


Evidence-based Employment Scenarios

Employment Scenarios to 2024

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Executive Summary

Unemployment and low levels of economic participation are amongst the greatest challenges facing South African society, economy and therefore government. In this light, the South African government has adopted targets of halving unemployment and poverty by 2014. This would reduce unemployment from about 26% in 2004 to 13% in 2014. This paper assembles a set of possible scenarios for 2024, on the basis of the assumption that the 2014 target is met. It is assumed that Government would like to see "full employment" by 2024, which in these scenarios is assumed to an unemployment rate of 6.5%. Normally scenarios offer a wider range of possible outcomes: for example, it is of course possible that the 2014 targets are not met. The approach used in this paper is to identify the kinds of decisions that would be required to bolster rates of job creation, under different economic conditions and to set some realistic expectations for how certain market-based sectors might realistically contribute to employment growth.

The assembly of employment scenarios is a multi-faceted exercise. Using the broadest brush strokes, there must be a consideration of where and by what means jobs might feasibly be created, appropriate supportive labour market and social protection policies, and the political economy questions surrounding these choices and trade-offs.

Employment Targets

These scenarios are designed to ask how the economy might look if unemployment were halved to 13% by 2014 or quartered to 6.5% by 2024. The unemployment rate is the ratio of unemployed to the labour force. The employment rate is the inverse: the ratio of employed to the labour force. Future unemployment rates will therefore depend on the rate of labour force growth. This in turn relies on the growth in the working age population (aged 15 – 65) and the extent to which they participate in the labour market. In 2004, about 53% of the working age population participated in the labour market[1]. This is very low by global standards: in SA, the extent of labour force participation has a strong urban/rural and racial dynamic. In 2004, 50% of Africans participated in the labour force, as compared to 64% of other race groups. This is partly explained by the very slow rate of job creation for Africans and high rates of discouragement. Moreover, low rates of participation are also partly explained by

[1] Of those who did not participate, approximately 14% would have liked to work, but were "discouraged" and not searching: they fall outside of the official measurement of the labour force. A further 16% said they were studying. The remaining 17% had other reasons such as being disabled, involved in child care, saying they were "too young or old too work" (Stats SA: Sept LFS 2004).

geography, networks and cost of job search: the labour force participation rate in the rural areas was only 41.6% as compared to 63.5% in urban areas.

There is an expectation that growth in the South African working age population may slow due to falling birth rates and HIV/AIDS. However, there are reasons why participation in the labour force might rise. The simple expansion of employment will encourage more people to actively invest in the search for work. This will contribute to rising urbanisation, where participation is higher. Continued economic growth will also attract immigrants from surrounding states. This could have the impact of expanding the labour force, but also reducing the unemployment rate: immigrants are not likely to invest in moving to SA and then not work.

In these scenarios, the labour force grows by between 1.6% and 2.8% pa, and the labour force participation rate reaches 61% to 64%.

To halve unemployment, 5 million net new jobs must be created between 2004 and 2014. An additional 4.4 million net new jobs would be needed between 2014 and 2024 to reduce the unemployment rate to 6.5%.

Sources of Employment

The scenario building exercise identifies potential lead employment sectors, and by what means they might be stimulated. There are plenty of examples of countries with sufficient numbers of skilled people who are out of work to show that it is necessary to consider how employment might be expanded in the first place. This paper therefore sketches some basic elements that need consideration in building employment scenarios from the "demand side".

For the moment, it is assumed that the 'supply side' will respond appropriately to any demand side stimuli. In other words, let us assume that labour at the required skill level and quantities could be available for any type of demand.

From an employment creation perspective, there are five broad sources of job creation, including:

- Expanded public works programmes
- "Informal sector" including subsistence agriculture, domestic work and the usual notion of the informal sector (such as spaza shops or informal mechanics)
- The public service
- Resource based sectors
- Low productivity industries that tend to be low paying. These tend to be domestic oriented and spin-off of more demand-dynamic goods and services. Retail and construction are examples. However, sectors that had typically been seen as non-traded and undynamic are changing, and their dynamism seems to be more related to the incentive structure than to an inherent characteristic. This opens up new policy domains in locating sources of growth and employment.

Sandy Lowitt has prepared a companion case study on the construction sector as an example.

- 'Demand-dynamic' goods and services industries that take advantage of growing global markets. These sectors ultimately tend to pay higher wages. Examples include business process outsourcing, finance and large parts of manufacturing. It can also include high-value agriculture such as cut flowers. These also include capital-intensive minerals-related export industries, such as mining, iron & steel or heavy chemicals, which do not really create much employment.

Three initial scenarios are sketched, with the aim of stimulating debate. These are expressed from the perspective of being in 2014, and looking backwards to 2004 and forwards to the possible implications toward 2024. They all assume that nothing will go wrong significantly in South Africa's growth path, and that macroeconomic policy remains approximately the same.

GDP growth rates of 3%, 4.5% or 6% pa are seen to hinge more on domestic policy choices, although global trends will matter somewhat. This approach is taken since there are still quite a number of institutional improvements that would induce new phases of growth, no matter what happens globally.

The stories are simply a device to communicate learning that has been made through the Employment Scenarios research and roundtables. Therefore, these central learning points are outlined below:

- There are two complementary ways of ensuring that the benefits of growth are broadly shared: through the composition of industrial growth and through the way that private and social incomes are distributed.
- The composition of employment matters a great deal. High productivity (usually traded) sectors tend to pay more than low productivity sectors, even for the same skill or occupation, as shown in Table 2. The more people working in higher paying tradables sectors, the more households will be able to depend on wage income for their livelihoods. In 2004, the distribution of wages was such that 65% of working people earned less than R 2,500 per month, which meant that in the absence of social grants their dependents lived on approximately $2 per day. 39% of working people earned less than R 1,000 per month, approximately equivalent to $ 1 per day.
- Although productivity improvements have been important drivers of accelerated growth in recent years, the benefits have not translated into earnings for low skill workers. That is, low skill employment expanded dramatically, but wages did not. On average across the economy, real wages did not rise for low and semi-skilled workers between 1997 and 2005. This is mostly because new jobs were sourced in vulnerable sectors, with high labour turnover, making contracts weak. This phenomenon is not unique to South Africa: the growing prominence of services appears to be contributing to rising income inequality, with those that are extremely high paid and very low paid. The Department of Labour has introduced minimum wages and escalations in most vulnerable sectors. It is uncertain whether these will slow down employment creation, or whether they will simply offer an affordable "floor".

- It is well known that manufacturing is generally an important ingredient in the development process. However, as countries become richer, manufacturing output may continue growing, but the share of manufacturing employment begins to fall. Each decade, the share of manufacturing in total employment begins falling at ever lower levels of per capita income. This is partly explained by global technology diffusion. Countries dominated by minerals exports also have a lower share of manufacturing employment than do non-minerals exporters at any level of per capita income. However, some countries, such as Indonesia and Malaysia have broken out of this pattern, and have managed to achieve higher proportions of manufacturing employment.
- Currently, there are few countries generating manufacturing employment growth in excess of 2% pa. Some of the very successful manufacturing industries are not creating net new employment at all. This explains why manufacturing is becoming a smaller share of total employment in so many countries. The absolute maximum that could be expected from South African manufacturing is perhaps 150,000 to 400,000 net new jobs between 2004 and 2014. This range should enable the setting of reasonable expectations for what it can and can't do.
- Having a higher proportion of manufacturing is not necessarily a guarantee of higher growth rates. Prof Jaime Ros of the University of Notre Dame shows that Mexico managed to achieve high manufacturing export growth *without achieving export-led growth*. This is explained by the role of the maquila in generating large numbers of jobs in low skill assembly activities, without any promotion of the development of capabilities. Therefore the usual reasoning for why manufacturing promotes growth – for example, learning and linkages – would not apply. Prof Al Berry argues that Malaysia may have a similar problem albeit less extreme, in having promoted electronics assembly without having developed deeper capabilities.
- In a set of 11 case studies of economies that managed to accelerate and sustain high growth rates, the majority implemented some combination of a devaluation to boost exports, investments in key network services, and strong market access arrangements. Chile had the strongest market orientation in the group, but even it invested heavily in R&D to initiate new industries and devalued its currency for a period.
- To achieve shared growth through wage income, industrial policy *must* apply itself to enabling the expansion of newer industries that have the same growth-inducing properties normally associated with manufacturing. The most likely source of both growth-inducing and employment-creating industries will be found in services. New ways of thinking about how to stimulate these sectors will be required, as will strategies to identify ways of promoting backward linkages into manufacturing. The study by Fiona Tregenna on the linkages between services and manufacturing shows how strong the pulling power of services can be. However, the more creative work will be found in the realm of business strategy, and in identifying new promotional industrial policy levers. South Africa cannot afford to miss opportunities where it has existing capabilities in a receptive global economy. Some of these are identified in the companion case study by Sandy Lowitt on the construction sector.

- All of our research shows that there will be no "silver bullet". No one intervention will generate "a million jobs". We have done a myriad of sector studies and each one offers up potential in the range of 20,000 to 250,000 net new jobs. Often we feel disappointed that yet again we have only identified a small opportunity. This mindset needs to change. Employment will arise as a result of deeper linkages in the South African economy. Employment expands as an organic process as one thing leads to the other. The diversity in the South African economy is a strength – it takes awhile to build, but it is also harder to destroy and so rolls through shocks with less trauma.
- While sector interventions will be important, a recognition that employment is likely to arise from many different, perhaps as yet unknown activities heightens the importance of improving the general business environment. Economic policy may have more impact on employment if efforts were first and foremost concentrated on reducing the risk/reward of investing in newer activities.
- Government has committed to reducing volatility in exchange rates and ensuring it is competitive, and at improving price and quality of utilities and network industries. These will be critically important to creating more bias that is favourable to labour absorbing traded goods and services. The scenarios in this paper draw out three very different but real possibilities for how slower or faster progress in achieving these targets could impact on the character of employment creation.
- Some of the other levers available to government that will become increasingly important in the promotion of newer industries include: easing the movement of people in and out of South Africa, more supportive R&D incentives for services industries, and more emphasis on services trade arrangements enabling market access and movement of people.
- It is surprising that the informal economy is so small in the context of such high unemployment. This may be explained by two factors. First, the regulatory environment is conducive to formality. In some countries, such as Brazil, the regulatory environment is highly pernicious and firms actively seek to avoid registration. In SA, tax rates are relatively low, there are flexible forms of registration and taxation, and urban regulations may make it relatively more difficult to operate as an informal entity. Second, in addition to the barriers caused by lack of access to capital or skills, high crime rates, or entrepreneurial skills, there are also barriers associated with market structure. The formal economy is very sophisticated and has penetrated deeply into poor household consumption. Moreover, there are few production linkages in the informal economy: most informal retailers repackage goods bought from the formal sector. Although the informal sector is more labour intensive, informal employment is growing more slowly than formal employment. Therefore it is very hard to say how informal activity might expand or contract in relation to general economic growth.
- Even at relatively high rates of economic growth, the commitment to halving unemployment will require substantial direct job creation by government. The higher the rate of growth, the more the public service can expand. The lower the rate of growth, the more government will have to devote resources to public works schemes.

