing, printing, recorded media	I16	2	2.7%	6.7%	5.9%
16	Other chemical products, man-made fibres	I19	2	2.6%	**18.6%**	**14.4%**
17	Hotels and restaurants	I41	2	0.5%	**12.7%**	9.1%
18	Real estate activities	I50	2	1.6%	0.3%	**3.5%**
19	Insurance and pension funding	I48	1	1.2%	-0.4%	**2.1%**
20	Machinery and equipment	I27	1	1.0%	**39.1%**	**24.2%**

Source: own calculations

Annexure B. Goods categories in the budget

The goods categories in published budget data are:

- Assets less than the capitalisation threshold
- Biological assets
- Consumable supplies
- Consumable: Stationery, printing and office supplies
- Heritage assets
- Inventory: Clothing material and accessories
- Inventory: Farming supplies
- Inventory: Food and food supplies
- Inventory: Fuel, oil and gas
- Inventory: Learner and teacher support material
- Inventory: Materials and supplies
- Inventory: Medical supplies
- Inventory: Medicine
- Inventory: Other supplies
- Minor Assets
- Other machinery and equipment
- Software and other intangible assets
- Specialised military assets
- Transport equipment

The following table shows the specific products in the categories account for 95% of goods procured by the state (at a national and provincial sphere). Some of the categories may only be used by a limited number of departments.

Products within the main SCOA categories

SCOA heading	Description of goods within the category	Procuring departments
Inventory: Medicine	Antiretroviral drugs, vaccines, oral contraceptives, tablets, capsules, lozenges, animal medicine and animal vaccines	Limited for use by DEPARTMENT OF HEALTH and DOD. This category will not be distributed for use by other departments.
Inventory: Materials and supplies	Hardware and irrigation materials, electrical supplies, camping material, road construction materials and road signs, notice boards, , building and construction supplies, sports and recreation consumables, spares.	Limited to DPW, DHS,DOT, DAFF
Inventory: Medical supplies	Artificial aids, application sets, gloves, bandages and dressing, tubes, syringes, condoms, contraceptives, dental supplies and surgical supplies.	Limited for use DEPARTMENT OF HEALTH and DOD. Similar expenses incurred by other departments will be allocated under Consumable Supplies: First Aid Kid or Contraceptives
Transport equipment	Aircrafts, aircraft engines, airport transport equipment, buses, cycles, emergency vehicles, mobile clinics, motor vehicles, railway rolling stock, ships and boats and engines, trailers and accessories and trucks.	Not department specific

SCOA heading	Description of goods within the category	Procuring departments
Inventory: Learner and teacher support material	Media, library materials, textbooks and stationery	Purchased by the Department of Education (DoE) for distribution to schools
Consumable supplies	Gardening and farming supplies, gifts and awards, uniform & clothing (protective gear), household supplies (brooms, brushes, soft furnishings, crockery and cutlery	Not department specific
Consumable: Stationery, printing and office supplies	Stationery and printing, art requirements, audio visual materials, binding, books, journals etc. IT consumables, drawing materials, magazines/newspapers, photographic materials, printing departments, government printers, print cartridges, printing paper	Not department specific
Inventory: Other supplies	Laboratory chemicals, military stores, and assets for distribution.	Limited for use by DEPARTMENT OF HEALTH, DAFF, DWA, DOD, SAPS. Similar expenses incurred by other departments will be allocated under Consumable Supplies; Laboratory Consumables
Inventory: Food and food supplies	Baby and special food, bread and confectionery foods, eggs and egg products, fruit and vegetables, groceries, meat, poultry, fish, milk and milk products	Limited for use by DEPARTMENT OF HEALTH, DCS, DSD. Similar expenses incurred by other departments will be allocated under Consumable Supplies; Household Supplies; Groceries
Software and other intangible assets	Mineral exploration rights; computer software; literary and artistic originals; and miscellaneous other intangible fixed assets	Not department specific
Minor Assets	Buildings and other fixed structures less than R5000, biological asset less than R5000, heritage assets less than R5000, machinery & equipment less than R5000	Not department specific
Other machinery and equipment	Aircraft launch/land/ground equipment, audio visual equipment, bags, building air-con systems, cellular phones, cellular routers, commercial and industrial gas cylinders, refrigeration equipment, domestic equipment, electric wires and power distribution, elevator/escalating systems, emergency/rescue equipment, farm/agriculture equipment, firefighting, gardening equipment, guns & rifles (non-military), hydro measure equipment, irrigation equipment, kitchen appliances, laundry equipment, lifting & handling equipment, library books, laboratory equipment, learning/training/library equipment, textile producing machines, mining & quarry machines, medical and allied equipment, music instruments, parachutes, pump/plumb/purifiers/sanitation/waste, photographic equipment, construction & maintenance equipment, radio equipment, security equipment, marine equipment, sport & recreation equipment, survey equipment, telecommunication equipment tents, flags & accessories, wood work machineries, workshop equipment, tools, wrapping and packaging equipment, furniture, office equipment, computer equipment, finance leases other machinery and equipment that can be used continuously or repeatedly in production for at least one year.	Not department specific

Source: National Treasury. 2018. SCOA COR4 Version 16 17 02. 16 April 2016.

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