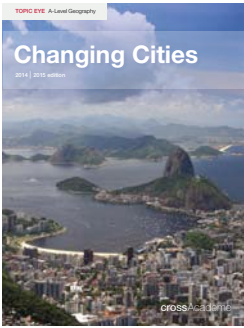


# Changing Cities

2014 | 2015 edition





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## 1 Overview

The continued growth, development and modification of our cities.

## 2 From London to Rio – the Olympic legacy

*Garrett Nagle* examines the legacy of the London Olympics and the preparation for the Rio de Janeiro Olympics to be held in 2016.

## 6 What future for the traditional high street?

The UK high street is a familiar and central part of the urban landscape. *David Holmes* discusses the complex and sometimes controversial changes that are taking place.

## 10 Johannesburg – a city of acute disparity

*Paul Guinness* considers the huge gap in the marked socio-economic inequality of Johannesburg, South Africa's most important city.

## 14 Phoenix – urban growth in the American Southwest

*David Redfern* examines the social and political issues related to the migration of large numbers of immigrants, many of whom are illegal, from Mexico to the city of Phoenix.

## 18 Smart cities – new forms of urban development

*Garrett Nagle* explains the concept of a 'smart city', looking in particular at the excellent example of Songdo in South Korea.

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# Overview

Most of the world's population lives in towns and cities, and the proportion is increasing as urbanisation continues to occur in the developing world. Cities are seen by many as the main source of finance, employment, housing, entertainment and culture. However, their continued growth, development and modification create issues for both the existing residents and planners of the countries concerned.

Cities are often the centre of major sporting events, such as the Olympic Games and the World Cup. London has recently been the centre of world attention for the former and has now passed on the baton to Rio de Janeiro in the emerging nation of Brazil. Garrett Nagle examines the legacy of London 2012 and looks at how the preparation for the Rio Games and the likely outcomes will be different. As with any major development, there will be 'winners' and 'losers'.

Some of the current 'losers' in many UK towns and cities are retail outlets on the high street. People make increasing use of out-of-town retail outlets where parking is often free and where shopping can be part of a wider leisure experience. Online and mobile commerce are adding to these problems for city centre retailers. David Holmes reviews the impacts of these threats to this essential part of a city's fabric, and asks what can be done both to protect this central area and to provide it with a more sustainable future.

The growth of some of the world's major cities, such as Mumbai and Sao Paulo, is well documented, and the next two articles in this edition of *Changing Cities* provide interesting case studies on the growth of two other expanding but very different million-aire cities – Johannesburg and Phoenix. Johannesburg's recent rapid growth has been fuelled by massive rural–urban migration and the result has been a significant disparity of wealth within it. Its context within the twentieth-century political system known as 'apartheid', which still has a lingering impact, makes it almost unique. Paul Guinness examines the issues within this city of extremes, and the means by which the authorities seek to address them. Phoenix is another city facing significant in-migration, predominantly of Hispanic people from nearby Mexico. Some of the indigenous white and black people of Phoenix do not see this economic migration as being positive. Indeed, many see it as a threat to their current way of life. David Redfern reviews the social and political dimensions that are emerging in this conservative region of the USA.

Sustainability of urban growth is a recurrent theme in the study of world cities. Perhaps one of the more extreme aspects of this is the development of 'smart cities' – purposefully planned, designed or modified to be as sustainable as possible. Garrett Nagle provides a detailed study of one such city, Songdo in South Korea, and asks whether such cities really are the way forward. Sustainability is the mantra of people who want to protect and preserve the world's scarce resources. Yet wealth is required to create such cities, and income disparities are evident within them. Are they really any better than those that have grown elsewhere in a more organic manner?

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# From London to Rio

## The Olympic legacy

Garrett Nagle examines the legacy of the London Olympics and the preparation for the Rio de Janeiro Olympics to be held in 2016.

The London 2012 Olympic Games are considered to have been a great success on a number of grounds. They attracted a worldwide audience and helped to regenerate one of London's poorest areas: 12,000 new jobs were created, £17 billion was spent on upgrading infrastructure, and 2800 new homes were built. However, there were many people who were not happy with the Games. They cost around £11 billion (plus the cost of infrastructure developments), receiving lottery funding of £675 million that could have gone elsewhere. Some people and businesses were forcibly relocated and there were regional development impacts, reinforcing development of London and the Southeast but not the rest of the country.



Figure 1 *The London 2012 legacy: from Athletes' Village to East Village*

The London 2012 Olympic Committee had four main aims for the Games:

- to regenerate and transform one of London's poorest areas;
- to create a Games for the world, reflecting London's diversity;
- to inspire young people, encouraging them to take part in sport;
- to create a legacy for east London that would last beyond 2012.

Many changes have resulted. A new Olympic Park, the Queen Elizabeth Park, was opened on 1 January 2013 along the Lea River. Some 2800 housing units have been created from the Athletes' Village and 50% of these are affordable housing for local people (Figure 1). The first new residents moved into East Village in April 2013. In July 2013 the Copper Box opened as a local community leisure facility. In Spring 2014 the Aquatic Centre



will open as a local swimming pool. Transport infrastructure also continues to be improved – in 2018, Crossrail will open at Stratford.

### Assessing the legacy

The primary aim behind the hosting of the 2012 Games was to build top-class infrastructure that would not only ensure the Games’ success but also enable the facilities to be put to good use in the future. Another aim was to involve more young people in sport. It is too early to tell whether this has been a success. A third aim of the Games will be assessed at the 2016 Games. The London 2012 organisers want an improved performance at the 2016 Rio de Janeiro Olympics by Team Great Britain, despite the trend of host countries to perform less well at subsequent Games.

In order to achieve these objectives, the British Government has already earmarked an increased funding of £1 billion towards the promotion of elite sports, development of existing infrastructure and its protection, creation of new sports centres and increased participation in sports with emphasis on Olympic and Paralympic disciplines. The focus on elite athletes might not translate into local participation.

The industrial and tourism sectors are expected to continue to grow in the coming years. However, the east London area, when compared to the rich west London area, is still very deprived. Much more long-term development is needed to change the relative inequalities in London.

### Contrasting plans for Rio

Are there lessons to be learnt from London for Rio? It may be too early to tell. However, there are important differences in the plans for Rio 2016 compared with London 2012. There are various venues (Figure 2), with particularly ambitious developments planned for the port zone and for Barra da Tijuca (Figure 3). Over 50% of the games will take place at Barra.

Barra da Tijuca is a recent ‘edge city’ – an exclusive edge of town development – and it is now a key Olympic site. In response to overwhelming pressure to decentralise the population of Rio in the 1960s, the city planning authority backed the plans of Lucio Costa, a French-born urban planner, to develop Jacarepaguá, with Barra da Tijuca as its geographic centre. The lowlands of Jacarepaguá comprise flat scrub, marshland, lagoons and coastal spits, and offered the prospect of enlarging the urban area by 122 km<sup>2</sup>.



Figure 2 Rio Olympics venues map

- Where the competition will take place:
- 1 Barra Zone
  - 2 Copacabana Zone
  - 3 Maracanã Zone
  - 4 Deodoro Zone



Figure 3 Ambitious Olympic plans for Barra da Tijuca

Barra da Tijuca has many attractions for Rio's expanding rich middle class, with its pleasant environment of mountain views, forest, lagoons and 20 km of beaches, in an area four times larger than the increasingly congested and polluted central zone but still only 30 minutes away by motorway. The town has expanded rapidly, from 2500 inhabitants in 1960 to 98,000 in 1991, growing by 139% per year during the 1980s. Barra represents the most recent example of the decentralisation of the rich. As a result, the lowlands have been divided into two – the coast and the interior.

The inland area of Jacarepaguá contains *conjunto habitacional* (low-quality, city authority housing) neighbourhoods such as Anil, Gardenia Azul and Cidade de Deus. This area was created from the 1960s onwards. However, it suffers from a remoteness, a lack of public transport and services, overcrowding and poor maintenance.

The site of the Athletes' Village for Rio 2016, 'Ilha Pura', will become a new neighbourhood after the Games. There are 31 apartment blocks planned – larger than London's Athletes' Village – and families will move into them when the Games have ended.

