THE PRESIDENCY
REPUBLIC OF SOUTH AFRICA

SPAID

BUSINESS TRUST

Support Programme for Accelerated Infrastructure Development

Infrastructure Expenditure Tracker

August 2010

The Business Trust Support Programme for Accelerated Infrastructure Development (SPAID)

SPAID is a partnership between the Business Trust and the Presidency of the South African Government. SPAID works to combine the resources of business and government to accelerate the achievement of the Government's infrastructure development targets.

SPAID's objectives are that:

- Private Sector support accelerates public sector delivery by mobilising:
  - private sector initiative;
  - private sector systems and delivery approaches; and
  - focused strategic support.
- Dialogue and understanding between senior public and private sector stakeholders in the infrastructure sector improves.

Please visit the website for more information: www.spaid.co.za.

The Presidency

Strategic objectives defined by South Africa's Presidency include:

- Co-ordination, monitoring and communication of government policies and programmes;
- fostering nation building;
- enhancing an integrated approach to governance for accelerated service delivery and supporting and consolidating initiatives for building a better Africa and a better world;
- bringing government closer to the people; and
- facilitating a Developmental State through accelerating economic growth, interventions in the second economy, elimination of poverty and fostering nation building.

Initiatives being undertaken by AsgiSA fall into six broad categories; a massive investment in infrastructure, targeting economic sectors with good growth potential, developing the skills of South Africans and harnessing the skills already there, building up small businesses to bridge the gap between the formal and informal economies, beefing up public administration and creating a macroeconomic environment more conducive to economic growth.

For more information on The Presidency and AsgiSA, go to: www.thepresidency.gov.za

The Business Trust

The Business Trust combines the resources of business and government in areas of common interest to accelerate the achievement of national objectives. It focuses on creating jobs, building capacity and combating poverty.

The partnerships of the Business Trust are structured through:

- The corporate partners who fund the Business Trust. Over 140 of South Africa's leading companies have committed over R1billion to the Business Trust since 1999.
- The board of the organization, made up of cabinet ministers and the heads of the major corporations who support the Business Trust.
- Sector specific partnership committees made up of business and government leaders, who oversee project implementation.
- A series of implementing partnerships with the agencies that implement Business Trust programmes.

Please visit the website for more information www.btrust.org.za.

This study was undertaken for the Support Programme for Accelerated Infrastructure Development (SPAID) by Keith Lockwood.

Contact Details

Keith Lockwood

3 Holt Street
Parkhurst
Johannesburg
2193
Telephone: 011 7884364
Cell Phone: 082 4698479
E-mail: keithloc@iafrica.com

List of acronyms used in this document

AIDS	Acquired Immunodeficiency Syndrome
ASGISA	Accelerated Shared Growth Initiative for South Africa
FIFA	Fédération Internationale de Football Association
GDP	Gross Domestic Product
GEC	Global Economic Crisis
HIV	Human Immunodeficiency Virus
MIG	Municipal Infrastructure Grant
NERSA	National Energy Regulator of South Africa
PIG	Provincial Infrastructure Grant
SOEs	State-owned Enterprises
SPAID	Support Programme for Accelerated Infrastructure Development

Executive Summary

Infrastructure has traditionally referred to the physical assets - such as roads, utilities, water and sewage systems - needed by industrial economies. However, in the post-industrial "information age", definitions have been broadened to include communications networks such as the internet, and distinctions have been drawn between economic infrastructure (the physical assets that provide services used in production and final consumption), social infrastructure (assets that support a healthy workforce with adequate skills) and institutional infrastructure (such as the legal system, culture and capital markets). Whatever the definition that is adopted, it is fair to say that the quantity and quality of a country's infrastructure has a direct impact on its economy's ability to operate and to expand over time.

In recent years the South African public sector's infrastructure spending programme has formed the centrepiece of government plans to support and facilitate economic growth and development, and to thereby help to achieve the targets set in the Accelerated Shared Growth Initiative for South Africa (ASGISA). In addition to contributing directly to economic growth, the public sector infrastructure programme is also supposed to support other ASGISA objectives by contributing to job creation, reducing poverty and assisting in developing competitive local industry.

The sheer scale of this public infrastructure development programme, together with the fact that rolling annual budgets have continually been supplemented and adjusted, and that so many different parties are actually involved in the delivery of the associated projects, has meant that it has been difficult to track the spending. In recognition of this, the Support Programme for Accelerated Infrastructure Development (SPAID) commissioned this study.

