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REGIONAL DYNAMICS OF THE GLOBAL LABOUR MARKET SKILLS IN DEMAND AND TOMORROW'S WORKFORCE

The Hays Global Skills Index 2017

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INTRODUCTION

Alistair Cox, Chief Executive, Hays plc

Welcome to the 2017 edition of the Hays Global Skills Index (the 'Index'). Now in its sixth year, our report provides the only true overview and analysis of the global labour market, based on our research of professional employment markets across 33 major global economies.

Each year we seek to throw a spotlight on the supply of skilled labour and the demand for those skills among employers. Based on our insights, the Index highlights the issues facing businesses while offering recommendations on how to alleviate the skills crisis that our world struggles with daily.

As the world's largest specialist recruiter, Hays places almost half a million people in a new role or contract assignment every single year. One such advantage of our position as a worldwide leader is that we can spot the challenges on the horizon which our clients will face in global labour markets in the foreseeable future.

After a period of global uncertainty which impacted last year's Index, there are signs emerging of a more positive backdrop for businesses around the world. In past years, we have found that an improving economic environment tends to be linked with tightening labour markets as demand for talent increases and the challenge of recruiting the most sought-after skills begins to impact organisations.

However, there would seem to be cause for optimism this year as there is evidence in our study of a slight easing in some of the key pressures and drivers impacting labour markets, notably rising participation levels and moderate growth relative to the past in employment costs, which will help businesses stay competitive.

While the specific reasons for this development differ from country to country, it can only be good news that the 2017 Index is showing a small decrease of labour market pressures overall. It suggests that, on a country-by-country basis, governments, educational establishments and organisations are becoming more focussed on the levers and dynamics driving the supply and demand of skills.

This suggests that across Europe, the Middle East, Asia Pacific and parts of the Americas, employers may now find it slightly easier to retain and attract skilled talent. Our supporting research suggests ways in which the world is also learning to adapt and evolve in relation to uncertainty and nowhere is that more obvious than in how businesses are engaging their workers and embracing demographic trends.

Our report shows that more and more employers are adopting new working patterns and responding to workers' demands for flexibility. In the US the amount of freelance, contract or temporary work has risen from 10 per cent to 15 per cent while European freelancer roles have grown four times faster than total employment in the last five years. These mark profound changes in the traditional view of workforces.

Technology and digitisation has had a significant influence on workers, with a growing trend towards a more digital economy. Businesses must engage with technology to reap the benefits rather than fear any fundamental change, helping to ensure they stay competitive - constantly innovating is essential to success.

In addition to changes in the way we work, our global workforce has also changed considerably. Following two decades of decline it is welcome news to see that the percentage of working age women who were either looking for work or in employment has increased since 2011.

However, not all changes are positive, with the working age population across all countries forecast to decline by nearly a million as the workforce ages. One such way of resolving this challenge is to continue to embrace skilled migration. There are now more global migrants than ever before, with 3.3 per cent of the world's population living in a country other than that of their birth. More notably, these workers are increasingly well educated.

At a time when skilled migration is at the top of both the political and news agenda, it is reassuring to see the benefit that countries receive from an educated workforce. Prosperity and growth depend on people, and without the right skills, businesses and therefore societies can flounder rather than flourish – skilled migration provides an important and necessary short-term resolution to the global skills gap.

> “There are signs emerging of a more positive backdrop for businesses around the world.”

At Hays we continue to call on governments and business to make concerted efforts to tackle the skills shortage across labour markets around the world. Based on the trends we have seen this year and in previous iterations of the Index, we have developed practical solutions to not only address the global skills deficit but also provide insights to businesses as they attempt to navigate the complexities of sourcing scarce talent. We believe if these recommendations are implemented we will continue to see positive changes in labour markets and societies around the world, as further jobs are created and economies run closer to their full potential.

1. **Embrace skilled migration and facilitate greater workforce participation to address an ageing working age population.**
   The working age population is declining in many countries. Over the next ten years, the working age population in 18 out of the 33 Index countries will decline by 50 million people, and this is likely to hinder employers looking for skilled workers. Furthermore, evidence from the EU, US and Japan in the last five years suggests that higher-skill workers are in greater demand relative to medium- and lower-skill workers. The impact of skilled migration can be mixed both for countries that send and receive skilled migrants, but when there are gaps it is important to fill them. We must ensure a smooth flow of people across all countries where there is demand, especially given that high-skill migrants currently tend to concentrate on only a handful of recipient countries.

2. **Ensure readiness for technological disruption through training and education**
   Even though the rise of technology and automation in the workplace will inevitably eliminate some job categories, it's important to remember that technology creates demand for new jobs as much as it will render others redundant. Low-skilled jobs are the most likely to be affected, so low-skilled workers must prepare to adapt their skillset to meet the new demands brought about by a more tech-centric work landscape. Similarly, employers should look to adapt their training for workers whose jobs will be changed rather than eliminated through technology.

3. **Capitalise on easing wage pressures and a growing world economy to invest in the future of your business**
   There has been a slight easing of wage pressures in European and Middle Eastern markets with a slower wage growth for high-skill industries relative to low-skill industries. This means employers could find it slightly easier to attract and retain talent in 2017 than in 2016. The world economy is also picking up speed, albeit at a slower pace than expected – which is also increasing demand for skilled workers. Employers must invest in their talent to ensure the future success of their business and those investments should be made now.

I hope that the Hays Global Skills Index 2017 provides not only a useful insight into the worldwide labour market, but some food for thought on how business can navigate uncertain times and ensure people and talent are at the heart of business strategies for growth and success in the years to come.

EXECUTIVE SUMMARY

The Hays Global Skills Index (the 'Index') is an annual assessment of the trends impacting skilled labour markets and examines the dynamics at play across 33 countries, determining how easy or difficult it is for organisations to find the skilled professionals they need.

This is the sixth edition of the Index and for many organisations across the globe access to talent remains an issue. Businesses are continuing to compete for the sought-after skills required to operate and ultimately succeed. When employers don't have the right people with the right skills, the implications can be far reaching.

While organisations continue to deal with skills shortages, labour markets across the globe are continually changing. This report explores three significant labour market changes: employers and workers are increasingly taking up less rigid working patterns, skilled migration is on the rise, and new technology is raising questions about who will do the work of tomorrow and what that work will look like.

Start with the fact that more and more employers and workers are adopting innovative working patterns. In the US, the number of freelance, contract, temporary or on-call jobs has grown from 10 per cent to 15 per cent of all workers in the last decade. In Europe, freelance roles have grown four times faster than total employment in the last five years. In the Asia Pacific region, Singapore and Australia are among the biggest freelance employers, and total freelancer earnings in the Philippines, Bangladesh, India and Pakistan are among the highest in the world. The greater flexibility afforded to employers and workers and the proliferation of mobile broadband are driving these innovative work patterns, making it easier than ever for businesses and workers to interact, regardless of location.

Another important finding of this report is that migrants are increasingly well educated. In the US in 2015, nearly half of recent arrivals were educated to university level. In the European Union, the proportion of all people born in another country who were university educated in 2016 was 29 per cent, up from 26 per cent five years earlier. That is important for labour markets because the United Nations estimates that 244 million people – 3.3 per cent of the world's population – are now living in a country other than that of their birth. This is more than ever before.

Finally, digitalisation – including artificial intelligence, big data, online platforms and computers that communicate with each other with little or no human intervention – is changing the world of work. As these technologies grow in prevalence in workplaces, they will cause some roles to become less common, others to move up or down the skills spectrum and others to be freshly created due to greater efficiencies and lower transaction costs.

The challenges presented by these three developments will play out in the years to come. Others have already made themselves felt: evidence from the European Union, US and Japan in the last five years shows that higher-skill workers remain in ever greater demand relative to medium- and lower-skill workers, which is the continuation of a long-term pattern.

In the midst of these changes, the global economy is picking up modestly, and this year's Index suggests a slight easing of labour market pressures overall compared to last year.

The average Index score across all 33 countries has declined from 5.4 last year to 5.3 this year. Overall wage pressure is a major driver. Compared to last year, average, inflation-adjusted wages are forecast to grow more slowly overall in 21 of the 33 countries covered in the Index.

Europe and the Middle East (EME)

- The Index score for Europe and the Middle East has fallen from 5.5 in 2016 to 5.4 in 2017, suggesting a slight easing of pressures in EME labour markets.
- The easing is largely due to lower overall wage pressures. Real, inflation-adjusted earnings for employees are forecast to increase by less in 2017 than they did in 2016 in 12 of 19 EME countries.

Asia Pacific

- Similar to Europe, employers may find it slightly easier to attract and retain talent in 2017 than in 2016. The average Index score has fallen from 5.0 last year to 4.8 this year.
- This is because overall wage pressures are declining in six of nine Asia Pacific countries. As in Europe, inflation is playing a role in limiting real wage growth.

The Americas

- The Americas is the only region to see an overall increase in the Index score - it has increased from 5.6 in 2016 to 5.7 in 2017.
- This is largely due to a recent spike in wages in high-skill industries in Chile; if not for that, the score for the Americas would be stable. The bigger story in the Americas is that Talent Mismatch is less of a problem, indicating that employers are able to find the employees with the required skills more easily than before.

Within these average Index scores there are important changes in individual countries' indicators. Employers continue to experience difficulties while navigating the supply and demand of skilled labour due to issues such as talent mismatch, inflexible labour markets and wage pressures in high-skill industries or high-skill occupations, with important implications for educators, policy makers, firms and workers everywhere. Failure to address these issues will only exacerbate the skills crisis further and create a lasting impact on tomorrow's workforce.

LABOUR MARKET CHANGES ARE SWEEPING THE GLOBE

Labour markets are experiencing broad changes across the globe: freelance, temporary and part-time work are becoming increasingly important for skilled labour markets; skilled migration is at an all-time high; and digitalisation is raising questions about who will do the work of tomorrow and what that work will look like. This section of the report explores each of these important labour market issues, examining how they are impacting the way companies manage their workforce and how workers manage their careers.

Innovative working patterns are invigorating labour markets

There are more opportunities than ever before for firms and workers to adopt newer working patterns. As a result, there is evidence that temporary, part-time, freelance, and self-employment options, including work in the so-called 'gig economy', are an increasing trend in labour markets around the world.

Employers and employees alike are beginning to embrace new contract models and the benefits they provide to both parties, such as a greater work-life balance and higher earnings for skilled professionals, and the flexibility and greater ability to manage talent pipelines for businesses.

In the US, for example, new work patterns are flourishing. In 2015, an estimated 23.9 million people worked as freelancers, contract, temporary, and on-call workers. This amounted to 15 per cent of all workers, up from 10 per cent a decade previously. This increase in people in alternative working arrangements (9.4 million) – as opposed to standard full-time employment – was equivalent to the net number of new jobs created in the US between 2005 and 2015. Innovative work patterns are growing fastest in business operations, finance, computing, mathematics, healthcare, education, food services, and community and social services occupations.

Although some of the people working in these jobs would undoubtedly prefer traditional, full-time employment, their demographic profile suggests that much of the growth in innovative working is by choice: older and female workers, who often prize flexibility, and the well-educated, who have more options, have been the fastest to adopt freelance, contract, temporary and on-call work[1].

