

# Industrial policy in a harsh climate: The case of South Africa

# 12

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## 12.1 Introduction

This chapter reviews South Africa's progress with the development and implementation of industrial policy over the post-apartheid era. This history falls into three broad phases: from the end of the Second World War to democracy in 1994, 1994–2007, and post-2007, with a particular focus on the last period. Economic policy, especially between 1994 and 2007, has been overwhelmingly dominated by orthodox laissez-faire economic reforms. These reforms were meant to achieve a step change in fixed investment and thereby catalyse higher levels of growth and employment across the economy, including manufacturing. However, they have not delivered significant or sustainable investment, growth or employment gains.

A policy shift on industrial policy began to emerge from 2007. Since then there has been significant progress with the development and implementation of industrial policy in terms of both cross-cutting instruments and sectoral strategies. Despite this, mobilization of the necessary support instruments has proceeded very slowly and has been subject to severe constraints. Meanwhile, the economy has suffered three major external and internal shocks: ongoing currency overvaluation and volatility, the global financial crisis and Great Recession, and a domestic electricity supply and price shock.

This chapter consists of six sections. The next section covers the literature on the role of the manufacturing sector and industrial policy. The third part reviews the most fundamental pre- and post-apartheid government policies affecting industrialization. The fourth section highlights South Africa's 2007 shift in industrial policy from neoclassical-based to structural-based reforms, with particular emphasis on ongoing structural constraints related to monetary policy, capital formation,

industrial financing, infrastructure provision and the supply of key intermediate inputs. The fifth section further discusses the implementation of this new approach in light of the three economic shocks and the identification of key institutional constraints. The last section concludes that, for industrial policy to succeed in South Africa, considerably greater coherence and coordination are required between industrialization objectives and macroeconomic and other economy-wide policies.

## 12.2 The importance of manufacturing and the need for industrial policy

There has been a recent international resurgence in the twin concerns of industrialization and industrial policy, even, to a limited extent, in institutions such as the World Bank, for which active industrial policy has long been anathema (Wade, 2012). This interest has arisen against the background of the disappointing results of orthodox policy reforms in a range of developing countries since the late 1980s and the manifest unsustainability of a finance-led economic model for developed countries in the light of the global financial crisis and associated Great Recession. At their core, orthodox economic policy prescriptions are premised on the notion that unencumbered markets in general and financial markets in particular rationally allocate resources to their most productive and developmental uses. This premise persists despite some developments within neoclassical economics itself that question such conclusions, largely based on market imperfections. As Kindleberger and Aliber (2005) have demonstrated, historically unregulated (or lightly regulated) financial markets are prone to vast and irrational inflation of asset prices (mania), which inevitably is followed by collapse (panic) and spillover onto the real economy (crash). Hence, even within the two exemplars of the Anglo-American finance-led model, vigorous debate has restarted about how to stimulate manufacturing through industrial policy measures.

For emerging economies, economic development is fundamentally a process of catch-up with the per capita living standards of developed countries. Orthodox policy proposals draw on theory that predicts catch-up will occur automatically through factor-price equalization across countries, in which trade increases the return to the abundant factor (assumed to be labour in a developing country) and decreases the return to the scarce factor (capital). The role of trade policy is reduced to maximum trade liberalization that will reveal and unlock production and exports of products and services in which countries have an underlying comparative advantage. This theoretical conclusion requires a range of assumptions

that are rarely met in real-world production and trade. They include the following: there are no qualitative differences among economic activities (no sector is more productive or has stronger linkage effects than another); returns to scale are constant or diminishing; there is perfect information about technological possibilities; and – critically – the adoption of technology is costless and instantaneous. It also assumes full employment and that capital is immobile. These theories solidified into what has become known as the Washington Consensus. Although even its original proponents questioned whether full opening of the capital account was desirable, the influence of the rational market hypothesis – which holds that unrestricted financial markets will allocate capital to its most efficient and productive uses (Palma, 2009) – effectively resulted, in practice, in the inclusion of capital account opening in policy advice based on the Consensus.

In contrast to the Washington Consensus, there is a long trail of literature emphasizing that there is “something special” about the role of manufacturing in economic development associated with the Kaldorian view of manufacturing’s irreplaceable role in generating dynamic increasing returns (Thirlwall, 1983). This literature identifies three channels through which manufacturing transforms the structure of an economy: (i) increasing returns at the firm level – that is, producing proportionately more output relative to inputs; (ii) dynamic increasing returns at the sector or cluster level – productivity improvements due to economies of proximity of related supplier and competitor firms and institutions; and (iii) economy-wide linkages and multipliers, as manufacturing draws in inputs from primary sectors, manufacturing itself and services as well as generating forward linkages to the rest of the economy.

In contrast to orthodox theory, this literature emphasizes that developing country growth and competitiveness are fundamentally driven by cumulative learning to adopt and adapt existing technologies and build interlinked firm- and cluster level capabilities (Amsden, 1992; Lall, 2004). These capabilities take time to build up, but they can be rapidly destroyed and will not necessarily be redeployed to another sector that is closer to the country’s notional comparative advantage in a world where one or more of the assumptions on which comparative advantage rests are likely to be violated.

Amsden (2003) describes how developing countries build on nascent industrial production capabilities by allocating economic rents conditionally, through a set of “reciprocal control mechanisms” (RCMs) that depend on performance. In one form or another, these rents require financing instruments to underwrite periods of learning to reach global competitiveness in target industries (Khan, 2000). The mixture of disciplining and financing instruments needs to be actively mobilized, can take a variety of forms, and must induce effort towards international competitiveness.

### 12.3 Apartheid-era industrialization

South Africa's industrialization has been characterized as dominated by a "minerals energy complex" (MEC) in two senses, both as a set of core sectors and as the predominant system through which capital accumulation has taken place (Fine and Rustomjee, 1996). These MEC sectors comprise various mining activities and further processing into semi-manufactured commodities so closely linked that the latter – despite formal statistical classification otherwise – are better understood as more closely linked to mining than to manufacturing.

Discovery of precious minerals – particularly gold – in the late nineteenth century kicked off a process of mining and mining-linked industrialization (Chabane, Goldstein and Roberts, 2006). State-owned enterprises (SOEs) and the state-owned development bank, the Industrial Development Corporation (IDC), played the central role in post-Second World War industrialization (Clark, 1994), supplemented by other instruments, particularly the extensive yet unstrategic use of import tariffs. Apartheid-era industrialization proceeded largely on the basis of "upstream" processing of mineral- and other natural resource-based commodities without sufficient impetus or policy coherence to develop the more labour-intensive and value adding "downstream" manufacturing sectors, which did not become internationally competitive. Using cheap coal as a feedstock, low-priced electricity was used as a policy instrument to create and expand a range of capital- and electricity-intensive industries that processed minerals and other primary resources into semi-processed commodities. Various industries including Electricity, Rail, Ports, Telecommunications, Steel, Petrochemicals and Aluminium were established by the apartheid State, generally through the introduction of SOEs.