The demand for infrastructure is derived from the demand for the output of the industries that the infrastructure serves. This implies that as the GDP of an economy increases, so too does its need for infrastructure. However, the characteristic "lumpiness" of infrastructure assets, and the fact that the pace of technological change is accelerating, means that the ratio of output change to infrastructure change is not constant. While infrastructure can theoretically be supplied publicly or privately, its inherent characteristics mean that spending on it is usually accompanied by significant regulation – which impacts directly on aspects such as ownership structure, financing, pricing and demand growth, and thereby on the supply decisions of the market. Investment decisions are made more complex by considerations around the quality of the infrastructure supplied, as well as the timing and quantity.

Trends in public sector fixed capital formation and fixed capital stock

An economy's real fixed capital stock represents the replacement value of all previous gross fixed capital formation spending, less the value of all fixed capital consumed. It is also the quantity and quality of the fixed capital stock (and the infrastructure portion of it) that determines the maximum potential output of the economy – given the quantity and quality of other available factor inputs. In analysing trends in infrastructure spending it is important to distinguish between the stock of infrastructure (represented by the fixed capital stock), the flow of new additions to the capital stock (represented by certain types of gross fixed capital formation), and the consumption of the existing stock of infrastructure.

The levels of real public sector gross fixed capital formation in South Africa – which is assumed to represent the flow of new additions to public infrastructure - increased relatively rapidly between 1963 and 1976. This was followed by a sharp dip and short-lived recovery between 1976 and 1980, and then an extended – and quite dramatic – fall for the following seven years. A nascent recovery - driven by increased spending on non-residential buildings and construction works between 1987 and 1989 - could not be sustained, and the levels of spending then slid further till 1994. By this stage real public sector capital formation was at the same levels as seen in 1965. In the democratic era, real public sector fixed capital formation spending gained momentum in the years following the 1994 elections until the brakes were firmly applied in response to fall-out from the 1998 Asian Crisis. Spending then declined in real terms till 2001, but in the years since then there has been almost exponential growth in public sector fixed capital formation – driven by dramatically higher construction works activity, and increases in investment in most other asset types.

South Africa experienced a progressive and accelerating increase in the public sector's real fixed capital stock between 1960 and 1981and then further, smaller increases for the following four years. Between 1986 and 2002 there was a marginal decline, but in the post-2002 period it increased at a faster rate than at any other time for which figures are available. The replacement value of the public sector fixed capital stock in 2009 stood at R1 556 billion in constant 2005 price terms – compared with R1 286 billion in 2002.

However, when the real value of the country's public sector infrastructure is divided by the prevailing population, a somewhat different picture emerges. It shows a significant and steady increase in the quantity of infrastructure available per person between 1960 and the early 1980s – with real per capita values rising from R18 360 in 1960 to a peak of R41 055 in 1985. However, these averages do not reflect apartheid-era racial inequalities which significantly distorted the access of large portions of the population to such infrastructure, and the benefit they were able to derive from it. Factors such as increasing urbanisation would also have influenced the growth in, and level of, public fixed capital stock per capita over this period. Unless the "depreciation" of the capital stock is fully offset by gross new fixed capital formation, the real quantity of the public sector capital stock will decline – as it did between 1985 and 1995. The resulting period of static and marginally-declining fixed capital stock translates into a pronounced fall in the per capita value of real public sector capital stock – which declined by almost one third from its 1985 high to R27 906.

On the basis of the depreciation rates applied to different asset types, just over R60 billion (in R2005 price terms) of fixed capital formation was required in 2009 simply to maintain the real fixed capital stock of the public sector at the same level as it was at the end of 2008. This translates into average life spans ranging from 2.5 years in the case of computers and related equipment to 36.8 years for construction works. The weighted average annual depreciation rate for public sector capital assets is 4.1%, with an implied average life span of assets of 24.3 years.

Actual and projected spending by different tiers of government and state-owned enterprises

National Treasury estimates of actual and projected spending on infrastructure by the diverse elements of the public sector indicate a quite dramatic rise in expenditure between fiscal 2006/07 and 2009/10, but anticipate slower growth in the coming three fiscal years. Total nominal public sector spending on infrastructure rose by an average of 41% per year between fiscal 2006/07 and fiscal 2009/10 – from R84 billion to R235 billion. This growth was driven by average annual growth in infrastructure spending by non-financial public enterprises of close to 70% per year. The value of public-private partnerships also grew rapidly over the period – increasing by an average 117% per year.

The projected outlook for total spending by the public sector for fiscal 2010/11 to 2012/13 is less stellar – with estimated average growth of only 8.5% a year. Spending growth is expected to be driven by extra-budgetary institutions (20% p.a.), national departments (19% p.a.) and local government (14% p.a.), but the value of public-private partnerships is expected to contract by an average of almost 24% a year over the period.