New work patterns are growing in importance in Europe, too. For example, research suggests that there were 9.9 million freelancers operating in the EU in 2016 – a 16 per cent increase on five years earlier and quadruple the rate of growth in total employment over this period. Freelancers now make up 30 per cent of all self-employed people and 4 per cent of all workers. As in the US, many of these freelancers are highly skilled: 57 per cent of the freelancers were educated at the graduate level or above, and 30 per cent worked in professional, scientific, and technical sectors. Many freelancers are older and choose to work independently after acquiring extensive experience in the workforce.[2]

In the Asia Pacific region, a recent OECD analysis demonstrates that freelancing is important for both employers and people with skills to offer. The Philippines, Bangladesh, India and Pakistan are among the ten countries with the highest freelancer earnings, and Singapore and Australia are among the top ten countries by employer spending on freelancers.[3]

Technology is contributing to these trends. Widespread mobile broadband access makes it easier to work on the move, social networking sites make it easier for employers and people with skills to find each other, and online freelancing sites help employers and workers monitor each other's obligations. These efficiencies can benefit both firms and workers, ultimately making it less costly for firms to seek flexible workers and easier for individuals to offer their skills if they want to earn extra income.

An important implication of innovative working is that employers are increasingly able to access demographics that were hitherto less active in labour markets. For example, more women are joining the labour market because part-time and self-employment opportunities make it easier to manage family with work life. And part-time and freelance work patterns are letting older workers take retirement in stages, which may prove to be a lifeline for experience-hungry firms operating in the growing list of countries where the prime working age population – those between the ages of 15 and 64 – is shrinking.

> “The biggest potential for untapped professionals lies in the inclusion of women into highly-skilled sectors.”

Gerardo Kanahuati, Managing Director, Hays Mexico

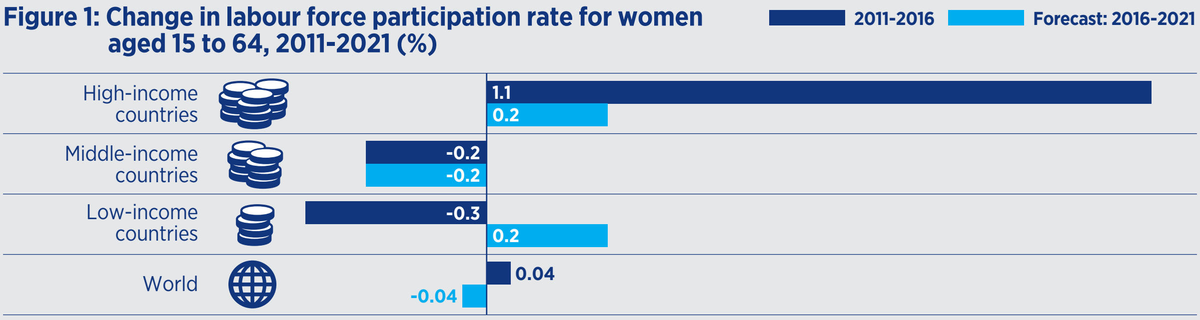
1. Lawrence F. Katz and Alan B. Krueger, “The Rise and Nature of Alternative Work Arrangements in the United States, 1995-2015”, 2016.
2. Association for Independent Professionals and the Self Employed, “Understanding Independent Professionals in the EU, 2015”, 2016.
3. OECD, “New forms of work in the digital economy”, 2016.

Key insight: Female participation in the world of work

After two decades of decline, the percentage of women aged 15 to 64 who were either working or looking for work increased globally between 2011 and 2016. This was due to trends in high-income countries like Sweden, Japan, Italy, Hungary and Chile.[4] The increase in female labour market participation in high-income countries overwhelmed the decline in middle-income countries like India and Indonesia, as well as in low-income countries like Tanzania and Malawi. Part of the reason for declines in low- and middle-income countries is that women are going to school for longer, which keeps them from being active in the labour market. In addition, there is an ongoing shift out of subsistence agriculture – which often requires that the entire family works – and into urban life, which is less labour intensive and boosts household income.[5]

In the next several years, the International Labor Organization (ILO) expects female labour force participation to increase in low-income and high-income countries, but continue to decline in middle-income countries (Fig. 1). The ILO's forecast is built on an analysis of each country, which considers how local economic growth rates, education enrolment, and population ageing affects peoples' decisions to enter or exit the labour market.

Figure 1: Change in labour force participation rate for women aged 15 to 64, 2011-2021 (%)



Source: ILO (2015)

Changing female participation rates (i.e. those active in the labour market) have important implications for the gender mix of employment by industry. In high-income countries, women already outnumber men in employment in the service sector, and the ILO forecasts that this difference will persist over the next five years. In low-income countries, men outnumber women in services, but growth in female employment in services is expected to be greater than for men in the next five years.[6]

Changes in gender mix by industry will affect occupations, too. Because high-skill occupations – like those requiring research, medical treatment, and architectural design – are more common in the services sector, more women in services mean more women in high-skill occupations. Thus, in both high- and low-income countries, where female labour market participation rates are expected to increase over the next five years, the number of women working in the highest-skilled occupations is forecast by the ILO to grow faster than the number of men.[7]

4. In this report, countries' income classifications adhere to World Bank definitions of high income (US $12,476 or greater), middle income (US $1,026 to $12,475), and low income ($1,025 or less).
5. International Labour Organization, "Women at Work: Trends 2016," 2016. Note: unlike the participation rate, the number of women in work in all country income classifications has increased; that is because growth in the female population aged 15-64 overwhelmed declining participation rates among that group.
6. International Labour Organization, "Employment by sex and economic activity – ILO modeled estimates", 2016.
7. International Labour Organization, "Employment by occupation – ILO modeled estimates, Nov. 2016", 2017. The highest-skill roles require complex problem solving, decision making, and creativity. They include things like research and analysis; diagnosis and treatment of disease; teaching; architecture; ensuring regulatory compliance; preparing detailed estimates of materials and labour costs; coordinating and supervising workers.

There are more migrants than ever before and they are increasingly well educated

More people live outside of their home country than ever before. The United Nations (UN) estimates that there were 244 million people living outside their birth country in 2015, or 3.3 per cent of the world's population. The clear majority of these migrants – 92 per cent – moved for personal or professional reasons, with the remainder classified as refugees.

Migrants are increasingly well educated. In the US, census data analysed by the Migration Policy Institute shows that nearly half of recent migrants in 2015 were university educated, compared to fewer than two fifths in 2010.[8] In the European Union countries, 29 per cent of all migrants were university educated as of 2016, up from 26 per cent five years earlier.[9]

High-skill migrants tend to go to a small handful of recipient countries. Among OECD countries, four countries account for 70 per cent of all immigrants educated to university level: the US, UK, Canada and Australia. That is a disproportionately high share, since those four countries account for only 37 per cent of all employment and 51 per cent of all economic output in the OECD.[10] For these countries, a larger pool of skilled workers makes it easier for employers to find the skills they need, which tends to increase productivity, wages and firms' profitability. This is particularly important when skills are rare or in places where clustering creates a disproportionately large demand for a particular skill relative to the size of the economy – for example, Silicon Valley or the City of London.

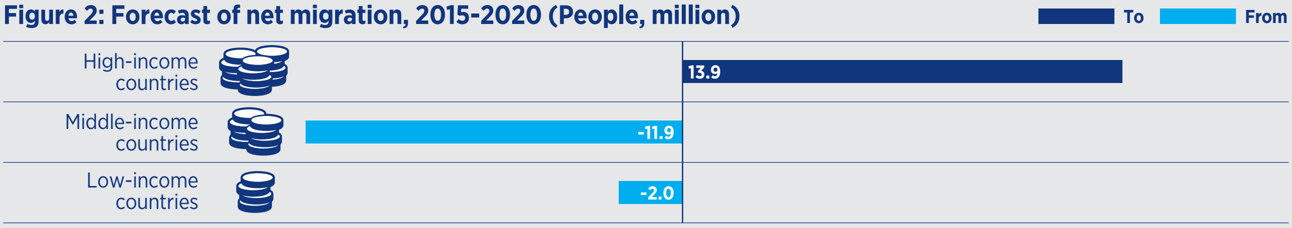
Inward migration can have both positive and negative implications for existing workers. For example, migrants increase competition for particular jobs, which can put downward pressure on wages; and the faster migration occurs, the less time an economy has to adjust in ways that do not involve downward wage pressures.

Yet, by expanding the pool of available workers, migrants increase an economy's capacity for specialisation, which can lead to an increase in productivity and wages. Migrants also consume goods and services. That boosts demand and employment opportunities. The net effect is therefore an empirical question, although the evidence across multiple countries is not overwhelming in one direction. The measured effects are often small or even indistinguishable from no change. Among studies that found positive wage effects overall, some noted that lower-skilled workers experienced a decline in wages due to immigration while higher-skilled workers experienced an increase.[11]

For countries that send migrants, again the impact on the local labour market is mixed. Local firms suffer when skilled people emigrate. Vacancies take longer to fill and businesses may need to pay more and look longer to find the skills they need, as a result of 'brain drain' within the country. But there can be benefits, too. People who migrate to live in another country, either permanently or temporarily, can establish connections to global sources of knowledge, capital and goods. Former migrants who are educated or work abroad and later return home enrich their home economies with knowledge and skills that might otherwise be unavailable to local firms. Overseas workers also often repatriate a proportion of their salaries back to their country of origin to help their families.

Regardless of the pros and cons for individual countries, migration is a trend that will continue. In the five years to 2020, the UN forecasts that high-income countries will receive an additional 14 million migrants (Fig. 2). Most of these are expected to come from middle-income countries.

Figure 2: Forecast of net migration, 2015-2020 (People, million)



Source: United Nations (2015)

8. Migration Policy Institute, "New brain gain: rising human capital among recent immigrants to the United States", 2017.
9. Eurostat, "Population by educational attainment level, sex, age and country of birth", 2017.
10. World Bank, "Global Talent Flows", 2016.
11. Christian Dustmann, Tommaso Frattini and Ian Preston, "The effect of immigration along distribution of wages", 2013, and Bank of England, "The impact of immigration on occupational wages: evidence from Britain", 2015, and Christian Dustmann, Albrecht Glitz and Tommaso Frattini, "The labour market impact of immigration", 2008.

Technology is disrupting the work landscape

Digitalisation, which includes big data, artificial intelligence, the internet of things and online platforms, is having a profound effect on skilled labour markets around the world.[12] The trend towards a more digital economy is raising questions about who will do the work of tomorrow, what that work will look like and how many jobs will change or disappear.

Some jobs will inevitably be made redundant by advances in software and robots. Estimates of the number of jobs that are at risk from automation vary widely, however. At the higher end, two academics assessed over 700 occupations in the US and determined that 47 per cent of jobs there are at risk of being automated over the next decade or two.[13] Their analysis predicts that jobs in transportation and logistics, office and administrative support, and manufacturing are at greatest risk. At the lower end, two OECD economists estimated that nine per cent of the jobs that exist today in 21 member countries are at risk of being automated; this analysis is based the tasks people do at work, which the authors believe is a more robust technique than judging automation risk for entire occupations.

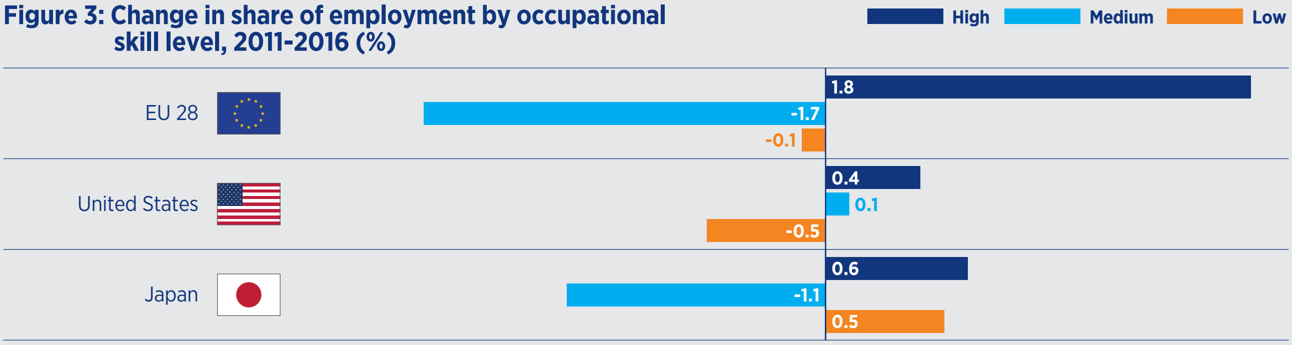
Some jobs will move up or down the skill-spectrum because of technology. Consider, for example, graphic design jobs, which would formerly have been largely paper-based but which now are largely computer-based and require skills with graphics editing software. Because of these technological changes, the quality of graphic designers' output has improved and the quantity of their output has never been greater.