The 2016 Olympic Park will be built on the lowlands of Jacarepaguá to the west of Barra. The first stage is to improve the sewerage system in order to reverse the long-term pollution of the surrounding lagoons and canals. Power lines are to be laid underground. Development will include an athletics track, swimming and cycling arena, a media centre and a luxury hotel.

### Rio's favelas and prime real estate

The 2016 Olympics are causing a property boom in some of the more central favelas. For example, the Vidigal favela had been dominated by drug gangs. Now, however, Vidigal is being transformed. The value of land has risen threefold in

three years, and land speculators are buying up properties. Outsiders are moving into the area and real estate agents have moved into the favela. The police have made the area safe. The average house price in Rio has increased by 165% over the past three years. Values have risen faster in favelas where the drug gangs have been pushed out of sight.

Investors are tussling over prime plots in Vidigal (Figure 4). It has become one of the most fashionable places in Rio. An Austrian engineer bought a dilapidated home in 2009 for £10,000 and turned it into a hostel and nightclub, which is attracting offers of around £300,000. Less than 100 metres away, a hotel is under construction. People are fighting for ownership of houses here, even among families, as land registration/property rights generally do not exist in such illegal informal settlements.

The process taking place is similar to the gentrification seen in cities such as New York and London. It is a mixed blessing for the community in Vidigal, many of whom – as with most of Rio's favelas – are from poor families that migrated from northeast Brazil.

The World Cup (2014) and Olympic Games (2016) are driving inward investment. Locals can rent their rooms out for more than three times as much as they could three years ago. The little shops on the street are doing more business with tourists. Some people are selling their homes here and buying big properties back in the northeast.

In the short term, many people see this as an opportunity to make money, but gentrification will change the community and not everyone is happy. A number of people fear that they may be forcibly relocated or priced out of their homes.

By contrast, Rocinha – Brazil's most populous slum, with at least 70,000 inhabitants – is still far from being gentrified. Nevertheless, the monthly rental price for a two-bedroom home doubled in 2012 because of the influx of outsiders.

### Conclusion

There will be many winners and losers as a result of the 2016 Rio Olympics – sports personnel, property developers, favela dwellers. London 2012 used the Games to regenerate an inner-city area, but Rio appears to be using them to put Barra da Tijuca on the map and to help develop peripheral parts of the city. There will be trickle down benefits for some of Rio's favelas, but not everyone is happy. **TE**

Figure 4 The Vidigal favela – prime real estate



# REVIEW

## Key points

- A country that hosts the Olympic Games is taking on a major undertaking, and a very expensive one at that.
- Host cities have become increasingly aware of the legacy – the benefits that exist after the Games are over.
- Benefits may include improvements to infrastructure, new stadia, availability of more housing and a cleanup of the environment.
- Many of London's legacy benefits are still to be realised. However, a major influence in awarding the Games to London was its potential impact on the regeneration of the East End of London.
- Rio de Janeiro is also hoping to benefit from the Games. It is planning to develop part of the Jacarepaguá region to the south of the city. However, the main beneficiary currently appears to be the exclusive development of Barra da Tijuca, an 'edge city' on Rio's southern border.
- Some of Rio's favelas are experiencing a property boom.

## Pause for thought

- One of the legacy aims of the London Games was to get more young people involved in sport. How successful do you think the Games have been in this respect?
- Worldwide sports events can bring great riches to some people. They can also leave others impoverished. Rio may benefit from improved transport infrastructure and better facilities, but will the poor benefit?

## Context

The 2016 Rio Games have great potential to deliver urban regeneration – an opportunity to develop undeveloped parts of the city and to redevelop slum areas. However, the Games also have the potential to increase inequalities both within Rio and within the country. Areas of investment contrast with a lack of investment and commitment in the less favoured parts of the city.

In June 2013 over 300,000 demonstrators took to the streets of Rio de Janeiro. They were complaining about poor public services, corruption, police brutality and excessive spending on the FIFA World Cup planned for 2014. Rioters 'hijacked' the demonstrations, forcing the demonstrators to call off their protests. However, the unease is unlikely to go away.

# RESPONSE

## Assimilation

- 1 Outline the range of benefits created by the London 2012 Olympic Games.
- 2 Comment on three problems related to the London 2012 Games.
- 3 Describe *one* similarity and *one* difference in the ways the 2016 Rio Games are being organised compared with the 2012 London Games.
- 4 Suggest why some Rio favelas are experiencing a property boom.
- 5 Suggest the locations of those favelas experiencing property booms. Briefly explain why.
- 6 Compare the characteristics of Barra da Tijuca with those of favelas, such as Vidigal and Rocinca.
- 7 Explain the term 'gentrification'. What evidence is there that the process of gentrification is occurring in Rio? In what ways does it differ from gentrification in developed countries?

## Evaluation

- 1 The benefits of hosting a worldwide sports event outweigh the problems that may be caused.' To what extent do you agree with this statement?

### ANSWER PLAN

There is no right or wrong answer to this question – much will depend on the evidence used:

- Contrast events, preferably in contrasting countries – high-income and low-income countries.
  - Events could include the Olympic Games, Football World Cup, Rugby World Cup. Located examples should be given.
  - The benefits can include improvements to transport infrastructure, facilities, housing stock, electricity, water and sanitation supplies, improved community facilities, increased tourism, increased employment opportunities, and improvements to the environment. Located examples should be given.
  - Problems include the cost of staging an event; pressure on the transport infrastructure; getting the work done on time; security is an increasing problem; pollution caused at major events; pressure on hotels and restaurants, etc.
  - Many of the benefits and disadvantages are long term and may take years to appear/disappear. There may also be disadvantages for other parts of the country/urban area that receive less funding than usual due to the event.
- 2 'The Olympic Games reinforce existing geographic inequalities.' Discuss.
  - 3 'The Olympic Games should not be concerned with urban redevelopment or regeneration.' Discuss.

## Extension

Go to the website <http://www.cslondon.org/sustainable-games/sustainable-legacy/> and comment on the plans for a sustainable legacy.





The UK high street is a familiar and central part of the urban landscape. *David Holmes* discusses the complex and sometimes controversial changes that are taking place.

# What future for the traditional high street?

Even before the recession, some high streets were in trouble as a result of shifting shopping habits. High-class regional shopping destinations, the move to 'leisure shopping', more knowledgeable consumers and the growing importance of the internet/mobile technology all pose significant challenges to the traditional high streets. Some have managed to re-image themselves and stop the decline in their fortunes, but others continue to struggle.

Whatever their characteristics and problems, high streets remain important places for people and economic activity. For a successful high street and town centre, the Association of Town Centre Management identifies the following features:

- a retailing centre that serves the needs of the local community;
- leisure, entertainment and cultural facilities as part of the mix;
- public and private sector services;
- a healthy local employment and business sector;
- accessibility, with different transport for a range of users;
- the preferred shopping space of the local community.

High streets in the UK are found in a broad range of shopping locations. They include high-profile regional city shopping destinations as well as smaller neighbourhood shopping centres within larger conurbations.





## An analysis of the existing problems

There is no doubt that the traditional high street has come under pressure for a range of reasons. This ‘perfect storm’ has created a series of linked problems such as competition from other retail spaces (internet and out-of-town especially), lack of high-street investment, increasing fuel and parking charges, and increasing retail rental prices, which have all been bound together by an economic downturn meaning that consumers feel as if they have less money to spend. As a consequence, retail vacancy rates (i.e. empty shops) are running at an average of about 15% in the UK. The fact that some high streets are doing better is offset by places such as Derby, Liverpool and Leeds, which have on average about 20% of their shops vacant.

## Clone towns vs independents

There has been much debate from economists, retail analysts and town centre managers regarding the importance of maintaining a diverse retail mix, including the number of independent outlets. Totnes in South Devon, for example, has been heralded as a retailing success story. The town has a shop vacancy rate of just 6% – less than half the national average. Eight out of 10 businesses there are independent. Compare that to the national average, where around 68% of retailers are independent, and Totnes is definitely different.