The two SOEs that provided the most critical sets of inputs into downstream manufacturing, mining, and agriculture were privatized in the late apartheid era – Sasol (petrochemicals) in 1979 and Iscor (steel) in 1989. Limited regulatory mechanisms were put in place to discourage the abuse of dominance of (now) privately owned natural monopolies, let alone to strategically leverage their potential to contribute to the diversification of manufacturing. The lack of effective regulation has allowed the extraction of monopolistic rents from downstream firms, predominantly in the form of the practice of import parity pricing (IPP), whereby domestic prices are not set by domestic competition but instead are marked up to what they would cost to import (Roberts and Zalk, 2004).<sup>1</sup>

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<sup>1</sup> This practice results in uniquely high rents in the South African economy due to a confluence of factors: high weight/value ratios of intermediate products, relative under-industrialization of the sub-region, and long distances and high transport costs of alternative sources of import supply.

Notwithstanding a lack of coherent strategy outside of MEC manufacturing sectors, by the end of the apartheid era, important – although not fully competitive – capabilities were established in a range of downstream sectors including metal fabrication, capital equipment, automotives and agro-processing.

## 12.4 Washington Consensus conforming policy (1994–2007)

South Africa's post-apartheid policies – fundamentally informed by the 1996 Growth, Employment and Redistribution (GEAR) strategy (Department of Finance, 1996) – embodied Washington Consensus-type reforms theorizing that liberalization of key markets would lead to more efficient allocation of capital and thereby raise private investment levels and growth and employment rates.

GEAR assumed that domestic price stability would generate the necessary degree of certainty needed to undertake large-scale private investment. Monetary policy has been tight, anchored in the formal adoption of inflation targeting in 2000, with a target range of 3 to 6 per cent. This policy was accompanied by ongoing and substantial liberalization of the capital account; restrictions were lifted and limits were raised for corporate offshore investment and remittance of profits as well as individual portfolio investment. A number of large domestic companies received approval to shift their primary listings offshore – largely to the London Stock Exchange – on the premise that they would be able to raise funds more cheaply on international capital markets and thereby raise their investment levels in South Africa.<sup>2</sup>

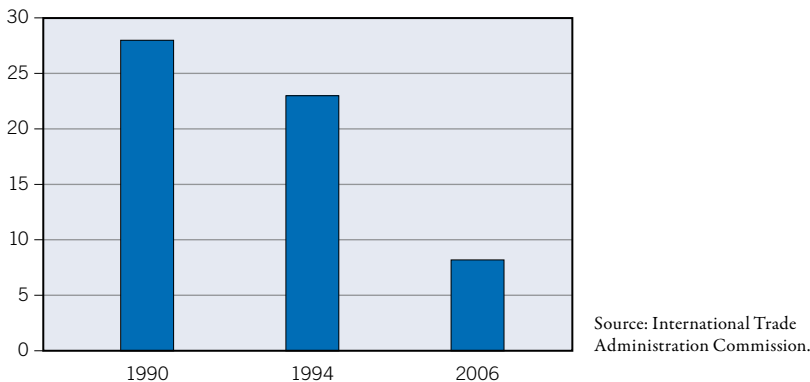
A lower fiscal deficit, it was argued, would result in lower interest rates and would thus “crowd in” private investment. Fiscal restraint, reinforced by substantial improvements in tax revenue collection, has indeed led to a lower debt-to-GDP ratio than that inherited from the apartheid State. Spending on health, education, housing, and limited forms of welfare grants (largely child support and old-age pensions) expanded, but not – until 2002 – expenditure on physical infrastructure.

A commitment to privatize various SOEs was only partially carried out. However, SOEs in a range of sectors were expected to become self-financing and generally commercialized, in preparation for privatization, through substantial cost-cutting of staff, new investment, and even maintenance of existing

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<sup>2</sup> Firms that have shifted their primary listings offshore include Billiton (mining/mineral processing), South African Breweries (brewing), Anglo American Corporation (mining), Old Mutual Life Assurance (financial services), and Dimension Data (information technology).

Figure 12.1 Average industrial tariff, South Africa, 1990–2006 (percentages)



infrastructure. This expectation encompassed much of the activities of utilities such as Eskom (electricity), Transnet (freight transport) and development banks such as the IDC in relation to sectors outside MEC manufacturing. However, they continued to provide concessionary terms to MEC manufacturing sectors in pricing of electricity, freight and cost of capital.

Trade liberalization – in Washington Consensus terms – should reveal nascent comparative advantage and reallocate investment to more productive activities. From 1993 onwards the trade liberalization process initiated by the late apartheid regime was accelerated, as South Africa joined the World Trade Organization (WTO) during the Uruguay Round. South Africa has implemented a tariff phase-down even more rapidly than required under its WTO commitments across a range of industrial and agricultural sectors, but with the exception of two “sensitive” industries: automotives, and clothing and textiles. The average industrial tariff declined precipitously between 1990 and 2006 (figure 12.1). South Africa also entered into two main regional free trade agreements, with the European Union (1999) and the Southern African Development Community (1994).

Edwards and Lawrence (2006) argue that trade liberalization has been the main cause of growth – albeit, by their own admission, limited – in South African manufactured exports since the early 1990s, driven largely by the growth of “medium technology” manufactured exports. Hence, they prescribe further trade liberalization as the main policy mechanism to increase manufacturing exports more generally. These are flawed conclusions for two main reasons.

First, this analysis fails to deal with the specifics of the main sectors that comprise the medium technology category and with the critical role that industrial policy – both past and present – has played in their relative export dynamism. The

major advancing sectors have been steel and other semi-processed metals, chemicals, automotives, and mining capital equipment. As noted above, semi-processed metals and chemicals were the lead sectors of apartheid industrial policy, had their origins as state-owned enterprises and recipients of major support from the IDC, and had developed capabilities that rendered them largely internationally competitive by the end of the apartheid period. Post-apartheid automotive policy did indeed involve large tariff reductions, but in the context of an export–import complementation scheme whereby automotive assemblers had to increase their production volumes and procurement of domestic components year by year in order to earn the same value of import credits (as discussed in greater detail below). Mining capital equipment had developed competitive capabilities over a long period of time due to the specific and demanding requirements of the South African mining sector. Most other sectors fared far less well under trade liberalization, and employment losses in these sectors were far greater than gains in other sectors. This experience is entirely consistent with Shafaeddin's (2005) study that finds that, for Latin American and African countries, trade liberalization has in general not been associated with diversification of manufactured exports except where industries are already very close to the global competitive frontier – in which case liberalization can be useful in providing the final impetus to international competitiveness.

Second, given that trade has already been liberalized by more than two-thirds and that in this context aggregate manufactured export growth has been considerably below the growth rates of peer medium-income developing countries, it is arithmetically implausible that removal of the last one-third of tariffs could have a major dynamic effect even if Edwards and Lawrence's argument is accepted at face value.

Part of GEAR envisaged a range of grant-based “supply side”, predominantly aimed at assisting small and medium (SMEs) manufacturing firms to adapt to a sharp increase in international competition. In practice, on-budget support for these measures was generally of limited scale and widely dispersed across a range of sectors and multiple policy objectives.