Still other jobs will be created because new business models become viable when technology lowers search and transactions costs – as has been seen with the rise of freelance work platforms that match employers with skilled individuals.

While pessimistic predictions may get all the headlines, it is important to remember that, historically, the total number of jobs in the world has grown alongside both technology adoption and population growth. This is because technology raises output per worker, which boosts prosperity and leads to extra demand for goods and services. Therefore, technology creates demand for new jobs just as it is rendering others redundant.

Still, there will likely be both winners and losers in the transition to new types of work. In the last five years, there is evidence that digitalisation – in combination with globalisation and demographic shifts – has disproportionately driven demand for highly-skilled workers relative to low- and middle-skilled workers (Fig. 3).[14] This recent trend has a lot in common with theories developed in the last decade about 'job polarisation' and 'hourglass economies', whereby high-skilled workers are in ever greater demand while middle-skilled workers are squeezed.[15]

Figure 3: Change in share of employment by occupational skill level, 2011-2016 (%)



Source: Eurostat (2017), US BLS (2017), ONET (2017), Official Statistics of Japan (2017)

The effects of digitalisation are likely to continue over the next five years and beyond. As more people use digital technologies, the more valuable they become to their users (because part of the benefit is the number of other people who use them and the accumulation of user data that enables functionality improvements), which attracts still more people into the fold. This is a virtuous, self-reinforcing circle that is bound to continue to influence the world's labour markets in powerful ways, some of which we are only just discovering.

12. The internet of things refers to the growing number of devices and appliances connected to the internet.
13. Carl Benedikt Frey and Michael A. Osborne, "The future of employment: how susceptible are jobs to computerisation?", 2013, and OECD, "The Risk of Automation for Jobs in OECD Countries: A Comparative Analysis", 2016.
14. IMF, "World Economic Outlook", April 2017.
15. David Autor, Lawrence Katz and Melissa Kearney, "The Polarizaton of the US Labor Market", 2006 and Maarten Goos, Alan Manning and Anna Salomons, "Explaining Job Polarization: Routine-Biased Technological Change and Offshoring", 2013.

Key insight : Industry 4.0 looks set to revolutionise the manufacturing sector

Industry 4.0, or the fourth industrial revolution, has the potential to change the manufacturing sector as we know it. The concept was first expressed by the German Government as part of a policy framework to maintain Germany's industrial competitiveness.[16] It is typically used to mean industrial use of machines and robots that communicate with each other, as well as with people, via the internet, although the concept can be applied to machine-to-machine or computer-to-computer conversation in many industries.[17]

Communication between the robots on factory floors, and between people and robots, could allow robots to start and stop processes based on real-time conditions around them and alert people when there is a problem; robots could increase their own efficiency if they could monitor themselves and determine when they needed maintenance; efficiency would also be improved if machines and robots could make production decisions on their own by, for example, ordering new supplies when existing inputs into a production process run low. The increase in productivity of industrial robots will likely reduce the number of manual jobs on the shop floor. At the same time, the increased output made possible by such robots will mean that manufacturers need more people in accounting, finance, sales, advertising, and other roles. The increase in output may also drive increased employment in manufacturers' supply chains.

Outside of the manufacturing sector, computers that talk to each other through what are called application programming interfaces (APIs), are growing in number. APIs let machines send data to each other, analyse data without people guiding them, and present easy-to-digest results to the people who set them up. This is likely to change the composition of many jobs, with fewer people needed in basic analytical roles in professional services, but more people needed to add value to API outputs by packaging them and selling them in unique ways, making organisational decisions based on them, or even developing new products and services based on the information the APIs offer up.

In addition to shifts in particular industries, the distribution of jobs across countries could change if robots lead companies to 're-shore' their factories to high wage countries. Re-shoring is the reverse of the process where companies moved manufacturing activity to low-labour-cost countries. Such shifts are expected to become more common because at the same time as wages are rising in many markets that benefited from the initial offshoring trend, locating production near consumer markets and product design centres decreases transportation costs and cuts production lead times. In turn, faster delivery and technological advancement open opportunities for firms to offer more bespoke products to their customers.

The long-term effect of Industry 4.0 on the type, quantity, and location of jobs will ultimately depend on the relative cost of labour and capital, investment levels in new technologies by different industries, the flexibility of labour markets and firms, and workers' education and skills.

“The pace of technological change in the country creates opportunities for businesses to develop a new vision and purpose to attract talented millennials into their workforce by creating targeted and logical solutions built around automation, virtual collaboration and partnerships.”

Marc Burrage, Managing Director, Hays Japan

16. European Parliament, "Industry 4.0", 2016.
17. The first industrial revolution was steam power, the second was electricity and assembly lines, and the third was computerisation. A related term is the 'internet of things'.

UNDERSTANDING THE INDEX

The Hays Global Skills Index measures how easy or difficult it is for firms to attract and retain the most talented workers in 33 countries.

To give a complete picture of each country's labour market, our seven indicators are chosen to highlight supply-side issues, demand-side issues, or both supply- and demand-side issues relating to the hiring of skilled workers. Together, they give a comprehensive picture of demand and supply conditions in each country's skilled labour market, reflecting the experiences of the people on both sides of hiring tables in North America, Europe and the Middle East, and Asia.

As you explore this report, keep in mind that the Index is not a league table, where countries on one end of the spectrum could be considered 'the best' and the others 'the worst'. Each country has its own labour market strengths and challenges, which are scored relative to conditions in the same country in the past. For a clearer picture of a country's complex labour market and the dynamics at play, you must examine each of their indicator scores.

Detailed description of each indicator

Each indicator measures pressure in the local labour market now relative to a period of economic tranquillity. Higher scores mean that a country is experiencing more pressure than has historically been the case. Lower scores mean that a country is experiencing less pressure. Each of the seven indicators are given equal weight when calculating the overall Index score for each country.

Education flexibility
(supply-side indicator)

In today's global and technology-driven economies, raising educational standards is crucial to bridging skills gaps. This indicator provides a comprehensive view of the state of education. The lower the score, the more likely the education system is flexible enough to meet labour market needs. The higher the score, the less likely an education system is equipped to build a solid talent pipeline for the future.

Labour market participation
(supply-side indicator)

Bringing more people into the workforce expands the talent pool that employers can choose from. The lower the score, the larger the potential pool of workers. The higher the score, the lower the number of workers there are available.

Labour market flexibility
(demand-side indicator)

Governments play an important part in determining how well labour markets function. For instance, they can cut red tape, avoid laws that discourage hiring and adapt policies that welcome talented people from abroad. The lower the score, the better aligned governmental policies are with labour market dynamics. A higher score suggests there are barriers in place restricting the local labour market.

Talent mismatch
(supply- and demand-side indicator)

This indicator measures the gap between the skills businesses are looking for and the skills available in the labour market. A higher score indicates that businesses face serious difficulty in matching available talent with unfilled jobs. A lower score suggests employers are having an easier time finding workers with the skills they need.

Overall wage pressure
(supply- and demand-side indicator)

Skills shortages are likely to be an important issue when wages are growing faster than the overall cost of living. A higher score indicates the presence of overall wage pressures that are higher than the historic norm for that country. A lower score tells us wages are not rising quickly and those pressures aren't as apparent.

Wage pressure in high-skill industries
(supply- and demand-side indicator)

Some industries require higher-skilled staff than others. As it takes time to undertake the training necessary to work in those industries, it potentially makes them more vulnerable to skills shortages as the number of people qualified to start work cannot change quickly. A higher score indicates that wages in high-skill industries are growing faster than in low-skill industries relative to the past, which is indicative of sector-specific skills shortages (such as in engineering or technology). A lower score tells us wages for those in high-skill industries are rising more slowly or in line with wages in low-skill industries.

Wage pressure in high-skill occupations
(supply- and demand-side indicator)

Some occupations require a higher than average amount of training, education and experience. These are called high-skill occupations. Rising wage pressure in this category signals that these occupations are experiencing shortages of workers with the necessary skills. The higher the score, the greater the presence of skills shortages affecting high-skill occupations. A lower score tells us that wages for those in high-skill occupations are rising more slowly than those in low-skill occupations.

How we display the indicators

Each country's overall Index score is accompanied by a visual indicating the score range for each indicator (see below).

The analysis on which the Hays Global Skills Index was based used data as of Q2 2017. Developments subsequent to this date are not reflected in the 2017 findings.

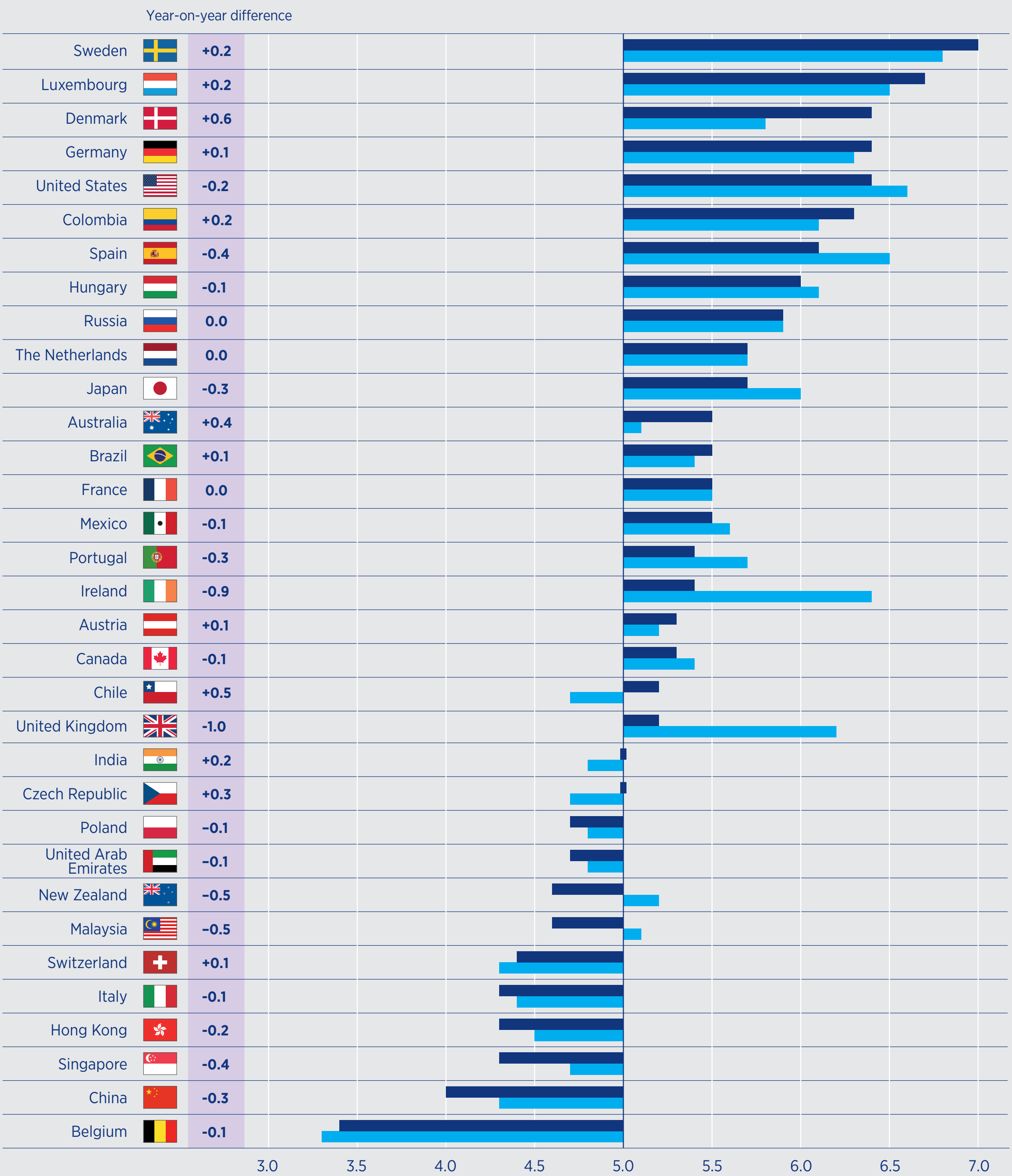
THE MACROECONOMIC BACKDROP

How labour market conditions have changed since last year's Index

In this year's Hays Global Skills Index, skilled labour market conditions have eased slightly relative to last year.