However, other people argue that successful town centres and high streets need the big name anchor stores to draw customers and increase footfall. The smaller independents feed off the volume of people coming to visit stores like Debenhams, Marks & Spencer and John Lewis.

The big companies have a competitive edge – they have the buying power to secure the cheapest deals and the capacity to support a

loss when discounting. The smaller independent shops find this much harder. However, smaller stores can group together to gain economies of scale when buying (e.g. electrical white goods – ‘Euronics’). This can mean that independent stores are actually very competitively priced. The fact is that big chain retailers are also vulnerable. In 2012, for instance, Game Group, Peacocks, Past Times, Clinton Cards and Comet all fell into administration, and the beginning of 2013 saw the loss of Jessops, HMV and Blockbuster. Just as small shops need help from the ‘big boys’ for footfall (see Ludlow case study below), so the chains may need independents in order to keep a high street vibrant, lively and attractive. There are hard times on the high street for large as well as small retailers (Figure 1) and it is more useful to classify the ‘winners’ and ‘losers’ in terms of their particular retail sectors (Table 1).

## Ludlow – a successful market town

Ludlow is the largest town in the South Shropshire District with a population of nearly 11,000. It has a Norman castle and a large number of listed buildings, making it attractive for tourists, but what makes the town successful as a destination? It is likely to be a combination of factors.

- As a small market town, Ludlow is endeavouring to balance the conflicting demands of the old and the new. Its heritage buildings are certainly a key attraction. The ruined castle has become a venue for festivals (e.g. Ludlow Food Festival – Figure 2), open-air theatrical

Figure 1 Hard times on the high street

### Winners

Payday loans	+20
Pawnbrokers	+13
Poundshops	+13
Supermarkets	+4
Coffee shops	+3
Betting shops	+3
Charity shops	+3

### Losers

Computer games	-45
Health food	-25
Card shops	-23
Recruitment	-15
General clothes	-9
Women's clothes	-7
Banks/financial	-3

Source: Local Data Company and <http://www.bbc.co.uk/news/business-21611772>

Table 1 High street ‘winners’ and ‘losers’ – net change in the number of retail units (%)

Figure 2 *The Ludlow Food Festival*



performances and other events throughout the year. However, the town’s economy is also being driven by its growing reputation for good food. It has become famous as the gastronomic centre of Shropshire and won its first Michelin star in 1995.

- Ludlow is easily accessible by public transport, and town planners have taken a number of steps to ensure that there is better access for pedestrians and cyclists. There is a new 20 mph speed limit.
- A controversial new Tesco was recently completed in the town, but its design was both innovative and contemporary. Some would argue that this is a key attractor for shoppers to the town who then take the opportunity to use the other smaller retailers, thereby acting as a catalyst for increased footfall in the town.

The above combination of factors makes Ludlow a success story, but it is difficult to see how this model could be transplanted successfully to other ailing high streets. Different places

usually require different solutions in order to make the most use of their unique selling points.

### The ‘Portas’ solution to high street decline

Mary Portas, a twenty-first century champion of the traditional UK high street, has proposed an extensive list of 28 solutions in an attempt to reverse some of the root causes of decline on the high street. Table 2 lists some of her key ideas.

There are a number of commentators who think that the strategies proposed by Portas will go some way to help make high streets and town centres more sustainable in the short and medium term. However, critics suggest that high rents and rates are a more serious obstacle to reviving high streets, along with issues of expensive parking and inaccessibility/lack of convenience.

### Conclusion

Some commentators argue that at the heart of the high-street problem is the issue of retail over-capacity. In the context of effective retail sphere of influence and local competition, they believe there are simply too many shops in the town centre. As the volume of retail space increases, it acts to dilute overall profitability. Exeter in Devon may be an exception, but its success is due in part to its popular university and also to the fact that it has a large and westwards catchment into Cornwall.

The hard truth is that the decline in the number of shops could in fact be a necessary realignment in order to achieve a more sustainable retail occupancy level for many of our high streets. The vacuum created could be filled by local and community-based activities, pop-up shops or even places for people to live. It’s a possibility... **TE**

Table 2 *Some of the solutions proposed by Mary Portas to combat high-street decline*

1	Put in place a ‘Town Team’ – a visionary, strategic and strong operational management team for the high street.
2	Town Teams should focus on making high streets accessible, attractive and safe.
3	The government should consider whether business rates could better support small businesses and independent retailers.
4	It should be made easier for people to become market traders by removing unnecessary regulations so that anyone can trade on the high street unless there is a valid objection.
5	A new ‘National Market Day’ should be established where budding shopkeepers can try their hand at operating a low-cost retail business.
6	Local areas should implement free controlled parking schemes that work for their town centres.
7	Large retailers should support and mentor local businesses and independent retailers.



# REVIEW

## Key points

- The high street is an essential component of most urban centres with a distinctive yet diverse structure and economy.
- Many of the economic activities that are currently part of the high street may not be sustainable in the future.
- There are a number of threats to the high street, including changes in the way in which people shop and increasing technology.
- There are a number of strategies that may give the high street hope for the future. They are based around giving experience and 'value' to the shopper.
- A consequence of change on the high street may mean a return to a more traditional shopping model with local independent stores.

## Pause for thought

- To what extent do all high streets share similar characteristics? Are there existing examples of good practice that struggling high streets could try to replicate?
- Which groups, agencies and/or individuals should be responsible for safeguarding the future of our high streets?
- Can future high streets and town centres incorporate a more sustainable economic and social model that encourages local employment and minimises travel for goods and services?

## Context

This article examines a range of issues that are affecting high streets, town centres and urban centres set within a UK context. However, there are other overlapping issues:

- Economic development and enhancement of the high street will result in social benefits for various groups of people.
- Some town centres and high streets are almost a microcosm of globalisation, e.g. the growth of 'ethnic retail'.
- Changes in technology and online retailing will always be a threat to the high street, so retailers must offer a service and experience that adds value and expertise.
- Local sustainability (environmental, social and political) needs to be a component of the future development of high streets.

# RESPONSE

## Assimilation

- 1 Outline the main characteristics of a healthy high street.
- 2 Describe the key factors that have led to the decline of many high streets.
- 3 What is 'ethnic retail' and how can it contribute to the revitalisation of the high street?
- 4 Explain why Totnes or Ludlow is an example of a successful town centre.
- 5 What are the issues surrounding clone towns and independents?
- 6 Name three cities that have suffered high-street decline.

## Evaluation

- 1 Outline the key factors that have led to many traditional high streets being under threat.

### ANSWER PLAN

The range of high-street threats could include:

- recession/hardship and lack of discretionary spending money;
  - extreme fluctuations in weather, which can reduce town centre footfall;
  - online shopping, which offers the advantages of price comparison and delivery convenience;
  - out-of-town shopping convenience, with free parking and undercover shops;
  - lack of investment, making high streets look tired and dated;
  - access problems, making it difficult to carry shopping;
  - too much unserviceable debt carried by the big shops and chains, especially if they are part of a larger group.
- 2 Why has online retailing in the UK become increasingly popular?
  - 3 'Only retailers who are "ahead of the curve" can survive long term on the high street.' Discuss.
  - 4 With reference to examples, describe and comment on the ways in which some high streets have overcome the economic challenges to become centres of excellence.

## Extension

- 1 Visit <https://maps.google.co.uk/maps/ms?msa=0&msid=214017557671758190387.0004c5a32875c37f5db12&hl=en&ie=UTF8&t=m&ll=53.396432,-2.570801&spn=6.553757,14.260254&z=6&source=embed>, which shows an interactive map of the locations of the Portas Pilots locations. Choose two contrasting locations and evaluate the visions presented in their videos (use the full-screen option). What difficulties and challenges need to be overcome and how do their visions differ?
- 2 Visit <http://www.guardian.co.uk/society/2012/apr/28/high-streets> and review the different strategies from the six 'big thinkers' that have been put forward.



# Johannesburg

## A city of acute disparity

*Paul Guinness* considers the marked socio-economic inequality of Johannesburg, South Africa's most important city.