In contrast, and despite the emphasis of policy statements on SMEs, substantial on- and off-budget support continued to be extended to a number of capital- and electricity-intensive MEC sectors in three important ways. First, a range of resource processing firms received generous tax allowances and IDC funding for expansions in the post-apartheid period.<sup>3</sup> Second, this support was not tied

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<sup>3</sup> This included firms in industries such as carbon and stainless steel, aluminium, chemicals and paper and pulp.

to strong reciprocal conditionalities, in particular not meaningfully linked to the pricing policies of these natural monopolies in the domestic market. Third, these companies also continued to receive cheap electricity over most of the post-apartheid period.

In no industry have arrangements been more generous than for the main carbon steel producer. Iscor, which was established as an SOE by the apartheid state, was privatized in 1989. It has undertaken various expansions since the early 1990s, assisted with tax rebates and IDC funding. In 2001 its steel making and iron ore mining operations were unbundled, but with the effective guarantee of low-cost iron ore for a large part of its requirements through a “cost plus 3 per cent” supply arrangement from the mining entity.<sup>4</sup> These arrangements paved the way for the introduction of foreign ownership and ultimate majority shareholding by ArcelorMittal. Despite such favourable arrangements a commitment to introduce a “developmental pricing” model, made at the time of assuming majority shareholding, has never materialized.

Perhaps the most significant domain in which post-apartheid economic policy has ostensibly departed from Washington Consensus orthodoxy has been with respect to the promotion of a black capitalist class through Black Economic Empowerment (BEE) policies. BEE has gone through a few iterations since the mid-1990s, with transactions taking place chiefly in sectors where the State has some direct form of leverage, such as the issuing of licences or as a major procurer. Mining policy in particular has been almost overwhelmingly focused on facilitating transfer of significant ownership of the mining sector into black hands through the introduction of a new licensing regime in 2002. However, other developmental objectives – particularly leveraging mining rights for the greater development of downstream value-adding and more labour-intensive sectors – have received little practical attention.

There have also been major weaknesses with respect to post-apartheid institutions for skills development. The previous artisan system was replaced by a skills levy linked to sector education and training authorities (SETAs). This has resulted in top-down choices on allocation of funding and a proliferation of relatively easy-to-do “soft” training and relative neglect of investment in dedicated training facilities, equipment and curricula in the skills required by manufacturing.

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<sup>4</sup> This supply arrangement was intended to be “evergreen” – that is, to last in perpetuity, but it has been subject to complex legal dispute since 2010.



## 12.5 Industrial policy since 2007: National Industrial Policy Framework (NIPF) and Industrial Policy Action Plan (IPAP)

Although there clearly have been industrial policy *interventions* since 1994, there was no formal industrial *policy* until 2007. The Cabinet approved the National Industrial Policy Framework (NIPF) (DTI, 2007a) in January 2007 and its first implementation blueprint, the Industrial Policy Action Plan (IPAP) (DTI, 2007b) in August 2007.

In contrast to the WC, the NIPF rejects a “one size fits all” policy approach, recognizing that:

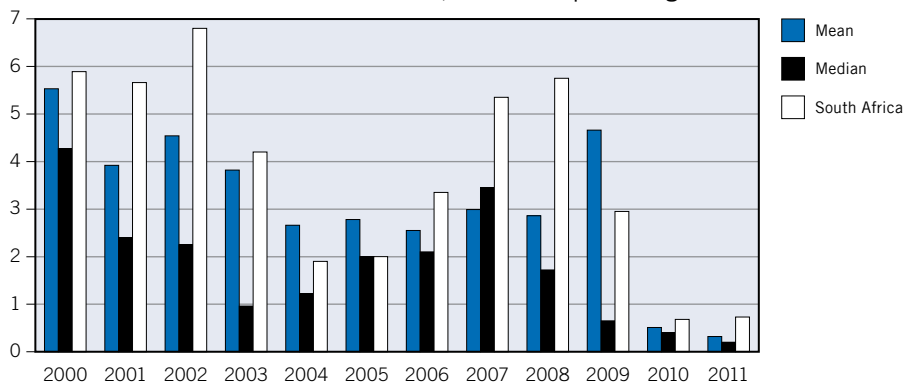
Countries that have uncritically embraced the WC have demonstrated disappointing growth and development results, [while] it is precisely those newly industrialised countries (NICs) that have not blindly followed this route that have demonstrated the highest levels of economic development (DTI, 2007a, p. 29).

In particular, the NIPF emphasizes that “South Africa cannot rely so heavily on either consumption or commodities as the basis for our growth and development” and sets out four strategic industrialization objectives (DTI, 2007a, pp. 6–7):

- To facilitate diversification beyond [the] current reliance on traditional commodities and non-tradable services. This requires the promotion of increased value-addition per capita characterized particularly by movement into non-traditional tradable goods and services that compete in export markets as well as against imports.
- The long-term intensification of South Africa’s industrialization process and movement towards a knowledge economy.
- The promotion of a more labour-absorbing industrialization path with a particular emphasis on tradable labour-absorbing goods and services and economic linkages that catalyse employment creation.
- The promotion of a broader-based industrialization path characterized by greater levels of participation of historically disadvantaged people and marginalized regions in the mainstream of the industrial economy.

The NIPF and successive versions of IPAP (DTI, 2007b, 2010a, 2011 and 2012) are rooted in a structural analysis of the economy in general and addressing key constraints to industrialization in particular. In the context of South Africa’s employment challenge, growth and diversification of the tradables sectors – and

Figure 12.2 Short-term real interest rates in South Africa versus mean and median rates of other middle-income developing and transition economies, 2000–11 (percentages)



Note: Countries are Brazil; Chile; China; Czech Republic; Hungary; Hong Kong (China); India; Indonesia; Republic of Korea, Malaysia; Mexico; Poland; Russian Federation; South Africa; Taiwan (China); Thailand; Turkey.

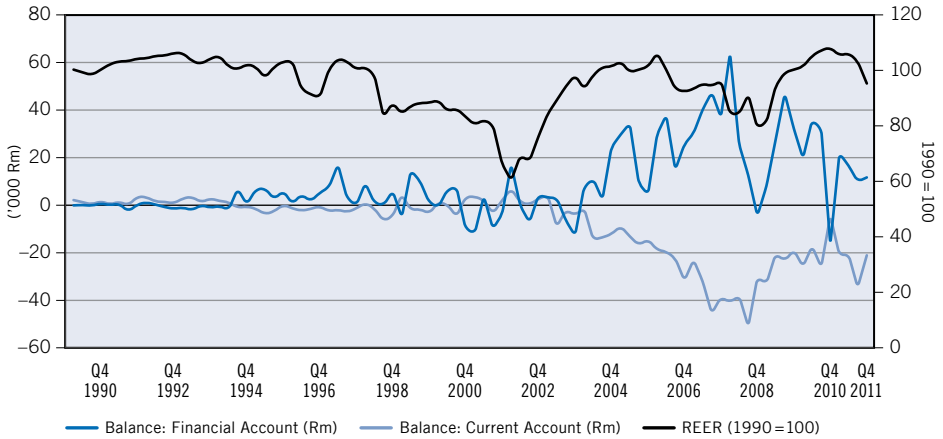
Source: SARB.

manufacturing in particular – are critical, first, because the tradables sectors are less skill-intensive than the private non-tradables sector, and thus likely to absorb more labour in the context of a weak education and skills system; and, second, because manufacturing has the highest growth multipliers, and many manufacturing sectors have high employment multipliers.

