



Western Cape
Government



Enterprising Cape: Building an inclusive and vibrant economy

FuturesCape Policy Brief

Executive Summary

The Western Cape faces two interrelated sets of development challenges in its efforts to become a more cohesive high-income society and economy. The first is unequal access to basic services and economic opportunities; the second is an economic environment with inadequate technology, skills and governance to enable it to move rapidly from middle-income to high-income status.

Many of the province's residents, particularly those in rural areas, still lack access to essential services, such as health care, basic education and basic infrastructure, such as electricity and sanitation. And the province's economy continues to struggle because of excessive red tape, a skills gap and insufficient infrastructure for economic development (such as information and communication technology [ICT]). If these challenges are not properly addressed, the economy of the Western Cape will remain characterised by fairly slow growth and a deeply divided society.

This FuturesCape policy brief analyses these two sets of challenges and explores some of the outcomes of pursuing policies designed to address them – first in isolation and then in combination. It compares these outcomes with a Base Case, which is how the future might be if no significant changes were made to the Western Cape's current mix of policy strategies. Under such a Base Case scenario, the Western Cape won't reach high-income status until around 2040.¹

This paper uses the International Futures (IFs) forecasting model to create and explore three scenarios for the Western Cape up to 2040. These have been titled Inclusive Economy, Vibrant Economy and Enterprising Cape. These scenarios provide pictures of how policy interventions might have a foreseeable impact on the development challenges outlined above.

In the Inclusive Economy scenario, the Western Cape adopts policies designed to address the structural problems surrounding access to services, such as providing better public transport; improving the numbers enrolled in and persisting with basic education; enhancing access to health care, particularly treatment for HIV/AIDS; and access to sanitation and electricity infrastructure. These initiatives would raise the province's gross domestic product (GDP) per capita by 8% above the Base Case GDP level by 2040 and increase its UN Human Development Index (HDI) by 1,4 points (an increase equivalent to 1,8%).² Under this scenario, the Western Cape reaches high-income status in the late 2030s – earlier than it would under the Base Case.

In the Vibrant Economy scenario, the Western Cape pushes to escape the middle-income trap and become a more globally competitive economy by implementing policies designed to improve vocational and tertiary education – with the emphasis on science and engineering; reducing the red tape holding back business; increasing funding for research and development (R&D); and improving access to high-speed ICT. These interventions would increase the province's GDP per capita by 16% above the Base Case and its HDI by 2,8 points (or 3,4%) by 2040. Under this scenario, the province would also achieve high-income status in the late 2030s.

The final scenario, Enterprising Cape, represents a comprehensive approach to the province's two sets of development challenges. A combination of interventions from the inclusive and vibrant scenarios spurs much greater economic growth and human development than either would achieve on its own. In the Enterprising Cape scenario, the province's GDP per capita is 24% greater than in the Base Case and its HDI is 3,6 points (4,3%) higher. Under this scenario, the province reaches high-income status earlier, in the mid-2030s.

Together, these three scenarios help illustrate the importance of a comprehensive approach to addressing the Western Cape's development challenges and creating a simultaneously more inclusive and vibrant economy.

About the project

The FuturesCape project is a collaboration between the Western Cape Government and the African Futures Project. The latter is a partnership between the Institute for Security Studies and the Frederick S Pardee Center for International Futures. The purpose of FuturesCape is to provide key decision makers in the Western Cape Government with tools to inform their strategic decisions and shape reasonable expectations of long-term development policies. This brief is the second in a series that will focus on the OneCape 2040 long-term strategic visioning process.³

OneCape 2040 sets out a vision of a Western Cape that is both economically advanced and inclusive, a province whose economy is characterised by efficiency, innovation and sustainability. The Enterprising Cape scenario envisions such a dynamic, entrepreneurial Western Cape, where all of its residents are able to take part, inclusively, in a vibrant economy and thereby secure a decent living.

Introduction

The Western Cape is at a difficult stage in its economic development. It is characterised by two interrelated sets of development challenges – the need to promote more inclusive growth and the need to build a vibrant, 21st-century economy capable of competing with high-income countries. Many people in the Western Cape, especially those in rural and poorer areas, still suffer from unequal access to essential services and formal economic opportunities, while the Western Cape’s economy still struggles against its own uncompetitive structures.

Policy makers around the world have often viewed the pursuit of inclusive and vibrant growth as being unrelated, or even as representing two conflicting policy priorities. However, treating these two development challenges separately is likely to be self-defeating. A policy designed to provide complete access to primary education is important, but if it is not pursued along with policies to improve skills at higher levels of education the Western Cape will become more inclusive, but it will find itself on a low growth trajectory. Similarly, a policy that only focuses on high-speed ICT connections, for example, will boost economic growth, but may do little to make society more inclusive.

Transforming the Western Cape into an inclusive and vibrant economy will require multifaceted policy interventions, which, when taken together, will address all segments of society and the economy over the near and long term, instead of taking a piecemeal approach. For the poorest segments of society, this means policies designed to improve access to basic services, such as health care, particularly HIV/AIDS prevention and treatment; primary and secondary education; and basic infrastructure – electricity, water, sanitation and public transport. It also means policies designed to reduce unemployment among low-skilled workers by increasing support for the province’s manufacturing and agricultural sectors while lowering the barriers to formalising small and micro-businesses, and offering vocational and retraining programmes.

For the middle and upper segments of society, and formal businesses, this means establishing a robust environment where entrepreneurship and innovation flourish. It means an economy primed for growth by building a modern ICT network, removing red tape, closing the skills gap, improving economic development infrastructure, and strengthening the relationships between business, government and academia. Without such a multifaceted approach, the Western Cape is likely to see a continuation of the recent pattern of slow, uneven economic growth – a pattern typical of economies caught in what has become known as the middle-income trap.

In general, to make the transition successfully from low-income to middle-income status, a developing country must first concentrate on boosting the productivity of its primary-sector and low-wage workers by, for example, providing basic education and health care, building basic infrastructure and shifting surplus labour from agriculture to manufacturing.⁴ But, to then reach high-income status, the country must implement a different set of policies designed to increase its global economic competitiveness with high-income economies. Some middle-income countries, however, have had trouble making this second transition. Instead, upon reaching middle-income status, they become trapped in extended periods of stagnant economic growth, often remaining in the middle-income category for decades.

Both lower-middle-income and upper-middle-income countries can become trapped, but upper-middle-income countries appear especially prone to this phenomenon.⁵ A country can become trapped when its economy has advanced enough to begin the shift away from low-skilled, low-productivity activities but has not yet established the sort of high-skilled, knowledge-intensive tertiary sector needed to compete effectively with high-income countries. In some cases, countries can also become trapped by attempting the second part of the transition without completing the first – in other words, by focusing on developing its tertiary sector while its primary, low-skilled sectors still require attention and resources.

Although there is no hard-and-fast rule about when a country is deemed to be in the middle-income trap and when it is not, this report uses criteria based on the findings of Felipe, Abdon and Kumar, who found that middle-income countries, on average, take about 14 years to make the transition from upper-middle-income to high-income status.⁶ This pace requires the country to maintain a rate of GDP per capita growth of more than 3,5% throughout the 14-year period. Eichengreen (2011) also identifies a threshold of 3,5% growth as being key in terms of escaping from the middle-income trap.⁷ South Africa, as a whole, has remained an upper-middle-income country⁸ for the past 35 years and has not seen its GDP per capita grow above 3,5% since 1972 (see Figure 1). The graph depicts three territories that are in the middle-income trap (Brazil, South Africa and the Western Cape) and one that rapidly moved through middle-income to high-income status (South Korea). The Western Cape’s GDP per capita grew at an average rate of

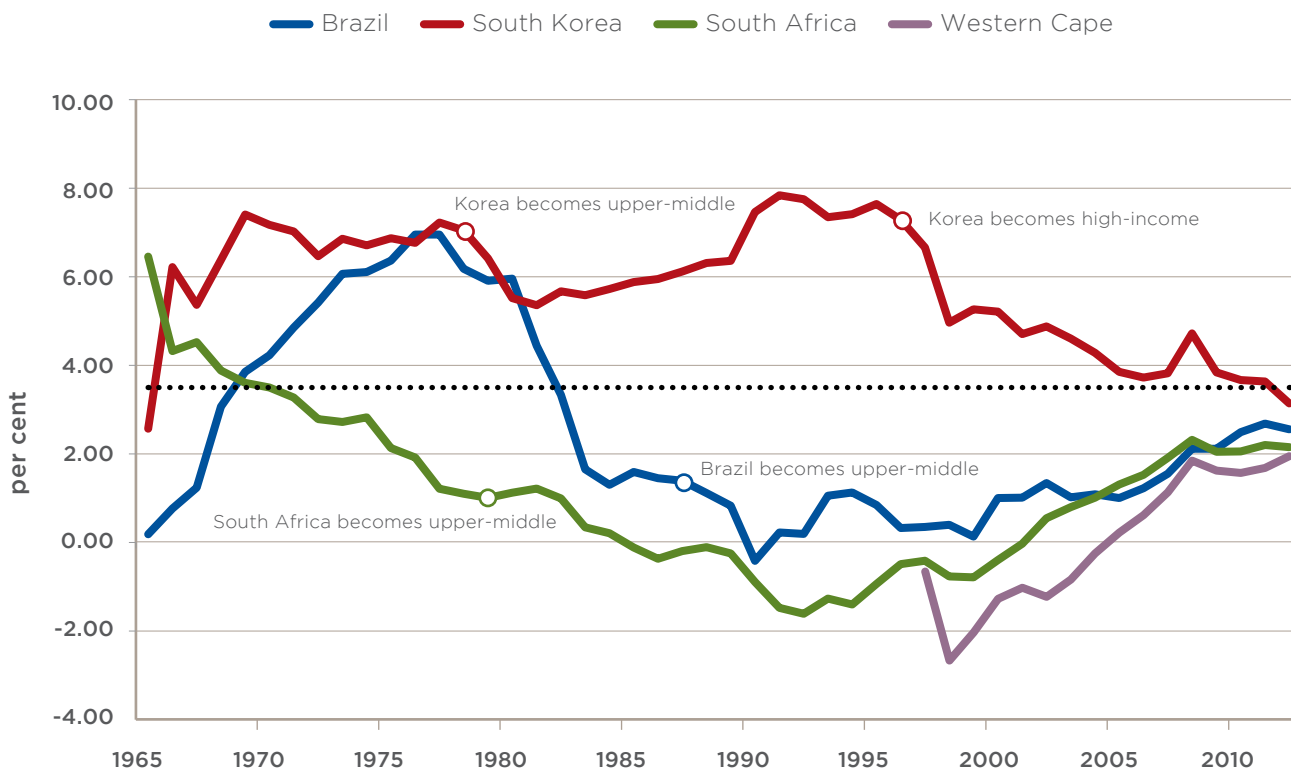
just 2,6% between 2001 and 2011, and growth is forecast to remain modest to 2019.⁹ These figures strongly suggest that both South Africa and the Western Cape are mired in the middle-income trap.

Under the IFs Base Case forecast (see Box 1), the Western Cape's GDP per capita grows at an average annual rate of 2,5% between 2014 and 2040. This rate sees the province achieve high-income status by around 2040, but with a GDP per capita still significantly behind today's high-income countries.¹⁰ Continuing on this trajectory will mean decades of painfully slow catch-up with today's high-income countries. For example, it will take until the mid-2050s for the Western Cape to achieve a GDP per capita equivalent to the average income for high-income economies in 2014.

Box 1: The IFs Base Case

The IFs Base Case is the baseline output of the full, integrated IFs system. It is an internally consistent, dynamic and non-linear forecast of the future and is not an extrapolation. The Base Case depicts a future that appears to be reasonable given there are no major systemic disruptions, like radical shifts in technology (i.e. the development of fusion power) or sudden, discrete events such as a global pandemic.

Figure 1: GDP per capita annual growth rate (%), 10-year moving average



Source: World Bank World Development Indicators online database available at: <http://databank.worldbank.org/data/databases.aspx> and Statistics South Africa online database NESSTAR available at: <http://interactive.statssa.gov.za:8282/webview/>.

Notes: Moving averages adjusted for first years; first year is 1-year average, second year is 2-year average, and so on until 10th year, when 10-year average moves normally. The dotted line shows 3,5% growth threshold.