- If the current practice continues, public sector employment could grow by the GDP growth rate plus 20%. So, if GDP grows by 3.5%, public employment could grow by 4.2%. The precise rate of growth will depend on the skills distribution. Service delivery is the main purpose of expanding public employment. However, in the context of high unemployment, public employment can also play an important labour market role.
- Once all sources of employment are taken into account, we assumed that EPWP would act as a residual source of job creation, so as to meet the target of halving unemployment. All the scenarios require much higher contributions to EPWP than at present. At best, the programme would need to be doubled if the economy grew at 6% pa. If the economy kept growing at 4.5% pa, it is possible that EPWP would need to contribute 1.5 mn opportunities by 2014 at a cost of R 45 bn in 2006 Rand. Scenario 1, where the economy grows by 3% pa, 2.8 mn EPWP opportunities will be needed in 2014, making it the largest employer in the country, leaving very little budget for other public spending.
- Government has committed itself to halving unemployment and poverty by 2014. Even if unemployment is halved, it is probable that social grants will be needed, in the context of low wages. An effective employment/poverty reduction package is likely to include some combination of improved service delivery, reduced prices for goods and services bought by the poor, access to a garden, as well as social grants. This along with improved education, skills and active labour market policies will be investigated in the next round of employment scenarios.

1. Introduction

The assembly of employment scenarios involves a number of elements. Using the broadest brush strokes, there must be a consideration of where and by what means jobs might feasibly be created, appropriate supportive labour market and social protection policies, and the political economy questions surrounding these choices and trade-offs. There are plenty of examples of countries with sufficient numbers of skilled people, who are out of work to show that it is necessary to consider how employment might be expanded in the first place. This paper therefore sketches some basic elements that need consideration in building employment scenarios from the "demand side".[2]

The scenarios start by determining how the labour force might grow between 2004 and 2024. An employment target is determined that could result in halving unemployment from 26% in 2004 to 13% by 2014 and quartering it to 6.5% by 2024.

The paper sketches three main scenarios. The first one looks at what would happen if employment grew approximately in the same proportions as it has over the past 5 to 8 years, but with an average GDP growth rate slowing down to an average of 3% pa. The first scenario (Scenario 1) requires substantial intervention by EPWP – without it, unemployment only falls to 28% in 2014 and 26.7% in 2024. Scenario 2 shows what would happen if GDP growth averaged 4.5% pa, with the exports leaning toward minerals-based industries and a relatively large proportion of employment created in in lower paying inward-oriented industries. Scenario 3 has a higher proportion of employment in higher paying traded goods and services. Initially, the focus is on halving unemployment by 2014. This poses some limitations on the exercise, since the implications of any scenario may only really become evident over a longer period of time. These become clearer when these paths are extended to 2024.

In 2004, about 65% of working people earned less than R 2,500 per month – these people are called 'working poor'. The paper concludes by looking at whether any of these scenarios help to reduce this problem.

[2] These scenarios emerge from a larger project based at the HSRC. Labour market scenarios will be developed from mid 2007. In 2006/7, the emphasis was on the source of job creation. Here we assume that labour supply will serve the needs of any employment creation path. This assumption will be lifted in the following HSRC research and scenarios process in 2007/8.

2. Employment & Unemployment

Government has identified targets of halving unemployment and poverty by 2014. The precise meaning of these targets is not specified. But their identification offers policy-makers and stakeholders something to focus their minds on. Before these were specified, we simply spoke vaguely about reducing unemployment and poverty. Given the depth of South Africa's unemployment and poverty, halving their rates seems meaningful enough as a target. It does not appear that anyone is necessarily critiquing the targets; instead, the question seems to be whether and how they might actually be achieved. For these scenarios, it is assumed that Government will reach its objective, whether through market based or public sector based jobs.

Halving unemployment could improve the standard of life considerably. But even then, South Africa's unemployment rate would still be considered extremely high by global standards. An unemployment rate of 4% to 6% is seen by most economists as a 'full employment rate': at this rate of unemployment, a large proportion of unemployed are either voluntarily so, or are between jobs. South Africa's unemployment rate is extremely high by global standards[3].

So 2014 should be seen as an interim rather than a final target - we want to see unemployment halved, and then continue to fall to even lower rates. What would be socially and economically acceptable rates of unemployment that would constitute our ultimate target? By when should we seek to achieve them? For this paper, targets to 2024 assume the 2014 target is reached, and then looks at surpassing this with the objective of reaching full employment. For SA, this might involve an unemployment rate of 6.5%.

Government has not specified an *employment growth target*. It is assumed that the employment target is one that is consistent with that for reducing unemployment.

Reducing unemployment and expanding employment do not necessarily involve precisely the same policy complements. Reducing unemployment depends not only on job creation, but also considerably on the pace of labour force growth. Targeting unemployment is tricky, since labour force growth is likely to be an ever-changing phenomenon in South Africa, depending on the policy toward HIV, immigration, emigration and signalling. Signalling is perhaps the biggest quandary: the more successfully the economy creates jobs, the stronger the signal for migration into South Africa and to the cities, and for previously discouraged adults to enter the labour force to look for work. So successful employment creation could actually make the unemployment reduction objective more elusive.

[3] The 'world average' is about 6%, but almost all regions have unemployment rates above that. The lowest unemployment rates are found in North America, South Asia and East Asia. Unemployment rates of around 10% are found in Latin America and Sub-Saharan Africa.

Employment targets and employment policy focus on how jobs might be created. Labour market policy may feature insofar as we are worried that the right skills complement could hinder economic expansion. But policy to stimulate labour demand is primarily concerned with economic growth and how that growth absorbs labour. Employment policy may also seek to make up for shortfalls in market-based job creation by generating public-oriented employment – for example, through social services or public works schemes.

It would make sense to set targets for ***both*** employment growth and unemployment reduction. The unemployment rate is a ratio that is continually shifting and whose measurement is not yet sufficiently reliable. Moreover, as noted, rising employment can actually contribute to a rising rate of unemployment. Therefore, the unemployment rate is worth tracking, but may not offer sufficient reflection of underlying rates of economic activity amongst the working-age population.

Broad bands for employment creation and unemployment reduction form the backdrop to this employment scenario-building. At best, it offers basic parameters that enable us to hold up any one policy or phenomenon to see how significantly it might contribute to changing employment and unemployment conditions.

The scenarios are framed around achieving the following targets for reducing unemployment to 2014 and 2024:

- If unemployment is halved between 2004 and 2014, the unemployment rate would need to fall from about 26% to 13%. The ultimate target will be 6.5% by 2024.
- These scenarios assume that by 2014, the labour force participation rate rises to about 58%, up from about 56% in 2004/5. The working age population (aged 15 – 65) grows by about 1.15% pa. The labour force grows by about 2.4% pa or about 345,000 people pa. This rate may seem high to many experts who focus on population growth rates to estimate how the labour force might grow. However, there are many other dynamics to take into account. The reasoning is explained in Box – 1 and more detail is laid out in Table 3 in the appendix.
- By 2024, the labour force participation rate reaches about 62.5%. This would mean that the working age population (age 15 -65) grows by 1.05% pa, but the labour force grows more rapidly by 2.2% pa. See Box -1.

To reach 13% unemployment by 2014, and 6.5% unemployment by 2024 the following rates of employment creation will be needed:

- To halve the strict unemployment rate to 13% by 2014, about 5 - million net new jobs would have to be created between 2004 and 2014. This is about 500,000 net new jobs per annum. To take the unemployment rate to 6.5% by 2024, a further 440,000 net new jobs would be needed per annum between 2014 and 2024.

The specific assumptions and labour market outcomes are found in Table 3.

Box 1 – What might affect labour force growth?

There are two main explanations for a slowing growth in the labour force. First, the rate of population growth has been falling partly due to demographic change and partly due to HIV/AIDS. The impact of demographic change will become particularly felt in the long run, as we approach 2024. Second, a large portion of the younger female workforce is infected by HIV: about 33% of all women between the ages of 25 – 29 and ¼ of those between the ages of 30-34 years (Shisana et al, xx). The roll-out of anti-retrovirals and other supportive health and anti-poverty measures will hopefully lead to HIV becoming a chronic disease, rather than a fatal one. If these policies don't succeed in keeping the HIV infected workforce active, the labour force will shrink dramatically, and poverty will rise with more people depending on fewer wage earners.

However, these scenarios assume that the labour force grows more rapidly than at present, despite current ill-health and slowing population growth. Other factors could counteract these effects.

First and foremost, success in expanding job opportunities will itself attract more people into the labour force. In particular, participation of the African working age population in the labour force is still quite low by global standards. Only 50% of Africans between the ages of 15 – 65 participated in the labour force in 2004, compared to an average of 64% for other race groups. This is partly explained by the much higher unemployment rates experienced by Africans and therefore greater discouragement (Sept LFS 2004). Geography, education, and networks affect race groups disproportionately. For example, in 2003, the labour force participation rate was only 41.6% in the rural areas, as compared to 63.5% in the urban areas (Sept LFS 2003). Currently, the cost: benefit of job search is extremely high. However, as the chance of finding work rises, it is likely that more Africans will enter the labour force, with the probability that their participation rates will edge up closer to the average for other groups.

Second, immigration from surrounding states is also likely to intensify in response to higher growth rates. There is very little certainty about the participation of foreign labour in South Africa, particularly where people enter either illegally or on a non-work related visa. Apart from South Africa, there are about 24 million people in the regional labour force – this includes Lesotho, Botswana, Namibia, Mozambique, Swaziland, Zambia, Zimbabwe and Malawi. Unemployment rates in most of these countries are extremely high, mostly above 20% (ILO-KILM and CIA Factbook). If only 5% of their labour force moved to South Africa, this would expand the SA labour force by 1.2 million people. Due to the economic crisis in Zimbabwe, there is evidence that about 2 million workers left for other countries between 2001 and 2006, likely to SA, the UK, Botswana and elsewhere. Nigeria and Congo have about 64 million people in their labour force. It is unlikely that large proportions will move to South Africa, due to distance and cultural differences. However, the faster SA grows, the more pulling power there will be. In terms of their impact, immigrants are more likely to be working rather than unemployed, if only due to the high investment associated with moving to SA. It is probable that most regional immigrants would be involved in small enterprises.

3. Elements of scenarios: categorising the role of different sectors

There are certain broad sectors that should feature in any employment scenario. These include those aimed at poverty alleviation, the public service, 'follower' services (mostly private sector non-traded services such as retail) and dynamic goods and services production (such as manufacturing, financial sector or tourism).

2.1 Resource-based sectors

The resource-based sectors, especially agriculture and mining, are unlikely to be major sources of employment. For decades, employment has been falling in these industries.

The official statistics can be a little misleading. For example, the household surveys show a drop in commercial agricultural employment by about 4% per annum between 2000 and 2005 to about 650,000 workers. The specialist agricultural censuses and surveys run by StatsSA find that commercial agricultural employment may be stagnant at about 800,000 to 900,000 workers. As recently as 1995, there may have been about 1.2 million people in commercial agriculture, accounting for about 14% of total formal employment. By 2005, it accounted for about 7% to 10% of formal employment. This transition is not unusual in the development process, but it did take place too rapidly in a labour surplus economy. Potential employment creation in agriculture is an emotive issue, but whether it could create large numbers of jobs needs to be evaluated. Certainly some major policy shifts would be required. Aliber et al (2007) consider possible employment creation that could arise under ten different agrarian reform scenarios in 'former white RSA" and "former homelands", reviewing five different ownership and scales of operation (eg smallholder, subsistence, commercial, etc). Depending on the intensity of land use and ownership size, Aliber et al (2007) propose that agricultural employment would most likely rise or fall by about 100,000 jobs.