The table below summarises the budgeted and actual levels of spending on infrastructure by the various elements of the public sector, as well as annual changes and the cumulative total since the adoption of the ASGISA programme. Although there was initially a significant shortfall between what was budgeted and what was actually spent by the public sector as a whole, the variance between cumulative budgeted spending and cumulative actual spending has shrunk from more than 25% in 2006/07 to less than 2% in 2009/10.

Description	2006/07		2007/08		2008/09		2009/10	
	Budget	Actual	Budget	Actual	Budget	Actual	Budget	Actual
	R Billions	R Billions	R Billions	R Billions	R Billions	R Billions	R Billions	R Billions
National Departments	8.9	4.6	5.8	5.7	6.4	6.3	8.0	6.4
Provincial Departments	32.0	27.1	35.4	29.4	36.9	36.1	39.9	41.2
Local Government	26.0	21.1	28.2	30.7	31.2	39.6	49.5	37.5
Consolidated government	66.9	52.8	69.4	65.8	74.5	82.0	97.4	85.1
Extra-budgetary Institutions	4.1	3.7	5.3	3.7	4.5	6.2	7.0	10.9
Public-private Partnerships	3.8	1.3	3.5	3.9	8.5	4.9	13.9	13.8
General Government	74.8	57.8	78.2	73.4	87.5	93.1	118.3	109.8
Non-financial Public Enterprises	37.7	25.7	44.7	56.8	71.2	79.4	119.6	125.5
Annual Total - Public Sector	112.5	83.5	122.9	130.2	158.7	172.5	237.9	235.3
Cumulative Total – Public Sector	**112.5**	**83.6**	**235.4**	**213.8**	**394.1**	**386.3**	**632.0**	**621.6**
Annual % Increase in Budgeted and Actual Total Public Sector Infrastructure Spending	22.5%	-7.0%	9.2%	55.9%	29.1%	32.5%	49.9%	36.4%

Sources: 2005, 2006, 2007, 2008, 2009 and 2010 Budget Reviews

While there is a concern in some quarters about a rapid fall-off in the level of public sector infrastructure spending after the completion of 2010 FIFA World Cup-related projects, there are still a large number of major projects that are scheduled for completion in subsequent years. The most significant of these by value are the Kusile and Medupi power stations – which have a combined price ticket of more than R266 billion, and which should be completed by fiscal 2015/16 (in the case of Medupi) and 2018/19 (in the case of Kusile). Most of the stimulatory impact of these projects still has to flow into the economy.

By contrast, the scheduled completion dates for some of the large-scale projects in the transport sector (Gautrain and Gauteng Freeway Improvement Scheme) are more imminent, and a large portion of the costs have already been sunk.

The table below shows the actual levels of spending for 2009/10, as well as the National Treasury estimates for the next three fiscal years. Although the nominal value of spending is still expected to increase in coming years, the rate of increase slowed significantly in the 2009/10 fiscal year, and is projected to remain below 10% over the next three fiscal years. Whether these nominal increases translate into real increases will depend on the extent to which prices are adjusted over the period. Given current inflation trends and targets, some real growth still seems likely.

Description	2009/10 Actual R Billions	2010/11 Estimate R Billions	2011/12 Estimate R Billions	2012/13 Estimate R Billions
National Departments	6.4	6.8	7.8	10.7
Provincial Departments	41.2	45.6	50.0	50.8
Local Government	37.5	41.3	50.4	56.0
Consolidated government	85.1	93.7	108.2	117.5
Extra-budgetary Institutions	10.9	11.2	15.1	18.8
Public-private Partnerships	13.8	9.9	11.4	6.1
General Government	109.8	114.8	134.7	142.4
Non-financial Public Enterprises	125.5	147.0	148.7	158.0
Annual Total - Public Sector	235.3	261.8	283.4	300.4
Cumulative Total – Public Sector	**621.6**	**883.4**	**1166.8**	**1467.2**
Annual % Increase in Estimated Total Public Sector Infrastructure Spending		11.3%	8.3%	6.0%

Source: 2010 Budget Review

It is evident from the tables above that national government departments are responsible for a relatively small proportion of total spending on infrastructure assets. However, they have tended to under-spend their capital budgets in recent years, and the gap between budgeted figures and actual ones - while still inconsequential in the overall context - has been getting bigger.

Collectively, infrastructure spending by provincial governments accounts for around 17% of total public sector expenditure. Spending on capital assets by provincial governments rose strongly between fiscal 2005/06 and 2009/10 and was characterised by a general trend towards modest over-spending of capital asset budgets. Compositionally, capital expenditure by provinces is dominated by spending on buildings and other fixed structures – which has tended to account for around 80% of the total in recent years. The balance is made up almost exclusively of spending on machinery and equipment.