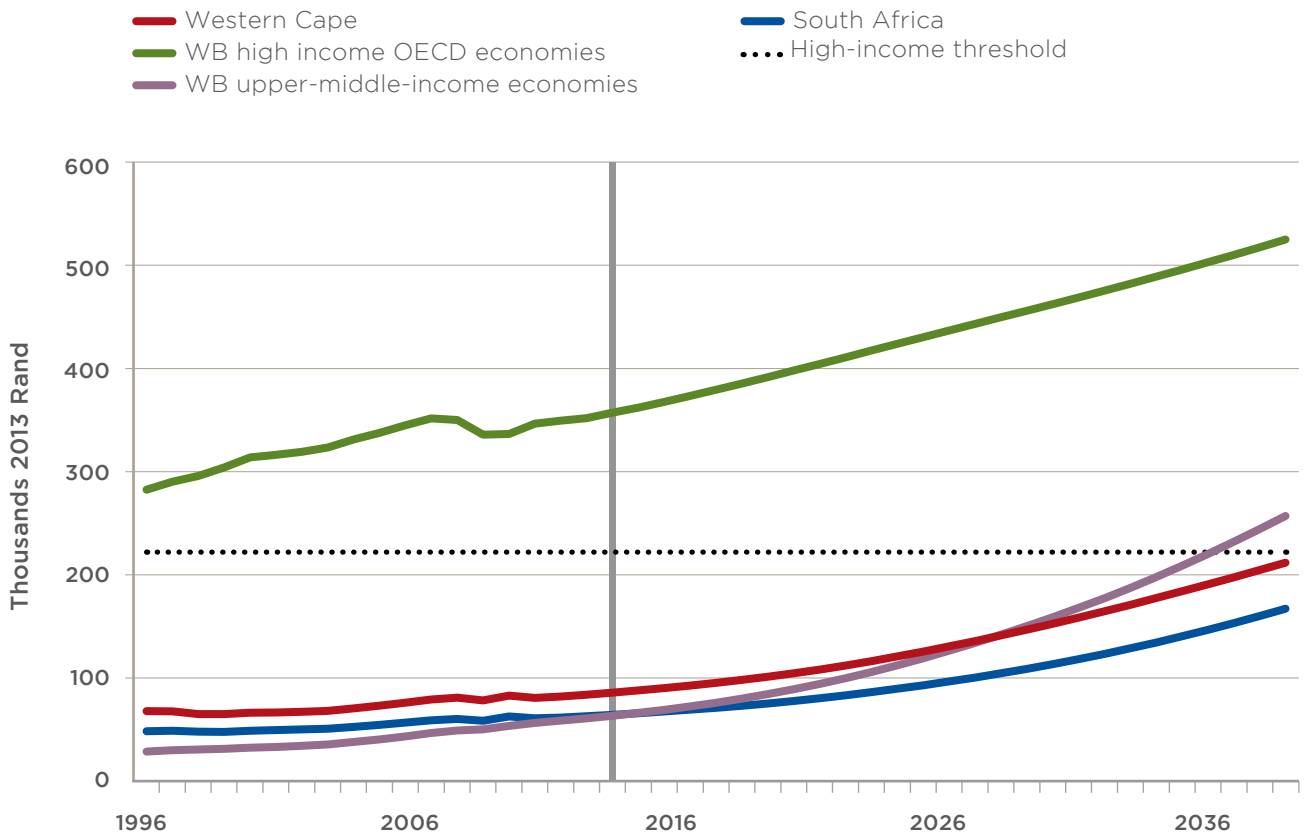
Enterprising Cape is a story of how the Western Cape, by strengthening its human capital, improving its business environment, and creating conditions conducive to greater innovation and entrepreneurship can help foster inclusive growth while simultaneously becoming a vibrant economic hub for Africa as it escapes the middle-income trap and achieves high-income status. The analysis in this paper evaluates the province's current state and forecasts potential developments in several aspects of the Western Cape's economy using the latest provincial data and the IFs modelling system.

The Western Cape's economy: An overview

The Western Cape's economy grew at an average rate of 3,5% per year from 2003 to 2013. This is 0,6 percentage points faster growth, on average, than that of South Africa as a whole, but well below the 6,0% per year average for developing countries globally over the same period. With a GDP per capita of R120 775 GDP,¹¹ the Western Cape falls squarely in the income range where countries are at risk of becoming caught in the middle-income trap.¹²

Looking ahead, the Base Case's GDP per capita forecast paints a mixed picture for the Western Cape. On the one hand, growth in the province continues to outpace that of South Africa as a whole in the period 2014-2040. On the other hand, the province doesn't become a high-income economy until after 2040 and won't achieve a GDP per capita equivalent to that of high-income countries in 2014 until the 2050s. Similarly, upper-middle-income countries as a whole overtake the Western Cape around 2030 and by the end of 2040 have a GDP per capita 37% higher than that of the province (see Figure 2).

Figure 2: GDP per capita for the Western Cape, South Africa and World Bank Income Groups, 1996-2040

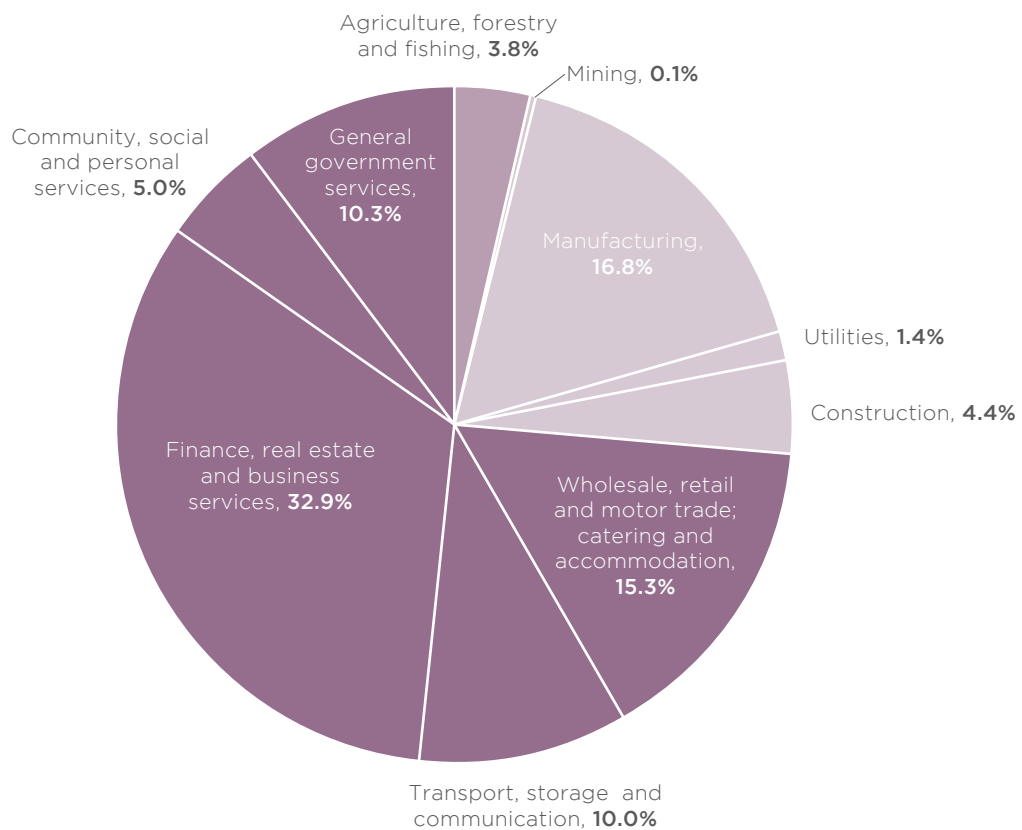


Source: IFs Base Case version 7.08 using adjusted South Africa Base Case

Notes: The horizontal dashed line shows what the GDP per capita of today's high-income economies was back in 1987, the year when the World Bank launched its Country Income Classification system. South Africa includes the Western Cape.

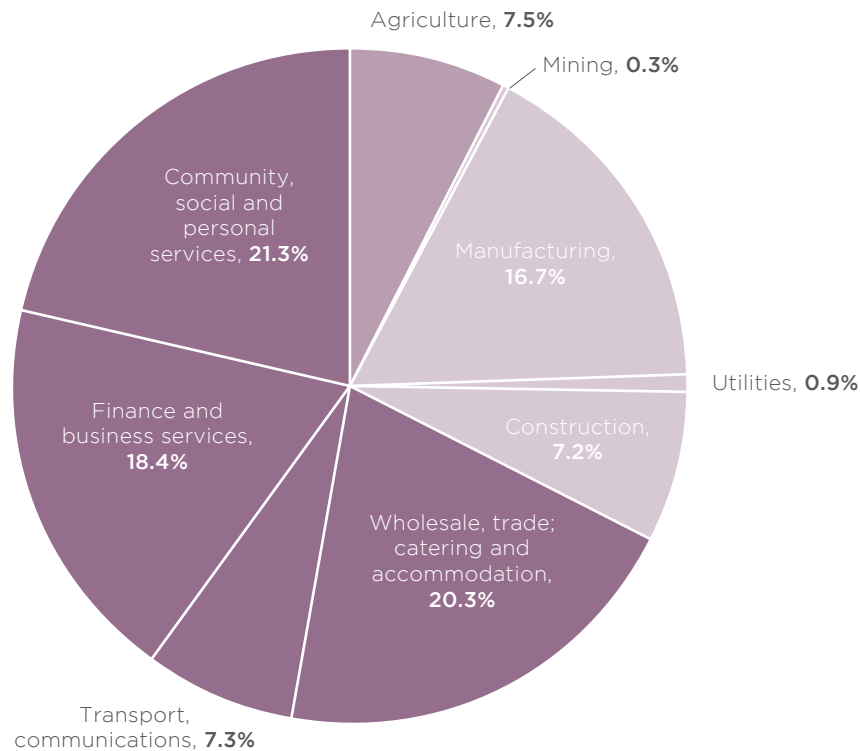
At the sectoral level, the economy in 2013 continued to show a significant mismatch between each sector's contribution to GDP and its share of the labour force, with the province's dominant tertiary sector contributing 74% of GDP, whereas it accounted for just 67% of the total labour force. The province's primary and secondary sectors together contributed 26% to GDP while accounting for 33% of the labour force. This amounts to a ratio of GDP to labour of 1,1 for the tertiary sector and 0,8 for the primary and secondary sectors combined (see Figure 3). This mismatch has only grown in recent years. Since 1995, the province's primary and secondary sectors have seen their combined contribution to GDP shrink by 5,6 percentage points, with the single largest decline coming from the manufacturing sector.¹³

Figure 3: Contributions to GDP by sectoral activity, 2013



Source: Western Cape Provincial Treasury, *Provincial Economic Review and Outlook 2014*. Western Cape Government, Cape Town, 2014

Figure 4: Formal sector employment by industry (% of total), 2014



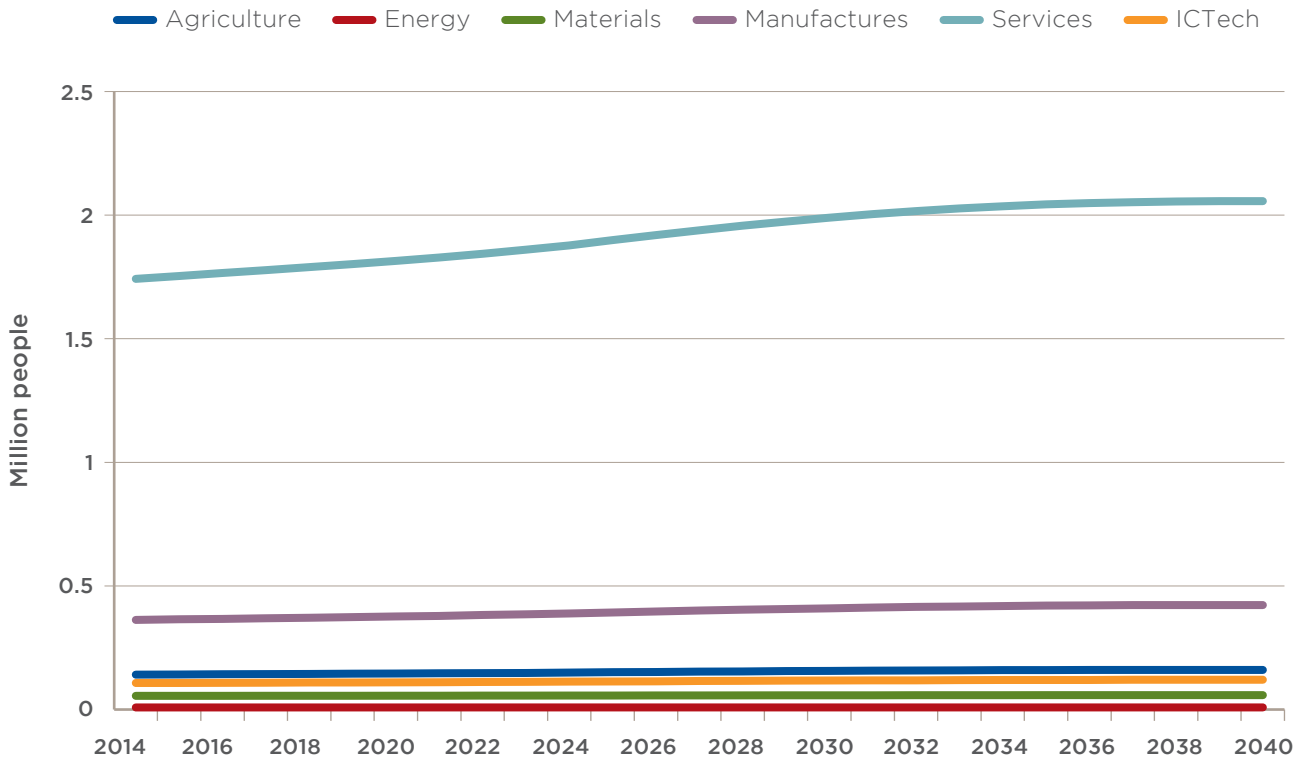
Source: Western Cape Provincial Treasury, *Provincial Economic Review and Outlook 2014*. Western Cape Government, Cape Town, 2014

Tertiary industries remain predominant under the IFs Base Case as manufacturing and agriculture continue to decline in terms of their GDP share. This suggests continued pressure on jobs, as the tertiary sector is less labour-intensive, generally requires fewer overall workers and favours high-skilled over low-skilled labour.¹⁴ In 2014, 33,6% of tertiary workers were considered highly skilled and 24,6% had a tertiary education. This compared with the agricultural sector, where high-skilled workers made up only 5% of the workforce and 85% had below matric-level education. In the case of manufacturing, 12% of workers were highly skilled and 4,8% had tertiary educations. With employment in agriculture and manufacturing continuing to shrink, there has been a large number of unemployed low-skilled workers and this phenomenon is likely to have helped maintain the province's unemployment rate at a high level.¹⁵

Total unemployment in the Western Cape has remained stuck at or above 20% from the April to June quarter of 2009 to the same quarter in 2014.¹⁶ Of the province's 2014 labour force of 2,87 million around 675 000 were unemployed (23,5%), up 3,5 percentage points from 2008, with a further 34 000 having given up looking for work.¹⁷ When it comes to the province's youth, some 50% of workers aged 15 to 24 and 27% of 25- to 34-year-olds were unemployed as of 2014.¹⁸ Most job growth in the province has come from the tertiary sector, which created 282 527 net jobs from 2000 to 2013, but it remains uncertain whether those who lost their jobs in primary and secondary industries could be employed in the tertiary sector, given the different skill levels required.¹⁹

Under the Base Case scenario, the Western Cape's total labour force increases from 2,9 million workers in 2014 to just over 3,4 million by 2040 as a result of in-migration and population growth (see Figure 5). The 500 000 additional people looking for work on top of those currently unemployed suggests that generating enough jobs to meet increasing demand could prove a major challenge. The tertiary sector continues to account for the majority of the labour force, reaching nearly 2,2 million workers by 2040, up from 1,7 million in 2014, while the province's primary and secondary sectors remain virtually constant. Manufacturing, which employed 325 000 workers in 2014, is unlikely to see its labour force top 500 000 even by 2040 in the Base Case.