Mining employment has progressively fallen since the 1980s. According to the censuses done by the Department of Minerals and Energy, there were about 600,000 workers in 1995, dropping to about 440,000 by 2004. Employment seems to have stabilised since then. The expansion of commodity-related exports mainly depends on global demand, as well as how conducive local conditions are. The paper by Baartjes et al (2007) reviews potential employment in mining to 2024. Surprisingly, they find that mining employment could rise taking into account potential gains and losses in gold, platinum, diamonds, coal and other industrial minerals. The outcome depends considerably on potential expansion in platinum. By 2014, they estimate that employment could at worst stagnate, and at best expand by 200,000 jobs reaching total employment of almost 650,000. By 2024, they foresee mining employment growing from a low of 500,000 to a high of 740,000.

Although commercial agriculture has become more skill intensive, it is an extremely low paid industry. By comparison, mining is quite a high paying industry, with a large percentage of the workforce unionised.

2.2 'Dynamic goods and services

"Dynamic" goods and services refers to sectors that could deliver to growing global markets, can have substantial linkages into the local economy, and promote learning. In a developing country context, they are often newer industries that require some stimulation to get them moving and to encourage the formation of clusters. This category includes industries such as manufacturing, financial and business services, or high-value agriculture. In 2004, these sectors accounted for 26% of total employment or 36% of formal sector employment.

Any society benefits where a larger proportion of jobs are created in dynamic sectors. Dynamic tradable goods and services are more sustainable and beneficial sources of job creation because they: (see Berry 2007)

- Tend to experience rising terms of trade, relative to commodities.
- Have stronger multiplier/spread effects.
- Can have stronger learning effects.
- Ultimately rely less on public expenditure. Even if there are initial or ongoing support mechanisms, these activities do not rely completely and indefinitely on state procurement. This reliance is dangerous, since a downturn in state revenues will generally result in a cutting of these programmes.
- Pay higher wages, as shown in Table 8, partly because there is room for substantial productivity improvements, which in turn create space for real wage growth.

In the first instance, these sectors can be distinguished as:

a. Labour-absorbing goods and services (business services, apparel, furniture, agro-processing, capital equipment, metal fabrication, etc.).

b. Capital- or skill-intensive goods and services (e.g. finance, medical, beverages, non-ferrous metals, chemicals, etc.).

Typically, manufacturing is seen as the driver of growth, and as an important source of non-traditional exports that should displace resources over the course of development. However, services are increasingly playing an important role in trade as well. The role it is playing is not merely facilitating, as in transport services. Services industries are expanding autonomously in global trade, and in themselves generating backward linkages into manufacturing. For example, the award of a construction contract may encourage demand for the contractor's home country construction inputs.

Currently, the strongest export sectors are the capital-intensive minerals-related sectors such as iron and steel, basic chemicals and non-ferrous metals. Although mining exports have fallen, minerals-related exports expanded dramatically in the 1990s. Capital-intensive, resource-based exports in metals, minerals and chemicals account for over 50% of South Africa's exports. Capital-intensive resource-based manufacturing employs up to 150,000 people. Even taking into account employment multipliers, growth in these sectors are unlikely to be really important contributors to ultimate employment growth. But their output and export growth influence ultimate employment outcomes substantially. This is partly because these sectors are important attractors of total investment and infrastructure spending. More importantly, their weighting in South Africa's export profile means that a global commodity boom can have the impact of appreciating the Rand and discouraging labour-intensive traded sectors.

An employment scenario that relies on commodity-related traded goods and very low productivity services will lead to (or entrench) an extremely dualistic society.

The extent to which employment growth is linked to the production of dynamic goods and services is the big outstanding question. It is the most uncertain aspect of any economic strategy, particularly in terms of how to promote know-how and induce the required investment. It may also require those decisions that impose market-related trade-offs; alternatively, the trade-offs might be less than imagined, if there is a willingness to undergo short- to medium-term adjustments.

It is well known that manufacturing is generally an important ingredient in the development process; Prof Bob Rowthorn of the University of Cambridge has shown that as countries become richer, manufacturing output may continue growing, but the share of manufacturing employment will begin falling. Dr. Gabriel Palma, also at the University of Cambridge, has shown that over the years, the share of manufacturing in total employment begins falling at ever lower levels of per capita income. This is partly explained by global technology diffusion. Countries dominated by minerals exports have a lower share of manufacturing employment than do non-minerals exporters at any level of per capita income. However, some countries, such as Indonesia and Malaysia have broken out of this pattern, and have managed to achieve higher proportions of manufacturing employment.

Currently, there are few countries generating manufacturing employment growth of more than 2% pa. Some of the very successful manufacturing industries are not creating net new employment at all. This explains why manufacturing is becoming a smaller share of total employment in so many countries. The absolute maximum that could be expected from South African manufacturing is that it generates 150,000 to 400,000 net new jobs between 2004 and 2014. This range should enable the setting of reasonable expectations for what it can and cannot do.

Having a higher proportion of manufacturing is not necessarily a guarantee of higher growth rates. Prof Jaime Ros of the University of Notre Dame shows that Mexico managed to achieve high manufacturing export growth *without achieving export-led growth*. This is explained by the role of the maquila in generating large numbers of jobs in low skill assembly activities, without any promotion of the development of capabilities. Therefore the usual reasoning for why manufacturing promotes growth – for example, learning and linkages – would not apply. Prof Al Berry (2007) argues that

Malaysia may have a similar problem albeit less extreme, in having promoted electronics assembly without having developed deeper capabilities.

If South Africa is to generate substantial new employment in 'dynamic industries', some new approach is going to be required that identifies market opportunities that have growth inducing properties such as learning and linkages. The scope for investigation will need to broaden out past manufacturing, particularly to services sectors that could have similar properties.

The elements or instruments to be considered in a policy package, most of which are already identified within Asgisa and Government's Programme of Action, might be as follows:

1. At the most basic level, it is inarguable that interventions to underpin economy-wide efficiencies are essential, especially in basic services that are biased to labour-absorbing dynamic trade. This might happen through improvements in the pricing, quality and efficiency of rail, ports or air transport.
2. The value and stability of the currency is an important consideration in veering the economy towards either traded or non-traded sectors. Investment in extractive industry and resources may continue despite exchange rate risk. An overvalued currency will favour non-traded sectors (such as retail) and greater import dependence. An undervalued currency might promote a shift toward tradables, both in discouraging imports and encouraging exports. But this is only likely to be seen if policy is implemented over time so that businesses see it as credible enough to make major investment decisions. Exchange rates have an important employment bias that is often overlooked. Labour is a 'non-tradable' and so labour intensive tradables are especially affected by exchange rate movements[4]
3. There may be generalised price incentives that raise the profitability and reduce the risk of expanding non-traditional dynamic products. Some of these policies include R&D allowances, incentives for foreign direct investment, investment in critical infrastructure, etc. There are a small number of successful countries that did not depreciate their currency, such as Ireland. Those countries managed to attract substantial foreign direct investment, partly attracted with substantial investment-related infrastructure and market access arrangements.
4. There may be policies to promote more small and medium-sized (SME) business. This is sometimes seen as one way to intensify labour absorption, since SMEs are known to employ more people per Rand invested. However, SMEs also pay about 10% to 30% less than the larger firms (see Woolard and Woolard, 2006). Aside from the obvious SME support services, the expansion of small

[4] For example, Profs Jaime Ros and Roberto Frenkel have done important research showing the relationship between unemployment and exchange rates in Argentina, Brazil, Mexico and Chile. They found a very strong correlation between an appreciation and unemployment rates, albeit with a two year lag. Significantly, they found that an appreciation could overwhelm the positive impact of growth on unemployment. That is, even in the presence of GDP growth, a change in the unemployment rate could be correlated to changes in the exchange rate.

firms has been stimulated through targeted public and private procurement (e.g. Korea, Japan and Brazil), and through targeted incentives (e.g. R&D incentives in Finland are only offered to SMEs).

5. There is considerable debate about the relative merits of strong sector-specific support programmes. All countries that have forcefully intervened to promote specific sectors have had both success and failures. The higher growth economies were those that managed to succeed in some of these experiments to establish non-traditional activities. A strong stomach is needed for these interventions because they will inevitably be expensive to begin with, with outcomes uncertain for long periods of time. To what extent is there willingness to emulate the effort and cost of the MIDP or the investment in tourism?

2.3 'Follower services' in the formal economy

Some activities are really spin-offs from other activities and from growing incomes. This includes activities like retail, wholesale, restaurants, fuel attendants, motor vehicle repair or construction. This is an increasingly important source of employment growth in South Africa and globally, as shown by the 10 international case studies being prepared by Prof Al Berry for the HSRC (with some interim results presented in Berry, 2007). These sectors tend to pay low wages, partly because there is less potential for productivity growth. This explains why they still have labour absorptive capacity. They can impact on growth mainly through their simple expansion: that is they mostly have potential to contribute to "extensive growth".

These types of sectors accounted for about 24% of total South African employment in 2004, or 35% of formal employment. This is already quite substantial by global standards. It has grown dramatically in recent years, partly in response to falling interest rates and lower price of imported consumer goods. But how much more could it grow? These sectors are poorly understood in development thinking, and so this question is very difficult to answer.

Construction can be an important source of employment growth. Its growth depends critically on both public and private sector demand. In part, its continued expansion relies on the ability of supplier industries to provide inputs efficiently. There is also potential to expand into exports, but this will only have an impact on employment if South African workers are built into supply contracts, as is done by Korea and China.

These sectors are often implicitly treated as "trickle-down" opportunities. They are the linkages that arise with growth. However, their activity can be stimulated in a variety of ways. First, they expand if consumer demand is stimulated. Second, they can be supported through business support measures. Third, although it is not sufficiently recognised, there is room to stimulate productivity improvements, the identification of new market niches and technologies. It is also not sufficiently recognised that even these sectors are traded internationally, whether South Africans go overseas to provide the service (eg construction) or foreigners come to South Africa (eg hospitality, health, repair, shopping, hairdressing, etc). Recognising the potential in changing the character of these sectors could open new opportunities for both jobs and growth that SA urgently needs.

2.4 The public service

The public service can play an important role in job creation and in underpinning low skill wages. In South Africa, the public service has also been important as a first recruiter of black graduates. There is no specific size that the public sector should be. Some less-developed economies may have a larger civil service which is an important source of formal employment – almost akin to a social insurance policy in countries that lack sufficient sources of stable employment (e.g. see Rodrik, 2000). In some countries it is used as a way of absorbing graduates and of reducing social tensions. The figures vary depending on the source, but it could be said that the public service in Latin America and East Asia respectively accounts for about 14% and 11% of the labour force. These figures are much higher when taken in proportion to the non-agricultural labour force, rising to 18% and 20% respectively.

It is, however, perhaps surprising that industrialised countries have, on average, higher proportions of their labour force employed in the public service (about 17%) (Marinakas, 1994; Rodrik, 2000). Economies such as Sweden or Norway that have strong welfare states employ a large proportion (more than 30%) of the formal workforce (Hammouya, 1999), and at some points in time this has been an explicit or implicit part of their employment solution.