Local government in South Africa consists of 295 metros, municipalities and district councils and is an important government interface for delivery. However, it is also a tier of government that is faced with significant capacity constraints. This is illustrated by the fact that in 2007/08 95 local authorities spent less than 40% of their capital budgets, 44 spent between 40% and 60% of their budgets, 9 spent between 60% and 80% of their budgets, and 61 spent between 80% and 100% of their capital budgets. In the same fiscal year 44 authorities spent between 100% and 150% of their capital budgets, 19 overspent on budget by between 150% and 200%, 9 spent between 200% and 300% of their capital budgets, and 7 over-spent by more than 300%. Although there has been some improvement in budgeting accuracy and/or spending efficiency at the aggregate level for this tier of government, the proportion of local authorities that under-spent on their capital budgets in 2007/08 (71%) is largely unchanged from the proportion that under-spent in 2003/04 (72%). This tends to confirm the view that, while there has been an improvement in spending by metros and larger municipalities, the smaller, more numerous, municipalities and district councils continue to find it difficult to spend their capital budgets. This is despite the clear need to do so from a delivery perspective.

State-owned enterprises are responsible for more than half of the infrastructure spending of the public sector – with Eskom expected to account for at least half of the capital spending by non-financial SOEs in coming years. Spending by these institutions increased by around 70% per annum between 2006/07 and 2009/10, but the rate of growth is projected to slow in the years thereafter – averaging close to 8% a year between 2009/10 and 2011/12. Total spending by non-financial public enterprises is expected to increase to R149 billion in fiscal 2011/12 – up from R26 billion in 2006/07.

Funding of public sector infrastructure spending

The funding for public sector spending on infrastructure can essentially come from one or more of the following sources:

- Taxation
- Grants and transfers
- Loans
- User charges
- Private sector contributions to public-private partnerships

Transfers from national government to provincial government may be classified as equitable shares (which are based on formulas developed by the Financial and Fiscal Commission), or conditional grants. The most significant conditional grant for funding provincial infrastructure spending is the Provincial Infrastructure Grant (PIG). Provinces may supplement transfers from national government through own revenue sources – although these tend to constitute a relatively small proportion of total provincial spending.

Both national and provincial governments can transfer funds directly to local governments, or make indirect transfers by paying particular service providers or households on behalf of a local authority. In the case of national government these transfers to local authorities may take the form of equitable shares or conditional grants (of which the Municipal Infrastructure Grant or MIG is the most significant). South Africa's six metros also receive a portion of the fuel levy.

Public entities are generally responsible for funding their own capital expenditure. However, national government does – in many cases – either act as guarantor of loans accessed by these entities, or (less frequently) extend loans to such entities directly. There was a dramatic increase in the value of loans guaranteed in fiscal 2009/10 – more than doubling from just over R62 billion in 2008/09 to R137 billion in 2009/10, and accounting for almost 79% of all new fixed capital formation by public corporations in the most recent fiscal year. In addition to the changes in loan guarantees, government has also extended loans directly to Eskom (valued at R33 billion in 2009/10 and R20 billion in the current 2010/11 fiscal year) to fund the building of power stations. Together with the increase in loan guarantees in 2009/10, this points to a massive increase in the direct, and contingent liabilities of national government towards public entities.

There are indications that the public sector as a whole has cut back on infrastructure spending plans in response to the Global Economic Crisis and its aftermath – with planned capital spending by general government expected to be between R13 billion and R16 billion lower over the next three years than originally indicated in the Medium Term Budget Policy Statement released in October 2009. However, these cuts have been partially offset by increased spending plans by extra-budgetary institutions. Non-financial enterprises are expected to cut capital spending in 2011/12, but to then increase expenditure in the following fiscal year – suggesting deferment rather than cancellation.

The slowdown in the level of economic activity in the wake of the Global Economic Crisis, and resulting decline in tax collections has necessitated a significant increase in public sector borrowing. In fiscal 2008/09 the combined public sector borrowing requirement amounted to 4% of GDP. However, this increased dramatically to almost 12% of GDP in 2009/10 and is expected to remain at relatively high levels over the medium term. As a consequence debt service costs are expected to increase from around 8.9% of national government revenue in fiscal 2008/09 to 12.9% in 2012/13. This is still substantially lower than corresponding debt servicing costs that existed in 1994 and that currently prevail in many other economies, but does point towards an element of crowding out as in the future government will have around 4% less of revenue collected to fund service delivery. The gross total debt of government is expected to increase quite rapidly from 27% in 2008/09 to more than 43% of estimated GDP in 2012/13.