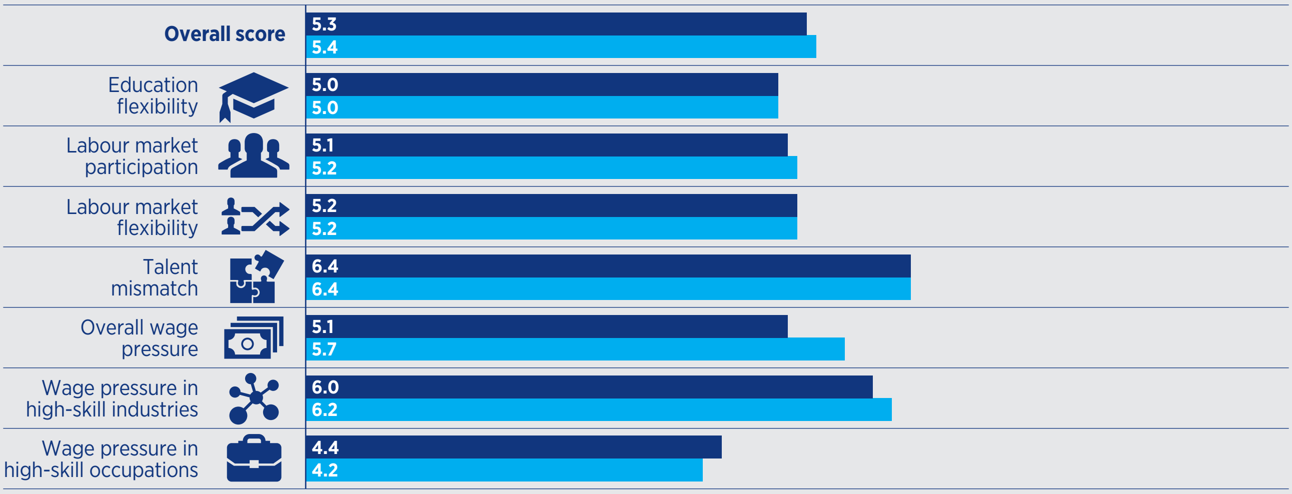
The average score across all 33 countries has fallen from 5.4 in 2016 to 5.3 in 2017. The score fell for 18 countries, rose for 12, and stayed the same for 3 (Fig. 4).

Figure 4: Hays Global Skills Index scores (by country)



The main driver of more relaxed labour market conditions is overall wage pressure (Fig. 5). In 21 of the 33 countries featured in the Hays Global Skills Index, the growth in real earnings that employees take home from their jobs is forecast to slow in 2017 compared to 2016, or in some cases even fall.

Figure 5: HGSI indicator scores (2017 vs 2016)



The decline in average real earnings growth was reinforced by the narrowing of the gap in pay between employees in high-skill and lower-skill industries. The score for wage pressures in high-skill industries fell in 18 countries, rose in 12, and stayed the same in three. In countries like the UK and Spain, this was because wages in lower-skill industries have grown faster while wages in high-skill industries grew more slowly. In others, like Russia and Hungary, while wages in both high- and lower-skill industries slowed, growth was slightly faster in lower-skill industries.

Offsetting the decline in indicators of overall wage pressure and the wage gap in high-skill industries, the available evidence shows that the gap in wages between high- and lower-skill occupations has grown significantly in a couple of countries.

The changes were especially notable in Chile, which saw wages for people in executive positions increase substantially, and Australia, where wages in high-skill occupation categories like database and systems administrators, ICT security specialists and medical practitioners, have continued to grow at the same rate as they had in the previous year, while lower-skill occupations experienced much slower wage growth. Elsewhere, in Denmark and Luxembourg, there are signs of a diminished skills premium. In Denmark, pay growth in high-skill occupations has been mostly flat, whereas pay for lower-skill occupations increased at a faster than usual rate. In Luxembourg, wages in high-skill occupations fell slightly while wages in lower-skill occupations rose slightly. This suggests that, relative to lower-skill occupations in Denmark and Luxembourg, the supply of high-skill workers has increased or that the demand for high skill workers has moderated, or a combination of both.

> “Things are expected to become somewhat bleaker in the next few years as baby boomers begin retiring from 2020 and, due to low birth rates, won’t be replaced in the market.”

Klaus Breitschopf, Managing Director, Hays Germany

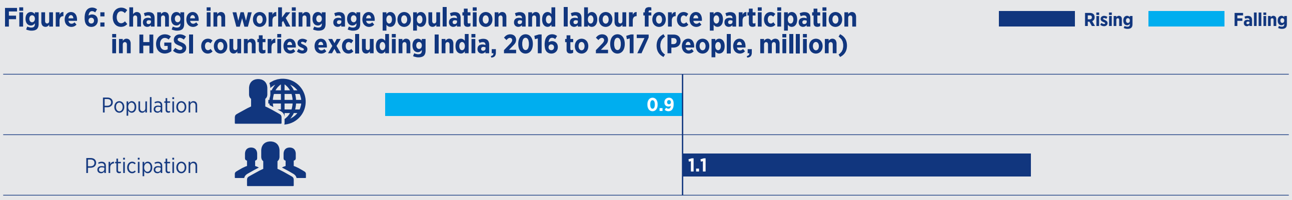
Global economic outlook

The world economy is picking up speed, albeit at a slower pace than expected in the recent past. All else being equal, this will tend to increase employers' demand for workers.

The International Monetary Fund (IMF) forecasted in April that world GDP would grow by 3.5 per cent in 2017.[18] If achieved, that would be an improvement on economic growth of 3.1 per cent in 2016, and slightly higher than the average for the last five years, at 3.4 per cent. The 33 countries featured in the Index are forecast by the IMF to experience GDP growth of 2.9 per cent in 2017, up from 2.5 per cent in 2016.

Amidst modestly rising global growth, the supply of workers available to employers is changing because of shifting demographics and labour market participation rates. Across all countries in the Index, the working age population is forecast to increase by 12.2 million people between 2016 and 2017, although most of this is due to population growth in India. Excluding India, the working age population across all countries in the Index is forecast to decline by nearly a million people in 2017 due to population ageing (Fig. 6). However, even with shrinking populations, rising participation rates in 25 of these 32 countries will cause the supply of skilled workers to increase by 1.1 million people.

Figure 6: Change in working age population and labour force participation in HGSI countries excluding India, 2016 to 2017 (People, million)



Source: ILO (2015), UN (2015)

Key insight: The long-term demographic outlook

Ten years ago, only four of the Hays Global Skills Index countries' prime working age populations – people between the ages of 15 and 64 – were shrinking: Germany's, Portugal's, Hungary's and Japan's. This has changed. In 2017, The United Nations estimates the 13 out of the 33 Hays Global Skills Index countries will experience declines in their working age populations: the Czech Republic, France, Germany, Hungary, Italy, the Netherlands, Poland, Portugal, Russia, Spain, China, Hong Kong and Japan.

Within five years, Austria, Belgium and Singapore will join that list. And within ten years, Denmark and Switzerland will count among the countries with declining working age populations, bringing the total to 18 out of the 33 countries in the Index. The total decline among these 18 countries over ten years is forecast to be 50 million people, or 3.5 per cent of their combined population this year.

While increasing labour market participation rates may help ease the challenges in some countries for a time, it will likely be overwhelmed by declines in the size of the working age population at some point. As that happens, employers may find it increasingly difficult to find the skilled labour they need.

18. IMF, "World Economic Outlook", April 2017.

Europe and the Middle East (EME)

Like the rest of the world, European economies are beginning to see a slight increase in their growth prospects. The IMF forecasts that the 19 Index countries in the Europe and Middle East region will experience economic growth of 1.8 per cent in 2017, up from 1.6 per cent in 2016.

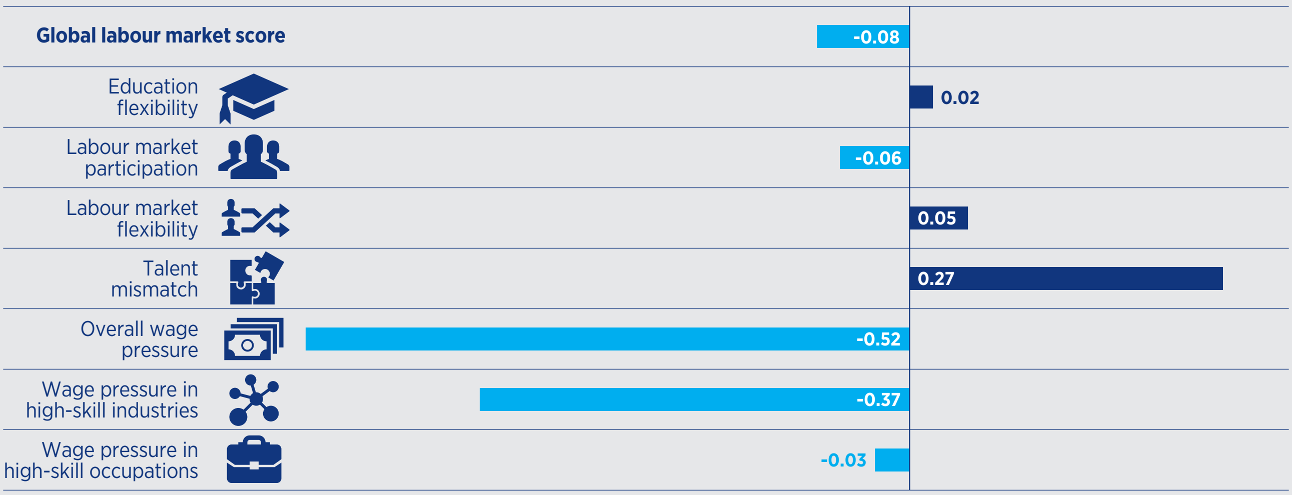
The decline in working age populations in several European countries is likely to adversely affect employers looking for skilled workers, because the skill pool is shrinking as people retire. In Russia, the UN forecasts that there will be a million fewer people in the labour market in 2017 compared to 2016. Small falls in the size of working age populations are also predicted for Poland, Germany and Italy.[19] Overall, the number of people participating in the labour markets in the Index's EME countries is forecast to decline by 0.3 per cent this year.[20]

Rising vacancies are a growing challenge in many European countries, and that has pushed the average score for the talent mismatch indicator up. In 2016, vacancies rose compared to 2015 in all but one of the 16 European countries for which vacancy data is available. The largest increases were in the Czech Republic (up 40 per cent), Hungary (33 per cent), and Sweden (29 per cent). There were smaller but still significant increases in vacancies in Austria, Belgium, Denmark, France, Germany, Italy, Luxembourg, the Netherlands, Poland, Spain, Switzerland and the UK.