The structural analysis that follows takes the two most important prices in the economy as its starting point: the interest rate and the exchange rate. As noted above, South Africa runs a very tight monetary policy regime. Its short-term real interest rates have been consistently above the median for other middle-income developing and transition countries (figure 12.2), despite lacklustre growth and a structural unemployment crisis. It is particularly striking that rates remained high even as the impact of the global financial crisis began to be felt, in late 2008. Rates remained well above the median in 2010 and 2011, although the gap narrowed considerably as most countries, including South Africa, cut their rates in response to the crisis.

South Africa has seen persistent currency overvaluation and volatility over the post-apartheid period, particularly from 2004 onwards (figure 12.3). This pattern is linked to three factors: bond market inflows due to high real interest rates; inflows into the Johannesburg Stock Exchange, particularly on the back of the spike in commodity prices since 2004; and speculative offshore trading of the rand (Hassan and Smith, 2011). The country has thus experienced a version

Figure 12.3 Balance on current and financial account ('000 Rm) and real effective exchange rate (REER) (1990 = 100), 1990Q1 – 2011Q4



Source: SARB.

of “Dutch disease” despite the fact that mining – still the most important component of the export basket – experienced no real value added or export boom. Even before the crisis Rodrik (2008, p. 36) observed:

[T]he South African case highlights ... the tension between the conduct of monetary policy and the health of the tradables sector. While South Africa has not gone to the Salvadoran extreme of dollarizing, its inflation targeting framework tends to deliver an appreciated currency – especially during a commodity boom. This increases the premium on appropriate industrial policies. In effect, the less room for maneuver there is on the exchange rate front, the greater the need for a compensating industrial policy.<sup>5</sup>

This in turn raises the issue of the rate and composition of investment and the role and scale of industrial policy, its financing instruments and associated policy instruments. Orthodox reforms were predicated on the reasoning that liberalization of trade and capital markets in particular would result in a more efficient reallocation of capital, in particular raising the rate of private fixed investment by increasing access to capital and lowering its cost. Since 1994 there has indeed been

<sup>5</sup> Notwithstanding this Rodrik went on to endorse a set of policy reforms for South Africa that included further capital account and trade liberalization.

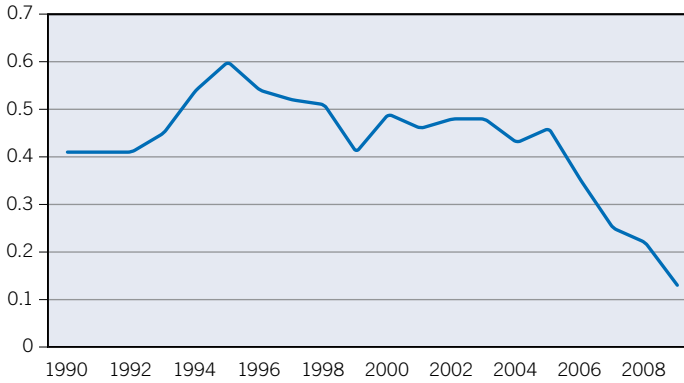
a massive transformation in the allocation of capital. Ashman, Fine and Newman (2011) argue, however, that, far from capital market liberalization helping to mobilize capital for private fixed investment in South Africa, there has been a massive exodus of long-term South African capital in the form of both legal and illegal capital flight (with the boundaries between the two shifting as some of what was previously illegal became legal). The rate of capital flight rose steadily over the post-apartheid period, averaging 12 per cent of GDP between 2001 and 2007 and peaking at 20 per cent in 2007. The vast majority of capital flight is associated with transfer pricing by large conglomerates, particularly trade misinvoicing in relation to minerals and metals exports. Side by side with this export of long-term investible capital there has been a corresponding increase in highly volatile short-term portfolio inflows into bond markets and the Johannesburg Stock Exchange.

Since 1994 private credit extension has grown very rapidly, fuelled by short-term portfolio inflows. However, only a tiny proportion of aggregate private credit extension has gone to fixed investment – about 5 to 6 per cent in 2010. Credit has predominantly taken the form of consumer credit and home mortgages. This has led to a large increase in household debt levels and contributed materially to the trade deficit.

The small pocket of private credit extension going into fixed investment has itself been sectorally concentrated in consumption-driven sectors, with the lion's share going into the Finance, Insurance and Real Estate (FIRE) sectors. Despite the massive growth in the relative share in investment and GDP of the Finance and Insurance sector in particular, aggregate private investment rates did not improve over most of the post-apartheid period. It is only since 2002, when public sector investment began to ramp up, that private investment outside of the consumption-driven sectors has began to improve. Most starkly, there has been virtually no improvement in the savings rate, hovering between 14 and 15 per cent of GDP over the entire period. Despite tepid investment and savings growth, the size of the financial sector doubled between 1994 and 2010, from 6 per cent to 13 per cent of GDP. The relative profitability of manufacturing in relation to FIRE has fallen steadily since 1994 (figure 12.4). Thus, in addition to a version of external “Dutch disease” due to currency overvaluation, there has also been a form of “internal Dutch disease” as relative prices and profitability have shifted against manufacturing.

There are, therefore, significant market failures with respect to private extension of finance for the medium- to long-term investments required for industrialization. Aside from the cost of capital being high relative to key developing and developed country competitors, there is also a tenure problem, a mismatch between sources and uses of funds that constrains long-term fixed investment.

Figure 12.4 Profitability per capita of manufacturing relative to finance and insurance sectors, 1990–2009

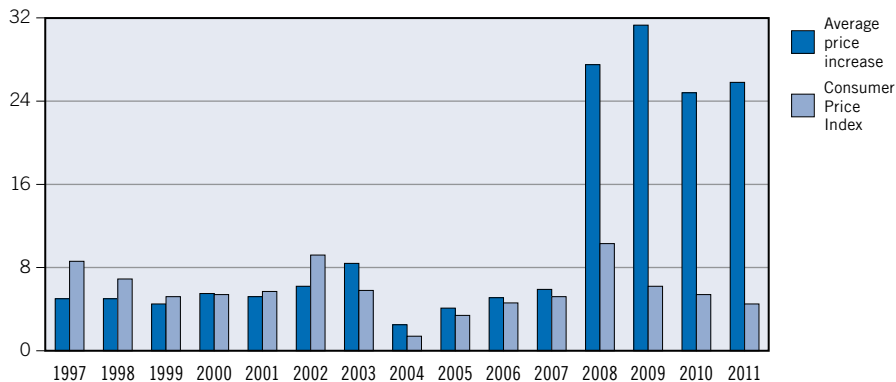


Source: SARB.

Commercial banks are reluctant to match short-term sources of funding (mainly deposits and short-term capital inflows) against the medium- to long-term requirements of industrial and infrastructure funding. Working capital also emerges as a critical constraint, particularly for medium-sized and small firms, and the constraint increases with the length and complexity of the production process, e.g. for capital equipment firms that need to finance a long supply chain and production process. Domestic firms competing against foreign rivals cannot secure the levels of highly concessionary trade finance offered by their competitors' exim banks and export credit agencies – invariably state-backed irrespective of whether they are in developing or developed countries.