Figure 5: Base Case forecast of labour force by sector in the Western Cape, 2014-2040



Source: IFs Base Case version 7.08 using adjusted South Africa Base Case

Challenges to and prescriptions for an inclusive economy

The need to create a more inclusive economy is one of the two major sets of development challenges facing the Western Cape. But what precisely is meant by an 'inclusive economy' or the related term, 'inclusive growth'? As described in the Provincial Economic Review and Outlook 2014, 'inclusive growth is a pace and pattern of broad-based economic growth that creates productive jobs for the unemployed, increases the productivity and real earnings for workers throughout the economy, and leads to sustained poverty alleviation'.²⁰

By this definition, an inclusive economy is one where all members of society have the opportunity to earn a decent living through access to education, basic infrastructure, health care and other services, so that they can become productive workers. It also means having job opportunities or access to the tools necessary to create one's own business. This section looks at the challenges to providing these services and offers certain strategies that can be prescribed to help achieve an inclusive economy.

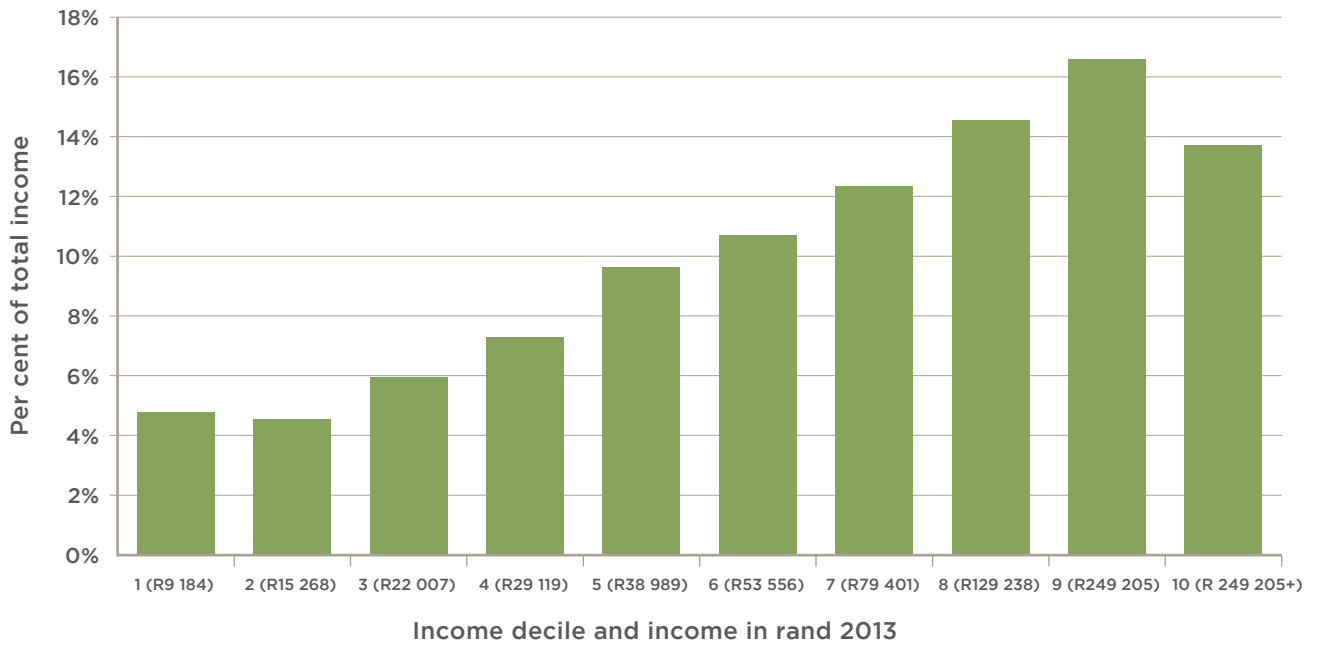
An exclusive economy

Although the Western Cape's Gini coefficient and HDI are better than the national average, significant inequalities nevertheless prevail in the province. These inequalities are most apparent in terms of income and in the divide between those with high-level skills and those without, as well as in their access to services.

Income earners in the Western Cape take home billions of rands a year. But the distribution of that income is skewed towards those with the highest incomes – even though there are fewer of them. To illustrate the imbalanced distribution, Figure 6 shows the percentage of the total income 'pot' taken home by each income decile – with the 1st first decile being the poorest segment of society (with annual incomes of less than R9 184) and 10th decile the richest (with incomes of more than R249 206).

According to the 2011 Census, about 22% of the Western Cape's population fall within the first (i.e. poorest) income decile yet they only take home 4,7% of all income earned in the province. The richest decile, in comparison, makes up less than 1% of the population but takes home 13,7% of total income. Combined, the top five deciles account for 36% of the population and 68% of all income; the bottom five deciles account for 63% of the population but only 32% of total income.²¹

Figure 6: Total income earned in the Western Cape by deciles, 2010/11



Source: Statistics South Africa, Income and Expenditure Survey 2010/11, 2012

The jobs problem

High unemployment can pose a number of problems for a country's socio-economic development. Loss of income and the subsequent decline in private consumption can be to the detriment of growth, while the lack of a safety net in the form of job-retraining programmes can lead to declines in human and social capital, and widening inequality.²² High youth unemployment can also increase the risk of instability and conflict.²³

The solution is to create more and better jobs – but how to achieve this has proven a difficult question to answer. China is often held up as a prime example when it comes to job creation. In the decade from 2000 to 2010, China created some 121 million non-farming jobs. According to many analysts, China accomplished this by greatly expanding its manufacturing sector (focusing on producing labour-intensive goods for export), rapidly pushing urbanisation and improving its primary and secondary education systems.²⁴

The Western Cape, by comparison, lost thousands of manufacturing jobs over the same period, due in part to high fixed costs (including the cost of transport), non-competitive pricing, subdued domestic demand and a lack of appropriately skilled workers.²⁵ Similar problems hold true for the agricultural sector, which the Provincial Economic Review and Outlook 2014 identifies as being potentially significant to inclusive growth efforts. To lower unemployment, these employment declines in agriculture and manufacturing will have to be reversed.

For agriculture, key ways of achieving this are to continue the shift away from primary agriculture towards high-value-added, labour-intensive crops and to expand agri-processing and vertical value chains. This would lead to higher wages and more highly skilled jobs for agricultural workers as increasing automation and other productivity gains reduce the need for semi- or low-skilled labour.²⁶ Such changes will require more effective standard and vocational education, as well as job-retraining programmes.

For manufacturing, one opportunity would be to concentrate on those areas where the Western Cape enjoys a comparative advantage over the rest of South Africa – particularly in the forward and backward linkages that connect to the agricultural sector.²⁷

The tourism industry is another important leverage point when it comes to trying to increase job creation and spur inclusive growth. In 2013 tourism contributed some 1,4% to the province's GDP and employed around 55 000 people, more than half of whom occupied skilled positions. This industry is expected to grow at a faster rate than the economy of the Western Cape as a whole. At the same time, 32% of the industry's workers are in the informal economy.

Workers often turn to the informal sector when formal employment is scarce and business regulations too onerous. When interviewed, many informal business owners cited difficulty in finding employment (41%) or because they had lost their jobs (17%) as reasons for setting up informal small businesses or micro-enterprises.²⁸ The informal sector in the Western Cape is smaller than in many developing countries. It accounted for only 9,7% of the province's non-agriculture-based labour force in 2014 – but that still equates to 213 000 workers. Bringing these workers into the formal labour force may have a ripple effect, increasing overall employment and incomes.

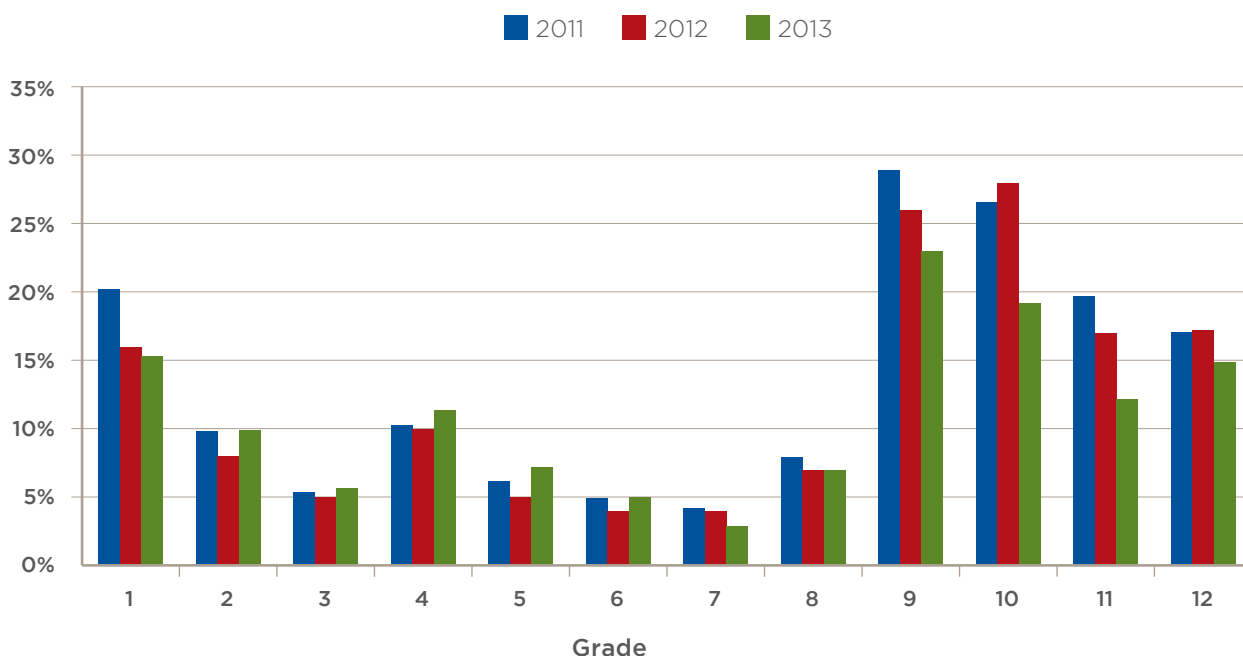
Unfortunately, there are a number of barriers to formalising informal businesses. Access to affordable finance – either formal or informal – is often identified as the biggest constraint. This is followed by a shortage of official business premises, the cost of and access to electricity and water, and lack of special manufacturing equipment.³⁰ Making it easier for informal workers to move into the formal sector and start their own formal businesses would create more jobs and reduce social inequality. For example, Clarke, Li and Xu, among others, found that, in developing countries, small, young firms tend to expand their workforces at faster rates than older, more established firms.³¹

Basic education

In the Western Cape, only 61% of people aged 15 and older have completed primary education. Although enrolment in primary and secondary education has been gradually improving, inequality of education outcomes remains a major problem. Poor outcomes tend to lead to a less skilled, less healthy and less productive populace, and contribute to social inequality.³²

In particular, the province's school system faces an ongoing problem with the number of those who fail grades and have to repeat them. This problem places a large strain on education budgets and learners' future chances of success.³³ Figure 7 shows the province's failure percentages by grade and year. The primary school survival rate of learners in the Western Cape was 78% in 2013. This figure is on par with Burkina Faso in country level rankings. In secondary school, more than one in five learners failed grade 9 and just under one in five failed grade 10.

Figure 7: Western Cape education failure rates, by grade, 2011–2013



Source: Provincial Strategic Objective 2: Human Development Sector Committee presentation

There are two major factors that contribute to this grade failure problem. Firstly, there are socio-economic challenges, like poor transport systems in rural areas and changing family structures. These make it harder for would-be students to attend and remain in school. Secondly, there is the problem of 'what does not happen' while learners are at school.³⁴ Once in school, a proportion of learners do not develop the skills the economy needs because many are not succeeding in basic literacy and numeracy, as pass rates have declined over the last decade.³⁵ This decline in basic skills then feeds into the high rates of student attrition seen in tertiary education in the province.

Despite lingering problems, the Base Case shows significant progress in the enrolment, survival and graduation rates of learners in primary and secondary education. The net enrolment rates are growing at close to 1% for primary education and 1,5% for secondary education per year. By 2040, net primary enrolment is close to universal, up from 78% in 2014, and net secondary enrolment reaches 86%, up from 63% in 2014. Survival rates follow a similar pattern, with the figure reaching nearly 100% for primary by 2040 and 89% for secondary. Graduation from upper secondary sees the greatest improvement, with 76% of learners graduating on time by 2040, up from 25% today.

Basic infrastructure

Basic infrastructure services, including clean water, improved sanitation, electricity and public transport, are vital to an inclusive society. Overall, the Western Cape has made significant progress in providing its population with access to most basic infrastructure services. In 2013 access to clean drinking water was near 100%, with 88% of households in the Western Cape having access to piped water inside their dwellings or yards. Access to improved sanitation in 2013 was lower but still good, with 95% of households having access to some form of improved sanitation.³⁶ And 93% of households had access to electricity.