Despite a modestly rising economic growth rate, higher talent mismatch indicator scores and a declining supply of labour – which would otherwise lead to a more pressured labour market – the Index score for Europe and the Middle East is 5.4 this year, down slightly from 5.5 last year. That suggests that it is slightly easier, on average, for firms looking to attract and retain talented staff.

The cause is lower overall wage pressure. That, in turn, is mostly a result of higher forecasted inflation. After three years where the average inflation rate was less than 1 per cent in the 18 European economies in the Index, consumer prices are forecast to rise by nearly 2 per cent on average in 2017. Wages may not always keep up. In real terms, wage growth is forecast to be lower in 2017 than in 2016 in 12 of 18 European countries. In some countries, like Belgium, Italy, Spain and the UK, overall wages are forecast to decline in real terms in 2017.

Figure 7: EME – HGSI indicator scores (2017 vs 2016)



19. United Nations, "World Population Prospects: The 2015 Revision", 2015.
20. International Labour Organization, "Labor force participation rate by sex and age," 2015.

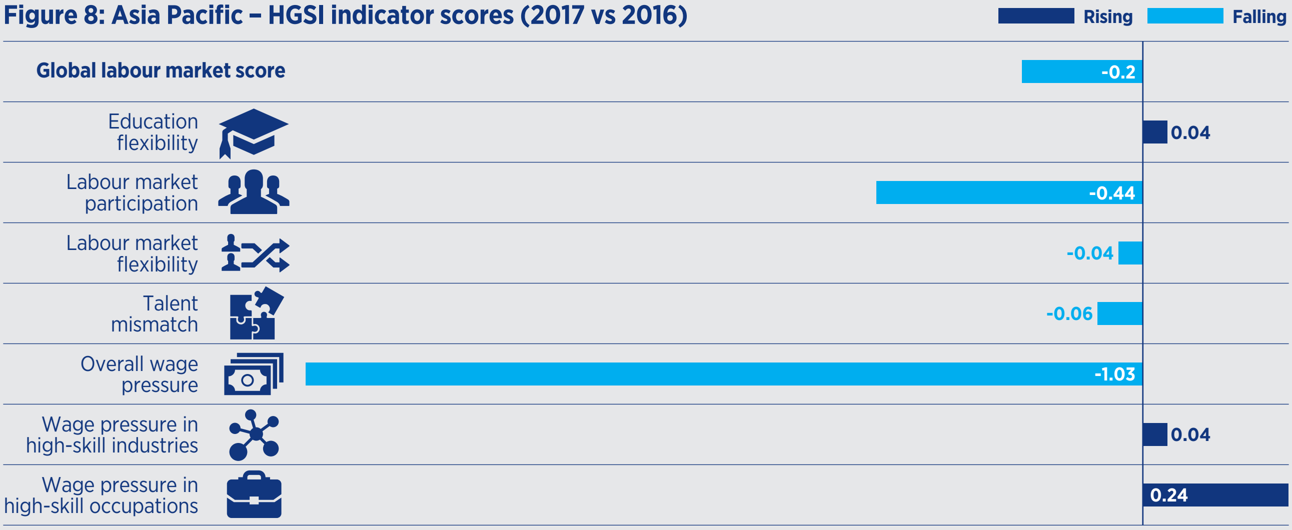
Asia Pacific

Economic growth is expected to increase in Asia Pacific countries in 2017, but the average growth rate for the region will be driven almost entirely by India and China. The Asia Pacific economies are forecast by the IMF to grow by 5 per cent in 2017, up from 4.9 per cent in 2016.[21] Excluding India and China, however, GDP growth is forecast to be a more modest 1.9 per cent.

Several Asia Pacific countries are forecast to have higher rates of labour market participation in 2017 compared to 2016, and this has contributed to a decline in the labour market participation indicator score. In New Zealand, overall labour market participation rates are expected to rise by three percentage points, while Hong Kong and Japan are expected to experience one percentage point increases in their labour market participation rates.[22] In Japan this will help to offset a falling working age population.

As in Europe, employers may find it slightly easier to attract and retain talent in 2017 than they did in 2016 in the Asia Pacific region. The average Index score among countries in this region declined from 5.0 last year to 4.8 this year. Apart from increased labour market participation which increases the talent pool for employers to choose from, this is largely driven by lower overall wage pressures. Employees are forecast to receive lower real wage growth in six of nine Asia Pacific countries in 2016 compared to 2015. A significant reason for this is rising inflation. In five of the six countries where overall wage pressures are lower, inflation is forecast to be higher in 2017 than in 2016, which will limit real terms wage growth.

Figure 8: Asia Pacific – HGSI indicator scores (2017 vs 2016)



Americas

The economies in the Americas are forecast by the IMF to grow by 2.1 per cent in 2017, nearly double the growth rate achieved by these economies in 2016.[23] That will tend to increase demand for skilled labour in the region.

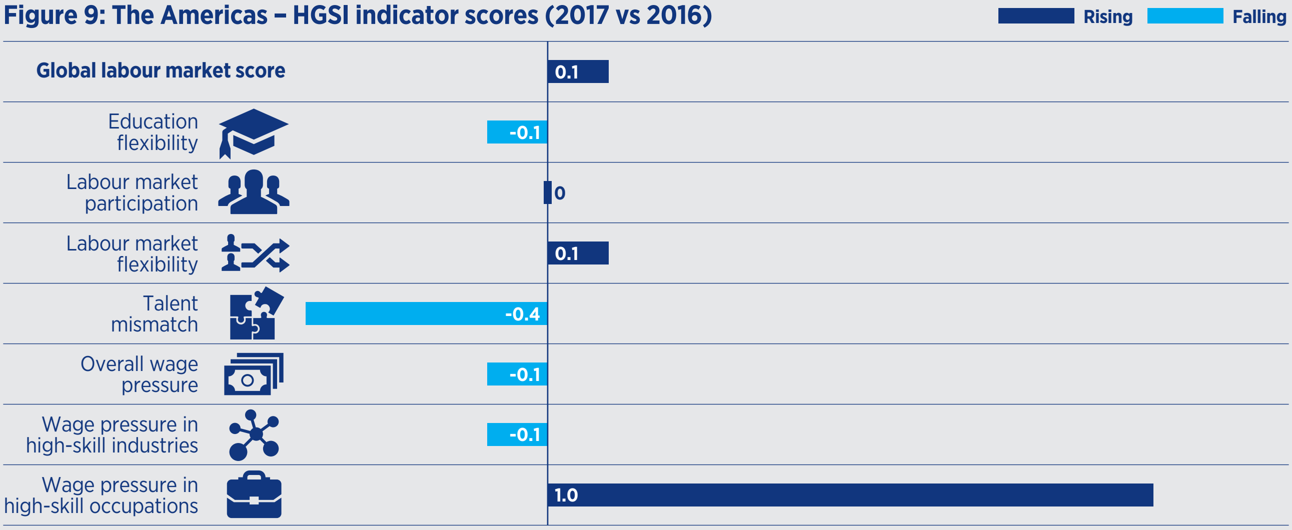
Offsetting the expected increase in demand in the Americas, the supply of workers continues to increase in the region. The ILO and the UN forecast that 1.2 million people will join the labour market in Brazil in 2017 and 1 million will join in Mexico. In the US, which gets more immigration than any other country, the working age population is forecast to grow by just over half a million people.

The Americas is the one region that has seen an overall increase in the Index score in 2017, although this is largely due to a significant change in Chile. If not for Chile's contribution – driven by a significant increase in the gap in wages paid to people in executive occupations in Chile – the Index Score for the Americas would remain unchanged.

Perhaps more important is evidence that talent mismatch is less problematic in four of the six countries in the region. In Canada and Chile, for example, the job vacancy rate was lower in 2016 than the previous year. Meanwhile, the rate of long-term unemployment, which contributes to the talent mismatch indicator, has recently declined in the US, Canada and Mexico. These lower vacancy and long-term unemployment rates suggest that employers are having an easier time finding employees with the right skills in the Americas compared to earlier years.

21. IMF, "World Economic Outlook", April 2017.
22. When subtracting one percentage from another, the result is a change in 'percentage points'.
23. IMF, "World Economic Outlook", April 2017.

Figure 9: The Americas – HGSI indicator scores (2017 vs 2016)



Conclusions

Each year, our analysis of skilled labour markets incorporates the views of our in-country experts, considers the latest labour market statistics across 33 countries, and includes research about the overarching skilled labour market issues that span the continents.

Averaging across all countries, we found that labour market conditions have eased slightly this year, largely due to declines in overall wage pressures. But within that overall picture, there are significant changes. In the Europe and Middle East region, there has been a rise in talent mismatch, but the effect on the overall score has been limited by easing wage pressure in the whole economy. In the Asia Pacific region, rising gaps in the pay between people in high-skill occupations and lower-skill occupations has been counteracted by lower overall wage pressure. And in the Americas, a decline in talent mismatch – due to falling vacancies and long-term unemployment rates – has been outweighed by an increase in wage pressure in high-skill occupations, particularly in Chile.

Our research also uncovered sweeping changes taking place in labour markets around the world. Technology has made it cheaper and easier for firms and workers to adopt temporary, part-time, freelance and self-employment options, and there is evidence that more and more people in the US, Europe and Asia are taking advantage of those options.

The number of migrants in the world is at an all-time high, at 244 million people or 3.3 per cent of the global population, and the evidence shows that they are increasingly well educated. Finally, digitalisation is causing certain jobs to move up or down the skill spectrum, eliminating other jobs, and creating entirely new jobs, all while generally driving up demand for highly-skilled workers.

Labour markets are evolving at a rapid rate, from how workers connect with employers to automation of the workforce. The labour market must now adapt to the sweeping changes affecting labour markets globally and navigate the complexities of supply and demand of skills.

There will be both opportunities and challenges for employers, workers, educators and policy-makers for years to come as the diverse skills landscape we describe in this report continues to unfold.

> “Candidates in areas of skills shortages remain in high demand and can receive multiple job offers and counter offers. They are also commanding significant salary increases, but generally wage pressure is easing across the UK.”

Nigel Heap, Managing Director, Hays UK

THE REGIONAL PICTURE

The country dashboards present a detailed breakdown of labour market pressures for each of the 33 countries featured in the Hays Global Skills Index. Seven indicators contribute equally to the overall Index score for each country,[*] providing insights into the state of the economy, the makeup of the labour market, education, and wage pressures by industry and occupation.

[*] Due to the lack of availability of Colombian occupational wage data, the overall Index score was calculated using six indicators. Due to the lack of availability of Malaysian structural unemployment data, we did not calculate the country's Talent Mismatch score and therefore the overall Index score was calculated using six indicators. Due to the lack of availability of UAE structural and long-term unemployment and vacancies data, we did not calculate the country's Talent Mismatch score and therefore the overall Index score was calculated using six indicators.

BRAZIL

Brazil's economy remained in recession throughout 2016, with important implications for the labour market.