Since 2002 South Africa's infrastructure backlog has begun to be addressed with increasingly large public investment plans in the electricity and rail sectors in particular. The excess electricity supply overhang of the late apartheid period gave way to an acute shortage and ultimately, in early 2008, an electricity supply crisis. Since then a large coal-fired build programme has been mobilized, to be supplemented by increasing investments in renewable generation. However, the build programme is being funded predominantly through a narrow "user pays" financing model requiring that electricity prices should rise very rapidly to meet the costs of decades of investment backlog. Over the four years 2008 to 2011 electricity prices have risen by between 25 and 30 per cent per annum (figure 12.5), with further increases of over 15 per cent anticipated over the period 2012 to 2016. Municipal distributors of electricity have in some cases piggy-backed on the underlying increases by adding margins of a similar magnitude on top of those increases. In five years South Africa has gone from having the lowest-cost

Figure 12.5 Eskom annual average electricity price increases price adjustment and change in the consumer price index (CPI), 1996–2011 (per cent)



Source: Eskom.

electricity in the world to parity with a number of developed countries such as the United States and Canada. According to the current price trajectory, electricity prices will rise to amongst the most expensive in the world. As a result a number of industries are currently vulnerable and have either experienced or are subject to firm closure, including zinc and chrome smelters, foundries and steel mini-mills. Coal-based electricity and its attendant negative externalities of carbon emissions and pollution have undoubtedly been historically under- or unpriced, respectively. However, the structural transition from a high energy- and emissions-intensive economy to a low-carbon one cannot realistically be achieved simply through the shock therapy of rising electricity prices, in the absence of a comprehensive and coherent national strategy for fundamental structural change.

Port charges in South Africa are already amongst the highest in the world before further major infrastructure investment expenditure (Demont, 2007). If rail and port upgrades are funded on the same narrow “user pays” principle, this will have a similar impact as the electricity build programme.

The privatization and (in the case of steel) subsequent approval of majority foreign ownership without a regulatory regime that regulates prices of natural monopolies has resulted in ongoing and sometimes worsening of monopolistic pricing in key input sectors such as chemicals and steel. Market power derived from a natural monopoly position combines with South Africa’s distance from other markets and low level of industrialization within the region to render these margins much larger than elsewhere in the world (figure 12.6).

The global financial crisis and the subsequent and on going Great Recession have had a profound effect on manufacturing exports and will pose challenges

Figure 12.6 Steel prices: hot rolled coil, US\$ per tonne, 2004–12

	2004	2005	2006	2007	2008	2009	2010	2011	2012 (Jan.- June)
USA	668	599	659	620	942	552	699	852	778
Canada	671	580	628	595	919	545	689	845	774
China	410	408	394	455	593	449	530	618	571
Japan	536	553	449	491	768	592	715	834	740
Republic of Korea	410	534	497	532	663	542	689	784	725
Taiwan (China)	472	531	447	532	824	514	657	704	688
EU (average)	559	563	588	688	960	546	705	792	703
Germany	548	584	583	696	960	549	710	803	700
World average	534	546	559	600	870	540	684	792	720
Russian Federation	517	449	497	564	864	461	605	679	618
Arcelor Mittal	615	632	599	616	840	618	744	842	795
South Africa (AMSA)									

Sources: MEPS, Metal Bulletin, CRU, ArcelorMittal South Africa (AMSA).

going forward. Recession, slow growth and deep economic uncertainties in the United States and the European Union (EU), South Africa's two largest export markets, particularly for diversified and value added products, have resulted in lower export demand. China and India have become increasingly important sources of demand for South African exports of traditional raw and semi-processed commodities as their resource-intensive industrialization phase sucks in imports of these materials. The sustained slow growth outlook for the United States and the EU poses a major challenge of reorienting trade, especially in non-traditional diversified and value added exports, to higher-growth developing countries.

## 12.6 Implementation of NIPF and IPAP: Progress and constraints

There has been considerable progress in formulating industrial policy, identification and mobilization of support instruments, and implementation of industrial policy since 2007 in the form of NIPF and IPAP. However, this has occurred in the context of the three economic shocks identified above and a number of institutional constraints, of which the most important are outlined below. NIPF and IPAP both emphasize that co-ordination of policies and instruments affecting the industrialization process is critical:

In order for the industrial economy to fire on all cylinders and an industrial policy to be successful, coordination and alignment is required across a range of supporting policies and institutions (DTI, 2007a, p. 9).

In particular, IPAP notes the need for “a comprehensive and integrated response to scale up industrial policy”. It identifies the following key areas of intervention and policy integration (DTI, 2011, p. 29):

- Stronger alignment between macro and industrial policies
- Industrial financing channelled to real economy sectors
- Leveraging public and private procurement to raise domestic production and employment in a range of sectors
- Developmental trade policies which deploy trade measures such as tariff setting and enforcement and standards in a selective and strategic manner
- Competition and regulation policies that lower costs for productive investments and poor and working class households
- Skills and innovation policies that are aligned to sectoral priorities
- Deploying the above policies in general and in relation to more ambitious sector strategies, building on work already done.

### *12.6.1 Macro and industrial policy alignment?*

As implied in the analysis above, there has been limited progress in achieving alignment between macroeconomic and industrial policies. The South African Reserve Bank (SARB) appears to have shifted to a “flexible inflation targeting” regime since 2009 (Marcus, 2012), meaning that considerations of growth and employment would be taken into account in setting interest rates in addition to the primary objective of moderation of inflation. It also temporarily engaged in a policy of additional reserve accumulation between the end of 2009 and mid 2011 but appears to have quietly abandoned such intervention, citing the financial costs of the exercise (SARB, 2012). The ongoing liberalization of capital outflows makes the exodus of long-term capital easier, rendering the economy more reliant on volatile short-term inflows.



### *12.6.2 Industrial financing*

Successive iterations of IPAP have identified the need for a variety of industrial financing instruments to address a range of market failures. The IDC has begun to respond to this challenge by re-prioritizing within its commercially funded balance sheet and making the important shift from acting as a private investment bank to a much greater emphasis on its development bank mandate. To this end it has identified lendable funds of around R102 billion (\$12.75 billion) over five years directed towards priority sectors, depending on economic conditions. A tax incentive for large industrial investments was put in place in 2010. However, on-budget finance has lagged behind IPAP priorities (table 12.1). It was only in mid-2011 that additional financing was agreed in light of increasing concerns about the fate of the manufacturing sector, given the severity and interminability of the global crisis. This culminated in the creation of the Manufacturing Competitiveness Enhancement Programme (MCEP), with an additional budget allocation of R5.7 billion (\$0.71 billion) over three years.

The Portfolio Committee on Trade and Industry has repeatedly questioned whether the fiscal allocation towards IPAP has been sufficient. For instance, “[t]he Committee, while acknowledging the substantive increase in budget for incentives related to IPAP sectors, is also of the opinion that for the IPAP to be an effective tool to drive industrialization thereby addressing poverty and unemployment will require a further increase in its budget allocation” (Portfolio Committee on Trade and Industry, 2012).