The World Bank has identified South Africa as one of the most unequal places on earth, with the bottom 50% of the population owning only 8% of the wealth of the country, and the UN-Habitat report *State of the World's Cities 2012/2013* points out that 'for an upper-middle income country, South Africa's social indicators [e.g. life expectancy, infant mortality, quality of education] are closer to those of lower-middle income or even low-income countries'. Both of these observations from major international organisations reflect the unequal distribution of resources and opportunities in the country clearly evident in

the massive disparity in the quality of life in Johannesburg, situated in the northeast (Figure 1). According to the city's official website (February 2013):

'Like most big South African cities, Johannesburg is a divided city: the poor live largely in the south or on the peripheries of the far north; the middle classes live largely in the suburbs of the centre and north. The poor are predominantly black; the affluent are

predominantly white. Around 20% of the inhabitants live in abject poverty, in shack settlements that lack proper roads, electricity or any kind of direct municipal services; another 40% live in inadequate housing, with insufficient municipal services.'

### The apartheid legacy and population growth

Johannesburg developed under the apartheid system. Although this system finally ended in 1994, it remains by far the most significant factor responsible for racial residential segregation and socio-economic inequality in Johannesburg. 'Apartheid' is an Afrikaans word that means 'apartness'. From 1948, government legislation was introduced to achieve maximum separation of the white and black populations of the country in all areas of life, including housing, employment, education and transportation. However, residential segregation based on race began with the original development of the city in the late nineteenth century. The apartheid system created a unique urban structure whereby Johannesburg was restricted to the white population. As a result, established black communities were broken up, with people forcibly removed to areas beyond the city boundary. Many were relocated to the South Western Townships (Soweto). Thus, rather than

Figure 1 The location of Johannesburg





occupying the inner city, the poor black population was concentrated on the edge. This pattern has changed considerably in recent decades with the end of apartheid.

Johannesburg's population is growing through both natural increase and migration from other parts of the country. In addition, the city is the destination for illegal immigrants from other African countries because of its perceived economic opportunities. Such population increase is placing huge demands on the economic and social infrastructure of the city. Each district receives funding according to its legal population, so a significant illegal population can place considerable pressure on funding levels that are already seriously stretched.

### A city of extremes

The Gini coefficient is a statistical technique often used to show income inequality. It ranges from a score of 0 (perfect equality) to 1.0 (total inequality). The general interpretation of the Gini coefficient is as follows:

- Low inequality: under 0.299 (e.g. Belarus and Hungary)
- Relatively low inequality: 0.3–3.99 (e.g. China and Poland)
- Relatively high inequality: 0.4–0.449 (e.g. Russia and Malaysia)
- High inequality: 0.45–0.499 (e.g. Venezuela and Mexico)
- Very high inequality: 0.5–0.599 (e.g. Nigeria and Kenya)
- Extremely high inequality: over 6.0 (all of the countries in this group are in southern Africa)

According to various reports published in the last decade, Johannesburg has one of the highest figures in the world. In 2005 the Gini coefficient for the city was calculated at 0.75 and in 2010 it was still at 0.62 (Figure 2). A recent book, *City of Extremes* by Martin Murray, published in 2011, describes Johannesburg's dual character as a city of affluent fortified enclaves occupied by middle- and high-income households, and impoverished slum areas characterised by signs of a new kind of marginality. While the increasing integration of Johannesburg into the global economy has benefited the affluent sections of the population, a persistently high rate of unemployment and other related factors have resulted in a widening wealth gap. Professional and skilled workers have been able to share the benefits of a more globalised economy, but the unskilled have become more marginalised. While the literacy

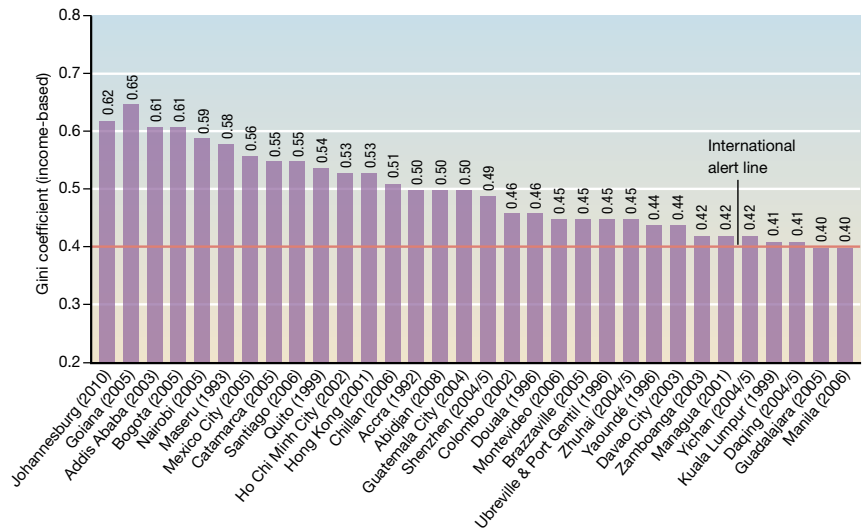


Figure 2  
Gini coefficients for Johannesburg and other high-inequality cities

level in Johannesburg has improved in recent years, it was estimated to be just over 87% in 2010, leaving considerable room for improvement.

Figure 3 shows the location of high- and low-income households in Johannesburg. Around 70% of the metropolitan population is African, with a significant proportion living in the Soweto/Diepsmeadow area. The majority of informal settlements are located in the south of the metropolitan area. According to UN-Habitat, 'The legacy of apartheid has resulted in inefficient land use patterns whereby much of the poor population has to commute from outlying townships that are far removed from places of employment'.

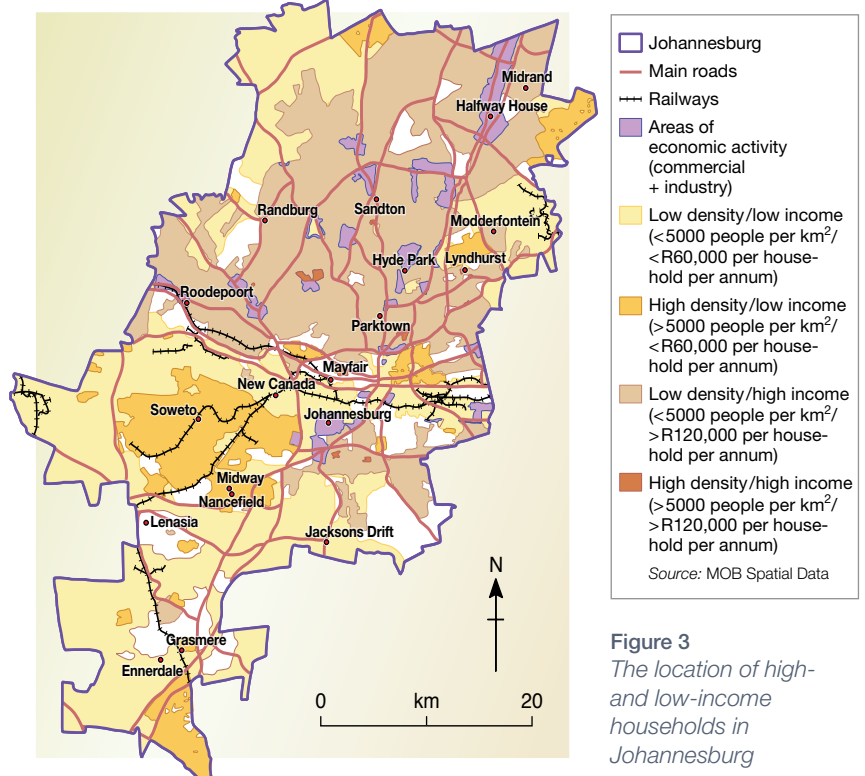


Figure 3  
The location of high- and low-income households in Johannesburg

Another legacy of apartheid has been the poor provision of services in traditional non-white areas.

### Urban deprivation and violence

According to the City of Johannesburg's own statistics, in 2012:

- 16% of households lack sanitation
- 15% of households lack electricity
- 3.6% of households have no water supply
- 30% of people are unemployed
- 117,000 families live in informal settlements
- 108,000 families live in illegal backyard dwellings
- There are 4500 homeless 'street people'

The older, larger and more established townships such as Soweto and Alexander, that were settled in the 1950s and 1960s, still exhibit clear poverty but face fewer hardships than the more recently established post-apartheid housing schemes.