Despite this progress, there are still many poorly serviced areas, particularly outside the Cape Town metro area.³⁷ In 2013, 1% of households in the province had no access to clean water; 5% of households had no access to 'a toilet facility' or used 'bucket toilets'; and 7% were without electricity.³⁸

The reliability of the province's infrastructure networks is also a major problem. In 2013, 2,7% of the households receiving municipal water reported service interruptions that lasted more than two days at a time – a slight increase since 2009. Despite this, though, the Western Cape enjoys the lowest rate of water-service disruptions in the country. And, in terms of electricity supply, 6% of households paying for electricity reported electricity interruptions during the second half of 2013.³⁹ Much of the Western Cape's basic infrastructure networks are ageing and will require repair and retrofit maintenance. This increases the challenge of provision and poses a barrier to a more enterprising economy, as reliable infrastructure services are particularly important for business.⁴⁰

Health care

Poor health outcomes are a symptom of the development challenges to inclusivity. The Western Cape currently suffers from multiple health burdens that, together, result in an average life expectancy of 66 years, which is significantly lower than the 73 years one would expect based on the Western Cape's GDP per capita.⁴¹

The first of these burdens is that as average incomes in the Western Cape increase, the population is transitioning from a high incidence of communicable diseases to a rising incidence of non-communicable 'lifestyle' diseases – like diabetes and heart disease. The predominance of lifestyle diseases is typical of countries with more developed economies and older populations.⁴² The Western Cape is still in the early phase of this transition, however, and the incidence of poverty-related communicable diseases like tuberculosis, pneumonia and diarrhoea remains high.⁴³ The HIV/AIDS epidemic, with a mortality rate that continues to be high, is another serious health issue. Finally, the province's health problems are also burdened by a significant rate of injury-related deaths. These include deaths from traffic accidents, drownings and homicides.⁴⁴

Challenges to and prescriptions for a vibrant economy

The middle-income trap

Recent history shows that most middle-income countries have had significant trouble making the transition to high-income status. In 1960, 101 countries were categorised as middle-income, including South Africa. By 2008, only 13 of those countries had made the transition to high income.⁴⁵ This has led to the notion of the so-called middle-income trap, which suggests that middle-income countries face certain economic obstacles that are particular to their stage of development. The middle-income trap occurs when a country's economy has advanced enough to shift away from low-skilled, low-productivity industries, such as agriculture and basic manufacturing, but has not yet established high-skilled, knowledge-intensive, highly productive industries. This in-between period is difficult to navigate. The country's workers are now unable to compete with lower-wage workers in low-income countries, but they have not yet acquired the skills and knowledge necessary to compete with their counterparts in high-income countries.

For low-income countries, a large portion of economic growth comes from the movement of surplus agricultural labour into basic manufacturing and resource-extraction industries, which are slightly more productive industries. Low-income countries also depend on adopting existing foreign-developed technologies rather than establishing domestic technological capabilities. These factors, taken together, allow low-income countries to grow rapidly. However, continuing to rely on these same growth factors after reaching middle-income status can lead to the country falling into the middle-income trap. This is because the shift from very low productivity to slightly higher productivity levels can only provide so much growth – at which point the economy suffers from diminishing returns caused by rising wages and a lack of strong institutions. Combined with insufficient numbers of highly skilled workers, this phenomenon hampers the development of innovative industries and discourages foreign investment. This troublesome mix of conditions most often leads to the classic middle-income-trap growth pattern: a country experiences rapid economic growth during the transition from low-income to lower-middle-income status followed by years of slowing growth or stagnation. When such reversals of fortune are severe enough to prevent a country from converging with high-income economies, and when this transition continues for longer than the historical averages (i.e. between 14 and 28 years), the country has become caught in the middle-income trap.⁴⁶

South Africa has been a middle-income country since the late 1960s and is often cited as a prime example of a country caught in the trap (see Figure 1, which compares South Africa with Brazil, another trapped country, and South Korea, now classified as a high-income country). The Western Cape's economy is in a similar situation. Since 1996, the earliest date for which there is adequate provincial data, GDP per capita has trended slightly upwards, while vacillating narrowly between R107 108 and R131 204 (measured in 2013 constant rands). This puts the Western Cape firmly in the upper-middle-income range and at risk of falling into the trap.⁴⁷ The province has also seen relatively low GDP per capita growth rates, with a five-year moving average of under 2% since 2000. This figure is well below what is required to advance to high-income status. Sub-Saharan Africa as a whole, by comparison, grew at a rate of between 3 and 4% (five-year moving average) before slowing down to between 1 and 2% after 2008.

Creating a knowledge society to escape the middle-income trap

In today's globalised world, the creation, diffusion and implementation of knowledge are central to economic growth. Modern businesses rely on extensive ICT networks for increased productivity, efficiency and innovation. They form partnerships with universities, and further education and training (FET) programmes to ensure their workers have the skills they need. They adopt best practices from foreign firms, and look to government for help in funding the R&D that are fundamental to producing new, innovative products.

Many analysts identify the strengthening of domestic technological innovation capacity as a key element if a nation is to become more productive and competitive, and thereby able to avoid the middle-income trap.⁴⁸ Government, as Paus describes it,⁴⁹ can be a primary tool for shifting economic activities towards those of greater knowledge intensity by investing public funds in R & D, science and vocational education, and ICT infrastructure.⁵⁰ Equally important is the need for effective, efficient and transparent relationships among academics, business and government.⁵¹

Improving tertiary enrolment by 1%, for example, can increase the rate of GDP per capita growth by 0,24 percentage points as more tertiary education workers help to speed up the adoption of new technologies. Greater vocational education could also increase the speed at which a country adopts technology, thereby raising its total factor productivity.⁵² Similarly, a highly skilled and educated workforce can help drive the speed and extent of international technology spillovers, as the adoption rates of computers and fixed/mobile phones is closely associated with increases in levels of secondary and tertiary education.⁵³

In the case of ICT, a 10% increase in broadband penetration has been shown to boost GDP growth by 1,38 percentage points in developing countries.⁵⁴ In addition to its effect on improved GDP, broadband infrastructure is also associated with increased business efficiency, lower costs of doing business, stronger job creation and higher rural incomes. In addition, Eichengreen et al found that countries that export high-tech goods are significantly less likely to experience 'trap-related' economic slowdowns, while countries with insufficient ICT networks are more likely to experience them.⁵⁵

The skills gap

The Western Cape faces a significant shortage of technically skilled and savvy workers, such as scientists, engineers and well-trained teachers. If left unaddressed, this skills gap could prove a major drag on economic growth and limit prospects for establishing a domestic knowledge society. Despite the emphasis on technology, people are still at the heart of knowledge generation. Therefore, a lack of skilled workers can slow the pace of technology adoption and upgrading, which can lead to a lack of competitiveness compared to firms in other developing countries that have better-trained labour forces.⁵⁶ Recent reports, including the South African Reserve Bank's study on bottlenecks to economic growth in South Africa, have consistently cited the limited supply of skilled and semi-skilled labour as one of the main constraints to industrial growth.⁵⁷ And Ghani et al, for example, found that the level and quality of local education is one of the most consistent factors predicting overall entrepreneurship levels.⁵⁸

The skills gap is largely the consequence of the education system in the Western Cape, and the country as a whole, which does not produce enough learners with the skills the economy needs, particularly those with intermediate skills. The skills gap begins in primary school. With a net enrolment of 78% in 2014, at least 22% of primary-aged children in the province never receive the necessary educational skills to advance to even basic levels of education as they grow up (many enrolled children may also not gain the necessary skills, of course). Poor education outcomes early on have a negative feed-forward effect on later education. According to the 2011 Census, more than half of the Western Cape's working-age population did not attain a matric certification, meaning they had no widely accepted way of presenting their educational achievement to potential employers. Such people were far more likely to be unemployed than those with a matric or higher qualification.

At the tertiary level, only 5% of those over the age of 15 in the Western Cape had gained a bachelor's degree or higher by 2010. This percentage is in line with other middle-income countries that are also working to grow their economies' skill base. For example, in 2010, Egypt, China and Brazil all had levels of tertiary education at or below that of the Western Cape's. But these levels are roughly half those of high-income countries. Completion rates for tertiary education in the Western Cape are on par with those of upper-middle-income countries as a whole – the figure was 18% in 2011. But this rate is poor compared with that of high-income countries, where the rate is 42%.

In the Base Case forecast, the proportion of the population with tertiary levels of education increases from 6% in 2013 to 14% in 2040, equivalent to the level of attainment found in Sweden today.⁵⁹

Closing the skills gap requires a high-quality education system that produces graduates with the skills they need to participate in more innovative industries. It also means that the country – or province, in this case – is able to retain many of its graduates with competitive salaries and attractive living conditions. Kharas and Kholi, Flaaen et al and Eichengreen et al emphasise the importance of developing secondary and tertiary (or vocational) education, and especially the need to focus on science and engineering – and even the importance of early childhood development for sustained, inclusive economic growth.⁶⁰ Eichengreen et al found that middle-income countries that do so are much less likely to experience an economic slowdown at the point they reach 'trap-associated' levels of GDP per capita.

Red tape and governance

Inefficient policies and bureaucracies can create red tape that stymies formal business formation and operations.

A number of reports identify government red tape as a major barrier to doing business in the Western Cape and the country as a whole. Of businesses surveyed in the Cape Town metro area, 73,4% cited red tape as either a moderate or major constraint to business. According to the Department of Economic Development and Tourism's annual performance plan, red tape cost the national economy R79 billion in 2004 – equivalent to 6,5% of GDP – as a result of lost productivity and reduced competitiveness.

It is the explicit aim of many Western Cape policies and strategies to accelerate development in all of these areas. Creating an enabling environment for investment and innovation is an overriding priority of economic policy making. In the Base Case, the government starts out in a favourable position compared with most middle-income nations in measures of effectiveness, transparency and regulatory quality, and continues to make marginal improvements. By 2040, however, the Western Cape does not quite reach the levels that high-income countries enjoy today.⁶¹

Infrastructure for economic development

In the globalised economy, the ability to develop, produce and transport goods efficiently is a major factor for business competitiveness, and therefore economic growth and employment. Today's innovative, globally competitive companies depend on access to robust, high-speed ICT networks. Rapid broadband networks are particularly important, as they facilitate domestic and international knowledge exchange, accelerate the pace of innovation, boost worker productivity, and provide new communication channels between the public and private sectors.⁶²

Recognising this need, the Western Cape Government launched the Western Cape Broadband Initiative in 2013. This policy calls for universal access to affordable broadband throughout the province by 2030. In 2005, South Africa's ICT sector contributed 4,3% to the country's GDP. By 2012, its contribution had grown to nearly 6%, with an estimated value of R306 billion in 2013.⁶³ The ICT sector in the Western Cape provides some 30 000 jobs and contributes R3 billion to the province's GDP.⁶⁴ At the same time, however, there is significant room for improvement. In 2013, only 24% of working households in the province had Internet access at work (the figure was 27,6% in the metro area and 14,6% in rural areas). And several reports have identified the lack of ICT-skilled workers as a potential barrier to ICT expansion, both at the provincial and national levels.⁶⁵

In a 2011 business survey, 26% of South African business owners cited high operating costs as one of their three greatest challenges, with high transport costs in particular being one of the most frequently cited challenges to growth.⁶⁶ Ghani, Kerr and O'Connell point to inadequate infrastructure and poor education as the two largest barriers to local entrepreneurship and international investment.⁶⁷ Improving the quality and capacity of the Western Cape's roads, rail, and airports and sea ports will help not only to bring down the cost of production, but will also enable businesses to switch to more advanced and higher-value-added products, as many high-value goods require sophisticated infrastructure systems, like cold chains, airfreight and just-in-time delivery technology.⁶⁸

Building an Enterprising Cape

The previous two sections looked at the two main sets of development challenges facing the Western Cape and identified some potential policy strategies for addressing them. This section explores the potential impact of some of those prescriptions on the Western Cape's economy and society through the creation of a trio of scenarios.

The first scenario, Inclusive Economy, represents interventions designed to enhance socio-economic opportunities for the province's populace, particularly its poor. The second scenario, Vibrant Economy, includes interventions designed to remove current constraints to growth and create a more level playing field for the province's businesses. The final scenario, Enterprising Cape, ties all of the interventions together into a single, inclusive growth scenario.

What policy interventions?

Box 2 shows which variables in the model were changed and how they were changed. The authors selected each variable based on current policy proposals by the Western Cape Government, literature reviews and existing variables within the IFs model.⁶⁹ Positive values in the intervention column represent incremental increases from the Base Case, with the full value being reached only at the end of the time period indicated. The values used are based on a review of existing policies as well as assumptions about what would make aggressive but reasonable goals.

Box 2: Potential policy targets⁷⁰

Inclusive Economy

Economy:

- Support shift towards labour-intensive high-value products, agri-processing and vertical value chains
- Shore up the manufacturing sector
- Increase support for the tourism sector

Education:

- **Improve primary and secondary enrolment and survival rates**
- Establish early childhood development programmes

Infrastructure:

- **Increase access to quality and reliable sanitation, water and electricity**
- **Enhance public transit systems**

Health:

- **Lower barriers to accessing health care**

Vibrant Economy

Economy:

- Lower barriers to formalising informal businesses

Education:

- **Close the skills gap by improving FET and tertiary education**
- **Produce more science and engineering graduates**

Infrastructure:

- **Provide greater access to ICT broadband**
- Increase quality, capacity and efficiency of economic development infrastructure – like roads, rail, sea ports and airports

Governance:

- **Reduce red tape for businesses**
- **Increase funding for R&D**
- **Undertake reforms to increase government effectiveness and regulatory quality**
- Promote stronger relationships between government, academia and businesses

Inclusive Economy

The Inclusive Economy scenario simulates policy interventions designed to promote a healthier, more productive and better-educated workforce across all economic sectors – for both urban and rural populations in the province. The interventions include improving enrolment in and completion of basic education along with increasing access to water, sanitation, electricity, public transit infrastructure and health services (especially HIV/AIDS treatment and prevention).