### *12.6.3 Leveraging of public procurement*

The NIPF and each iteration of IPAP have identified South Africa’s infrastructure build programme as a major opportunity to resuscitate and grow important sectors of manufacturing by leveraging public procurement. Leveraging public procurement was also identified in 2009 as a critical measure in the country’s multi-stakeholder response to the global crisis (National Economic Development and Labour Council, 2009). However, it took until the middle of 2012 to give practical effect to this policy lever in the form of amendment and operationalization of regulations under the Preferential Procurement Policy Framework Act (PPPFA). The amended regulations enable the designation of certain industries for domestic procurement by public procurement programmes. Initially designated sectors have included rail rolling stock, buses, certain inputs into coal and renewable electricity generation and certain labour-intensive products.

Table 12.1 Nominal and real on-budget IPAP investment support (million Rand)

	2006/07	2007/08	2008/09	2009/10	2010/11	2011/12	2012/13 estimate
Small and Medium Manufacturing Development Programme (SMMDP)	11	6	5	3	2	0	0
Small and Medium Enterprise Development Programme (SMEDP)	0	0	0	1 349	577	0	0
Manufacturing Development Incentives	0	0	0	0	0	1 839	3 227
Sector Development Programme	0	0	0	0	0	3	3
Manufacturing Competitiveness Enhancement Programme (MCEP)	0	0	0	0	0	0	1 224
Services Sector Development Incentives	0	0	0	0	0	333	439
Customised Sector Programmes (CSPs)	47	0	0	0	0	0	0
IDC: Customised Sector Programmes (CSPs)	0	0	0	49	51	57	56
Business Process Services (BPS)	70	110	110	130	63	0	0
Film and TV production incentive	72	96	154	197	246	0	0
CSIR: Aerospace	6	10	10	10	10	17	21
National Foundry Technology Network	0	0	0	0	7	7	21
National Tooling Initiative	0	0	0	0	32	36	49
UNIDO: Automotive Supplier Development Programme	0	0	0	5	7	7	0
<b>TOTAL R' Current</b>	<b>206</b>	<b>222</b>	<b>279</b>	<b>1 742</b>	<b>995</b>	<b>2 300</b>	<b>5 041</b>
<i>GDP Deflator Index (2005 = 100)</i>	<i>107</i>	<i>115</i>	<i>125</i>	<i>134</i>	<i>145</i>	<i>156</i>	<i>161</i>
<b>TOTAL R' (2005)</b>	<b>193</b>	<b>193</b>	<b>222</b>	<b>1 297</b>	<b>685</b>	<b>1 471</b>	<b>3 122</b>

Note: Excludes tariff-based incentives such as the Motor Industries Development Programme (MIDP) as well as the Clothing Textiles Competitiveness Programme (CTCP), which has in effect been funded through the additional tariff revenue collected as a consequence of ending the Duty Credit Certificate Scheme (which allowed clothing and textiles exporters to earn a corresponding import credit).

Source: National Treasury – Estimates of National Expenditure, DTI budget votes, IMF (GDP deflator).

#### 12.6.4 Trade and competition policy

Under NIPF and IPAP tariff setting has shifted from being unidirectional to being informed by strategic sectoral priorities. The general principle informing tariff setting is a downward trajectory for tariffs on industries that produce intermediate inputs for downstream manufacturing, particularly sectors that enjoy considerable domestic market power, and an openness to retain or increase tariffs affecting sectors that can demonstrate value-adding and more labour-intensive potential where “water” exists between the bound and applied rates. Sectors that have had tariffs cut or removed over recent years have invariably been the largest, most concentrated and politically influential industries. This calls into serious question the credibility of deeply ideological claims that industrial policy will invariably be “captured” by entrenched interests and “rent-seeking” (e.g. CDE, 2009; South African Institute of International Affairs, 2008). There is a risk that this policy space will be seriously diminished if the Doha Round is concluded according to the Swiss formula methodology for tariff reduction, which proposes deeper tariff cuts with greater degrees of flexibility (or lighter cuts with less flexibility).<sup>6</sup>

Standards also have taken on a more strategic role under IPAP, which recognizes their increasing role as tariffs come under pressure through multilateral, regional and bilateral trade negotiation processes. South Africa’s standards institutions contribute to the creation of new industries through enabling standards, such as recent enabling standards in the green and renewable energy space. They also play an important role in deterring substandard products that undermine fair trade and consumer safety. Greater coordination has been forged between regulatory and enforcement agencies to tackle issues of customs fraud, illegal imports and goods that do not meet mandatory standards.

Implementation of competition policy has also become more strategically informed by the twin objectives of tackling anti-competitive behaviour in industries providing inputs into production sectors – manufacturing, agriculture and mining – and protecting the purchasing power of poor and working class households. In addition to tariff reductions on the upstream industries referred to above, the competition authorities have undertaken a number of investigations in the steel, chemicals, construction, cement and agricultural subsectors. There have been numerous findings of cartel behaviour or abuse of dominance, leading to

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<sup>6</sup> Because South Africa made bound rate commitments well in excess of those of its developing country counterparts in the Uruguay Round and cut tariffs beyond what was required in terms of bound rates, it will be disproportionately adversely affected unless it is able to negotiate specific recognition of these prior cuts.

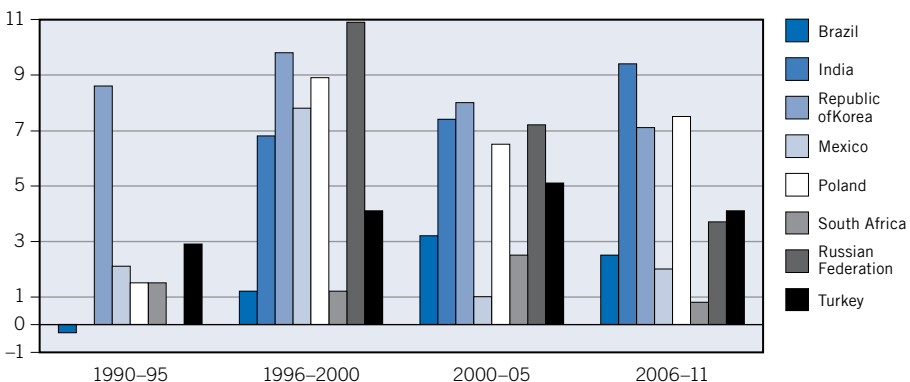
large fines. However, the ability of such competition findings to flow through to changes in pricing behaviour remains to be seen, given the *ex post* nature of competition remedies and resistance to them.

### 12.6.5 Manufacturing performance and sector strategies

As with GDP growth and aggregate export performance, South African manufacturing performance has been muted. Manufacturing value added (MVA) growth has been slower than in peer middle-income developing and transition economies (figure 12.7). Contrary to some mainstream explanations for South Africa’s economic failings, and leaving aside the substantial methodological problems with notions of labour market “rigidity” and “flexibility”, it is significant to note that – even in its own terms – there is no clear relationship at the country level between high levels of manufacturing and GDP growth on one hand and levels of “labour market rigidity” on the other (figure 12.8). Indeed, South Africa is similar or ranks as “more flexible” than the other BRICS countries, namely Brazil, the Russian Federation, India and China.