Trends in the urban area show increasing densification of informal settlements, due mainly to the considerable influx of migrants. Food security is a major issue amongst the very poor because of the very high proportion of household income required to buy food. It has been estimated that as many as 42% of households in Johannesburg are food insecure. Poverty and food insecurity are major influences on patterns of health. A high prevalence of HIV/AIDS has had a considerable impact on the poorest parts of Johannesburg, as has a range of other chronic diseases. A recent study of health in Johannesburg referred to the 'quadruple burden of disease':

- Diseases of poverty
- Emerging chronic diseases
- Injuries
- HIV/AIDS

Urban violence affects all parts of the city to an extent, but it is clearly concentrated in the poorest areas, impacting severely on the quality of life of the local populations. Many middle- and high-income households live in gated communities to reduce the likelihood of violent encounters (Figure 4), and the fear of violence can impact significantly on both personal and business decision



Figure 4 An affluent gated community in Johannesburg

making for those who live in the urban area and for those from outside who might be considering visiting or investing. That fear has not been helped by the high-profile Oscar Pistorius case in nearby Pretoria, which highlights the fact that violence is at the core of a society that witnesses more than 15,000 deaths by shooting every year.

### City council help for the poor

The city council, in line with broader national policies, has introduced a number of measures to help those on low incomes. These measures include:

- Properties valued at less than R20,000 (Rand) are not charged rates. This applies to about half the properties in the city. Rates have also been reduced in declining areas to try to encourage a residential revival. There are special rebates for senior citizens with incomes of less than R4000 per month.
- Households that use less than six kilolitres of water per month receive free water supply. It has been estimated that 90% of poor households use less than this amount.
- The city aims to build 200,000 houses for the poor over the next 10 years.
- The city has identified over 80 apartment blocks in the centre of Johannesburg that are not being maintained. Financial measures have been put in place to refurbish these buildings.
- Increased funds have been allocated to community health services.
- R100 million will be spent on seven capital projects in the inner city that will provide job opportunities for the unemployed.

### Future trends

The city's growing middle class, many of whom are black, is a positive aspect of development. However, the persistently high proportion of people living in poverty will be a difficult problem to solve. A reduction in the high level of unemployment is seen as a key element in poverty reduction, but the limited funding available for projects such as the Expanded Public Works Programme shows that this is very much a long-term objective. Other aspects of urban deprivation need to be addressed. The city has the major task of trying to balance the objectives of global competitiveness and poverty reduction programmes as well as improving urban governance, particularly with regard to getting to grips with the extremely high crime rate. Johannesburg is likely to exhibit acute disparity for some time to come. **TE**



# REVIEW

## Key points

- South Africa is one of the most unequal places on earth, with the bottom 50% of the population owning only 8% of the wealth of the country.
- Apartheid remains by far the most significant factor responsible for the racial residential segregation and socio-economic inequality in Johannesburg.
- Population increase, partly due to rural–urban migration and illegal immigration from other countries, is placing huge additional demands on the economic and social infrastructure of the city.
- A persistently high rate of unemployment and other related factors have resulted in a widening wealth gap.
- The legacy of apartheid has resulted in inefficient land use patterns whereby much of the poor population has to commute from outlying townships that are far removed from places of employment.
- Food security is a major issue amongst the very poor because of the very high proportion of household income required to buy food. Poverty and food insecurity are major influences on patterns of health.
- The city council has introduced a number of measures to help those on low incomes.

## Pause for thought

- Why do you think the apartheid system was introduced and why did it exist for so long?
- Look at the examples given of countries with different Gini coefficients. Suggest reasons why some countries have much lower Gini coefficients than others.
- What are the reasons for the high rate of population increase in Johannesburg? Why might this help to sustain a high rate of inequality?
- Comment on the measures that the city council is undertaking to help the poor.
- Johannesburg has a very high crime rate. How do you think this impacts on different sections of the population of the city?

## Context

Johannesburg's city council has developed strategies to tackle the acute wealth disparity of its citizens but there is now a tension between the objective of greater efficiency in order to compete globally and the desire to improve the quality of life of the poorest inhabitants. How can the legacy of apartheid be minimised to reduce its burden on the non-white people of the city? Can anything be done to reduce illegal immigration from neighbouring countries and to reduce rural–urban migration within South Africa in order to ease the pressures on infrastructure?

# RESPONSE

## Assimilation

- 1 Describe the geographical location of Johannesburg.
- 2 What is apartheid and how long did it last?
- 3 Briefly describe the information shown in Figure 2.
- 4 Describe and suggest reasons for the patterns of low- and high-income housing shown in Figure 3.
- 5 Comment on the differences between the title photograph of a low-income area and Figure 4, which shows an affluent district in Johannesburg.
- 6 What is meant by the 'quadruple burden of disease'?

## Evaluation

- 1 How can urban disparity be measured and what have been the main causes of disparity in Johannesburg?

### ANSWER PLAN

- The Gini coefficient is a statistical technique often used to show income inequality. It ranges from a score of 0 (perfect equality) to 1.0 (total inequality).
  - Johannesburg has one of the highest figures in the world, according to a number of reports published in the last decade. In 2010, the Gini coefficient for the city was calculated at 0.62.
  - Apartheid remains by far the most significant factor responsible for racial residential segregation and socio-economic inequality in Johannesburg.
  - The apartheid system created a unique urban structure to the detriment of the non-white population.
  - A persistently high rate of unemployment, particularly among the unskilled, is recognised as the main cause of poverty.
  - The legacy of apartheid means that much of the poor population has to commute from outlying townships that are far removed from places of employment.
  - Other related factors include the 'quadruple burden of disease', food insecurity, lack of literacy and urban violence.
- 2 What are the symptoms of urban deprivation in Johannesburg?
  - 3 Outline the current plans of the city council to tackle urban poverty.

## Extension

- 1 Visit the official website of Johannesburg ([www.joburg.org.za](http://www.joburg.org.za)) to find out more about the characteristics of the different regions of Johannesburg such as Greater Soweto and the Inner City. This information can be found under the section entitled 'Regions' on the website.
- 2 Look online at the Johannesburg Poverty and Livelihoods Study 2008 ([http://www.ncr.org.za/pdfs/Research\\_Reports/Livelihoods%20study.pdf](http://www.ncr.org.za/pdfs/Research_Reports/Livelihoods%20study.pdf)) for a range of images from different parts of the urban area.



# Phoenix

## Urban growth in the American Southwest

*David Redfern* examines the social and political issues related to the migration of large numbers of immigrants, many of whom are illegal, from Mexico to the city of Phoenix.

**O**n the evening of 3 April 2012, following a heated argument outside a restaurant in the city of Phoenix, Arizona, an unarmed 29-year-old mentally disabled Hispanic man, Daniel Adkins, was shot dead by a black man, Cordell Jude. Cordell Jude was not prosecuted for killing Adkins as he claimed that he was being threatened and he acted in self-defence under a ‘Stand your ground’ law. By the end of the year the issue was still unresolved, and many have suggested that there was a racial undertone to the shooting.

Later that month a controversial new state law – the *Support Our Law Enforcement and Safe Neighborhoods Act*, known as Arizona SB (State Bill) 1070 – was introduced. At the time of passage, it was widely seen as the strictest anti-illegal immigration measure taken in recent

US history. It received national and international attention and spurred considerable controversy.

Both of these events highlight the growing issue of a rising Hispanic population in the city of Phoenix and its surrounding area, and the degree to which ‘indigenous’ residents of the city (white and black) feel unease at the increasing number of people coming illegally to the city from Mexico to the south.