Vibrant Economy

This scenario involves a cluster of interventions designed to foster the sustained rapid economic growth of the Western Cape, so that it can become a hub of innovation and entrepreneurship, and escape the middle-income trap. This scenario envisions lowering barriers to business and strengthening the province's knowledge society. The policy interventions include increasing enrolment in quality FET and general tertiary education, with an emphasis on producing more science and engineering graduates; providing universal access to mobile broadband by 2020, as set out by the Western Cape Broadband Initiative, as well as introducing more fixed-line broadband connections for homes and businesses; reducing government red tape; and increasing the quality and effectiveness of government services.

Enterprising Cape

The Enterprising Cape scenario combines the two approaches to increasing growth into one. By bringing together the interventions from Inclusive Growth and Vibrant Economy, the combined scenario is designed to tackle the main challenges to growth simultaneously.

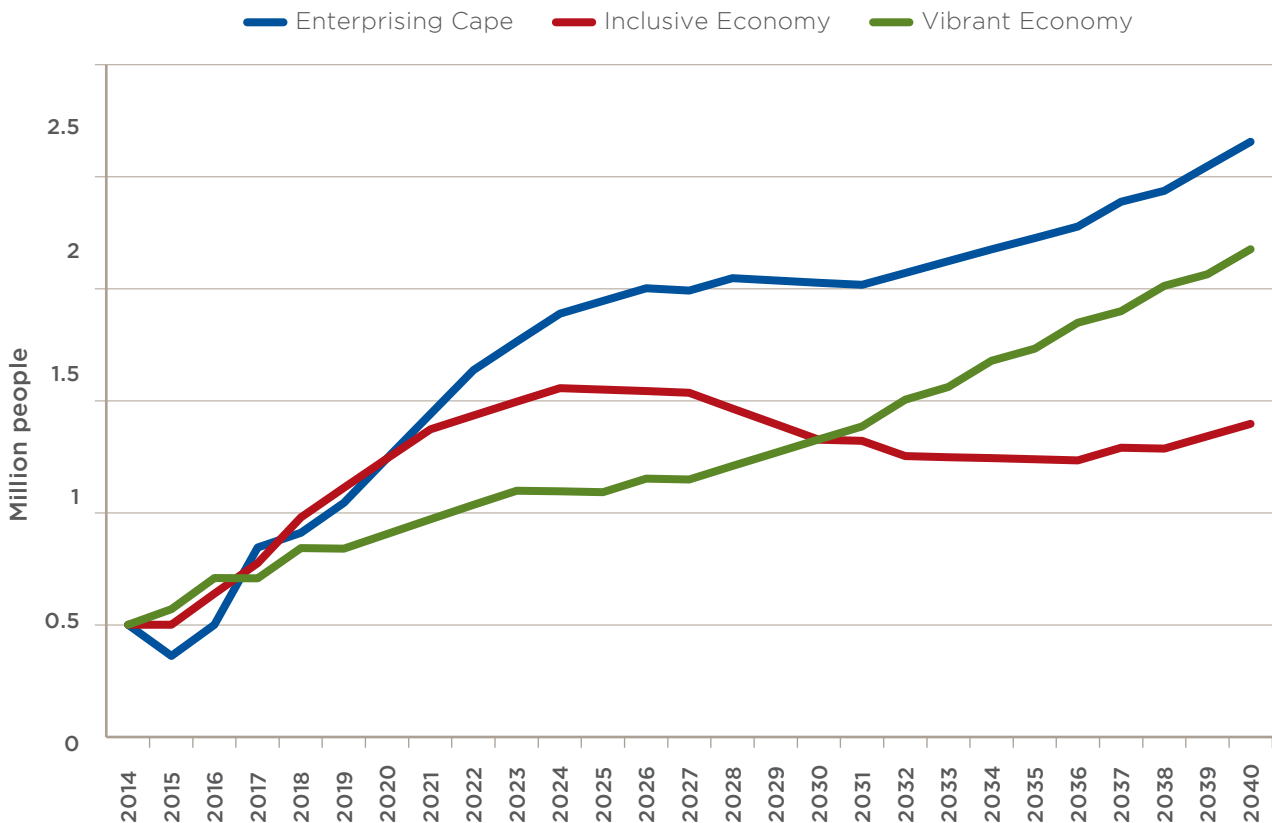
Scenario results and analysis

Comparison of intervention outcomes and costs

Figure 8 shows the difference in terms of the percentage change between the Western Cape's HDI in the Base Case and in each of the three scenarios. The results shown in this figure, more than any other, make the argument for pursuing simultaneous interventions. Focusing only on creating an inclusive economy initially sees the most rapid increases in HDI of all the scenarios, but the gains don't last. An inclusive economy without vibrant economic growth simply can't sustain improvements in HDI once the challenges of basic services are met. Focusing solely on creating a vibrant economy, on the other hand, clearly doesn't improve HDI much over the short to middle term compared with the other scenarios. But, eventually, as economic growth takes off, Vibrant Economy provides the needed push once the gains from Inclusive Economy begin to stagnate. As the Enterprising Cape growth trajectory clearly shows, combining the two approaches yields a better outcome than either of the others on their own.

At the same time, however, Figure 8 also suggests that the need to invest in so many areas at once can represent a significant short-term cost. During the first few years of the intervention experience, an HDI is roughly 0,5 percentage points lower than the Base Case in the first year and about 0,4 percentage points lower than the other two scenarios over the next few years.

Figure 8: Percentage change in HDI (2010 reformulation) from Base Case by scenario



Source: IFs version 7.08 using adjusted South Africa Base Case

Table 1 compares the effects of a combined approach with a more piecemeal one. It groups the policy interventions listed in Box 2 into five categories (infrastructure, public health, governance, basic education, and knowledge and higher education) and ranks them according to the cumulative change in GDP compared to the Base Case.⁷¹ Of these grouped interventions, infrastructure, public health and governance have the greatest impact on GDP. In terms of cost, basic education requires more government funding in the short term (i.e. up to 2024), but in the longer term, infrastructure, public health and governance require the most financial support.⁷² Knowledge and higher education, on the other hand, have a negative impact in the short term, as many of its interventions, like training more science and engineering graduates, increasing R&D and establishing more vocational programmes can take years before dividends are seen.

Table 1: Grouped interventions ranked by discounted cumulative change in GDP in 2024 and 2040 compared with the Base Case

GDP (billion R)			
2024		2040	
Infrastructure	+25,5	Infrastructure	+362,9
Public health	+3,2	Governance	+101,4
Governance	+2,4	Public health	+67,6
Basic education	+0,8	Basic education	+44,3
Knowledge and higher education	-45,1	Knowledge and higher education	+6,4

Source: IFs version 7.08 using South Africa adjusted Base Case

Notes: Each grouped intervention is a separate scenario within IFs. Infrastructure includes public transport, ICT, electricity and improved water interventions. Public health includes HIV/AIDS reduction and improved sanitation. Governance includes government effectiveness, government regulatory quality and economic freedom. Basic education includes primary and non-vocational secondary education. Knowledge and higher education include vocational education, R&D funding, tertiary education, and science and engineering graduates.

The story changes, however, if you rank the interventions according to their impact on the province's HDI. By 2024, basic education has had the greatest impact, raising HDI by 2,8% above the Base Case. By 2040, knowledge and higher education have the greatest impact, raising HDI by 1,4% above the Base Case. The increase in HDI is primarily a reflection of the increase in average years of schooling under these interventions.

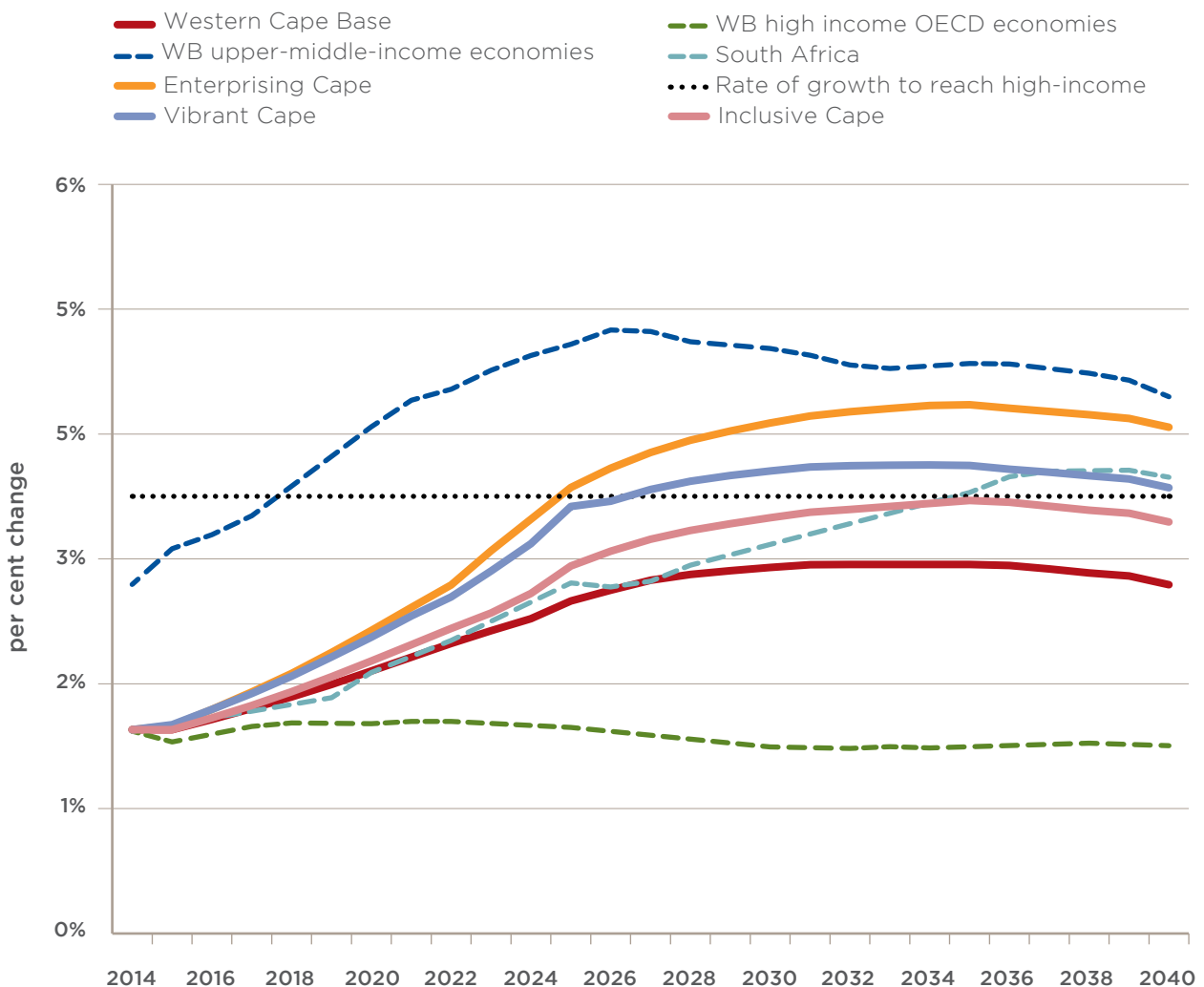
Outcomes in detail

Economy

Escaping the middle-income trap and making the transition from an upper-middle to a high-income economy in a timely fashion requires sustaining a GDP per capita growth rate of more than 3,5%, as mentioned (see Figure 9). In the Base Case scenario, the Western Cape never quite breaks this threshold, instead managing to grow at 3% for a sustained period before seeing the rate of growth begin to decline after 2036. The Base Case also reinforces the recent trend of convergence between the province's growth rates and those of South Africa as a whole⁷³ until around 2030, when South Africa begins to outgrow the province.

The Vibrant Economy and Inclusive Growth scenarios both see increased rates of growth throughout the time horizon, but the Vibrant Economy scenario sees faster growth than the Inclusive Growth scenario. The Enterprising Cape scenario sees growth rates in the Western Cape moving towards the average growth rates for upper-middle-income countries (though still well below the level of growth seen in South Korea when that country moved through middle-income status, averaging 6% growth).