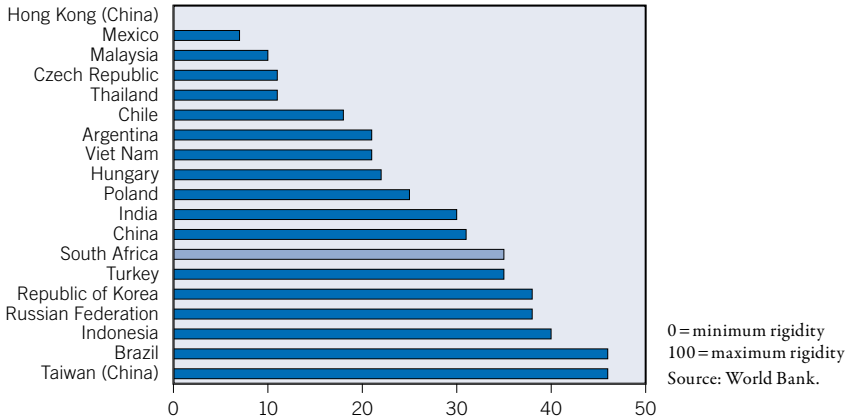
Growth in average real MVA in local currency terms has been very modest at 2.7 per cent compound annual growth (CAGR) between 1994 and 2011. There have been net employment losses in formal manufacturing employment with a CAGR of –1.3 per cent over the same period. Of the nine sectors that outperformed average MVA CAGR, five are capital- and energy-intensive MEC sectors. The remainder comprise furniture; machinery and equipment; motor vehicles,

Figure 12.7 Annual average manufacturing growth rates, selected countries, 1990–2011



Source: UNIDO.

Figure 12.8 World Bank rigidity of employment index, 2010



parts and accessories (Automotives); and food and electrical machinery and apparatus (table 12.2).

As outlined above, three groups of sectors received effective industrial policy support between 1994 and 2007, albeit in the absence of a formal industrial policy: automotives; clothing and textiles; and a range of upstream sectors, particularly steel, petrochemicals and aluminium.

The Automotives sector was promoted through the Motor Industry Development Programme (MIDP) starting in 1995. Under the terms of the MIDP, exporters of automotive vehicles and components earned import rebate credits that could be used to offset import duties on components and vehicles not produced in South Africa. The disciplining mechanism of the MIDP was a sharp phase-down of import tariffs on both vehicles and components. For instance, vehicle tariffs declined from 80 per cent in 1999 to 30 per cent by 2007. This drove automotive original equipment manufacturers (OEMs) to rationalize platforms and increase economies of scale. Vehicle production increased from 388,442 units in 1995 to 534,490 units in 2007, with exports increasing tenfold over the same period. Challenges remain, however. Imports of both vehicles and components remain substantial. Domestic component production has been concentrated in fairly resource-intensive areas such as catalytic convertors and leather seat covers.<sup>7</sup> The focus of the next phase of automotive policy – as the MIDP gives way to the Automotive Production Development Programme (APDP) from 2013 through 2020 – is to address such issues as further increases in economies

<sup>7</sup> Catalytic convertors are a major user of costly platinum group metals (PGMs), while leather seat covers obviously use leather as a major input.

Table 12.2 Compound annual average growth rate (CAGR) of manufacturing value added (MVA) and employment, by sector, 1994–2011 and share in 2011

	MVA CAGR 1944–2011 (%)	Share 2011 (%)	Employment CAGR 1944–2011 (%)	Share 2011 (%)
<b>Manufacturing</b>	<b>2.7</b>		<b>-1.3</b>	
Leather and leather products**	16.4	0.4	-2.2	0.5
Furniture	5.7	1.1	-2.2	2.9
Other chemicals and man-made fibres*	5.6	6.9	-0.2	4.2
Basic chemicals*	4.7	5.8	-2.3	1.6
Machinery and equipment	4.6	6.6	1.4	9.8
Motor vehicles, parts and accessories	4.5	8.0	0.2	7.5
Basic iron and steel*	4.1	5.4	-1.5	4.3
Coke and refined petroleum products*	4.0	7.5	1.1	2.3
Food	3.8	12.5	-1.7	14.9
Electrical machinery and apparatus	3.7	2.9	-2.0	3.2
Basic non-ferrous metals*	2.7	2.8	0.2	1.9
Professional and scientific equipment	2.1	0.6	0.8	0.8
Paper and paper products	1.9	3.3	0.9	2.8
Plastic products	1.5	2.5	-0.7	3.3
Metal products excluding machinery	1.3	5.1	-0.8	9.1
Rubber products	1.2	0.9	-3.4	1.1
Television, radio and communication equipment	1.2	0.9	-3.6	0.6
Wearing apparel	1.1	2.0	-3.6	4.6
Other manufacturing	1.1	6.8	-1.0	3.9
Wood and wood products	0.9	2.2	-1.0	3.2
Glass and glass products	0.9	0.6	-2.4	0.9
Non-metallic minerals	0.7	3.1	-3.6	4.1
Printing, publishing and recorded media	0.7	3.0	0.7	4.5
Textiles	0.2	1.3	-3.4	3.0
Tobacco	0.2	0.7	-0.4	0.2
Other transport equipment	0.1	0.9	0.2	1.4
Beverages	-0.3	5.6	-1.5	2.9
Footwear	-1.2	0.4	-7.4	0.7

\* MEC manufacturing sectors. \*\* Leather sector excluded due to questions about data reliability.

Source: Quantec RSA Standardised Industry Database.

of scale at the assembly level and growth and diversification of value added and employment in automotive components.

From 1995 to 2009 Clothing and Textiles was supported under an architecture like that of the MIDP, whereby exporters earned import rebates based on export levels. However, this programme – the Duty Credit Certificate Scheme (DCCS) – had profoundly different results. It supported a small pocket of

exporters while helping to fuel the surge of imports caused by a combination of China's entry into the WTO and the expiry of the multi-fibre agreement in 2005. The DCCS was discontinued in 2009 and replaced with an on-budget support programme: the Clothing Textiles Competitiveness Programme (CTCP). The CTCP allows manufacturers to earn a value added-based production incentive in the form of credits that can be redeemed only through investments in specific competitiveness and upgrading activities. Even though its implementation coincided with the worst economic crisis since the Great Depression and ongoing currency overvaluation and volatility, the CTCP managed to stabilize employment levels in the sector by late 2011.

As already set out above, upstream sectors such as Carbon and Stainless Steel, Aluminium and Petrochemicals benefited from a range of supportive measures between 1994 and 2007 but de-linked from effective disciplines on exploitation of market dominance. Steel and polymers are the most significant material inputs into downstream manufacturing. For instance, steel makes up between 23 and 43 per cent of the direct and indirect input costs of the metal fabrication and machinery and equipment sectors. Thus, monopolistic pricing fundamentally impedes the ability of these sectors to compete in export markets and against imports. Research conducted for the Department of Trade and Industry (DTI) estimated that 10 per cent lower steel prices would induce downstream firms to increase output by 44 per cent and employment by 22 per cent, while a 20 per cent decrease would induce increases of 68 per cent and 45 per cent, respectively (DTI, 2010b).