South Africa's public service is smaller: it employs about 9% of the labour force, about 10% of the non-agricultural labour force and accounts for about 18% of formal employment. In South Africa, public employment contracted in the 1990s (it was previously equal to 15% of the labour force in 1995), and has been stagnant in the 2000s.

The choice to expand public employment is a purely administrative or political choice.

From a budgeting perspective only, it involves the decisions about the proportion of the budget to be spent on personnel, and the way this spending will be allocated between salaries and new hires (see Hassen & Altman, 2007). It is estimated that the budget might grow by 50% more than the GDP growth rate. If this is so, personnel spending would rise by the GDP growth rate plus 40%, so that personnel spending becomes a diminishing share of the total. Perhaps half of that spending accrues to new hires and the other half to salary increases. So, if GDP grows by 4.5%, spending on new hires will increase by 4.5% x 1.4 x 0.5 = 3.15%. The number of new personnel to be hired then depends on the skill intensity or composition of those to be hired.

2.5 Poverty alleviation

No matter how successful employment policy is, it is quite certain that severe unemployment and under-employment will persist. The problem has simply become too big for market-based solutions to solve the problem within the next 10 to 20 years. The 'problem' includes both severe unemployment and very low levels of remuneration from market-based employment. Therefore, it is certain that the continued expansion of the system of grants, and much more convincing expansion of extremely low productivity, non-market services such as EPWP-type projects in government construction, care, self-help projects and survivalist activities, will be essential to any employment and poverty policy.

The expansion of very low productivity non-market services is an administrative decision, such as social sector expanded public works projects. Currently, it is estimated that about 330,000 people may work in expanded public works related projects (September LFS, 2006). The main questions include: How much should be spent on these services? What are the positive and negative labour market effects? Is there a willingness to invest deeply in administrative capability in localities, community-based organisations, etc. to enable the required reach?

The expansion of very low productivity market services is more complicated, as it is not an administrative decision. These activities include self-help survivalist informal activity. Much more convincing intervention will be needed to stimulate low productivity, market-oriented, essentially non-traded services (e.g. taxis, informal retail, hairdressing, etc.). Their expansion is constrained, not only by internal constraints (e.g. lack of finance or skill) but also by market concentration. Little is known about how the more marginalised parts of sectors grow relative to their larger counterparts (e.g., how might informal retail grow as shopping malls penetrate the townships?). Presumably some combination of demand side (e.g. incentive packages to workers, etc.) and/or supply side measures (e.g. low interest loans, etc.) could be considered. It is worth noting that, despite being more labour intensive, informal activity has grown more slowly than formal activity since at least 2000.

4. The link between employment & poverty

How might falling unemployment impact on poverty?

The income earned from employment will be important, particularly since the aim is to reduce unemployment *and* poverty. Strengthening broad-based economic participation can be the best way to ensure a more equal distribution of income. This requires, not only low rates of unemployment, but also rising income earned from work. In other words, some path is needed that would create jobs *and* also enable real wage growth in a way that is supportive of long run economic expansion.

The type of jobs that are created matters a great deal. The official definition of 'employment' is not very onerous. The official employment measure groups high flying finance executives with someone scratching out a marginal part-time existence in the informal sector.

One will generally find that capital and/or skill intensive sectors pay higher wages for the same skill level than labour intensive sectors. So, an office cleaner is likely to be paid more in the mining, chemicals or finance, than they will in the agriculture, clothing or restaurants. This is clearly shown in Table 8.

In South Africa, earnings from employment and self-employment are low relative to the cost of living. The Labour Force Survey shows that about 65% of all workers earned less than R2,500 per month in 2004, and 39% earned less than R1,000 per month. Low earners are not only found in the informal sector: just over half of formal sector workers earned less than R 2,500 per month. Low earners in the formal sector are not only found in low level jobs: about two-thirds of craft workers and plant and machinery operators earned R2,500 per month or less. What does this mean for poverty? There is no official poverty line, but the National Treasury recently released a discussion paper suggesting that it might initially be set at the equivalent of R 430 per person per month in 2006 Rand. About 50% of the population would fall below this level. What if the unemployment problem were virtually resolved and fell from about 25% to 13% to 6.5%? Most of us assume that this would dig deeply into the poverty problem.

If unemployment fell to 13%, the distribution of employment remained the same and households depended only on wages, there is little doubt that incomes would rise. Per capita expenditure in poor households would probably increase by between 60% and 120% depending on the starting expenditure. *However, 35% of the population might still fall under the poverty line.* [5] If unemployment fell to 6.5%, incomes would rise by between

[5] The link between poverty and employment drawn in these scenarios is based on preliminary modelling. The IES (2000) data is used to determine the number of people in each expenditure decile who are employed, unemployed or not working. Earnings are inflated to 2004 Rand. The proportion of people working and in each expenditure decile is approximately matched to the LFS 2004 to ensure alignment. Social grant contributions by expenditure decile are calculated from the GHS (2005). It is assumed that

72% and 132% depending on the starting expenditure, but still 33% would fall below the poverty line.

Much would depend on the rate of real wage growth. Average wages for low and semi skilled workers have been stagnant or falling over the past decade, according to a recent HSRC study (Woolard & Woolard, 2006). This trend could continue in a context of high unemployment and the likelihood that a large portion of jobs will be created in domestically-oriented services, the informal sector and public works.

Insofar as market-determined wages don't sufficiently contribute to some minimum livelihood, it would be the job of the state to address this. Some balance is needed that does not create a disincentive to employ, but that also enables working people to assemble an acceptable standard of living. There are a number of ways this can be done.

The first approach involves raising the value of people's private earnings. For example, the National Treasury has made important moves over the past few years to progressively eliminate personal income tax on those who earn R 43,000 or less. This has received little popular attention, but is one of the most obvious policies to pursue: that is, at the very least not to tax the poor unnecessarily. More difficult is reducing the cost of living, particularly in relation to food prices, housing, transport, finance, education and health.

A second option involves raising minimum wages. Real wages in sectors that absorb large numbers of low skill workers are likely to be relatively stagnant in a context of high unemployment. Moreover, those sectors tend to have less union organisation. [6]There are already minimum wages set by the Department of Labour for a wide range of sectors such as contract cleaning, wholesale & retail, private security and clothing, domestic and agricultural workers. There is much debate about the impact of this legislation: does this legislation slow down the rate of low skill job creation? Do the benefits of minimum standards outweigh any possible dampening of labour demand? There is little empirical evidence to prove the case either way. Some preliminary modelling shows that, if unemployment were halved the poverty rate would fall to 35% without minimums: *with the minimums, expenditure could rise by 110% to 440% depending on the starting expenditure, the proportion of people falling below the poverty line would be reduced to 30%.* If unemployment were quartered, expenditure might rise by 124% to 480% depending on the starting expenditure, but still 30% of the population would fall below the poverty line.

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the social grants expanded by 100% between the 2000 and 2005. In these calculations, the labour force participation rates are not altered. The scenarios do not calculate the impact of 2014 or 2024 scenarios. Instead they ask what would be the impact on poverty if unemployment had been halved or quartered in 2004.

[6] It is possible that real wages might rise if the unemployment rate were substantially lower. However, there is substantial global evidence, even in contexts of low unemployment, of wages in non-traded services not rising in relation to sector output or productivity growth. For example, see Palma (xxx) and Ros (xxx).

Another option involves raising incomes through social grants. The South African state has dramatically expanded its system of grants in the 2000s. There has been some concern that this may cause 'welfare dependency'. However, as noted, even if the vast majority of grant recipients found jobs, it is probable that they would still qualify for their grant. A long term commitment to social grants may be a necessary part of ensuring that households can assemble a minimum livelihood, even if unemployment fell dramatically. For example, *preliminary modelling shows that if unemployment were halved or quartered, the application of minimum wages plus grants as currently available would bring the poverty rate down to 25%. If unemployment were quartered, and there were minimum wages plus grants, 15% of the population would be below the poverty line.*

Naturally, another way of addressing poverty rates is by reducing the cost of living. This could involve interventions such as lower cost retail for the poor, cheaper commuter transport, lower and stable prices for food, as well as reduced cost pressures in relation to services like health, education or funerals.

It is perhaps worth noting the limitations of a poverty line. The poverty line can be crude in that it we want to see how incomes are improving: these scenarios show that incomes improve dramatically when unemployment is lower. The poverty line simply offers a marker which tells us what proportion of the population has achieved some minimum income. On the other hand, people who earn more than R 430 per month per person are still extremely poor. With current dependency ratios, R 430 is just slightly more than the MDG target of $2 per day which is a ghastly thought in a middle income country cost structure.

5. Assembling scenarios

In the process of building employment scenarios, we want to identify the possible range of outcomes that would reach acceptable levels of poverty and unemployment. We start here with a couple of possibilities, simply to kick off some discussion. Some information is given to contextualise possible employment growth through different sectors or policy choices. A deeper reality check, in terms of costs, politics and trade-offs will be done once a fuller range of options is explored. The scenarios presented are not at all unrealistic. Three scenarios are presented showing what might happen if the economy grew at 3%, 4.5% or 6% per annum over the next 10 and 20 years[7]. The rate of job creation at any particular rate of economic growth is presented in Table 9. [8]

Employment and industry in South Africa is highly diversified, so changes over a 10-year period do not look so dramatic. This can cause frustration since we would like to identify the 'silver bullet' that will generate a "million jobs". Changes in employment are more likely to happen progressively across a large number of sectors. The real impact of any particular path is seen in the 20 year scenario. These scenarios compare 3 trajectories between 2004 – 2014 and then onwards to 2024.

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[7] The BER (2007) projects growth rates of 5% and Business Monitor International (2007) projects average GDP growth rates of about 4% pa between 2004 and 2011. There is considerable uncertainty since the growth rate has been rising, and it is not clear whether the growth acceleration will continue, or stabilize. Asgisa figures that a GDP growth rate of 5% between 2004 – 2014 will support the meeting of economic and social objectives. The ASGISA policy document seeks to have an annual growth rate that averages 4.5% or higher between 2005 and 2009, and a growth rate of at least 6% between 2010 and 2014.

[8] Between 2000 – 2005, the Labour Force Survey shows that formal, non-agricultural, private sector employment grew by about 0.72 % for every 1% in GDP. The informal sector, excluding subsistence agriculture, grew by 0.55% for every 1% in GDP. These ratios (or employment elasticities) are used as a basis for calculating how employment might grow in these sections of the economy. The ratio of employment: GDP growth is seen to fall slightly at higher rates of GDP growth.

It is worth noting that, according to the ILO (KILM 19), these employment elasticities are extremely high by global standards. Sub-Saharan Africa have the highest employment elasticities, but also below-average rates of economic growth. The elasticities found in all other regions range from 0.1 in Eastern Europe to 0.42 in South-East Asia.

It may seem counter-intuitive that the informal sector would grow more slowly than the formal as it is more labour intensive. However, these ratios show that the informal sector may be less responsive (than the formal sector) to growth in South Africa. This might be explained by a number of factors: for example, informal retail, which is the largest informal sub-sector, relies heavily on inputs from the formal sector. It often sells items in smaller batches, but that are more expensive per unit. Growing demand may enable people to buy the cheaper but larger batches of goods. Moreover, some formal retail stores offer credit, not available through the informal sector.