### Phoenix metropolitan area

Phoenix is the capital and largest city of the state of Arizona. The metropolitan area has a population of over 4 million (2010 Census) and it is the sixth most populous city in the USA. It is built near the Salt River, close to its confluence with the Gila River, and located in the Sonoran Desert where temperatures regularly average over 38°C. In terms of its economy, the state government employs many people in the area. Arizona State University is another major employer, with its growing education programme and strong research capabilities. Numerous high-tech and



telecommunications companies have also recently relocated to the area. Due to the warm climate in winter, Phoenix benefits greatly from seasonal tourism and recreation, with many golf courses in the vicinity. The credit card company American Express hosts its financial transactions, customer information and website in Phoenix. The city is also home to the headquarters of Best Western, the world's largest group of hotels; US Airways relocated its corporate headquarters to the metropolitan Phoenix area (Tempe) in 2005 after being acquired by America West Airlines.

### The 2010 Census

Between 2000 and 2010, the Hispanic population increased by 48% in the Phoenix metropolitan area. Hispanics now make up 30% of the total population (1.9 million). In contrast, the white population increased by only 10% and the proportion of whites fell from 66% to 59%. Figure 1 shows the proportions for Phoenix City alone. Among Arizonans younger than 18 years, 43.2% were Hispanic and 41.6% were white. This represents the first time that children of Hispanic ancestry now outnumber those who are white.

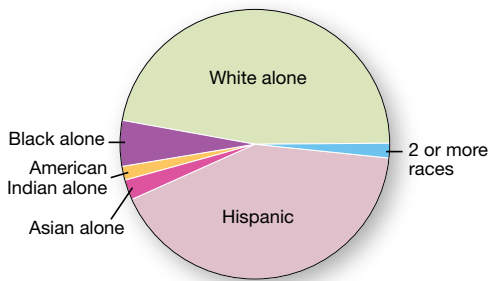


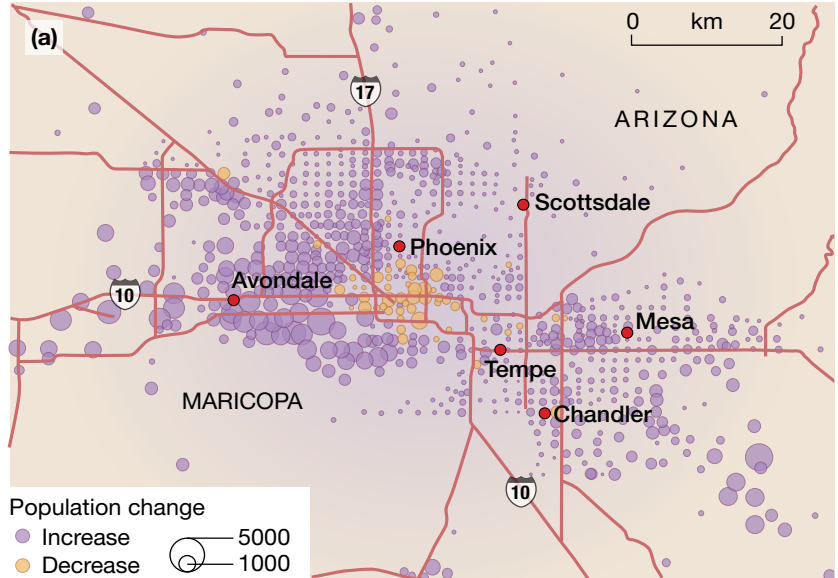
Figure 1 Proportion of racial groups in Phoenix City, 2010

Figure 2 shows the changes in population distribution between 2000 and 2010 by ethnic type. These mean that Phoenix will have to adapt to new challenges. For example, its education system may have to focus more on English language instruction. The diverse population will present special challenges, such as housing, which will be difficult to meet in times of financial constraint.

However, the growth in census numbers for Hispanics was less than many had predicted. Some suggest this could be due to the effects of the economic downturn; others suggest it is more a function of illegal immigration, where immigrants are not counted. It has also been argued that it could be due to an exodus of immigrants in response to SB 1070.

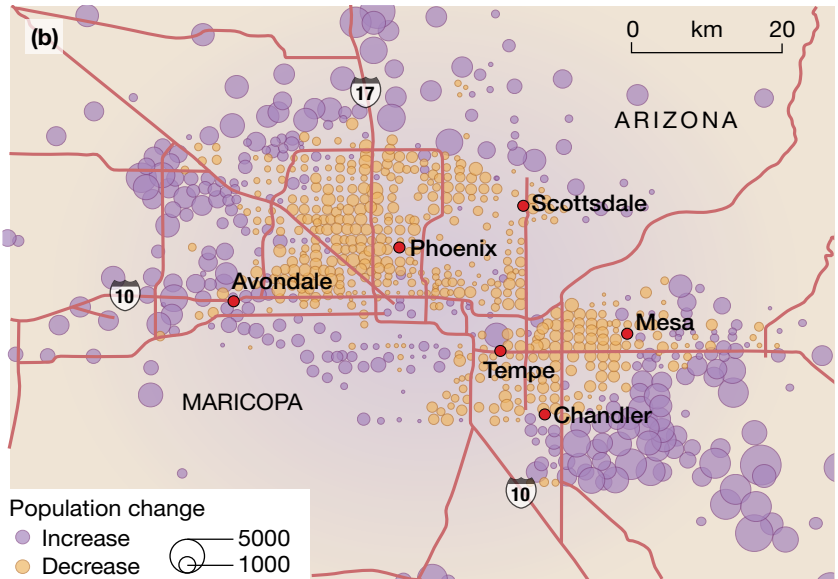
### Big gains for Hispanics in Phoenix area...

From 2000 to 2010, the Hispanic population increased by 48% in Maricopa County, which includes much of the Phoenix-Mesa metropolitan area. Hispanics make up 30% of the entire population in the area.



### ... But not for whites

The white population in Maricopa County increased by 10%, growing at a much slower pace than Hispanics. The overall share of whites in the area decreased to 59% in 2010 from two-thirds in 2000.



Sources: Census Bureau; Social Explorer

Figure 2

(a) Hispanics in the Phoenix area, 2000–10  
(b) Whites in the Phoenix area, 2000–10

### SB 1070

United States federal law requires all immigrants (known as ‘aliens’) over the age of 14 who remain in the USA for longer than 30 days to register with the US government and to have registration documents in their possession at all times. Violation of this law is a federal offence, and SB 1070 has now made it a state crime for an ‘alien’ to be in Arizona without carrying the required documents. It also

declares that state law enforcement officers can attempt to determine an individual's immigration status during any lawful 'stop, detention or arrest' – a form of 'stop and search'. The original draft of SB 1070 was even more severe than this, giving a police officer the right to request documents when seeing any 'suspicious activity', but the US Supreme Court ruled that this was unlawful.

Critics of the legislation argue that it encourages racial profiling; others disagree, stating that it is lawful detention or arrest that is the key to implementation. One outcome, however, is that some civilians within Arizona have taken it upon themselves to patrol state borders and make citizen's arrests. Tensions between Hispanics and other people in Phoenix have been raised, as illustrated by the Daniel Adkins case.

### Tent City, Phoenix

One of the most extreme manifestations of SB 1070 is Tent City, which was established in the 1990s by the Maricopa County Sheriff, Joe Arpaio. (Maricopa County is the electoral district that includes Phoenix and is located to the west of the city.) Sheriff Arpaio has a very strong anti-immigration stance, and the jail is now home to many illegal immigrants detained under SB 1070 (Figure 3). Prisoners wear stripes, pink socks, pink



Figure 3  
Maricopa County Sheriff, Jo Arpaio (above), founder of Tent City (right)



underwear and are forced to live, day and night, in Korean War-era tents. Temperatures can be as high as 60°C under the tents, and prisoners must remove their pink towels from their heads, even in harsh sunlight. When some inmates complained about the heat, Arpaio is reported to have said: 'It's 120°C in Iraq and the soldiers are living in tents, have to wear full body armour, and they didn't commit any crimes, so shut your mouths'. Various aspects of the regime in the jail have been viewed as inhumane and have been subject to much controversy. The jail has attracted a number

of protests and rallies outside its confines, often resulting in clashes between police and protestors.