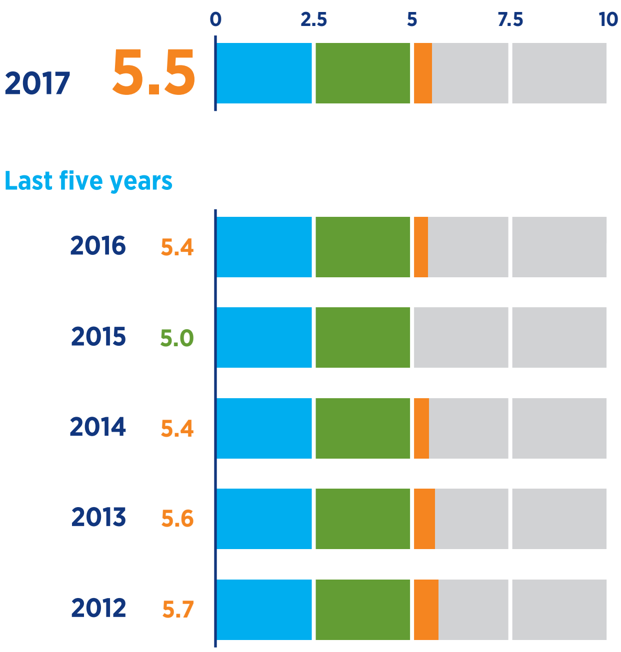
The unemployment rate grew for the third year in a row, with one in eight people looking for work being unable to secure an opportunity. The unemployment rate is expected to peak this year, at just over 13 per cent.

Despite this large available pool of potential workers, the rising talent mismatch indicator for Brazil suggests employers may still struggle to find the skills they need.

	2016	2017†
Population	209.8m	**211.4m**
GDP		
GDP (Billion BRL*)	6,524	**6,533**
GDP growth	-3.6%	**0.4%**
GDP/head (BRL*)	31,100	**30,992**
Unemployment		
Unemployment rate	11.5%	**13.1%**
Long-term unemployment rate	n/a	n/a

*2017 prices †Average forecast figures for 2017

Overall Index score



Key drivers

Talent mismatch
A greater imbalance between workers' skills and those demanded by employers mean it is taking longer to match employers and jobseekers with the right skills.

Overall wage pressure
Overall wage pressure remains low for Brazilian businesses, although real wages are expected to rise slightly this year.

Wage pressure in high-skill industries
The difference between wages in high- and low-skill industries has increased recently, approaching historical norms. This is largely due to wage growth in the services sector.

For a full list of indicators scores, view page 52

View from the ground

Brazil continues to struggle to gain real momentum in its economic recovery; however, we are seeing many causes for increased optimism. Political uncertainty is hampering a much-needed reform agenda but, despite this, progress is being made with a positive GDP quarter for the first time in over two years. This growth is evidenced across a number of industries and is starting to flow through into an increased demand for talent. The further challenge this presents for Brazil is heightened by a complex labour environment and talent mismatch that has the potential to slow down the recovery. As we move further through the year and into next we anticipate there will be increased pressure that flows through into competition for talent.

Jonathan Sampson, Managing Director, Hays Brazil

Key skills in demand

- Application security specialists
- Demand planning
- Plant managers/industrial managers
- Latam accountant and tax coordinators/managers
- Sales executives

Note: The analysis on which the Hays Global Skills Index was based utilised data as of Q2 2017. Developments subsequent to this date are not reflected in the 2017 findings.

CANADA

The overall Index score for Canada is slightly lower this year compared to last year, indicating that conditions in the labour market have eased on average.

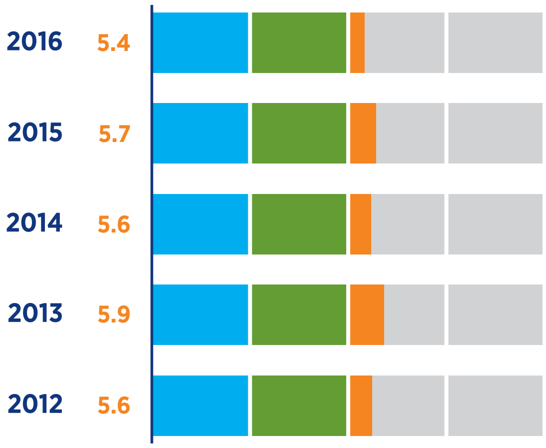
Last year the unemployment rate rose slightly to 7 per cent but is forecast to fall this year. And a growing working age population – forecast by the UN to increase by 0.9 per cent between 2015 and 2020 – is adding to the pool of workers available to employers. In 2017, average workforce earnings in Canada are expected to fall slightly, suggesting that it will be easier overall for firms to attract and retain labour.

	2016	2017†
Population	36.2m	**36.6m**
GDP		
GDP (Billion CAD*)	2,085	**2,146**
GDP growth	1.5%	**2.9%**
GDP/head (CAD*)	57,592	**58,681**
Unemployment		
Unemployment rate	7.0%	**6.6%**
Long-term unemployment rate	0.81%	**0.76%**

*2017 prices †Average forecast figures for 2017

Overall Index score

Last five years



Key drivers

Talent mismatch
The long-term unemployment rate has declined slightly, meaning there is better matching of available skills and employers' needs.

Overall wage pressure
Modest nominal wage growth is not expected to translate into rising real incomes due to inflation.

Wage pressure in high-skill industries
There was greater wage pressure in high-skill industries than in lower-skill industries, driven by high increases in sectors such as information services.

For a full list of indicators scores, view page 52

View from the ground

The Canadian economy is recovering from the oil and gas downturn, with steady economic growth in 2017 and similar moderate growth expected in 2018. However, uncertainty remains around a number of economic drivers including the rebound of the oil and gas industry, NAFTA re-negotiations and the potential for a correction in key housing markets. Employers are cautiously optimistic that business activity will increase in the year to come. This is not yet translating into widespread hiring or wage increases, but these metrics should increase in another year or two of continued stability. Industries such as construction, IT and telecommunications, and banking and financial are bucking the trend, with significant hiring needs that are challenging skill-short markets.

Rowan O'Grady, President, Hays Canada

Key skills in demand

- Software developers
- Cyber security professionals
- Construction estimators
- Skilled tradespeople
- Construction project managers

Note: The analysis on which the Hays Global Skills Index was based utilised data as of Q2 2017. Developments subsequent to this date are not reflected in the 2017 findings.

CHILE

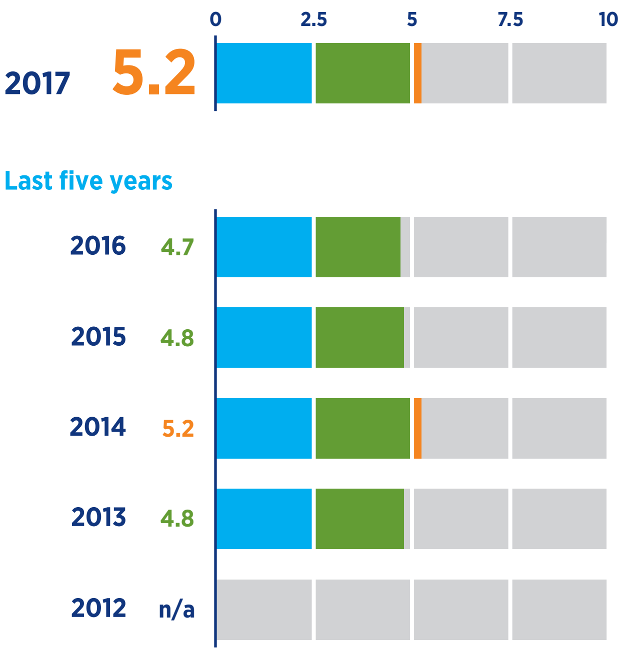
Economic growth in Chile in 2016 was well below the average for the last five years, limiting employers' need to expand. Still, there are some signs of labour market pressures in high-skill occupations and Chile's higher score in the Hays Global Skills Index this year reflects this.

Looking to the future, Chile's low rate of female participation in the labour market, at 58 per cent, could result in talent shortages. Chile also has the second-highest rate of temporary employment (29 per cent) among countries featured in the Index. Temporary contracts can provide flexibility for employers but may also limit their incentive to invest in their employees and at such a high percentage this has the potential to damage the talent pipeline of the future.

	2016	2017†
Population	18.2m	**18.3m**
GDP		
GDP (Billion CLP*)	172,695	**175,018**
GDP growth	1.5%	**1.3%**
GDP/head (CLP*)	9,512,927	**9,545,177**
Unemployment		
Unemployment rate	6.7%	**6.9%**
Long-term unemployment rate	n/a	**n/a**

*2017 prices †Average forecast figures for 2017

Overall Index score



Key drivers

Talent mismatch
The rate of unfilled vacancies fell to low levels relative to the past, suggesting businesses are finding it easier to find and retain employees with the right skills.

Wage pressure in high-skill industries
Fast wage growth in lower-skill industries, including fishing and hospitality, outstripped that in high-skill ones, narrowing the spread of wages across industries.

Wage pressure in high-skill occupations
The most highly-skilled occupations witnessed fast wage growth, increasing occupational wage dispersion in Chile.

Note: Chile was included in the Hays Global Skills Index for the first time in 2013.

For a full list of indicators scores, view page 52

View from the ground

We have seen a softening and inconsistency in GDP growth versus the recent historic trends in Chile. As a consequence, there has been a spike in unemployment leading to a particular availability of skilled talent. However, with the completion of successful Presidential elections and an improved global backdrop, more certainty is already being felt. We anticipate that 2018 will see an improved environment with many businesses restarting and beginning major projects. As this happens, we expect the availability of talent to quickly diminish with a material impact on salaries. Therefore early movers will benefit from talent attraction at a competitive level.

Luis Fernando, Regional Director, Hays Chile

Key skills in demand

- Sales professionals
- Senior controllers
- Developers
- Site managers
- Logistics & operations professionals

Note: The analysis on which the Hays Global Skills Index was based utilised data as of Q2 2017. Developments subsequent to this date are not reflected in the 2017 findings.
* Chile was included in the Hays Global Skills Index for the first time in 2013.

COLOMBIA

Like several other Latin American countries, economic growth in Colombia in 2016 was well below the average in the previous five years, although growth is forecast to pick up slightly in 2017.

Despite a modestly improving economy, the unemployment rate is forecast to rise slightly in 2017, to 9.4 per cent. That is up from 9.2 per cent in 2016.

Looking forward, the supply of skilled labour is forecast to expand. A growing working age population – forecast to increase by nearly 5 per cent between 2015 and 2020 – coupled with rising labour force participation rates means employers will have a growing pool of labour to choose from.

	2016	2017†
Population	48.6m	**49.0m**
GDP		
GDP (Billion COP*)	905,809	**919,396**
GDP growth	2.0%	**1.5%**
GDP/head (COP*)	18,626,932	**18,752,086**
Unemployment		
Unemployment rate	9.2%	**9.4%**
Long-term unemployment rate	n/a	**n/a**

*2017 prices †Average forecast figures for 2017

Overall Index score‡

2017 **6.3**

Last five years

2016 6.1

2015 5.9

2014 6.0

2013 n/a

2012 n/a

Note: Colombia was included in the Hays Global Skills Index for the first time in 2014

‡ Due to the lack of availability of Colombian occupational wage data, the Overall Index score was calculated using six indicators

Key drivers

Education flexibility
Education flexibility has improved, giving businesses access to a larger pool of graduate talent. There is an emphasis on educational reform in Colombia's latest National Development Plan.

Talent mismatch
A lack of workers with the right mix of skills to meet the diverse needs of employers is increasing pressure on the labour market.

Overall wage pressure
After two years of declining employee earnings, they are now forecast to rise by 2.8 per cent as the economy begins to pick up.

For a full list of indicators scores, view page 52

View from the ground

The expected economic growth rate is projected to increase 1.5%. A number of factors are generating this growth, including the historic peace agreement (to end more than 50 years of the Colombian conflict), higher oil prices and the start of infrastructure projects. Private consumption, the motor of the Colombian economy, will grow moderately and the unemployment rate is projected to change slightly from 9.2% to 9.4%. Finally, as the effects of the climate cycle, El Niño, wear off, inflation is projected to return to the central bank target range of 2 to 4 per cent by the end of 2017.