To halve unemployment, about 5 -million net new jobs would be created between 2004 and 2014. This is an average employment growth of about 4.3% p.a. If the aim were to quarter unemployment to 6.5% by 2024, about 9.3 million net new jobs will be needed over the 20 year period. Remembering that the aim is to halve or quarter *both* unemployment and poverty, the scenarios need to consider not only the number of jobs created, but also their quality. Because poverty is the target, wages or remuneration will be used as the measure of job quality (and not enjoyment, personal fulfilment, safety, standards and so forth).

Table 1 presents the distribution of employment in 2004 and compares that to three possible scenarios in 2024. The more detailed figures are presented in Table 4 and

Table **5** for 2014 and in Table 6 and Table 7 in the Appendix.

The scenarios are described from the perspective of living in the year 2014, looking back at what happened and the choices that were made over the previous decade. They then consider the implications for the chosen path for the coming decade. In all the scenarios it is assumed that macro-economic policy does not change dramatically, that reliance on foreign loans does not expand to any great degree, and that the non-interest spending in the national budget expands by the rate of GDP growth plus 50%[9]. Personnel spending is assumed to grow by the GDP growth rate plus 40%. All financial amounts are in 2006 Rand.

[9] For example, if the GDP growth rate is 4.5% pa, then non-interest spending expands by 4.5% x 1.5 = 6.75% pa. Personnel spending is assumed to grow by 4.5% x 1.4 = 6.3% pa.

Scenario 1: Growth slows….Venezuela!

For most of the first decade of the 2000s, economic growth rates accelerated upwards. By 2007, it seemed that average GDP growth rates would pierce the 5% mark. But in 2007, global markets took a turn for the worse. Global growth slowed, as did the demand for commodities. Fortunately, South Africa was sufficiently buffered that it was not hit as hard as some other developing countries. Nevertheless, GDP growth slowed to an average of 3% per annum. Inflation was kept under control, and the SARB kept to its policy of minimum intervention in respect of exchange rates.

The Chinese economy experienced growing urban unemployment: this encouraged more import substitution, and protection on foreign investment in services industries to slow down employment losses. Its efforts to move up the technology ladder paid off and enabled it to intensify its efforts to penetrate global markets with goods and services that were increasingly in competition with South African ones.

Government commitments to improving the quality and price in key supporting sectors such as telecommunications, rail and ports were not implemented in a timely manner. A recent HSRC report shows that annual GDP and employment growth rates could likely have been up to 0.6% and 0.8% higher than they actually were respectively had this been done by now – this could have stimulated about 500,000 more jobs in newer globally traded goods and services where jobs are needed most.

In the rail sector, the first investment phases were successful in raising productivity in certain areas of business, such as the Coalex and Orex rail lines. However, it was less successful in turning around the general freight business. Users stayed on the road, causing huge pressures on the road system, blockages and high toll fees. The ports were successful in procuring and installing new equipment as planned. Yet, they failed to implement operational efficiency more generally and so have yet to see the benefits from its investments.

Substantial public subsidies to SAA, Denel and the Pebble Bed Reactor have still not realised returns, and Government continues to push public funds in their direction. These failures by the state to reform its enterprises, plus seeming endless streams of funding, have caused substantial frustration and renewed calls for privatisation have emerged.

The Alcan smelter at Coega was finally built, and production came on-stream in 2012. This has already boosted aluminium exports by 50%. Aluminium now accounts for 6% of South Africa's exports, up from 4% about 7 years ago. Eskom's agreement with Alcan for concessionary rates has forced it to raise electricity prices to other users. Energy prices increased by 5% in real terms annually between 2007 and 2012, to cover the cost of new investments. Over the past few years, there has been some evidence of cancelled investments, apparently the result of concerns in respect of potential price increases in future. For example, Engineering News reported on a planned beer bottling plant in Wadeville that was shelved. Some important potential ferrochrome investments in Rustenberg and Steelpoort were also apparently shelved for the same reason.

Government commitments to investing in construction proved timely. These investments were a particularly important source of stimulation, and helped keep growth rates higher than they might have been. The construction sector was an important contributor to growth, and was also an extremely important source of new employment. The building sector was not as robust, particularly as private housing construction slowed with higher interest rates and stagnant property prices. Construction employment grew by about 4.5% pa (or about 350,000 jobs) over the past decade.

The 2010 World Cup was pulled off successfully. Although the event is still being paid for and economic linkage programmes were not stimulated to any substantial degree, the World Cup did successfully establish South Africa in the world's mind as a viable vacation and events destination. Over the past decade, other major sporting events have been secured as a result of demonstrated infrastructure and capabilities. If sufficient events can be secured into the future, the economic gains may well come to outweigh the costs incurred.

It is possible that construction employment may remain at current levels for perhaps 4 or 5 years hence. Nevertheless, as some of the major projects have been completed, construction sector employment is forecast to begin declining from 2016. From a peak of 960,000, the sector may shrink back to about 750,000 by 2024. As domestic projects wane, civil construction companies will seek to locate global opportunities. This is going to be challenging as China has developed strong competitive advantages over the past decade in direct competition to South Africa, and has successfully penetrated African markets. Brazil and Chile also emerged as strong competitors: as from about 2005, they initiated more forceful strategies to diversify their exports into construction, and have managed to gain substantial market access through a series of counter trade deals with key African economies.

Both mining and agriculture shrank a bit each year. Agriculture shed about 60,000 jobs over the past decade. There was only minor restructuring, and these job losses mostly resulted from technical change and attrition. Mining employment fell by about 20,000, partly as a result of slowing global demand and falling commodity prices. Platinum investments were held up by the late opening of the de Hoop dam.

The manufacturing sector grew at a healthy pace, even if slightly slower than in the pre-2007 period. Demand for its key exports was dampened by slowing global demand. Minerals-based exports became even more prominent. In the tight environment, firms maintained competitive edge through tighter work organisation and investment in new equipment. Although manufacturing output grew by about 2% pa, employment was virtually stagnant: only 62,000 net new jobs were generated over the past decade. Manufacturing now accounts for only 9.5 % of all employment, down from 12.9% in 2004. If this trend continues, by 2024, manufacturing will account for only 7.9% of total employment.

The public sector created about 330,000 new jobs over the past decade. It is becoming a smaller share of total employment, now accounting for about 11% down from almost 13% in 2004. If it continues on this path, public employment will account for only 10.6% of total employment by 2024.

Seeing that economic growth would not recover to anticipated rates, but wanting to keep to its commitment of halving unemployment, Government stepped in more recently to dramatically ramp up the delivery of community based social services as well as environmental projects like landscaping around residential areas and roads. A special agreement was reached with the Indian government to draw in administrative expertise in helping local areas to rapidly expand these projects. With the programmes becoming so big, there have been some difficulties maintaining quality. This has been a particular concern in the social delivery projects. About 2.8 million people or almost 17% of working people find some livelihood through these projects each year. Work teams have now become a feature country-wide in their special yellow suits. A new agreement was reached amongst the social partners in 2009 about pay and work conditions. However, now that the programme is so large there is some talk about forming EPWP unions. The municipal workers recently struck due to concerns of undercutting. If economic growth does not accelerate, a commitment to reaching 6.5% unemployment by 2024 will require Government to create 4.7 million EPWP opportunities a year. The sustainability of this path is being called into question. The price tag of public works schemes spiralled up to R 57 billion this year. The bill could rise to R 100 bn by 2024 if the economy stays on this path.

The implications for spending on other programmes is substantial. Non-interest spending by Government grew in real terms by 4.5% pa, from R 474 billion in 2006/7 to R645 bn in 2013/4. After personnel spending, almost equally allocated between raising salaries and new hires, about R 415 bn was left. Once EPWP was paid for, there was only R 358 bn left to be spent on *all other* expenditure categories. This is only R 50bn more than what was distributed to non-personnel spending in 2006/7.

This is constraining both social spending and growth- inducing investments. There have been calls to cut back on the EPWP. This led to mass nation-wide protests of EPWP workers.

Working poverty has become a real concern. 56% of working people earn less than R 1000 per month, up from 48% in 2004. If this continues, by 2024, up to 59% of working people will be in this situation. The proportion of working people earning more than R 2,500 per month fell from 34% to 29% over the past decade. On the positive side, the dependency ratios have fallen. In the poorest households, (expenditure deciles one to four), about 6.4 people depended on one worker in 2000. Now an average of 3.5 people depend on a worker. So although earnings are very low, more people are working and this is having an important impact on poverty rates.

To bolster livelihoods, Government introduced a programme in 2009 to reach people who are engaged in secondary subsistence farming, with the aim of enabling some to produce a surplus. The programme is being piloted in a rural and urban area in the Western Cape. The programme enables groups of 5 or more households who can show the ability to work cooperatively to apply for regular free seed packets, fertiliser, basic hand tools and basic agricultural education. If successful, the programme will be rolled out to reach two million people engaged in secondary subsistence farming.

Table 1 - Summary of employment outcomes under four scenarios in 2024

	2004	2024		
Sectors	**Current**	**Scenario 1**	**Scenario 2**	**Scenario 3**
Assumptions		Economy slows down	Primary commodity path as now: Resource-linked exports & high domestic orientation in employment	Manufactures & services trade path: more employment from traded sectors
GDP growth		3.0%	4.5%	6.0%
Mining & agriculture	9.2%	4.4%	5.8%	6.2%
Manufacturing	12.9%	7.9%	8.3%	11.2%
'Dynamic services'	13.4%	11.1%	13.9%	18.6%
Follower services & construction	21.8%	22.2%	26.4%	24.4%
Public sector & private social services	15.5%	12.8%	15.3%	18.5%
IFS & EPWP	27.1%	41.6%	30.2%	21.1%
Total	100.0%	100.0%	100.0%	100.0%
% SERVICES/FS	69.6%	78.9%	79.8%	77.9%
% MANUF/FS	17.7%	13.6%	11.9%	14.2%

Table 2 - Average wages under different scenarios in 2024

	2004 (1)	**2024**		
Remuneration per month		**Scenario 1 slow down**	**Scenario 2: domestic orientation (2)**	**Scenario 3: dynamic products in trade orientation (2)**
<R1000	47.9%	58.7%	51.4%	43.8%
R1000 – R2500	17.9%	14.1%	16.2%	18.0%
>R2500	34.0%	27.5%	32.6%	38.3%

Notes:

(1) With the exception of EPWP, each sector has some proportion of workers in any income category. In EPWP, all workers earn less than R 1,000 pm. These proportions are drawn from the LFS, 2004.

(2) The proportions of people in any income category in Scenario 1 and 2 differ depending on how much employment in that sector grows.

Scenario 2 – Chug chug…..Chile!

For most of the first decade of the 2000s, economic growth rates accelerated upwards. By 2007, it seemed that average GDP growth rates would pierce the 5% mark. After the 2007 downturn, global markets resumed growth albeit a bit more tenuously until 2010. South Africa's GDP growth settled at an average of 4.5% per annum. Inflation was kept under control, and the SARB kept to its policy of minimum intervention in respect of exchange rates.

The Chinese economy experienced growing urban unemployment: this encouraged more import substitution, and protection on foreign investment in services industries to slow down employment losses. Its efforts to move up the technology ladder paid off and enabled it to intensify its efforts to penetrate global markets with goods and services that were increasingly in competition with South African ones.

The mining sector has benefited from growing global demand for commodities and high prices. Almost 80,000 jobs have been created in the mining sector over the past decade, with platinum taking the lead.