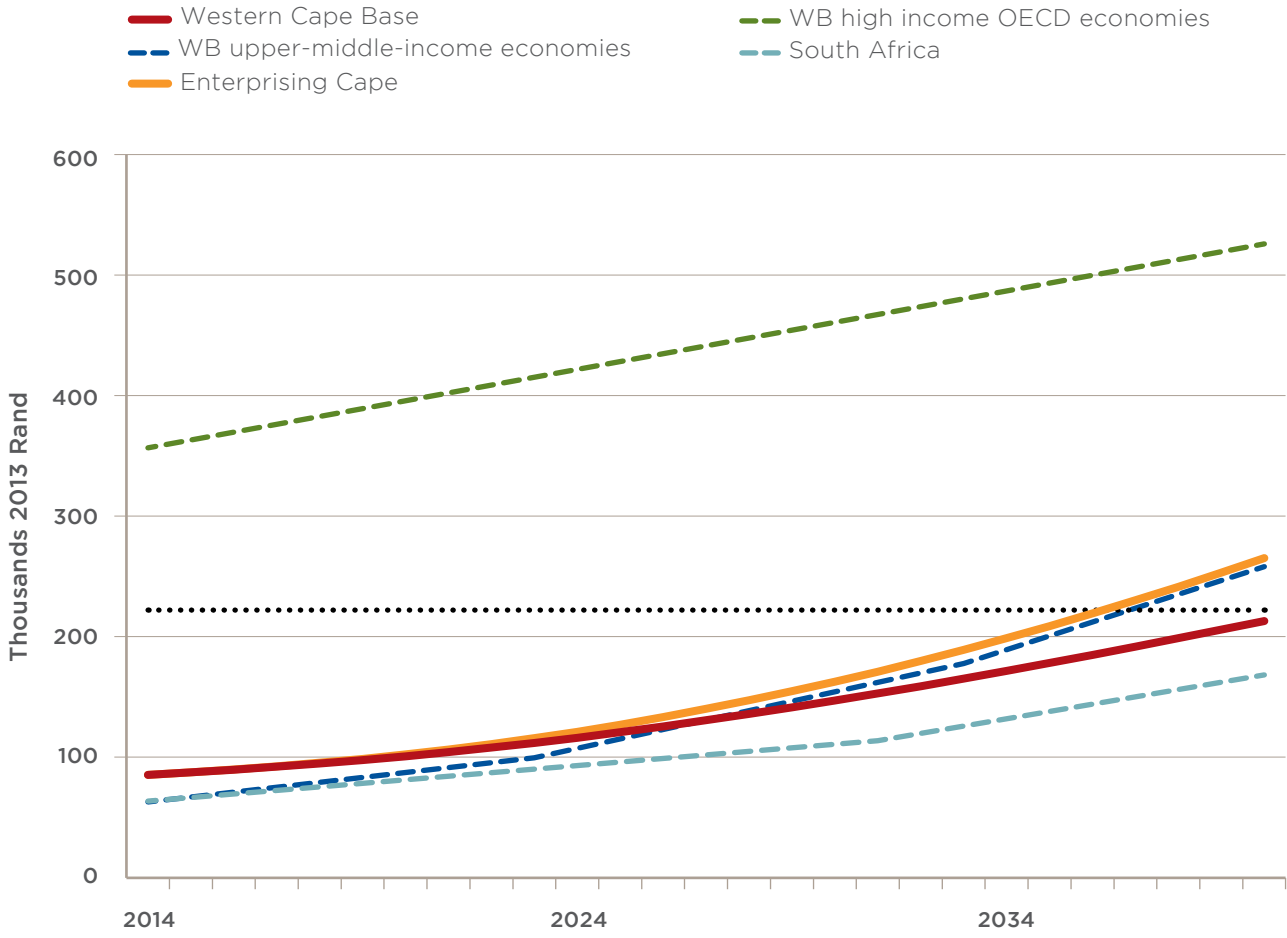
Figure 9: Annual GDP per capita growth rate in the Western Cape, South Africa and World Bank Income Groups, 2014-2040



Source: IFs version 7.08 using adjusted South Africa Base Case. Note: The dotted black line shows the 3,5% growth threshold that upper-middle-income countries must sustain to reach high-income status in a timely fashion.

Under the Enterprising Cape scenario, the Western Cape significantly increases its GDP per capita and the province is put on a path to achieving high-income status by 2037 and more rapid convergence with today's high-income Organization for Economic Cooperation and Development (OECD) countries (see Figure 10). However, even by 2040, GDP per capita in the Western Cape remains significantly less than that of the OECD countries in 2014. This differs from the Base Case, which shows much slower growth and is surpassed by upper-middle-income countries as a whole in 2029 and beyond.

Figure 10: GDP per capita in the Western Cape, South Africa and World Bank Income Groups, 2014-2040



Source: IFs version 7.08 using adjusted South Africa Base Case

Jobs

IFs does not directly model job creation or unemployment. Instead, it looks at changes in the overall labour force and in labour participation rates. However, historical data combined with forecasts of how the Western Cape's GDP and labour force size change over time can give us some sense of how the job situation might evolve over time.

Based on data from the Quarterly Labour Force Survey and the Provincial Economic Review and Outlook 2014, employment rates in the Western Cape are seen to lag behind changes in the province's GDP growth rate.⁷⁴ During the period from 2008 to 2013, downturns and upturns in the rate of GDP growth (which averaged 2% for the period) were followed by similar movements in the rate of change in employment, usually a year or two later. However, compared with GDP growth, employment experienced deeper troughs (-2,5% compared with -1% for GDP) and lower peaks (+3,5% compared with +4,0% for GDP). These figures show that employment tends to be more volatile on the negative end than economic growth.

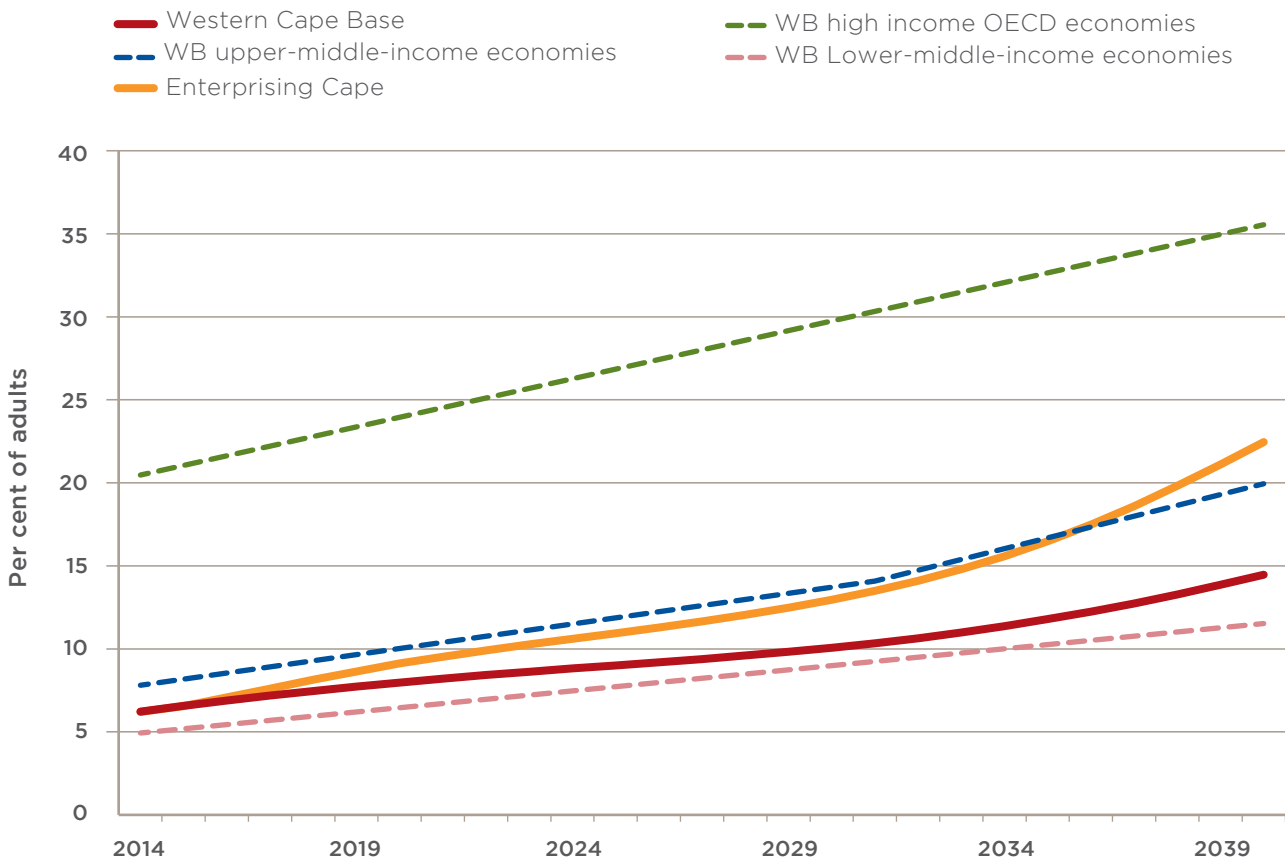
Looking ahead, both the IFs Base Case and the Provincial Economic Review and Outlook 2014 forecast an average GDP growth rate of 2,9% from 2014 to 2019. Given that past changes in employment followed changes in GDP, this suggests that overall employment numbers may rise slowly but steadily, perhaps closer to an average of 2% per year (the relationship between volatility in GDP growth and the magnitude of change in employment is unclear).

At the same time, the province's total labour force in the IFs Base Case is expected to grow by at least 1,2% a year, depending on the rate of in-migration. With 23,5% of the labour force currently unemployed, and the overall number of potential labourers growing, the forecasted rate of GDP growth would seem to be inadequate to significantly reduce unemployment in a reasonable time frame. The Enterprising Cape scenario, however, suggests a much improved job outlook, with the Western Cape experiencing an average rate of GDP growth above 4% for the same time period while the pace of growth in the labour force is slightly slower, at an average 1,1%.⁷⁵

Education

In 2013, the percentage of adults in the Western Cape with tertiary education was two percentage points below upper-middle-income countries as a group. Under the Base Case, the province is still likely to remain several percentage points behind upper-middle-income countries in 2040. But with the Enterprising Cape interventions, the percentage of adults with a tertiary education increases dramatically, outpacing upper-middle-income countries as a whole by the mid-2030s and achieving a rate comparable to where OECD countries were in 2014 (see Figure 11).

Figure 11: Percentage of adults (aged 15+) who have completed tertiary education in the Western Cape compared with World Bank Income Groups, 2014-2040

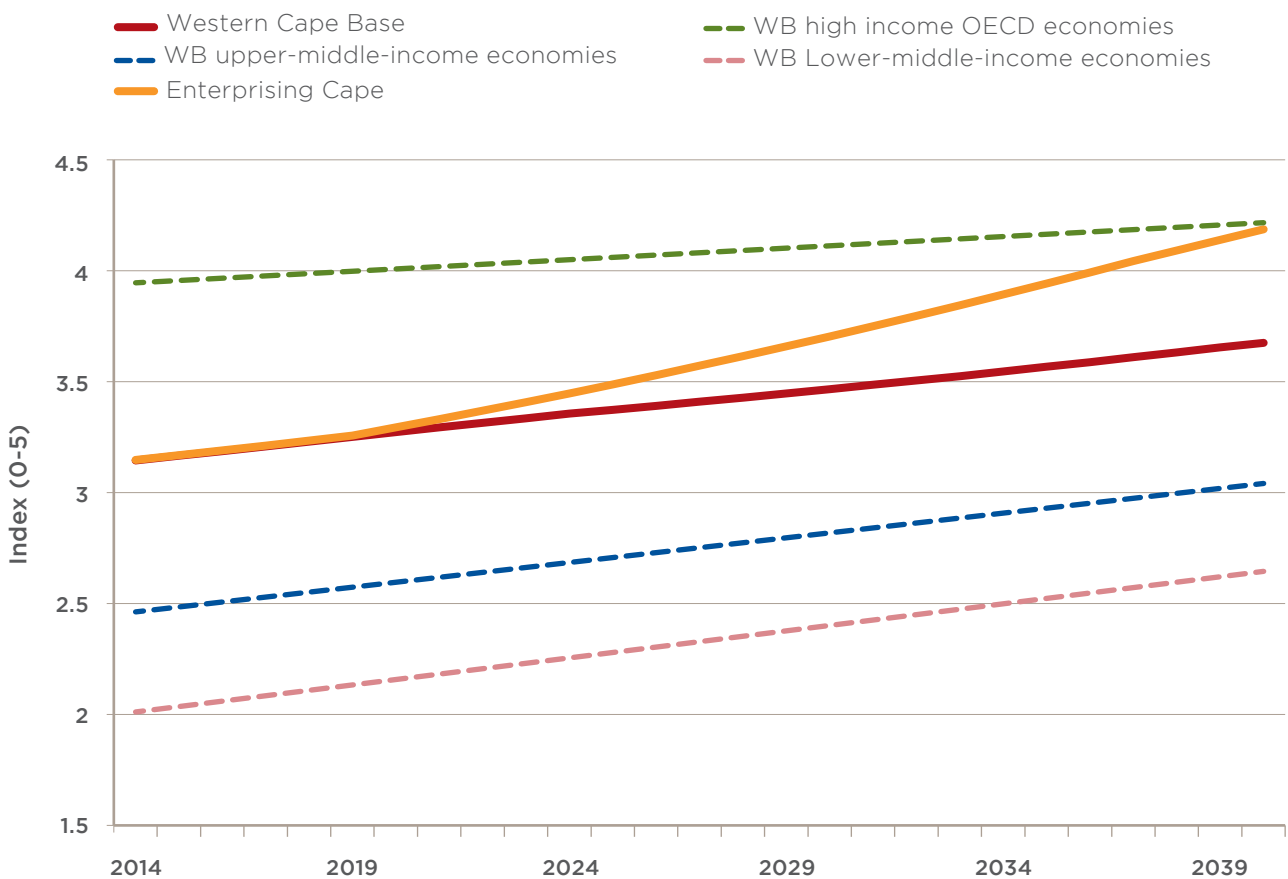


Source: IFs version 7.08 using adjusted South Africa Base Case

Governance

In the Enterprising Cape scenario, improvements in governance effectiveness above the Base Case are simulated over the next 26 years (see Figure 12).⁷⁶ A more effective Western Cape Government has more streamlined departments, which has the effect of reducing inefficiencies in service delivery and information access. In the IFs Base Case, the Western Cape was ranked 49th out of 186 countries in the world in 2012 in terms of government effectiveness, placing the province between Poland and Croatia. In Enterprising Cape, the Western Cape Government pushes to improve and streamline the provision of government services, and the province rises to the rank of 20th globally, equivalent to the level that Iceland and the US were in 2012.