### The wider political dimension

The popular image of Phoenix as a city of white retirees is changing. It is now a much more mixed city. But are the numbers given above accurate? The perceived shortfall from the census estimates could have been due to the difficulty of counting undocumented immigrants. It is always difficult to count such people accurately, especially when they are wary of identifying themselves officially at a time of impending legislation – SB 1070 was on the horizon for some time. It is suggested that there could be as many as 1.5 million illegal immigrants in Arizona. Many may not have participated in the census because they did not want the state and city to have the additional federal funding that would be generated by the larger numbers, recognising that the money could be used to bolster law enforcement – a worrying feedback loop.

However, attitudes are polarised. There are fears amongst conservative white Republicans that in time the Hispanic sections will have a greater role in state and city voting patterns. Indeed, some national electoral analysts have suggested that the re-election of President Obama in 2012 was partly due to the increased Hispanic vote in the country as a whole. The West Valley Tea Party Patriots based in Phoenix hold the view that that all immigrants are 'communists'. They are raising money to build a private border fence, and want the estimated 12 to 20 million illegal immigrants in the USA to be deported. Due to such extreme right-wing attitudes within the state of Arizona, there is pressure from some other parts of the USA to start a campaign for the economic boycott of the state.

### Conclusion

The people of Phoenix and its surrounding area are playing out a debate that has parallels in many parts of the world. Economic success in one region encourages migration from less prosperous regions. In many cases this movement further facilitates economic growth in the receiving area, and further decline in the sending area. However, not everyone views these demographic changes in the same way. Some are very uncomfortable with their social and political consequences. This case study illustrates well the degree to which attitudes and values influence geographical outcomes. **TE**



# REVIEW

## Key points

- Phoenix, Arizona is one of the largest cities in the USA, with its economy based on high technology and service industries.
- Between 2000 and 2010 the Hispanic proportion of the population has increased substantially in comparison to the white population.
- This change in population characteristic has led to a number of social and political challenges within the city.
- One of these has been the creation of a state law that allows police officers to stop and search, and then arrest, potential illegal immigrants.
- Another challenge has been the concern among some conservative white people that more should be done to prevent illegal immigration into their city.
- Both of the above have caused controversy within and beyond Phoenix.

## Pause for thought

- Why are there often conflicting pressures between the need to attract labour to assist economic growth and the feelings of indigenous people?
- Why are attitudes to immigration often negative?
- Why do nations conduct censuses, when they are frequently inaccurate?
- How should a country such as the USA be run – by federal government or by state government?

## Context

This article examines a contentious issue – immigration and its impact – mirrored in many parts of the world. Due to the wide economic disparity between the US state of Arizona and Mexico, together with their proximity, there is widespread movement of Hispanic people to the city of Phoenix and its environs, much of it illegal. These people are mainly economic migrants attracted by employment opportunities in service industries in that city. This migration has created a number of social and political issues:

- What are the cultural challenges, such as language differences?
- How much of the migration is legal, and what should be done about illegal immigrants?
- To what extent will there be integration by the different communities within the city, or will there be segregation?
- What are the implications for voting patterns in reputedly one of the most democratic countries in the world?

# RESPONSE

## Assimilation

- 1 Describe the main characteristics of Phoenix, including its location and employment characteristics.
- 2 Outline the main outcomes of the 2010 Census.
- 3 Summarise the key issues facing the city authorities in Phoenix that result from the outcomes of the census.
- 4 Why has SB 1070 caused so much controversy?
- 5 Discuss the political consequences of the changing demographics within Phoenix.
- 6 What is the 'Tea Party'?

## Evaluation

- 1 Outline the major consequences of the growth of cities such as Phoenix around the world.

### ANSWER PLAN

Consequences could include:

- Urban sprawl – often in an uncontrolled way, which may involve illegal development. There is evidence in Figure 2 of this being the case in Phoenix – use the scale.
  - Suburbanisation when the wealthy live increasingly on the city edge – many such suburbs are gated communities.
  - Reurbanisation – either of older city centres, or of older industrial/dockland areas further out.
  - Issues relating to urban growth – housing shortages, health and education provision, transport and communication, waste management, illegal trading and crime, etc. One issue for Phoenix is where to house illegal immigrants prior to deportation.
- 2 Study Figures 2(a) and 2(b). Describe and comment on the changing patterns of both the Hispanic and the white populations within the Phoenix metropolitan area.
  - 3 'Phoenix epitomises many of the characteristics of a developed world city.' Discuss.
  - 4 To what extent can urban areas be sustainable?
  - 5 'It takes time to adjust to living in a multicultural society.' To what extent do you agree with this statement?

## Extension

- 1 Phoenix also has issues regarding atmospheric pollution. As a starting point, investigate this problem by visiting <http://phoenix.about.com/od/weather/a/browncld.htm>.
- 2 Use the Internet to research the current situation regarding both the Daniel Adkins incident and Tent City. YouTube has a number of videos you can watch relating to these two. For example:
  - The Daniel Adkins incident:  
<http://www.youtube.com/watch?v=DWN8DobYh2M>
  - Sheriff Arpaio and Tent City:  
<http://www.youtube.com/watch?v=G6hUUL-5DM>

# Smart cities



## New forms of urban development

*Garrett Nagle* explains the concept of a 'smart city', looking in particular at the excellent example of Songdo in South Korea.

A 'smart city' is a city that is performing well in six categories, namely economy, environment, people, living conditions, governance and mobility. Some smart cities are entirely new, as in the case of Songdo in South Korea, whereas others have smart aspects added to them.

A city is defined as **smart** when investments in social and human capital, along with physical infrastructure and ICT, enable sustainable development and a high quality of life. Sustainable development suggests a wise management of the resources available to the city.

The concept of the smart city is relatively new and is quite fashionable. Smart cities contain a sophisticated ICT network that helps deliver various services. Nevertheless, the role of human capital is also stressed. The availability and quality of ICT is only part of the definition of a smart city – the role of human capital is crucial. The most rapid urban growth rates have taken place in urban areas where there is a high proportion of educated workers.

The success of urban development depends upon the physical infrastructure of cities (roads, railways, buildings, etc.), but also, increasingly, the availability and quality of information and communications technology, and social infrastructure – intelligence and skills. The latter is essential for the success of urban competitiveness.

Smart cities are seen by some as the solution to population growth and dwindling resources. However, there are others who believe that the majority of cities that will exist in the future already exist, and so efforts should be directed at improving existing cities rather than building new ones. The transformation of industrial waterfronts in New York, Newcastle and Oslo are examples of readaptation and the upgrading of existing cities.

In January 2013 Glasgow won £24 million of government money to help it become one of the UK's first smart cities. Its plans include the development of better services for the population, with apps that show if buses and trains



are on time and other apps to allow residents to report potholes and missing bin collections. CCTV cameras will be linked up across the city to identify traffic incidents and improve traffic management. The use of software and security cameras will help identify and try to reduce crime in the city. They will also monitor energy levels around the city. Other cities beginning to develop smart technologies include London, Birmingham, Southampton and Sunderland.

### Songdo International Business District (IBD)

Songdo in South Korea is one model for a brand new smart city. It is 40 miles from Seoul and just seven miles from Incheon International Airport (Figure 1). It is a £23 billion project located on 1500 acres of reclaimed land near the Yellow Sea. Started in 2005, it is due to be completed in 2015. It will be home to 65,000 people and 300,000 workers. It is also known as a ubiquitous city or U-city. It has an array of sensors that control heating in houses but also allow video conferencing, the delivery of healthcare, education and government services. The computing mastermind behind Songdo is Cisco Systems.

Songdo IBD's leadership in sustainable development will be key quality-of-life attributes for both corporations and residents. The city will be the first LEED (Leadership in Energy and Environmental Design) certified district in Korea and the largest project outside North America to be included in the LEED ND (Neighbourhood Development) Pilot Programme.

With more than US\$10 billion invested and approximately 100 buildings completed or currently under construction, it is expected that Songdo IBD will quickly become the central business hub in Northeast Asia (Figure 2).