Agricultural employment stopped shedding jobs. Although some jobs were lost in commercial agriculture, there were gains as a result of the development of small holder agriculture in the former homelands.

New entrants in telecommunications managed to pull customers away from Telkom with lower priced services. However, capacity continued to constrain the expansion of these services.

Government's investments in its utilities infrastructure programme were relatively successful. Improvements in the quality and availability of energy, rail and ports services boosted growth. However, prices also rose until recently, dampening the potential stimulatory effect. The major investments planned by Transnet in rail and ports did take place. along with important efficiency improvements in their operations. While this did contribute to service quality, higher tariffs were required to satisfy commitments to bondholders. Above inflation price increases discouraged users of the general freight business. Low volumes have compromised the ability of Transnet to service its financial commitments, and this has further fuelled its need to raise prices. 2014 was the first year where prices rose only by inflation, so with rising toll fees, users may begin to shift from road to rail.

The Alcan investment at Coega was finally built, and production came on-stream in 2012. This has already boosted aluminium exports by 50%. Aluminium now accounts for 6% of South Africa's exports, up from 4% about 7 years ago. Eskom's agreement with Alcan for concessionary rates has forced it to raise electricity prices to other users. High global commodity prices have enabled substantial mining investments, and more recently ferrochrome projects have gone ahead in Rustenberg and Steelpoort. These users have put further pressure on available electricity. Energy prices increased by 5% in real terms annually between 2007 and 2012, to cover the cost of new investments. Electricity has become less reliable in homes and in smaller industrial areas. Under pressure from their corporate users, the central business districts in Johannesburg and Cape Town are exploring alternative energy sources as a way of attracting in new investments.

Manufacturing employment grew by 1.0% per annum, generating only 150,000 jobs between 2004 and 2014: manufacturing's share of employment fell from 12.9% to 10%. Most new investments were oriented to capital intensive minerals-based exports. If the economy stays on this capital intensive track, perhaps 90,000 jobs could be created to 2024, and manufacturing could account for only 8.3% of total employment. The dti has come under increasing pressure to protect domestic industry due to what is seen as a failure of its trade policy to generate manufacturing jobs. Evidence shows that this rate of manufacturing job creation is quite strong compared to even high growth economies, and has resulted from quite robust investment. However, there is growing impatience in the context of the slow pace of employment creation in other sectors. For example, the better paying services sectors, such as finance and business services grew by 3.2% per annum, creating about 600,000 jobs between 2004 and 2014.

The largest number of jobs was created in low paying service sectors, such as retail, repair, restaurants, and personal services. These industries grew by 4.7% pa, generating 1.1-million jobs over the past decade. These sectors are now the biggest employers accounting for 18.3% of all employment, up from 16.5% in 2004. If this trend continues, it is anticipated that about 22.5% of all employment will be found in low paying services sectors by 2024.

The construction and building sector has been an important source of growth and employment, creating 540,000 jobs over the past decade. Government-led infrastructure projects were particularly important in stimulating this growth. The building sector also grew rapidly, through housing, office blocks and retail centres, particularly in middle income and former township areas. Employment in civil construction is expected to shrink as from 2017 when most of the infrastructure projects are complete. The building sector may maintain some strength going forward. Current projections estimate that employment may fall from a high of 1.16 mn this year to 825,000 by 2024. While an important contributor to growth, the majority of jobs created are extremely low paid. This is one sector where the Department of Labour has struggled to impose sector minimums.

The informal sector generated about 800,000 jobs over the past decade, growing by 2.4% pa, from 2.8 mn to 3.6 mn. Informal retail growth slowed as more shopping malls moved into the townships. In addition, mail order buying picked up pace. The spaza shops were badly hit by the 18 hour shopping made available by the retailers who also offered cheap credit and discounted bus services to shoppers. An important source of employment growth was found in personal and repair services to a growing middle class.

To ensure that unemployment halved, Government had to step in with a large EPWP effort, creating 1.5 mn opportunities this year. This cost about R 25 bn.

The implication for spending on other programmes is substantial. Non-interest spending by Government grew in real terms by 6.8% pa, from R 474 billion in 2006/7 to R749 bn in 2013/4. After personnel spending, almost equally allocated between raising salaries and new hires, about R 484 bn was left. Once EPWP was paid for, there was only R 458 bn left to be spent on *all other* expenditure categories. This is only R 150bn more than what was distributed to non-personnel spending in 2006/7.

This is constraining both social spending and growth- inducing investments. There have been calls to cut back on the EPWP. This was particularly the case when it became evident that EPWP would need to expand to 2.2 mn opportunities annually by 2024 at a cost of R 42 bn (in 2006 Rand) if the economy maintained current growth rates.

Working poverty has become a real concern. 51% of working people earn less than R 1000 per month, up from 48% in 2004. The proportion of working people earning more than R 2,500 per month fell from 34% to 32% over the past decade. On the positive side, the dependency ratios have fallen. In the poorest households, (expenditure deciles one to four), about 6.4 people depended on one worker in 2000. Now an average of 3.5 people depend on a worker. So although earnings are very low, more people are working and this is having an important impact on poverty rates. There is growing impatience. Although poverty rates have fallen dramatically, the gap between rich and poor has widened. More attention is being given to bolstering household incomes through the development of municipal commonages, food price subsidies, and the introduction of retail cooperatives.

Scenario 3 – More activity in dynamic industries….Korea!

For most of the first decade of the 2000s, economic growth rates accelerated upwards. By 2007, it seemed that average GDP growth rates would pierce the 5% mark. They did, and ultimately the average GDP growth rate between 2004 and 2014 was 6% pa. Global growth resumed after the downturn in 2007, as did the demand for commodities. Many important domestic reforms were implemented that had the effect of boosting productivity growth, and encouraging newer industries to thrive. A feeling of exuberance abounds.

The Chinese economy experienced growing urban unemployment: this encouraged more import substitution, and protection on foreign investment in services industries to slow down employment losses. Its efforts to move up the technology ladder paid off and enabled it to intensify its efforts to penetrate global markets with more sophisticated and higher quality goods and services. SA benefited from foresight in its investments in innovation and market access arrangements, and so Chinese products are not competing directly with SA's emerging export sectors.

In the past five years, more has been done to stabilise the Rand. There has been some intervention to slowly and consistently reduce the real exchange rate as a way of boosting demand for exports and discouraging imports.

Growth was boosted by significant improvements in rail, ports, energy and telecommunications. The major investments planned by Transnet did take place, along with important efficiency improvements in their operations. The investment programme was underway by 2007 and the main benefits of this programme started to be felt in 2010. Government took an important position in this to subsidise these investments in return for a commitment to agreed quality and price levels benchmarked to a basket of competitor countries. The pace of improvements came earlier than expected as a result of improved asset utilisation partly brought on by closer interaction with users. This enabled Transnet to defer what had previously been thought were essential investments. Competition between rail lines and ports operators was introduced. This had the effect of bringing down prices, and also introducing new sources of investment. The shift from road to rail has led to stable toll fees. Price and efficiency improvements have increased volumes in general freight, and has pulled some users off the roads. This has created the conditions in which both toll fees and rail prices have been contained.

In telecommunications, capacity was improved and new entrants managed to improve service and cost. Some analysts argue that this has had important, albeit invisible, productivity enhancing impacts.

The Alcan smelter at Coega was finally built, and production came on-stream in 2012. Eskom's agreement with Alcan for concessionary rates forced has put pressure on Eskom's ability to contain prices. High global commodity prices have enabled substantial mining investments, and more recently ferrochrome projects have gone ahead in Rustenberg and Steelpoort. These users have put further pressure on available electricity. Government instituted a number of measures to contain price increases, including direct support to Eskom's infrastructure investment programme in exchange for open dialogue on efficiency improvements and competition. Government also introduced incentives for technology development and adoption of alternative energy sources. For example, the new lighter weight solar panels can now be seen in most new homes and buildings. Regional security concerns diminished, particularly in relation to the DRC, Angola, Malawi and Botswana. In 2011, a regional deal was signed to invest in hydroelectric power. It is envisaged that this will improve energy security, but also promote more regional trade, reduce the dependency on coal and generally help to contain energy prices into the future.

Electricity has become less reliable in homes and in smaller industrial areas. Under pressure from their corporate users, the central business districts in Johannesburg and Cape Town are exploring alternative energy sources as a way of attracting in new investments.

The emphasis on research and development in newer industries was intensified. A number of influential partnerships were established between the private sector and universities and research agencies to place SA on the global map in identified areas. This involved promoting knowledge and innovation hubs that draw in leading global experts. Government offered substantial R&D incentives, as well as tax incentives to new investments in these areas. Its spending on support to business R&D expanded from about R1.3 billion in 2005/6 to R 2.5 billion in 2014. A new cash grant programme was introduced, provided only to SMMEs to enable new entry and competition. In 2008, these were extended to innovation in "soft" areas like human resources and business process. Municipalities were also given the chance to bid for technology hub funding. Some of the more notable outcomes involved the establishment of the "Financial Services Hub" in Cape Town, the "Renewables & Recycling Research Hub" in Gauteng, "Innovation in Construction". These led to new property booms in urban areas, as new centres emerged with all the attendant services. The hubs now seem to be causing 'creative destruction' requiring response from well established South African firms, and have led to falling prices in many core services sectors.

The band for inflation targeting has edged up, and even then the SARB has struggled to keep prices within that band. There is concern that rising interest rates may slow down growth, and some alternatives are being discussed behind closed doors with a number of industry bodies. There have been special investigations into food pricing, construction materials, retail and financial services. The IDC introduced a low interest loan scheme aimed at SMEs in 2009. In the same year, the IDC re-introduced a low interest loan for firms introducing additional work shifts, as part of an employment creation drive. This was tried unsuccessfully in the 1990s, with low take up due to crime rates. Although crime is still a problem, growth is sufficiently high to encourage firms to improve capacity utilisation. In addition to creating more jobs, it is hoped this will help relieve supply constraints.

As part of this effort, the flow of people was facilitated with a dramatic turn-around at the Department of Home Affairs. This was mainly effected in preparation for the World Cup, but it had important knock on effects. By 2010, immigration regulations were loosened making the import of skilled personnel faster and simpler. This had the impact of bringing down the earnings of professionals, an added source of efficiency improvement.

The effect has been visible. South Africa's trade profile to 2007 showed a rising proportion of capital intensive minerals based exports. After 2010, this began to turn around, with a rising share of newer traded goods and services. Employment in dynamic services sectors such as finance and business services grew by an average of 5% pa, creating almost one million jobs. This led to its employment share rising from about 13% in 2004 to 15% in 2014. If this trend continues, about 19% of all employment will be in these sectors.

Manufacturing employment grew by 2.3% pa as a result of extremely strong output growth, particularly found in renewed sectors feeding into mining and construction. This generated almost 400,000 new jobs. Although popularly seen as a disappointment, these employment growth rates are amongst the highest in the world. Nevertheless, manufacturing's contribution to employment shrank from 12.9% to 11.4% over the same period.

To offset the impact of the currency depreciation, special support schemes have been implemented to subsidise the purchase of new capital equipment. These enable firms to either import or buy locally, and form part of the dti's support to the engineering sector in SA.