Figure 12: Governance effectiveness in the Western Cape compared with World Bank Income Groups, 2014–2040

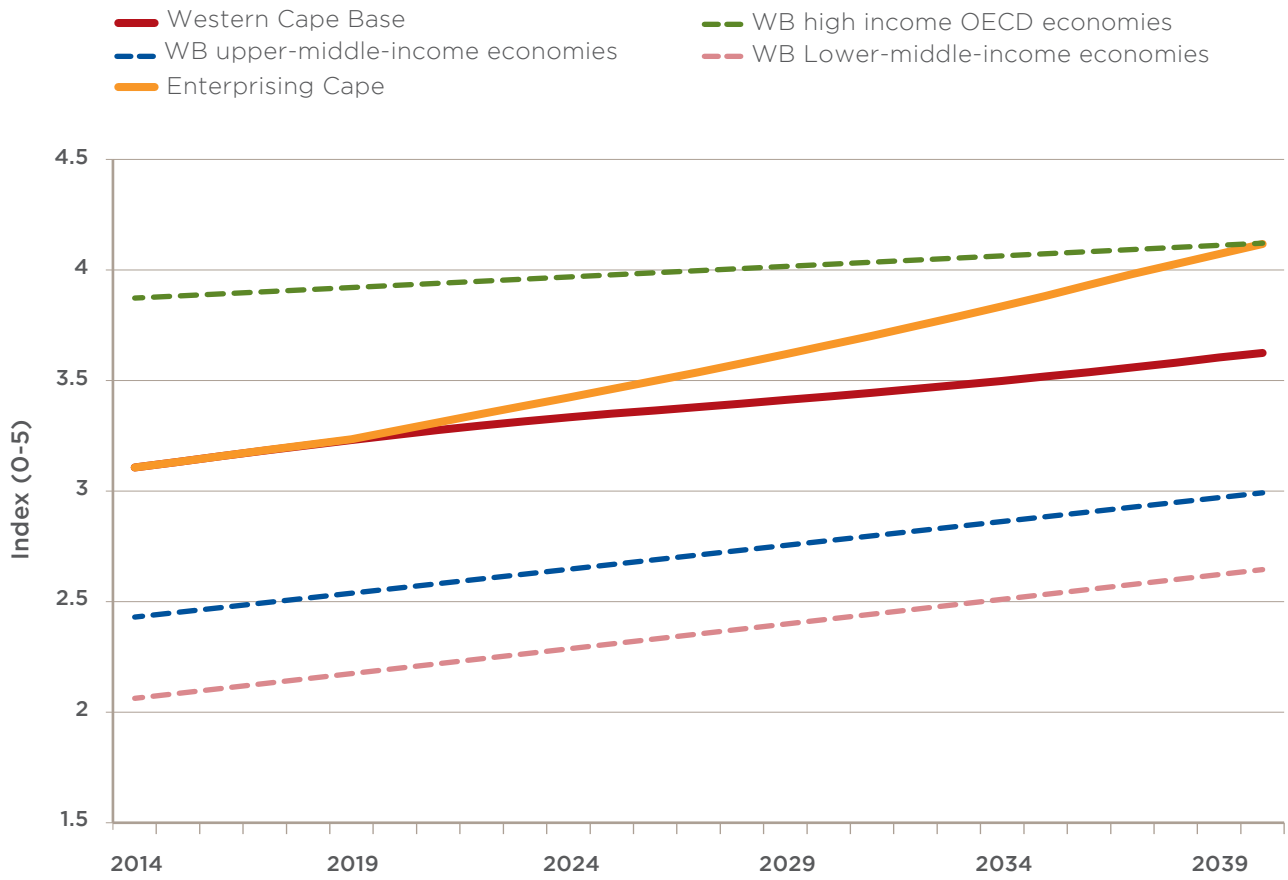


Source: IFs version 7.08 using adjusted South Africa Base Case

Enterprising Cape also simulates improvements in governance regulatory quality over the next two decades (see Figure 13).⁷⁷ This index is meant to capture the level to which government fosters growth in the private sector through policy. This means reducing the red tape that often inhibits natural private-sector development.

In 2012, the Western Cape ranked 51st globally in this index, with Greece acting as a reference country. In Enterprising Cape, the Western Cape continues its commitment to eliminating barriers to business activity and reaches the rank of Estonia in 2012 (20th in the world).

Figure 13: Governance regulatory quality in the Western Cape compared with World Bank Income Groups, 2014-2040



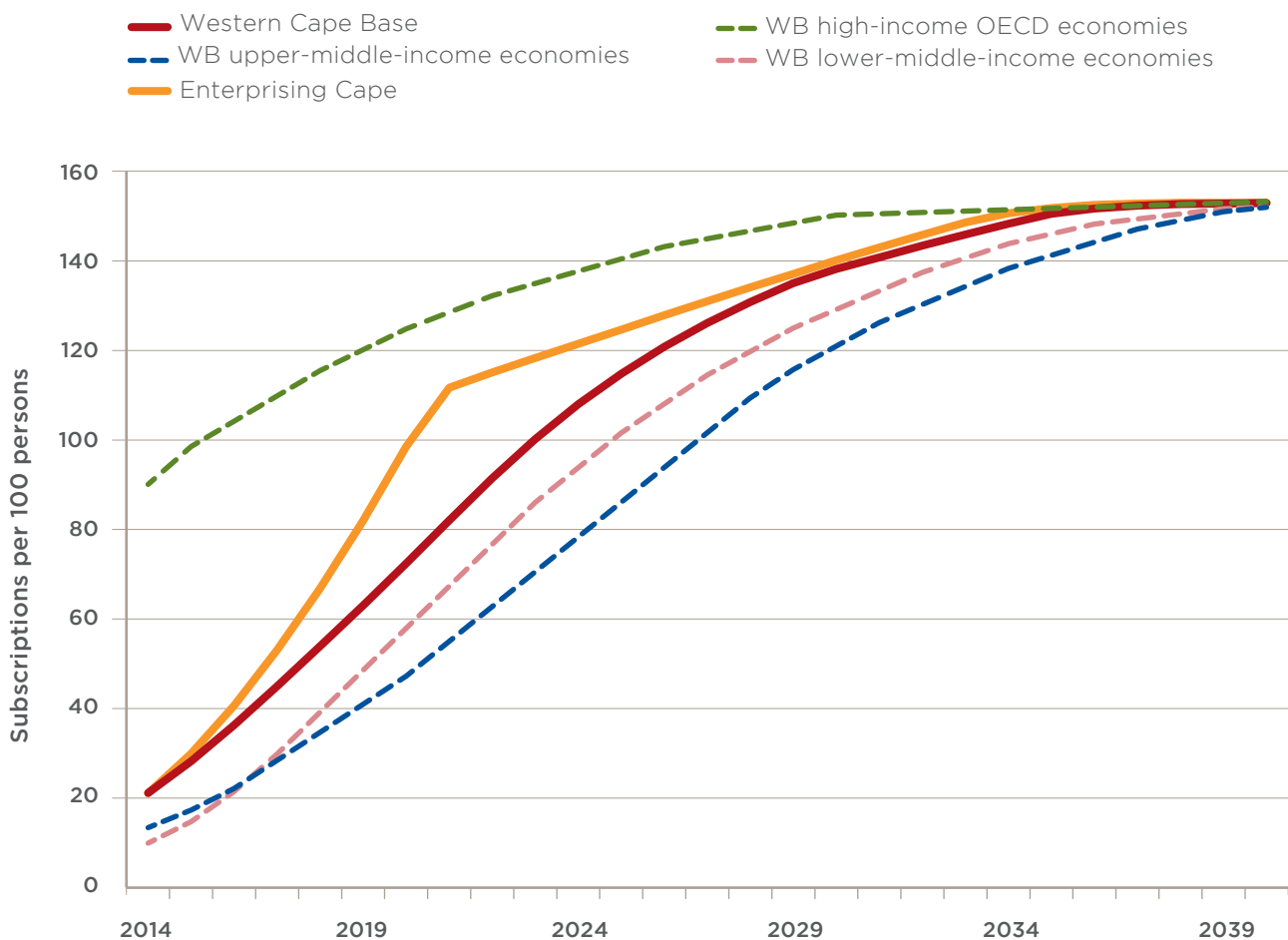
Source: IFs version 7.08 using adjusted South Africa Base Case

ICT

Although the Western Cape lags behind much of Western Europe, for example, in mobile broadband access, the province's current level is still well above the average of upper-middle-income countries (see Figure 14). In 2013, about 18,5% of the Western Cape's residents responded to having access to a mobile broadband connection (compared with a figure of 4,3% for population-weighted upper-middle-income economies in 2010).⁷⁸

Enterprising Cape simulates the gains that would be achieved from the Western Cape's Broadband Initiative, whose objective is to have universal access to mobile broadband services by 2020.

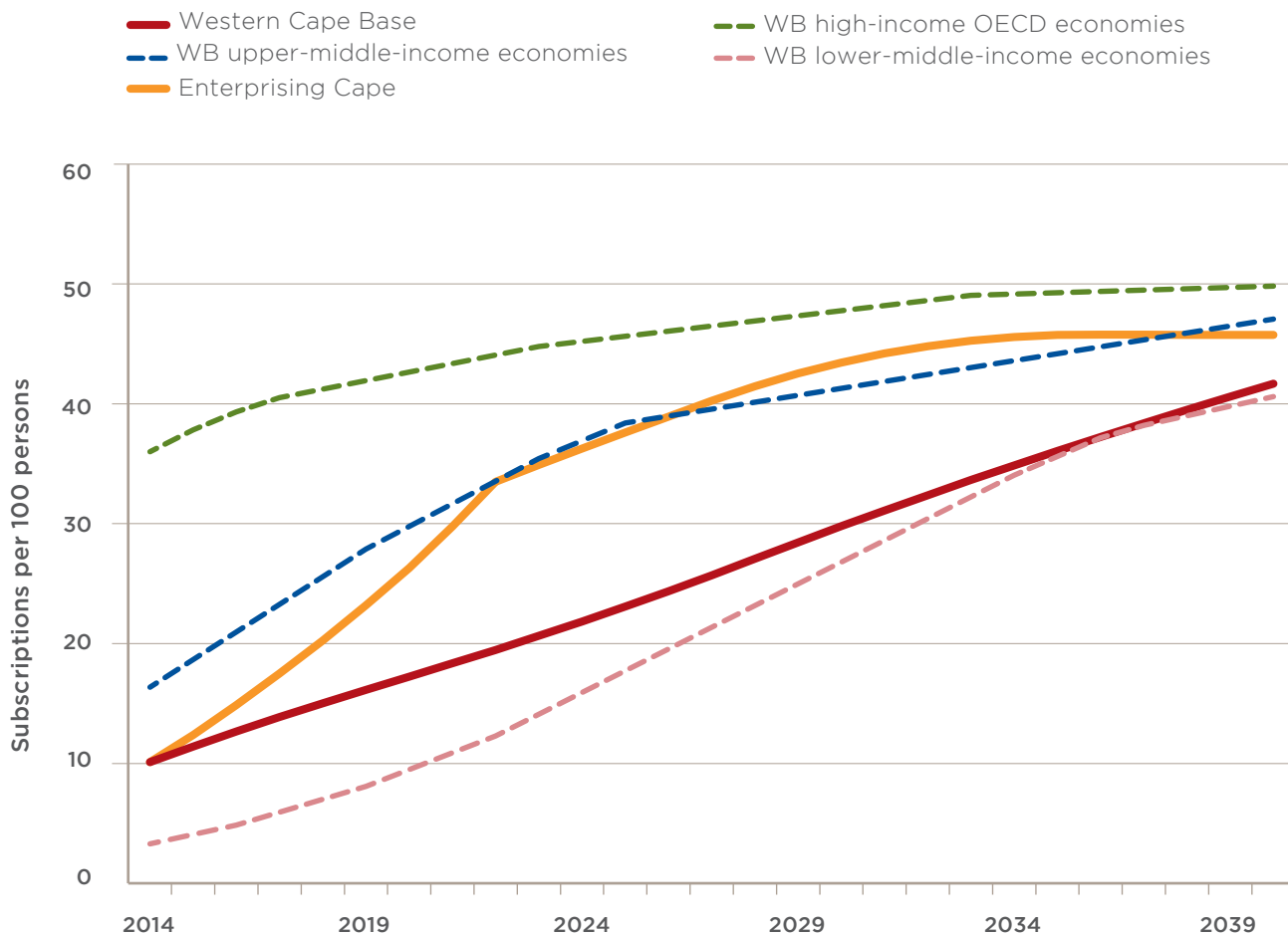
Figure 14: Mobile broadband subscriptions per 100 people in the Western Cape and World Bank Income Groups, 2014–2040



Source: IFs version 7.08 using adjusted South Africa Base Case Note: Many economies exceed 100% access to broadband connectivity because this measure captures people who have multiple SIM cards.

Fixed broadband access requires a longer-term strategy, as it means retrofitting pre-existing telephone infrastructure for broadband connectivity. In the Enterprising Cape scenario, there is a more aggressive push to converge with the rates of fixed-line access seen in high-income economies (see Figure 15).