Songdo is part of the Incheon Free Economic Zone (FEZ) – a special economic zone that minimises regulation and maximises business incentives and opportunities for foreign investment. The Incheon FEZ is the special area where, compared with the rest of Korea, exceptional measures apply, such as tax breaks and other incentives for foreign-invested firms, an expanded foreign exchange circulation, a foreign language service, labour flexibility, and the establishment of foreign education and medical institutions. FEZ is a designated area that provides foreign-invested enterprises with an optimal business and living environment in order to



Figure 1  
The location of Songdo

attract foreign investment in high-end industries and global services.

The IFEZ project comprises three separate districts within Incheon Metropolitan City covering 51,862 acres: the Cheongna reclaimed area, Songdo and Yeongjong, which surrounds Incheon International Airport. These areas are earmarked for major projects between 2003 and 2020 (Table 1).

### Songdo Area Development Plan

The new Songdo City will be developed in three phases by 2020. In the first phase, an International Convention Centre (Songdo Convensia) and a 68-storey Northeast Asia Trade Tower, office buildings, deluxe hotels, shopping malls and golf course were built by 2008. Techno Park was completed by 2004 and the Korean Institute



Figure 2  
New developments in Songdo

Table 1  
Planned population and development strategy

Area	Total size (acres)	Planned population	Project period	Development strategy
Songdo	13,260	252,500	2003–20	International business centre
Yeongjong	34,183	144,800	2003–20	Logistics hub
Cheongna	4,419	90,000	2003–08	International finance centre
<b>Total</b>	<b>51,862</b>	<b>487,300</b>	<b>2003–20</b>	

of Technology along with other research centres began moving there in 2004. The 151-storey Incheon Twin Towers is due to be completed by 2014. In addition, there will be 600 acres of open space including the 100-acre Central Park. The Jack Nicklaus Golf Club Korea contains an 18-hole championship golf course, a full clubhouse and a fitness centre situated on a 228-acre site that will include luxury villas and condominiums. Songdo also boasts the Incheon Arts Centre, a cultural complex housing a concert hall, opera house and museum of Asian contemporary art, and a number of public and private schools including the Chadwick International School. Songdo International City Hospital is being designed to include the latest in medical technologies, with partners such as 3M and Microsoft participating in the development of this world-class healthcare facility.

### Smart initiatives

There is a wide range of smart technologies in use at Songdo. For example, Tele-Presence allows video conferencing from every building. This reduces the need to travel and thereby reduces Songdo's carbon footprint. The Northeast Asia Trade Tower (Figure 3) is located close to the convention centre. All

venues are within 15 minutes walk from Central Park. The city is compact and accessible and contains 25 km of bike lanes. Water conservation measures mean that 30% less water is used in commercial buildings than would otherwise be expected. Information technology enables Songdo to reduce energy loss by 30% as well. Smart meters measure energy consumption and there is micro-generation of wind power and photovoltaics. Plug-in hybrid electric vehicles can plug in and buy electricity when it is cheap and then store it on batteries in the car.

### Cheongna Area Development Plan

Cheongna will be developed as an international business, culture and recreational site for foreign investors, tourists and metropolitan residents.

Plans include a floral complex, spacious golf course, and a sports and leisure complex, to be followed by a theme park and other recreational facilities. The Cheongna area has excellent traffic routes to Incheon International Airport, making it a convenient location to live for international business personnel.

### Yeongjong Area Development Plan

With the world's second largest cargo airport, Yeongjong will be developed as an international logistics base and airport support area by 2020. It also has abundant tourism resources, including scenic vistas and sandy beaches, and will be developed as an international leisure complex (for example, the Yongyoo Mueui and Woon Buk leisure complexes) linking with Incheon International Airport.

### Strengths and opportunities

Incheon has many advantages that are ideal for establishing a free economic zone and a smart city in Songdo. It is a coastal city equipped with an internationally competitive seaport and an airport that is the main entry point to Korea. Two billion people, or 32% of the world's population, live within a flight time from Incheon of 3.5 hours; 61 cities, each with populations over 1 million, are located within a flight time of 3.5 hours.

### Weaknesses and threats

Some of the incentives offered in the free economic zones may lead to expensive foreign schools in the IFEZ, widening the education gap between the rich and the poor.

North Korea is an obstacle to the development of IFEZ because foreign investors fear a second Korean War. North Korea's nuclear experiments in 2006, 2009 and 2013 surprised the world.

### Conclusion

Smart cities are those that have invested in social and human capital, physical infrastructure and ICT to achieve sustainable development and a high quality of life. They can be at the cutting edge in their use of ICT to bring about improvements in people's quality of life. Songdo typifies this type of approach, with smart developments in energy, business, transport, the home, retailing and recreation. The scale of investment is massive and beyond the means of many countries, but it does create a much-needed competitive edge in an ever-competitive world. **TE**



Figure 3  
View of the 68-storey  
NEAT tower, Songdo



# REVIEW

## Key points

- Smart cities are those that show progress in economy, environment, people, living conditions, governance and mobility.
- Some smart cities are entirely new, but others adapt existing infrastructure.
- Songdo in the Republic of Korea is an excellent example of a smart city.
- It is an expensive development but may pave the way for money-saving developments in the future.
- It has smart developments in terms of business, living, transport, home, retail, entertainment and energy.
- It is part of a wider development process that aims to attract an increasing amount of the world's economic investment, namely the Incheon Free Economic Zone.
- There are downsides to smart cities apart from the cost – the development of first-class education facilities for children of foreign workers could lead to a division in the education system between international schools and national schools.

## Pause for thought

- The need for sustainable development is clear, but does sustainable development have to be 'state of the art' and so expensive?
- Could the same type of development 'work' in another part of Korea (or any other country, for that matter) that does not have the same location and same potential?
- What would happen if Korea were to experience a recession like the one experienced in Europe from 2007 until 2013? What impact would this have on new investments and developments? Has it already had an impact on investment and development?

## Context

This article examines the concept of smart cities. It focuses on Songdo, a new city being built on reclaimed land off the west coast of Korea, close to the capital Seoul. It considers the role of smart developments in established cities, such as Glasgow. Most smart developments involve the integration of ICT and physical and social infrastructure. As such, they tend to be concentrated in affluent countries. Are smart developments therefore increasing the world's rich-poor divide?

# RESPONSE

## Assimilation

- 1 Outline the main characteristics of a smart city.
- 2 Comment on Glasgow's plans to develop as a smart city.
- 3 Suggest ways in which Songdo may be able to achieve sustainability.
- 4 Describe the location of Songdo in relation to Seoul. Why is this important?
- 5 How is the situation of Songdo important internationally?
- 6 What are the main weaknesses of the Songdo development?
- 7 How important are transport developments to the success of Songdo?

## Evaluation

- 1 'Smart cities are the cities of the future.' Discuss this view.

### ANSWER PLAN

- Smart cities, such as Songdo, are new and have many advantages over existing cities. They can be built 'from scratch'.
  - Existing cities such as Glasgow or London can become 'smart', with new developments added to them.
  - It is more difficult to try to adapt old cities so that they include smart developments.
  - It may be more difficult to develop smart cities in developing countries where there is less funding available.
  - Smart cities may be 'trailblazers' that introduce new ideas and technologies that will help mankind to deal with environmental and other problems in the decades to come.
- 2 Outline the range of smart developments in Songdo.
  - 3 To what extent is location important for the success of Songdo?
  - 4 Outline the potential of smart cities for developing countries.
  - 5 Comment on the potential of smart cities for landlocked countries.
  - 6 'Smart cities are not worth the expense.' Discuss this statement.

## Extension

- 1 Visit <http://newsroom.cisco.com/songdo>, which provides videos about Songdo and an interactive map. Comment on the smart initiatives in relation to the office, wellbeing, transportation, home (classroom and home), retail and entertainment, and energy. Note down specific information that you can use in an examination to support your comments about smart cities.
- 2 A very interesting article can be found on *The Economist's* website at <http://www.economist.com/node/21538104>. Entitled 'What do you do when you reach the top?', this looks at some of the reasons for Korea's growth and the challenges that it faces in the years to come. It considers the value of education. If you have not already done so, also read the article on the Demographic Dividend in *Topic Eye: Population & Health* (2014/15 edition). This explains how demography, education and government policy were all crucial for Korea's economic success.

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