Axel Dono, Managing Director, Hays Colombia

Key skills in demand

- Business unit managers
- Product managers
- Supply chain managers
- Financial controllers
- HR managers with labour relations experience

Note: The analysis on which the Hays Global Skills Index was based utilised data as of Q2 2017. Developments subsequent to this date are not reflected in the 2017 findings.
*Colombia was included in the Hays Global Skills Index for the first time in 2014.

MEXICO

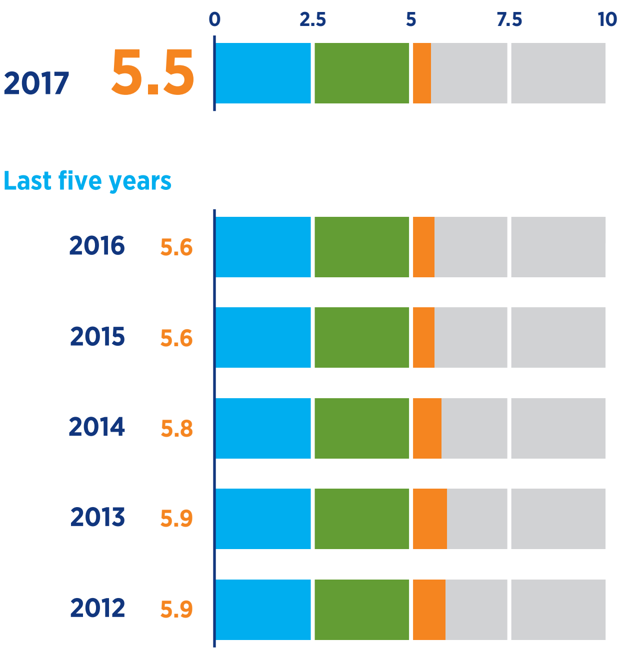
GDP growth in Mexico was lower in 2016 than all but one of the last five years. If low growth continues this year, businesses' recruitment plans are likely to be modest.

Mexican businesses wanting to expand their headcount in the future are likely to benefit from the country's increasing working age population, although an ongoing challenge is that Mexico has the third lowest female labour force participation rate (49 per cent) among the 33 countries featured in the Hays Global Skills Index. That is lower than many other Latin American countries, including Brazil (62 per cent), Colombia (63 per cent), and Chile (58 per cent). This remains a significant pool of untapped labour.

	2016	2017†
Population	128.8m	**130.4m**
GDP		
GDP (Billion MXN*)	20,698	**21,230**
GDP growth	2.0%	**2.6%**
GDP/head (MXN*)	160,661	**162,787**
Unemployment		
Unemployment rate	3.9%	**3.7%**
Long-term unemployment rate	0.08%	**0.07%**

*2017 prices †Average forecast figures for 2017

Overall Index score



Key drivers

Talent mismatch
Talent mismatch has improved, with falling levels of long-term unemployment reducing the risk of the labour force losing skills.

Overall wage pressure
Mexican firms are expected to benefit from more competitive wages (lower wage pressure) in 2017, as inflation is forecast to erode real wage growth.

Wage pressure in high-skill industries
Industry wage pressures in high-skill industries has eased, as the gap between wages in high- and low-skill industries has declined.

For a full list of indicators scores, view page 52

View from the ground

Mexico is optimistic in its drive to maintain growth trends, despite adverse external and internal factors that have kept GDP growth low and short of the initial forecast. The key challenge has been maintaining foreign investment interest throughout the electoral period – this has been sustained by the geopolitical 'Mexican moment' as the country searches for new allies as well as new exporting territories. Mexico is currently facing a demographic transition, presenting an opportunity to produce professionals with the skills required by businesses. The current workforce, and those on the brink of joining it, will need further training in order to meet the number of highly-skilled workers needed. The biggest potential for untapped professionals lies in the inclusion of women into highly-skilled sectors.

Gerardo Kanahuati, Managing Director, Hays Mexico

Key skills in demand

- Quality managers
- Engineering plant managers
- Sales managers/directors
- Solution sales
- HR generalists/senior management

Note: The analysis on which the Hays Global Skills Index was based utilised data as of Q2 2017. Developments subsequent to this date are not reflected in the 2017 findings.

UNITED STATES

The United States' continued recovery from the global recession has had a mixed impact on the labour market overall.

In recent years, the US unemployment rate has decreased, leaving a smaller pool of available workers. However, wage growth in the current recovery has been relatively slow, which suggests that employers are not yet feeling overly constrained by an inability to find employees.

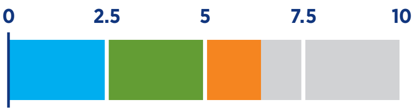
Looking to the future, the US faces some powerful structural challenges. The baby boomers are beginning to retire and this may make it harder for employers to find experienced staff. At the same time, key indicators of labour market fluidity, including people's willingness to change jobs and move between sectors, seem to be declining.

	2016	2017†
Population	324.0m	**326.6m**
GDP		
GDP (Billion USD*)	18,922	**19,311**
GDP growth	1.5%	**2.1%**
GDP/head (USD*)	58,401	**59,122**
Unemployment		
Unemployment rate	4.9%	**4.4%**
Long-term unemployment rate	0.64%	**0.59%**

*2017 prices †Average forecast figures for 2017

Overall Index score

2017 **6.4**



Last five years

2016 6.6
2015 6.9
2014 6.3
2013 6.4
2012 6.4

Key drivers

Talent mismatch
Despite the score still being high, the US' talent mismatch indicator is lower this year than last due to the country's long-term unemployment rate declining.

Overall wage pressure
Overall wage pressure in the US is expected to decline due to slowing real wage growth, with higher inflation offsetting nominal wage growth.

Wage pressure in high-skill occupations
The wage premium attached to high-skill occupations in the US has been falling, reducing occupation-specific wage pressures on the labour market.

For a full list of indicators scores, view page 52

View from the ground

GDP growth remains stable and positive, with 2.1 per cent expected in 2017, and we are seeing significant job growth in industries such as healthcare, construction and technology. However, most of these roles are skilled positions, which will further challenge skill-short markets and could put more pressure on salaries. In IT and technology, the talent mismatch is severely impacting businesses, with an excess of candidates in some areas and a scarcity in others. In other industries, such as construction, the ageing population means increasing retirement rates, which will increase the existing management skills gap. Healthcare, trade and tax reforms from the Trump administration are aimed at creating jobs, but it is too early to know the long-term impact of those changes.

Dan Rodriguez, Managing Director, Hays USA

Key skills in demand

- Software developers
- Cyber security professionals
- Construction estimators
- Clinical research associates
- Big Data professionals (data analysts/scientists)

Note: The analysis on which the Hays Global Skills Index was based utilised data as of Q2 2017. Developments subsequent to this date are not reflected in the 2017 findings.

AUSTRALIA

While still only displaying moderate labour market pressures overall, Australia's score in the Hays Global Skills Index has increased significantly since last year.

Australia's economy is forecast to grow by 2.5 per cent in 2017, equivalent to the growth rate experienced in 2016, which should see demand for labour remain high.

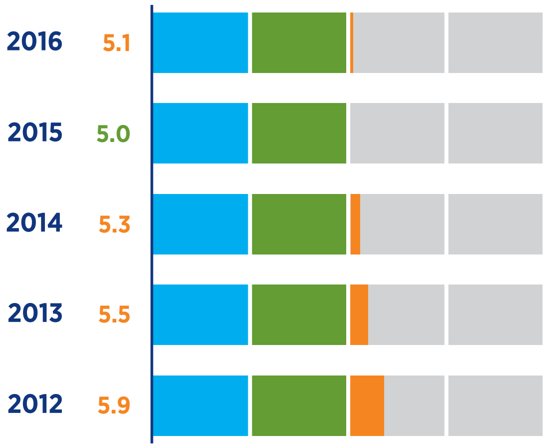
A sign of labour market challenges can be found in job vacancy rates, which rose in Australia in 2015 and 2016, suggesting employers find it increasingly difficult to attract and retain talented workers.

	2016	2017†
Population	24.3m	**24.7m**
GDP		
GDP (Billion AUD*)	1,754	**1,797**
GDP growth	2.5%	**2.5%**
GDP/head (AUD*)	72,186	**72,653**
Unemployment		
Unemployment rate	5.7%	**5.7%**
Long-term unemployment rate	1.4%	**1.3%**

*2017 prices †Average forecast figures for 2017

Overall Index score

Last five years



Key drivers

Labour market participation
Australia's labour market participation rate is expected to fall this year. Lower migration and an ageing population contribute to the shrinking labour force.

Talent Mismatch
An increase in the rate of unfilled vacancies combined with a rising long-term unemployment rate indicates that employers are finding it harder to source workers with the right skills.

Wage pressure in high-skill occupations
The largest driver of Australia's tightening labour market is the increasing gap between wages in high-skill occupations compared to lower-skill ones, relative to the past.

For a full list of indicators scores, view page 52

View from the ground

Australia's fluid job market is delivering career advancing opportunities as greater confidence and the need to support growth and business changes fuel permanent and temporary/contract job creation. But the talent required for these roles has changed, with highly-skilled professionals sought over those who perform routine or repetitive tasks that can be automated. At the same time, the labour force is shrinking and is less likely to possess the skills employers want. Add wage stagnation and Australia's overall score has returned to 5.5, a figure not seen since 2013. In such a market, will employees remain loyal or will voluntary staff turnover intensify? Early indications suggest the latter, making talent management and career and skills development more important than ever.

Nick Deligiannis, Managing Director, Hays Australia

Key skills in demand

- Digital experts (DevOps engineers and solutions architects)
- Engineers
- Senior accountants
- Financial planners
- Residential estimators

Note: The analysis on which the Hays Global Skills Index was based utilised data as of Q2 2017. Developments subsequent to this date are not reflected in the 2017 findings.

CHINA

After a long period of rapid industrialisation, Chinese firms are moving up the value chain, paying their staff higher wages and exiting some labour intensive sectors.

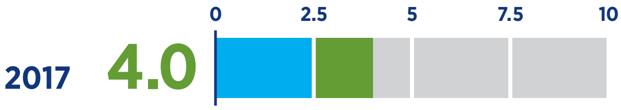
As China becomes more service-oriented, the country's economic growth rate is slowing. This is to be expected, because it is harder to increase productivity in services compared to industrial activities.

Wages in China are expected to rise by 5.8 per cent in 2017. That is slightly lower than in 2016, when wages grew by 6.3 per cent, but the growth rate is still higher than most other countries featured in the Hays Global Skills Index.

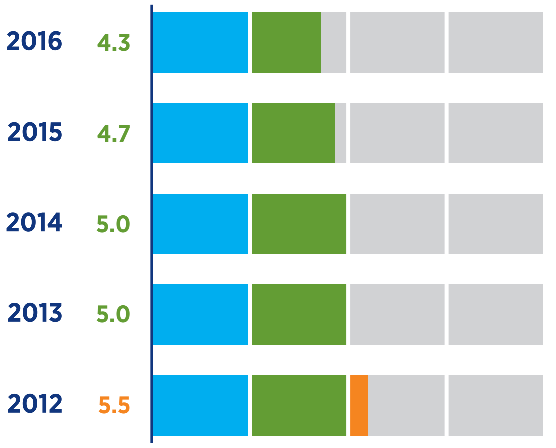
	2016	2017†
Population	1,383m	**1,389m**
GDP		
GDP (Billion CNY*)	77,323	**82,595**
GDP growth	6.7%	**6.8%**
GDP/head (CNY*)	55,913	**59,473**
Unemployment		
Unemployment rate	4.0%	**3.9%**
Long-term unemployment rate	n/a	**n/a**

*2017 prices †Average forecast figures for 2017

Overall Index score



Last five years



Key drivers

Labour market participation
Rising participation rates contributed to a fall in China's score this year, although growth in participation has begun to slow as it's dampened by falling youth participation rates.