An important regional programme was introduced to boost the production of steel. In 2008, South Africa initiated talks amongst the main African producers of iron-ore to develop a regional beneficiation strategy. This culminated in the signing of a pact in 2011 which will expand investments in iron-ore, implement export quotas on raw materials, and divert regionally sourced iron-ore into an agreed number of steel production plants. A consortium of investors is being assembled, and the first steel smelter is expected to go on stream by 2018. Further investments are expected in related downstream products as well. South Africans are hopeful that this will generate sufficient competition and reduce input prices as a way of stimulating domestic and regional manufacturing.

The construction sector was an important contributor to growth, and was also an extremely important source of new employment. The building sector was also quite robust, particularly as private housing construction picked up pace as more people found better paying jobs. Construction employment grew by about 6.5% pa (or about 550,000 jobs) over the past decade.

The 2010 World Cup was pulled off successfully. Although the event is still being paid for and economic linkage programmes were not stimulated to any substantial degree, the World Cup did successfully establish South Africa in the world's mind as a viable vacation and events destination. Over the past decade, other major sporting events have been secured as a result of demonstrated infrastructure and capabilities. If sufficient events can be secured into the future, the economic gains may well come to outweigh the costs incurred.

With foresight, a major programme to promote construction specialisation, construction trade as well as backward linkages was introduced in 2009. This programme worked with a select group of companies to develop specialised services that would pre-empt competition from other developing countries in Africa and the Middle East. As a result, the decline in construction exports was reversed in 2009, and they now account for approximately 20% of industry turnover. It is possible that construction employment may remain at current levels for perhaps 4 or 5 years hence. Nevertheless, as some of the major projects have been completed, construction sector employment is forecast to begin declining from 2018. From a peak of 1.16 million, the sector may shrink back to about 900,000 by 2024. It is thought that the more forceful entry into global construction markets will generate at least 100,000 jobs for South Africans directly over the coming decade.

Domestic oriented and lower paying services, such as retail, restaurants, office cleaning, repair and personal services such as hairdressing, also grew dramatically, by about one million jobs or 4.5 % pa. A strong link was encouraged between the high skill services and the lower skill ones.

Against all expectations, mining employment grew by 3% pa, generating about 150,000 new jobs. Perhaps 80,000 more jobs might be expected by 2024. This growth masks considerable churning. Many jobs were lost in the gold sector, and a strong industry recruitment programme enabled them to shift over to platinum.

On the other hand, agriculture just managed to hang onto its employment: although jobs losses continued on commercial farms, jobs were gained as a result of the development of municipal commonages, fallow commercial land and small scale farm development in the former homelands.

Informal sector employment grew by 2.4 % pa, creating about 750,000 jobs. It now accounts for about 21% of total employment, down from 24% in 2004. While these opportunities have been useful entry points for marginalised workers, the informal sector has expanded much more slowly than the rest of the economy. Informal retail growth slowed as more shopping malls moved into the townships. The spaza shops were badly hit by the 18 hour shopping made available by the retailers who also offered cheap credit and discounted bus services to shoppers. Informal street sellers had previously benefited by selling small quantities at higher unit prices: their main market were buyers that could only by small quantities as cash became available. However, as incomes have risen, lower income consumers have reversed their behaviour by buying in bulk. The spaza shops that remain offer wholesaling services. The informal mechanics in the townships also experienced loss of business after the taxi recapitalisation programme and the penetration of electronic cars through the used vehicle market. Lack of access to training has meant that they are not equipped to service these vehicles. Their business is now confined to car wash and panel beating. The main informal businesses that remain are food preparation, butchers and personal services such as hairdressing. Domestic services have also thrived.

EPWP has remained a small programme, directed at the most marginalised in society. The numbers in the programme doubled to about 600,000 this year. It is anticipated that if growth continues as it has over the past decade, EPWP will no longer be required in its current form.

A virtuous circle was stimulated, as economic growth fuelled tax revenue. Non-interest spending by Government rose by 9% each year. This offered more room to further support new industries, invest in major infrastructure projects, and in social spending. After interest and personnel, Government is able to spend R250 bn more in 2013/4 than it could in 2006/7: this is a spending increase of 84%. If this path continues, government spending could expand four fold by 2024, offering substantial discretion domestically. In future, it is envisaged that SA can begin to play a more meaningful role in the continent as a more pro-active funder.

In addition, public employment expanded by about 4% pa generating about 850,000 new jobs, with most reported vacancies now filled. This was partly achieved in partnership with regional tertiary institutions, where teachers and nurses colleges were re-opened. About 200,000 of these new opportunities were in new paraprofessional and youth work opportunity categories. At the same time, Government was able to raise salaries of professional categories such as teachers, nurses and doctors to competitive levels. Strong performance measures were put in place and government workers were drawn more actively into the process of solving delivery barriers.

Working poverty is still a real concern. Despite 6% economic growth rates, 65% of working people still earn less than R 2,500 per month, the same as a decade ago. Real wages have risen as the labour market has gotten tighter and there is substantial compliance to statutory minimums even in vulnerable sectors. However, the sheer expansion in numbers of low skill workers in the workforce has kept this ratio in place. Although real wages have risen, there is a growing sentiment amongst poor households that they are not benefiting from growth. On the positive side, the dependency ratios have fallen. In the poorest households, (expenditure deciles one to four), about 6.4 people depended on one worker in 2000. Now an average of 3.5 people depend on a worker. So although earnings are very low, more people are working and this is having an important impact on poverty rates. In combination with the social grants, the number of people falling below the poverty line has halved since 2004. Nevertheless, anger is mounting as they compare their lot to a growing class of extremely rich beneficiaries of growth.

6. Concluding remarks

These scenarios draw together some preliminary thoughts on employment trajectories aimed at halving unemployment and poverty. They suggest feasible story lines along which the economy could move from 2004 to 2014 and onward to 2024.

The paper first establishes possible employment targets that could enable the halving of unemployment to 13% by 2014 and quartering to 6.5% by 2024. This depends greatly on the pace of labour force growth. It is expected that about 5 million net new jobs are needed between 2004 and 2014, and a further 4.4 million net new jobs between 2015 and 2024.

The scenarios primarily focus on potential sources of job creation, with five broad areas of economic activity identified:

- public works and community based social services that are procured by Government
- The public service
- Resource based sectors
- Informal economic activity
- 'Follower' industries, such as retail or construction, which are relatively low paying.
- 'Dynamic' goods and services industries that take advantage of growing global markets. These sectors ultimately tend to pay higher wages. Examples include business process outsourcing, finance and large parts of manufacturing. It can also include high-value agriculture such as cut flowers. These also include capital-intensive minerals-related export industries, such as mining, iron & steel or heavy chemicals, which do not really create much employment.

Three initial scenarios are sketched, with the aim of stimulating debate. The scenarios identify potential industrial structure (ie where might people work?), its impact on wage distribution (what might they be earning from work?) and its impact on household poverty. They also show the potential cost of halving unemployment, and how this might impact on public spending.

What have we learnt so far?

- There are two complementary ways of ensuring that the benefits of growth are broadly shared: through the composition of industrial growth and through the way that private and social incomes are distributed.
- The composition of employment matters a great deal. High productivity (usually traded) sectors tend to pay more than low productivity sectors, even for the same skill or occupation, as shown in Table 2. The more people working in higher

paying tradables sectors, the more households will be able to depend on wage income for their livelihoods.

- Although productivity improvements have been important drivers of accelerated growth in recent years, the benefits have not translated into earnings for low skill workers. That is, low skill employment expanded dramatically, but wages did not.
- It is well known that manufacturing is generally an important ingredient in the development process. However, as countries become richer, manufacturing output may continue growing, but the share of manufacturing employment begins to fall. Each decade, the share of manufacturing in total employment begins falling at ever lower levels of per capita income. This is partly explained by global technology diffusion. Countries dominated by minerals exports also have a lower share of manufacturing employment than do non-minerals exporters at any level of per capita income. However, some countries, such as Indonesia and Malaysia have broken out of this pattern, and have managed to achieve higher proportions of manufacturing employment.
- Currently, there are few countries generating manufacturing employment growth in excess of 2% pa. Some of the very successful manufacturing industries are not creating net new employment at all. This explains why manufacturing is becoming a smaller share of total employment in so many countries. The absolute maximum that could be expected from South African manufacturing is perhaps 150,000 to 400,000 net new jobs between 2004 and 2014.
- Having a higher proportion of manufacturing is not necessarily a guarantee of higher growth rates. Prof Jaime Ros of the University of Notre Dame shows that Mexico managed to achieve high manufacturing export growth *without achieving export-led growth.* This is explained by the role of the maquila in generating large numbers of jobs in low skill assembly activities, without any promotion of the development of capabilities. Therefore the usual reasoning for why manufacturing promotes growth – for example, learning and linkages – would not apply. Prof Al Berry argues that Malaysia may have a similar problem albeit less extreme, in having promoted electronics assembly without having developed deeper capabilities.
- In a set of 11 case studies of economies that managed to accelerate and sustain high growth rates, the majority implemented some combination of a devaluation to boost exports, investments in key network services, and strong market access arrangements. Chile had the strongest market orientation in the group, but even it invested heavily in R&D to initiate new industries and devalued its currency for a period.
- To achieve shared growth through wage income, industrial policy *must* apply itself to enabling the expansion of newer industries that have the same growth-inducing properties normally associated with manufacturing. The most likely source of both growth-inducing and employment-creating industries will be found in services. New ways of thinking about how to stimulate these sectors will be required, as will strategies to identify ways of promoting backward linkages into manufacturing. The study by Fiona Tregenna on the linkages between services and manufacturing shows how strong the pulling power of services can be. However, the more creative work will be found in the realm of business strategy, and in identifying new promotional industrial policy levers.

South Africa cannot afford to miss opportunities where it has existing capabilities in a receptive global economy. Some of these are identified in the companion case study by Sandy Lowitt on the construction sector.

- All of our research shows that there will be no "silver bullet". No one intervention will generate "a million jobs". We have done a myriad of sector studies and each one offers up potential in the range of 20,000 to 250,000 net new jobs. Often we feel disappointed that yet again we have only identified a small opportunity. This mindset needs to change. Employment will arise as a result of deeper linkages in the South African economy. Employment expands as an organic process as one thing leads to the other. The diversity in the South African economy is a strength – it takes awhile to build, but it is also harder to destroy and so rolls through shocks with less trauma.
- While sector interventions will be important, a recognition that employment is likely to arise from many different, perhaps as yet unknown activities heightens the importance of improving the general business environment. Economic policy may have more impact on employment if efforts were first and foremost concentrated on reducing the risk/reward of investing in newer activities.
- Government has committed to reducing volatility in exchange rates and ensuring it is competitive, and at improving price and quality of utilities and network industries. These will be critically important to creating more bias that is favourable to labour absorbing traded goods and services. The scenarios in this paper draw out three very different but real possibilities for how slower or faster progress in achieving these targets could impact on the character of employment creation.
- Some of the other levers available to government that will become increasingly important in the promotion of newer industries include: easing the movement of people in and out of South Africa, more supportive R&D incentives for services industries, and more emphasis on services trade arrangements enabling market access and movement of people.
- It is surprising that the informal economy is so small in the context of such high unemployment. This may be explained by two factors. First, the regulatory environment is conducive to formality. In some countries, such as Brazil, the regulatory environment is highly pernicious and firms actively seek to avoid registration. In SA, tax rates are relatively low, there are flexible forms of registration and taxation, and urban regulations may make it relatively more difficult to operate as an informal entity. Second, in addition to the barriers caused by lack of access to capital or skills, high crime rates, or entrepreneurial skills, there are also barriers associated with market structure. The formal economy is very sophisticated and has penetrated deeply into poor household consumption. Moreover, there are few production linkages in the informal economy: most informal retailers repackage goods bought from the formal sector. Although the informal sector is more labour intensive, informal employment is growing more slowly than formal employment. Therefore it is very hard to say how informal activity might expand or contract in relation to general economic growth.
- Even at relatively high rates of economic growth, the commitment to halving unemployment will require substantial direct job creation by government. The

higher the rate of growth, the more the public service can expand. The lower the rate of growth, the more government will have to devote resources to public works schemes.