Figure 15: Fixed broadband subscriptions per 100 people in the Western Cape and World Bank Income Groups, 2014-2040



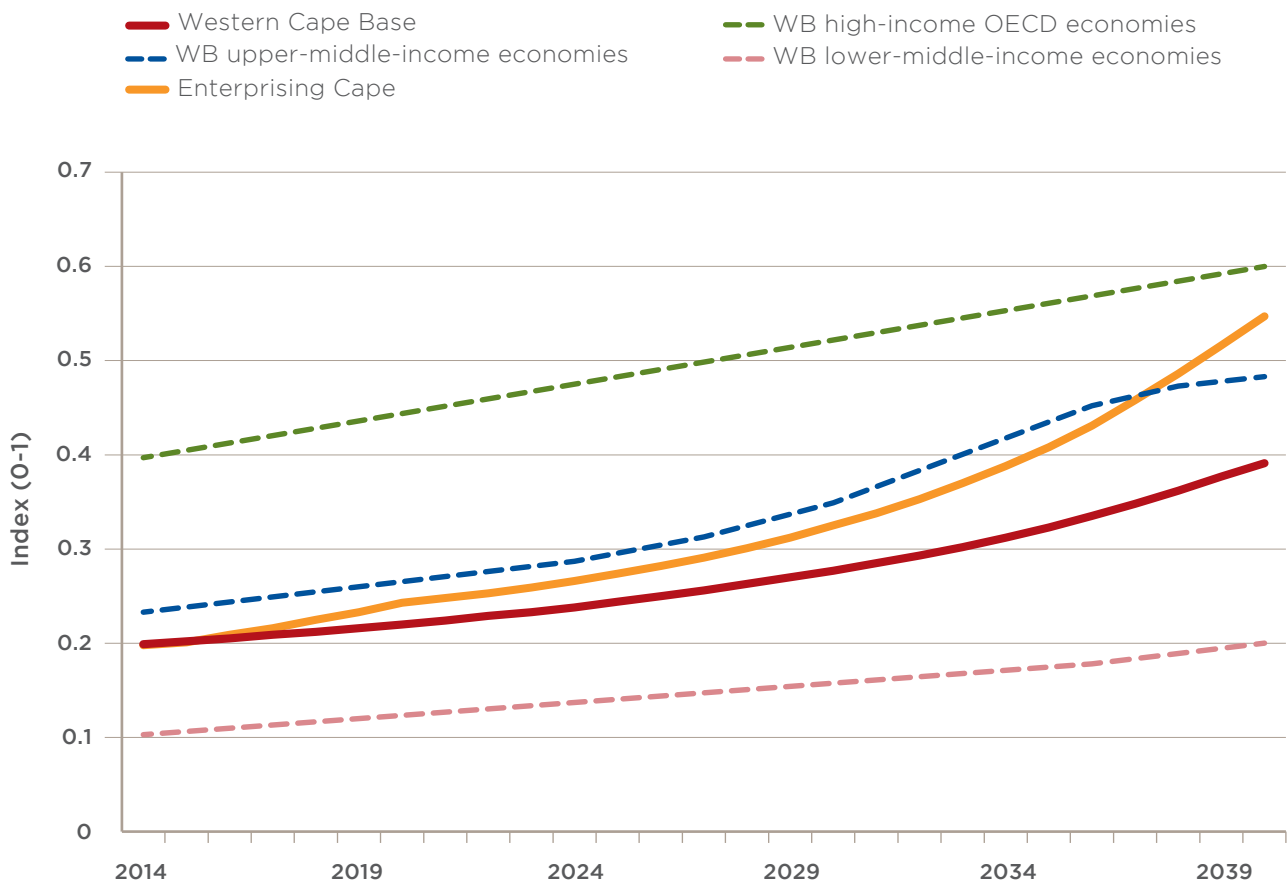
Source: IFs version 7.08 using adjusted South Africa Base Case

The emphasis on FET schooling, science and engineering programmes, and the provision of broadband networks in the Enterprising Cape scenario all help the Western Cape move towards much more rapid convergence with high-income economies. In this scenario, the Western Cape reaches and then surpasses the level of access for upper-middle-income countries as a whole, suggesting that the Western Cape could become a global innovation hub.⁷⁹

Knowledge society and innovation

In 2014, the Western Cape is comparable to upper-middle-income countries in the World Bank's Knowledge Society Innovation Index.⁸¹ But with increases in R&D funding under the Enterprising Cape scenario, and more graduates with science and engineering qualifications and general tertiary degrees, the environment becomes more conducive to innovation and begins to converge with the level in OECD countries (see Figure 17). There is particularly rapid growth in the latter half of the period. This would eventually put the Western Cape well ahead of upper-middle-income countries as a whole, setting up the province for its role as an innovation hub.

Figure 17: World Bank Knowledge Society Innovation Index for the Western Cape and World Bank income groups, 2014-2040



Source: IFs version 7.08 using adjusted South Africa Base Case. Note: The IFs version of the World Bank Knowledge Society Innovation Index is built from government spending on R&D, the tertiary graduation rate, and the number of science and engineering graduates.

Conclusions and recommendations

As of 2015, the Western Cape is stuck in a middle-income trap, wrestling with stubbornly high unemployment, and characterised by unequal access to services and unequal distribution of resources. The OneCape 2040 plan, however, envisions a different Western Cape – one that is more inclusive and economically vibrant. Turning this vision into reality would need the province to address two interrelated sets of development challenges: providing all of its residents with access to basic services and economic opportunities, while also building a 21st-century, knowledge-driven economy. Meeting these challenges will necessitate, firstly, improving access to basic services to improve social cohesion and human development and, secondly, enhancing access to technology, improving the level of labour skills and refining the quality of governance.

Notes

1. Based on the GDP per capita of today's high-income countries, as identified by the World Bank in 1989, the year it began its system of country classification. The Western Cape's GDP per capita will still remain far below that of today's high-income countries.
2. HDI is measured on a scale of 1 to 100, with higher values representing a greater level of development.
3. Policy briefs that will be published over the coming year will examine the Green Cape and Living Cape transitions of OneCape 2040.
4. J Felipe, A Abdon and U Kumar, Tracking the middle-income trap: What is it, who is in it, and why? Working paper no. 715, Levy Economics Institute, Bard College, Annadale-on-Hudson, 2012.
5. B Eichengreen, D Park, K Shin, When Fast Growing Economies Slow Down: International evidence and implications for China. NBER Working Paper Series no. 16919. National Bureau of Economic Research, Cambridge, MA, 2011; B Eichengreen, Escaping the Middle Income Trap, in Federal Reserve Bank of Kansas City Achieving Maximum Long-Run Growth, 2012.
6. J Felipe, A Abdon and U Kumar, Tracking the middle-income trap: What is it, who is in it, and why? Working paper no. 715, Levy Economics Institute, Bard College, Annadale-on-Hudson, 2012.
7. B Eichengreen, D Park, K Shin, When Fast Growing Economies Slow Down: International evidence and implications for China. NBER Working Paper Series no. 16919. National Bureau of Economic Research, Cambridge, MA, 2011.
8. The World Bank began classifying countries by income level in 1987 (the bank's 1989 fiscal year). At that time, upper-middle-income countries were identified as having a gross national income (GNI) per capita of between \$1 941 and \$6 000 (in current US dollars). South Africa had a GNI per capita of \$2 670 in 1987. As part of its Atlas methodology, the World Bank revises the income groupings each year to account for inflation. From 1987 to 2014, the lower bound for upper-middle-income countries has increased at an annual average rate of 2,5% per year, suggesting that the earliest year South Africa would have met the upper-middle-income threshold was in 1979, when its GNI per capita was \$1 940.
9. Western Cape Provincial Treasury, Provincial Economic Review and Outlook 2014. Western Cape Government, Cape Town, 2014.
10. The World Bank's country-classification system identifies high-income countries as having a GNI per capita greater than \$12 745 in current US dollars at purchasing power parity. For this report, the authors use as a high-income threshold the GDP per capita of today's high-income countries in 1987, which, when converted to 2013 rands using a GDP deflator from the World Bank and 2013 exchange rates from the Standard Bank of South Africa, yields a threshold of R222 000.
11. Converted from R43 500 GDP per capita in constant 2005 rands at market exchange rate (Western Cape Provincial Treasury, Provincial Economic Review and Outlook 2014. Western Cape Government, Cape Town, 2014.) to 2013 rands using the 2005–2013 GDP deflator for South Africa from the World Bank.
12. See J Felipe, A Abdon and U Kumar, Tracking the middle-income trap: What is it, who is in it, and why? Working paper no. 715, Levy Economics Institute, Bard College, Annadale-on-Hudson, 2012. That research found that countries with a GDP per capita between R114 059 and R184 854 in 2013 rands were at greatest risk of falling into the upper-middle-income trap. (See the Middle-Income Trap subsection in this paper for more details.) Values were converted from \$1 990 purchasing power parity using a 2005 dollar GDP deflator from econstats.com, a 2005 purchasing power parity to local currency unit conversion factor from the World Bank and a 2013 GDP deflator calculated from the percentage change in the consumer price headline index from 2011 to 2013 from Statistics South Africa NESSTAR online database available at: <http://interactive.statssa.gov.za:8282/webview/>.
13. Figures taken from Statistics South Africa NESSTAR online database available at: <http://interactive.statssa.gov.za:8282/webview/>.
14. As the 32,9% suggests, the tertiary sector is not homogeneous in its skill set: there are many lower-skilled workers within the sector, like security guards and caterers.
15. The Western Cape's manufacturing sector shed 84 821 net jobs and its agriculture sector 64 545 between 2000 and 2013 (Western Cape Provincial Treasury, Provincial Economic Review and Outlook 2014. Western Cape Government, Cape Town, 2014).
16. Unemployment in the Western Cape stood at 22% at the end of 2013, compared with 5% in upper-middle-income countries as a whole and 7,9% for high-income OECD countries. World Bank World Development Indicators Database, available at: <http://databank.worldbank.org/data/databases.aspx>
17. Using narrow definition of employment which does not include discouraged workers, only those that are unemployed and actively seeking work. Western Cape Provincial Treasury, Provincial Economic Review and Outlook 2014. Western Cape Government, Cape Town 2014.

18. Statistics South Africa, Quarterly Labour Force Survey, statistical release P0211, 2nd quarter 2014, Pretoria, 2014; see also Western Cape Provincial Treasury, Provincial Economic Review and Outlook 2014. Western Cape Government, Cape Town 2014.
19. Net jobs is a figure equal to the total number of jobs created in the sector between 2000 and 2013 minus the total number of jobs lost over the same period.
20. Western Cape Provincial Treasury, Provincial Economic Review and Outlook 2014. Western Cape Government, Cape Town, 2014.
21. The population percentages reported here exclude the 11% of Census respondents with unspecified incomes and the 39% who reported no income. While a good number of those with no income are likely to fall into the lower-income category, the Provincial Economic Review and Outlook 2014 points out that a number of those with no income hail from the province's more affluent districts.
22. A Nichols, J Mitchell, and S Lindner, Consequences of Long-Term Unemployment, Urban Institute, Washington DC, 2013.
23. TF Azeng and T U Yogo, Youth unemployment and political instability in selected developing countries, African Development Bank Group Working Paper Series no. 171, Belvedere, Tunisia: African Development Bank, 2013.
24. D Fine et al, Africa at work: Job creation and inclusive growth, McKinsey Global Institute, Washington DC, 2012.
25. G Williams, S Cunningham, and D De Beer, Advanced Manufacturing and Jobs in South Africa: An Examination of Perceptions and Trends, paper presented at the International Conference on Manufacturing-Led Growth for Employment and Equality, Johannesburg, SA, May 20 & 21, 2014.
26. D Fine et al, Africa at work: Job creation and inclusive growth, McKinsey Global Institute, Washington DC, 2012.
27. Western Cape Provincial Treasury, Provincial Economic Review and Outlook 2014. Western Cape Government, Cape Town 2014.
28. Micro-enterprises are defined as small businesses that employ fewer than five people. In the Western Cape, micro-enterprises account for 94% of all small businesses (Finmark Trust, FinScope South Africa Small Business Survey 2010, final report, Johannesburg: Finmark Trust, 2010).
29. Western Cape Provincial Treasury, Provincial Economic Review and Outlook 2014. Western Cape Government, Cape Town 2014.
30. Ibid.
31. G Clarke, Y Li and L Colin Xu, Business environment, economic agglomeration and job creation around the world, Policy Research Working Paper no. 6706, Washington DC: World Bank, 2013.
32. See our first policy brief in this series, Educating Cape, for a detailed analysis and forecast of the Western Cape's education system. (Data source: Western Cape Education Department raw data.)
33. Having more students completing primary and secondary education can yield significant economic benefits. A 2006 study of African economies, found that a 1% increase in the average years of primary education raised the growth rate of GDP per capita by 0,08 percentage points per year, and secondary education by 0,06 percentage points (see K Gyimah-Brempong, O Paddison and W Mitiku, Higher education and economic growth in Africa, *Journal of Development Studies*, 42:3, 2006, 509–539). Coulombe et al used adult literacy as a measure rather than education years or enrolment, and found that a 1% rise in literacy is associated with a 2,5% rise in labour productivity and a 1,5% increase in GDP per capita (S, Coulombe, J F Treblay, and S, Marchand, Literacy scores, human capital and growth in 14 OECD countries, International Adult Literacy Survey, Statistic Canada, Ottawa, Ontario, 2004).
34. G Kruss et al, Education, training, and skills development in the Cape Town City Region: Background paper, Cape Town Global Competitiveness Project, Cape Town: Human Sciences Research Council, 2010.
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59. To contextualise these forecasts, we often use a benchmarking method of analysis, meaning we identify 'reference countries', which exhibit levels of development today that are similar to our forecast of future levels of development. For example, our 2040 forecasts for the Western Cape will be compared to 2012 values around the world. Therefore, ranking the Western Cape as 10th in 2040 means that the province's level of development on a given measure in 2040 would be equivalent to that of the country ranked in 10th place in 2012. This method of analysis helps to contextualise our forecasts with the current environment of development.
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69. All variables selected had a significant impact on GDP (+2% or more of GDP over the Base Case) and an R2 with GDP per capita of 0,1 or greater.
70. The targets set in bold type represent those policies modelled in the Vibrant Economy, Inclusive Economy and Enterprising Cape scenarios in the next section. The IFs model currently has limited capability to model specific labour trends and investment interventions within sectors.
71. The cumulative change in GDP is discounted at an annual rate of 3% to reflect the current value of the gains to GDP.
72. The IFs model can establish only certain costs (e.g. how much it costs to enroll a thousand more pupils in primary education, or increase access to sanitation); it cannot calculate the costs of implementing specific governance policy changes.
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75. Using the rate of economic growth to estimate potential job creation does not, of course, take into account the potential for new automation technologies to spur increased growth even while displacing jobs.
76. Governance effectiveness is a World Bank measurement from its World Governance Indicators project. According to the World Bank, this measure captures 'perceptions of the quality of public services, the quality of the civil service and the degree of its independence from political pressures, the quality of policy formulation and implementation, and the credibility of the government's commitment to such policies'. See www.govindicators.org for more information on the indices.
77. Governance regulatory quality is a World Bank measurement from its World Governance Indicators project. According to the World Bank, this measure captures 'perceptions of the ability of the government to formulate and implement sound policies and regulations that permit and promote private sector development'. See www.govindicators.org for more information on the index.
78. Data obtained from a South African Audience Research Foundation AMPS survey. Categories included as wireless were 3G, Edge and GPRS.
79. Mobile broadband tends to supplant the need for fixed broadband. The massive growth in mobile broadband in the Western Cape under the Enterprising Cape scenario, which is greater than in upper-middle-income economies, is likely to account for the earlier saturation of fixed broadband access compared to upper-middle-income economies seen in Figure 15.
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