The NIPF and each version of IPAP have identified monopolistic pricing of intermediate inputs as a fundamental constraint to downstream manufacturing growth and diversification and have highlighted the importance of competition and minerals policies to address these challenges. The competition authorities have responded to IPAP imperatives since 2007 and engaged in a concerted effort to address *ex post* evidence of anti-competitive conduct, but they lack the powers to directly regulate prices or change market structure.<sup>8</sup> Anticipating these difficulties, Fine (1997) had recommended the regulation of the South African steel industry.

However, minerals policy in particular has not been deployed in a meaningful way to ensure that South Africa's mineral endowment is passed through to promote the development of downstream manufacturing in the form of jobs and value addition. For instance – notwithstanding rhetorical commitment to downstream beneficiation – current mineral licensing legislation does not include

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<sup>8</sup> Since natural monopoly industries are capital intensive and have a minimum efficient scale, the options for addressing behaviour through structural change are limited, for example a single integrated plant cannot feasibly be broken up.

beneficiation as an objective (African National Congress, 2012). Rather mineral licensing has focused predominantly on leveraging BEE ownership participation in the mining sector. There have been a number of other missed opportunities to introduce conditionalities that would ensure that natural resource rents flow to downstream industrial development, including during the unbundling of Iscor into its mining and steel parts; the sale of the mining component; and linked to tax incentive support to the steel sector since 1994. A similar pattern emerges in other natural monopoly sectors such as polymers and aluminium.

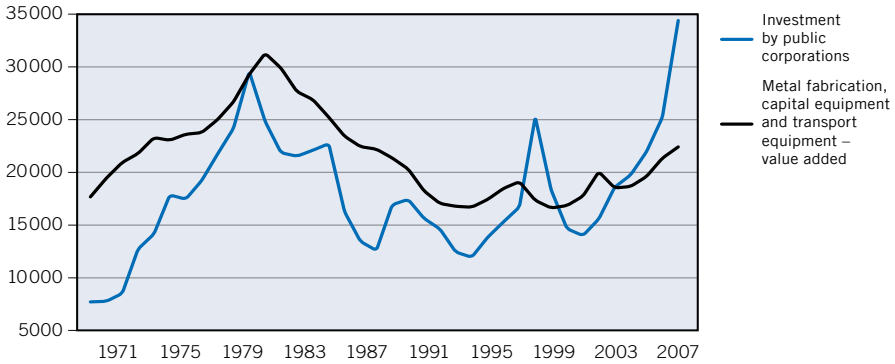
The Metal Fabrication, Capital Equipment and Transport Equipment (MFCTE) cluster are core sectors that rely on steel as a major raw material input. Historically, the performance of the MFCTE cluster has been strongly linked to the level of public investment, particularly by SOEs (figure 12.9). Thus, the real MVA of the MFCTE sectors in general peaked at the same time as public investment in the early 1980s and has never since approached similar levels. Important capabilities and skills in these sectors have been dissipated over the last 30 years due a confluence of factors in addition to monopolistic pricing of inputs. These factors include: low domestic investment demand and slow progress in mobilizing public procurement regulations; exchange rate overvaluation and volatility; trade liberalization; and inadequate financing instruments, particularly for various forms of working capital requirements. The Capital Equipment sector of the MFCTE group has, however, demonstrated relatively strong performance, largely because of its mining capital goods segment linked to South Africa's historical mining investment and an important source of diversified manufacturing exports.

Thus, IPAP focuses on a coherent package of measures that includes leveraging public investment expenditure; financing for supply-side upgrading and skills development; tackling monopolistic pricing of raw material inputs; and support for building on areas of dynamic capabilities such as product development in mining capital equipment.

The Agro-processing sector also accounts for a substantial part of manufacturing. The Food segment – but not the Beverage segment – has grown considerably above the manufacturing sector average. It has traditionally relied on the domestic market plus the EU as its key export market. The global crisis and the prospect of lengthy stagnation in the EU fundamentally challenge this model. Significant opportunities exist to expand the sector in a variety of directions: first, through expediting the necessary regulatory measures to create a domestic bio-fuels sector, which could create tens of thousands of jobs across the value chain from agriculture through to refining and distribution; second, to replace imports in selected high import penetration produce such as soy; third, to target high growth net-food importing developing countries to diversify trade in this sector;



Figure 12.9 Investment by public corporations and value added in Metal Fabrication, Capital Equipment and Transport Equipment (million South African Rand in real 2000 prices), 1970–2007



Sources: SARB and Quantec SA Standardised Industry Database.

fourth, to support greater product development in relation to wealthier consumers in the domestic and export markets.

Green industries and industrial energy efficiency are considered major new initiatives. South Africa's commitment to procure 17.8 GW of renewable energy by 2030 provides an opportunity to catch this technological wave and participate as part of production chains rather than as importers and service providers to imported technologies, as happened with the ICT technological wave. Procurement and supply-side upgrading are the critical instruments to facilitate participation as component suppliers to wind, solar photovoltaic and concentrated solar power projects. Solar water heater manufacture and services is another opportunity as revisions to building energy efficiency standards require new buildings to install this or similar technologies. Opportunities also exist in such areas as industrial energy efficiency and waste management.

### 12.6.6 Policy and institutional coherence

The above analysis illustrates that extensive work has been carried out to identify transversal and sector-specific constraints in relation to key industries or groups of sectors and to develop and implement detailed sector strategies. Despite this, various progress reports on the implementation of IPAP repeatedly raise two key institutional constraints: first, the need for greater alignment of macro-economic policies with industrialization imperatives and, second, the need for stronger supportive action from other government departments (DTI, 2011).

## 12.7 Conclusions

This chapter reviews South Africa's progress over the post-apartheid era with the development and implementation of industrial policy. Orthodox laissez-faire economic reforms dominated the 1994–2007 period but did not deliver significant or sustainable investment, growth or employment gains. A policy shift began in 2007. Since then there has been significant progress in the development and implementation of industrial policy both in terms of cross-cutting instruments and sectoral strategies.

However, mobilization of the necessary support instruments and policy alignment has proceeded very slowly, even as the economy has been subjected to three major shocks: ongoing currency overvaluation and volatility, the global financial crisis and ensuing recession, and a domestic electricity supply and price shock.

The major lesson to be drawn is that successful industrialization is not simply a matter of deploying “microeconomic” instruments such as tariffs and fiscal incentives, however well designed. It also requires considerably greater integration across a range of economy-wide policies. These include provision of public goods such as reasonably priced modern infrastructure and skills development institutions that are aligned to industry needs. Most important is the need to ensure that relative prices and profitability favour investment in value-adding productive sectors of the economy rather than shorter term debt-driven consumption and speculative activities. This requires significantly stronger measures to maintain a competitive and stable exchange rate and, by implication, to manage short-term capital flows and the composition of domestic financing activities.

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