- If the current practice continues, public sector employment could grow by the GDP growth rate plus 20%. So, if GDP grows by 3.5%, public employment could grow by 4.2%. The precise rate of growth will depend on the skills distribution. Service delivery is the main purpose of expanding public employment. However, in the context of high unemployment, public employment can also play an important labour market role.
- Once all sources of employment are taken into account, we assumed that EPWP would act as a residual source of job creation, so as to meet the target of halving unemployment. All the scenarios require much higher contributions to EPWP than at present. At best, the programme would need to be doubled if the economy grew at 6% pa. If the economy kept growing at 4.5% pa, it is possible that EPWP would need to contribute 1.5 mn opportunities by 2014 at a cost of R 45 bn in 2006 Rand. Scenario 1, where the economy grows by 3% pa, 2.8 mn EPWP opportunities will be needed in 2014, making it the largest employer in the country, leaving very little budget for other public spending.
- Government has committed itself to halving unemployment and poverty by 2014. Even if unemployment is halved, it is probable that social grants will be needed, in the context of low wages. An effective employment/poverty reduction package is likely to include some combination of improved service delivery, reduced prices for goods and services bought by the poor, access to a garden, as well as social grants. This along with improved education, skills and active labour market policies will be investigated in the next round of employment scenarios.

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Appendices – Tables

Table 3 – Targets to reduce unemployment by 2014 & 2024

	2004	2014		2024	
		Low	High	Low	High
		1% WAP growth; 56% LFPR	1.3% WAP growth; 60% LFPR	1% WAP growth; 60% LFPR	1.15% WAP growth; 64% LFPR
Working age population (15-65) (grows 1% pa)	29,304	32,370	33,344	34,808	36,834
Unemployed (strict)	4,009	2,357	2,601	1,380	1,532
Unemployed (broad)	7,966	4,474	4,609	2,450	2,583
Labour force growth pa	1.5%	1.6%	2.8%	1.8%	2.5%
Labour force (strict)	15,637	18,127	20,007	21,233	23,574
Labour force (broad)	19,594	22,011	22,674	24,018	25,415
Target unemployment rate (strict)	25.6%	13.0%	13.0%	6.5%	6.5%
Target unemployment rate (broad)	40.7%	20.3%	20.3%	10.2%	10.2%
Labour force participation rate (strict)	53.4%	56.0%	60.0%	61.0%	64.0%
Labour force participation rate (broad)	66.9%	68.0%	68.0%	69.0%	69.0%
Total employment	11,628				
Target employment to halve strict unemployment		15,771	17,406	19,853	22,041
Target employment to broad strict unemployment		17,537	18,065	21,568	22,832
Rate of average annual job creation needed		3.6%	5.0%	3.5%	4.5%

Source: September Labour Force Surveys, Statistics South Africa

Note: "2004 labour force growth" is for 2001 - 2005, chosen because the labour force participation rates were the same in those years

Table 4 – Employment Scenarios to 2014

	Employment in 2004	Employment in 2014		
Sectors		**Scenario 1: Slow down**	**Scenario 2: high domestic orientation**	**Scenario 3: More employment from traded sectors**
Agriculture	650,000	588,437	650,000	650,000
Mining	425,000	404,323	503,035	571,164
Manufacturing	1,500,000	1,576,710	1,656,933	1,891,288
Leader & high paid services (eg finance, transport)	1,563,000	1,905,288	2,145,841	2,545,962
Follower services (eg retail, personal services)	1,915,000	2,777,947	3,031,347	2,973,936
Construction & utilities	620,000	962,841	1,163,825	1,163,825
Informal sector & dom work & subsis agric; less EPWP	2,815,000	3,315,524	3,563,213	3,568,436
Public sector, private social services & parastatals	1,800,000	2,199,967	2,405,473	2,644,037
EPWP-type jobs - construction	220,000	370,000	370,000	220,000
EPWP-type jobs - community care	120,000	2,487,115	1,098,485	359,503
Total	11,628,000	16,588,152	16,588,152	16,588,152
Unemployment rate	25.6%	13.0%	13.0%	13.0%
Unemployment rate, without EPWP	27.8%	28.0%	20.7%	16.0%

Table 5 - Employment growth assumptions in each 2014 scenario

Categories	2004	Scenario 1	Scenario 2	Scenario 3
Agriculture		-1.0%	0.0%	0.0%
Mining		-0.5%	1.7%	3.0%
Manufacturing		0.5%	1.0%	2.3%
Leader & high paid services (eg finance, transport)		2.0%	3.2%	5.0%
Follower services (eg retail, personal services)		3.8%	4.7%	4.5%
Construction & utilities		4.5%	6.5%	6.5%
Informal sector & dom work & subsis agric; less EPWP	Excludes construction EPWP	1.6%	2.4%	2.4%
Public sector, private social services & parastatals	Includes private social services & some NGOs	2.0%	2.9%	3.9%
EPWP-type jobs - construction		+150,000	+150,000	No change
EPWP-type jobs - community care		residual	residual	residual

Table 6 - Employment scenarios to 2024

Sectors	Employment in 2004	Employment in 2024		
		Scenario 1: slow down	Scenario 2: high domestic orientation	Scenario 3: More employment from traded sectors "MF&S"
Agriculture	650,000	532,704	650,000	650,000
Mining	425,000	384,652	566,766	656,358
Manufacturing	1,500,000	1,657,343	1,741,669	2,355,680
Leader & high paid services (eg finance, transport)	1,563,000	2,322,536	2,911,952	3,897,414
Follower services (eg retail, personal services)	1,915,000	3,888,385	4,707,589	4,195,031
Construction & utilities	620,000	752,170	825,058	909,178
Informal sector & dom work & subsis agric; less EPWP	2,815,000	3,905,045	4,141,369	4,392,739
Public sector, private social services & parastatals	1,800,000	2,688,901	3,210,031	3,872,593
EPWP-type jobs - construction	220,000	370,000	370,000	-
EPWP-type jobs - community care	120,000	4,445,364	1,822,667	18,107
Total	11,628,000	20,947,100	20,947,100	20,947,100
Unemployment rate	25.6%	6.5%	6.5%	6.5%
Unemployment rate, without additional public service & EPWP	27.8%	26.7%	14.9%	6.5%

Table 7 - Employment growth assumptions in each 2024 scenario

Categories	Scenario 1	Scenario 2	Scenario 3
Agriculture	-1.0%	0.0%	0.0%
Mining	-0.5%	1.2%	1.4%
Manufacturing	0.5%	1.0%	2.2%
Leader & high paid services (eg finance, transport)	2.0%	3.1%	4.3%
Follower services (eg retail, personal services)	3.4%	4.5%	3.5%
Construction & utilities	-2.5%	-3.5%	-2.5%
Informal sector & dom work & subsis agric; less EPWP	1.6%	1.5%	2.1%
Public sector, private social services & parastatals	2.0%	2.9%	3.9%
EPWP-type jobs - construction	+150000	+150000	-220,000
EPWP-type jobs - community care	residual	residual	residual

Table 8 - The distribution of formal sector earnings by sector, 2004

Sector	Wages earned per month 1-1000	1000 - 2500	2500 +
Agriculture, hunting, forestry and fishing	85.2%	4.7%	10.1%
Community, social and personal services	20.4%	10.7%	68.9%
Construction	58.0%	22.2%	19.8%
Financial intermediation, insurance, real estate and business	30.0%	15.5%	54.5%
Manufacturing	38.0%	23.6%	38.3%
Mining and quarrying	10.1%	32.6%	57.4%
Private households	95.7%	3.4%	0.9%
Transport, storage and communication	28.3%	16.7%	55.1%
Wholesale and retail trade	56.0%	17.3%	26.7%

Source: LFS, Sept 2004

Table 9 - Employment elasticities and growth - 2014 and 2024

Scenarios - 2014

		Non agricultural private formal sector		**Informal sector**		
	real GDP growth	employment elasticity	employment growth - 2004-14	employment elasticity	employment growth - 2004-14	GDP growth 2004 -14
Scenario 1:Growth slows	3.0%	0.72	1.24	0.55	1.18	1.34
Scenario 2: Successful primary commodity	4.5%	0.70	1.36	0.53	1.27	1.55
Scenario 3: Successful manufacturing & services exporter	6.0%	0.67	1.48	0.40	1.27	1.79

Scenarios 2024

		Non agricultural private formal sector		**Informal sector**		
	real GDP growth	employment elasticity	employment growth, 2004 - 24	Employment elasticity	employment growth - 2004-24	GDP growth - 2004 - 24
Scenario 1: Growth slows	3.0%	0.72	1.64	0.55	1.46	1.81
Scenario 2: Successful primary commodity	4.5%	0.68	1.91	0.50	1.58	2.41
Scenario 3: Successful manufacturing & services exporter.	6.0%	0.64	2.16	0.35	1.56	3.21

Note: Non-agricultural private formal sector excludes construction and utilities, private social and community services.

Table 10: Scenarios for spending on public personnel, EPWP and everything else

	2006/7	2013/4			2023/4		
GDP growth rate pa		3.0%	4.5%	6.0%	3.0%	4.5%	6.0%
Growth in non-interest spending pa		4.5%	6.8%	9.0%	3.9%	5.9%	7.8%
Growth in personnel spending pa		4.2%	6.3%	8.4%	5.1%	7.6%	10.1%
Non-interest spending (R bn)	R 473.8	R 644.8	R 748.5	R 866.1	R 945.3	R 1,321.5	R 1,835.6
Personnel expend (Rbn)	R 172.3	R 229.8	R 264.3	R 303.0	R 336.9	R 466.6	R 642.2
Non-personnel expenditure (R bn)	R 301.5	R 415.0	R 484.2	R 563.1	R 608.4	R 855.0	R 1,193.3
EPWP (Rbn)		R 57.2	R 25.3	R 8.3	R 102.2	R 41.9	R 0.4
Remainder (Rbn)	R 301.5	R 357.8	R 458.9	R 554.8	R 506.1	R 813.0	R 1,192.9

Notes:
2006/7 figures from 2007 budget statement
All amounts are in 2006/7 Rand. Growth rates are above inflation.
For the period between 2004 and 2014, non-interest spending is expected to growth 50% faster than the rate of GDP growth. That is, if GDP grows by 3% pa, then non-interest expenditure grows by 4.5% pa. (This is assumed on the basis that the MTEF for 2007 - 2009 projects GDP growth of 5.1% and non-interest spending of 7.7%). Personnel spending grows 40% faster than the GDP growth rate (that is a 3% GDP growth rate translates into a 4.2% growth in personnel spending.
For the period between 2015 – 2024, both non-interest spending and personnel spending grows 30% faster than the GDP growth rate.