Another potential concern is that the ratio of debt service costs to net loan debt suggests that National Treasury believes that average interest rates on state debt will decline from around 8.3% per annum in 2009/10 to 7.9% in fiscal 2012/13. This may not be consistent with the view that capital market rates are likely to be structurally higher in coming years.

Employment trends in the construction sectors

There is an underlying assumption that the increase in public sector spending on infrastructure will lead to an expansion in the number of people employed – both directly in the construction sector, and indirectly through its facilitation of private sector investment and supply expansion. While employment trends in civil construction are more likely to reflect underlying trends in spending on power stations, soccer stadia, airports and roads, a significant portion of the investment by general government is into buildings – so trends in this sub-sector must also be taken into account. Employment in the construction sector as a whole initially increased quite strongly – rising by more than 100 000 jobs between 2005 and 2007. However, the global economic slowdown contributed towards a subsequent decline in total employment.

Employment in the civil construction sector increased by about 31% between 2000 and 2007 - but lost some of these gains in subsequent years so that it was around 20% above its 2000 levels in 2009. Building construction employment increased by close to 24% between 2000 and 2006 before commencing its decline back to its 2000 levels in 2009.

The impact of public sector infrastructure spending on the broader economy

Multiplier effects – particularly as they relate to fixed capital formation multipliers - are often misinterpreted. In assessing the impact of a R1 million investment in fixed capital in a particular sector, it is important to note that the resulting impact on that sector, and on the economy more generally, can vary substantially. This variation will be influenced by factors such as whether the investment in question constitutes net new investment in the sector, or merely contributes to the maintenance of the existing capital stock in that sector. The extent to which existing production capacity in a sector is currently being utilised will also influence the socio-economic impact of any new investment.

Average multipliers for both construction sub-sectors (civil and building) were applied to the estimated general government spending on construction-related infrastructure in fiscal 2009/10 in order to try to determine the impact on the broader economy. Spending of R51.3 billion is estimated to have directly and indirectly given rise to, or supported, economy-wide sales of around R194 billion, added R64 billion to South Africa's GDP, generated labour remuneration of around R28 billion, required additional fixed capital formation of R15 billion, and supported the employment of around 485 000 people.

The impact of infrastructure spending on competitiveness

It is ultimately firms – not countries - that compete with one another for shares of particular markets – so market share of local and global markets for particular products provides the best indication of microeconomic competitiveness. However, country competitiveness is critical to company competitiveness because the quality of institutions and infrastructure and the stability and appropriateness of macroeconomic policy have a profound impact on the level of transactions costs facing firms, and hence on their ability to compete in global markets.

Country competitiveness is a relative term. The mere fact that a country has improved in many (or even all) the diverse aspects that are said to influence competitiveness does not automatically imply that that country will be more competitive. If the rate of improvement, and their collective impact, is less than that of other competing countries, the competitiveness of the country in question might actually deteriorate in relative terms. This is probably particularly true in South Africa's case, where the country has slipped in competitiveness rankings, despite a perceived improvement in many areas regarded as relevant to national competitiveness.

According to the World Economic Forum's Global Competitiveness Report, South Africa's overall competitiveness ranking has been reasonably static since 2006/07, after slipping in 2005/06. The infrastructure ranking has been more volatile, improving from 49th to 43rd between 2006/07 and 2007/08, before deteriorating back to 48th. This deterioration may have been influenced by the electricity blackouts and load-shedding in early 2008. The infrastructure ranking has since improved to 45th.

South Africa's rankings in respect of the various sub-components of the overall infrastructure assessment indicate a relatively positive assessment of air transport, and available seat kilometres, a reasonable – but deteriorating - assessment of road quality, and poor rankings in respect of electricity supply quality and the number of telephone lines. Although the effects of the recent surge in infrastructure spending have yet to be reflected in a significant improvement in South Africa's overall competitiveness ranking, it is expected to improve as a consequence of past, and planned, spending. However, this presupposes that other aspects of competitiveness are not allowed to deteriorate in relative terms.

The real benefits of this infrastructure spending will only be felt by businesses generally once the various projects are completed. Perversely, disruptions during the construction and implementation phases of the various infrastructure projects may actually have served to undermine the competitiveness of private businesses (and the economy more generally) in the short-to-medium term. This reality points to the need for more effective, and strategic, planning in respect of the future provision of public sector infrastructure – so that Eskom-type disruptions can be avoided.

For the full version of this Infrastructure Expenditure Tracker please visit www.spaid.co.za.