Talent mismatch
A fall in unfilled vacancies as a proportion of total employment has contributed to China's lower score, indicating employers are finding it easier to find workers with the right skills.

Overall wage pressure
Overall wage pressure eased, with strong but slower real wage growth. Although lower than past levels, wage growth is the highest amongst the countries in the Hays Global Skills Index.

For a full list of indicators scores, view page 52

View from the ground

Mainland China's Overall Index score has steadily decreased over recent years, indicating an improved ability for the local labour market to meet the demands of employers. Organisations have continued to localise their workforces, showing a strong preference for local Chinese candidates when sourcing for both technical and management positions. Strong leadership and soft skills are required to secure the top vacancies, with an entrepreneurial mindset appealing to many rapidly growing Chinese-owned organisations. In line with increasing uncertainty in global economies, top talent is likely to be attracted to organisations able to demonstrate strong financial backing, positive management culture and tangible competitive advantages in their industry.

Simon Lance, Managing Director, Hays Greater China

Key skills in demand

- Internet, eCommerce and digital professionals
- R&D professionals in high-tech industries
- PE/VC and M&A experts
- Business development and account management professionals
- Audit, risk, compliance and legal professionals

Note: The analysis on which the Hays Global Skills Index was based utilised data as of Q2 2017. Developments subsequent to this date are not reflected in the 2017 findings.

HONG KONG

The working age population in Hong Kong is forecast by the UN to decline by 2.4 per cent between 2015 and 2020.

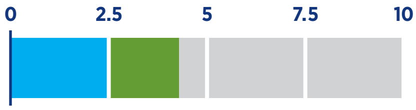
The challenging demographics in Hong Kong will pose a challenge for businesses looking to attract talented workers, as they will be in shorter supply. However, Hong Kong's flexible labour market and labour market participation rates that are expected to rise over the next few years will help counteract the shrinking working age population.

	2016	2017†
Population	7.4m	**7.4m**
GDP		
GDP (Billion HKD*)	2,535	**2,613**
GDP growth	2.0%	**3.0%**
GDP/head (HKD*)	344,906	**352,765**
Unemployment		
Unemployment rate	3.4%	**3.1%**
Long-term unemployment rate	n/a	**n/a**

*2017 prices †Average forecast figures for 2017

Overall Index score

2017 **4.3**



Last five years

Key drivers

Education flexibility
Hong Kong's strong record for educational attainment continues to provide employees with a talent pipeline to hire from.

Labour market participation
Hong Kong's higher labour market participation rates eased labour market pressures as they gave employers a larger pool of workers to pick from. Rising rates are important given the expected fall in the working age population in the future.

Labour market flexibility
Hong Kong's efficient and transparent business and labour regulation continue to contribute to a flexible labour market, meaning employees find it relatively easy to hire from outside Hong Kong.

For a full list of indicators scores, view page 52

View from the ground

Hong Kong's economy has a positive, but qualified, outlook for growth that is benefiting from the ever-growing influx of Chinese capital into the territory and in time, it's recent membership to the Asian Infrastructure Investment Bank (AIIB). However, the pace of change in Hong Kong's financial services sector is increasing, and along with the emergence of new business models such as Hong Kong banks and other financial institutions entering into partnerships with FinTech businesses, this is putting an enormous strain on the pool of available talent. The upside is that financial institutions will be able to achieve their goals without major capital expenditure, which will also help to cement Hong Kong's profile as one of the world's top digital technology hubs.

Dean Stallard, Managing Director, Hays Hong Kong

Key skills in demand

- Cyber security experts
- Compliance professionals
- Digital marketing professionals
- Developers
- Sales professionals

Note: The analysis on which the Hays Global Skills Index was based utilised data as of Q2 2017. Developments subsequent to this date are not reflected in the 2017 findings.

INDIA

India's economy is growing quickly and businesses are able to benefit from favourable demographics, although significant labour market challenges remain.

India's economy is forecast to grow by 7.2 per cent this year, down from 7.5 per cent in 2016. Still, this growth rate is faster than any other country in the Hays Global Skills Index. Growth in India has been healthy in part because of structural reforms and a return to normal monsoon rainfall.

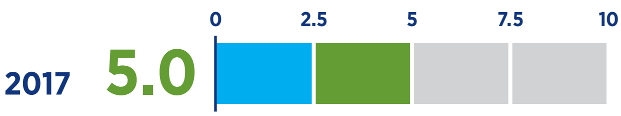
A potential challenge going forward is low labour market participation. This is among the lowest it has been in last couple of decades. This could have lasting labour market effects because people who could be gaining work experience are not, to the detriment of India's talent pipeline.

	2016	2017†
Population	1,329m	**1,345m**
GDP		
GDP (Billion INR*)	155,595	**166,361**
GDP growth	7.9%	**6.9%**
GDP/head (INR*)	117,093	**123,730**
Unemployment		
Unemployment rate	3.3%	**3.4%**
Long-term unemployment rate	n/a	**n/a**

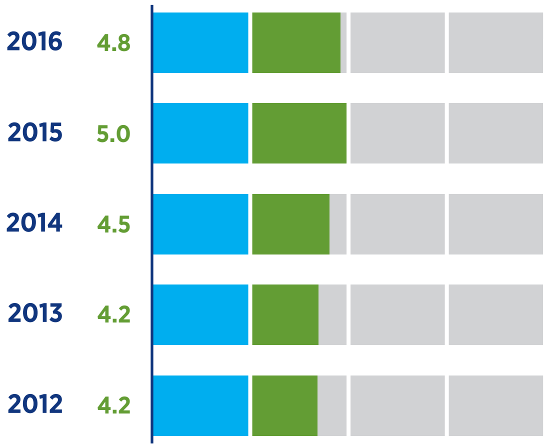
*2017 prices †Average forecast figures for 2017

ASIA PACIFIC

Overall Index score



Last five years



Key drivers

Education flexibility
The proportion of Indians holding degrees has not been growing. This may put pressure on expanding businesses seeking highly-skilled employees, with fewer graduates entering the labour market.

Labour market flexibility
India's rank among countries featured in the Index for ease of doing business, in terms of labour market regulations, has declined.

Wage pressure in high-skill industries
Wage growth in lower-skill industries has slowed, increasing the wage gap between high-skill industries and lower-skill ones.

For a full list of indicators scores, view page 52

View from the ground

There have been two major policy developments in India recently; the demonetisation of two of the highest banknotes (INR 500 and INR 1,000) as well as the introduction of Goods and Services Tax (GST) – the slight decline in GDP could be attributed to these unprecedented changes, however, the Government remains optimistic that previous levels of growth will return. Alongside these changes, the Government has introduced initiatives such as Startup India, Digital India, Make in India, etc. which, if implemented well, could lead to an increase in job opportunities involving a wide range of skills. Amidst all these local changes the Agile Indian corporates have demonstrated maturity and have designed programmes to ensure a talent pipeline, low levels of attrition and even a marginally reduced salary budget.

Matthew Dickason, Global Managing Director, Hays Talent Solutions

Key skills in demand

- Management professionals
- Chartered accountants
- Business analysts
- Software engineers
- Software application developers

Note: The analysis on which the Hays Global Skills Index was based utilised data as of Q2 2017. Developments subsequent to this date are not reflected in the 2017 findings.

JAPAN

Japan's unemployment rate is low, at 3.1 per cent in 2016, and labour market participation is relatively high, at 76 per cent. But despite these indications of a more pressured labour market, real wage growth has been slow.

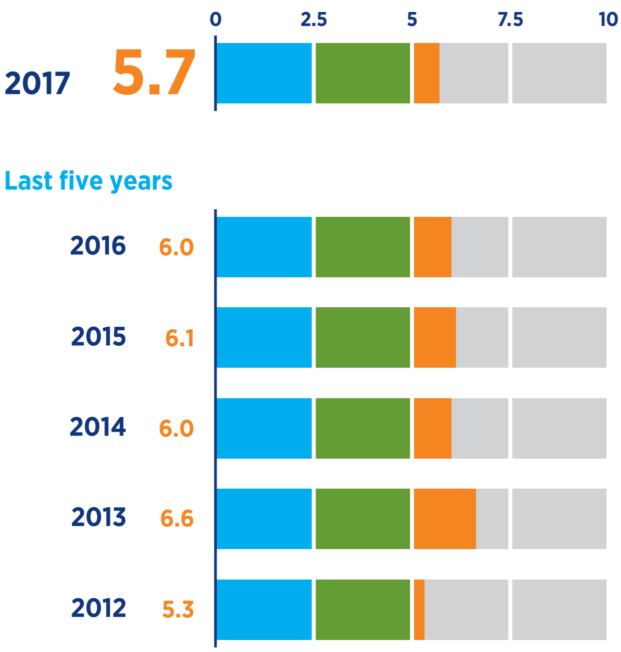
Part of the reason may be that the skillsets at Japan's disposal are not being used to their potential. According to the OECD, literacy and numeracy are very high in Japan, but many workers do not make full use of these skills while at work.

Going forward, Japan faces considerable challenges as its working age population shrinks. The number of people aged between 15 and 64 is forecast by the UN to shrink by 4.2 per cent between 2015 and 2020.

	2016	2017†
Population	126.3m	**126.0m**
GDP		
GDP (Billion JPY*)	535,244	**542,588**
GDP growth	1.0%	**1.4%**
GDP/head (JPY*)	4,238,107	**4,305,909**
Unemployment		
Unemployment rate	3.1%	**2.8%**
Long-term unemployment rate	1.2%	**1.1%**

*2017 prices †Average forecast figures for 2017

Overall Index score



Key drivers

Labour market flexibility
Japan's labour market flexibility has declined, with the latest World Bank 'Doing Business' findings highlighting structural problems and bureaucracy. Japanese businesses will therefore find it harder to employ workers as they come up against obstacles.

Overall wage pressure
The tightening of Japan's labour market has been offset to some extent by falling wage pressure. Whole economy wage growth has been sluggish.

Wage pressure in high-skill industries
Relatively slower wage growth in high-skill industries than lower-skill ones last year has reduced industry wage dispersion.

For a full list of indicators scores, view page 52

View from the ground

Japan is facing tough challenges in future-proofing its workforce as the working age population shrinks. The pace of technological change in the country creates opportunities for businesses to develop a new vision and purpose to attract talented millennials into their workforce by creating targeted and logical solutions built around automation, virtual collaboration and partnerships. Japan is grappling with the reform of its working practices in areas such as flexible working, diversity in all guises and skilled migration, as the Government looks to change how people work to improve productivity, the wellbeing of employees and to introduce measures that would stimulate growth in wages. Increasing wages is seen as critical in helping to unlock better growth opportunities for Japan.

Marc Burrage, Managing Director, Hays Japan

Key skills in demand

- Mobile application engineers
- Data scientists
- Medical doctors
- Junior HR bilingual candidates
- Senior digital marketing managers

Note: The analysis on which the Hays Global Skills Index was based utilised data as of Q2 2017. Developments subsequent to this date are not reflected in the 2017 findings.

MALAYSIA

Malaysia's Index score has declined substantially since last year. That suggests that conditions for firms looking to attract and retain talent have eased on average.

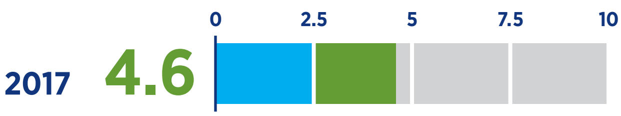
Productivity growth continues to underperform expectations in Malaysia. All else being equal, that will tend to reduce overall demand for unskilled workers and, along with inflation, is likely contributing to a subdued forecast for overall real wage growth in 2017.

However, in large parts of the skilled labour market shortages remain. In the first quarter of 2017 there were twice as many job vacancies as there were in the first quarter of 2016, indicating that there are certainly some employers that are struggling to find the workers they need.

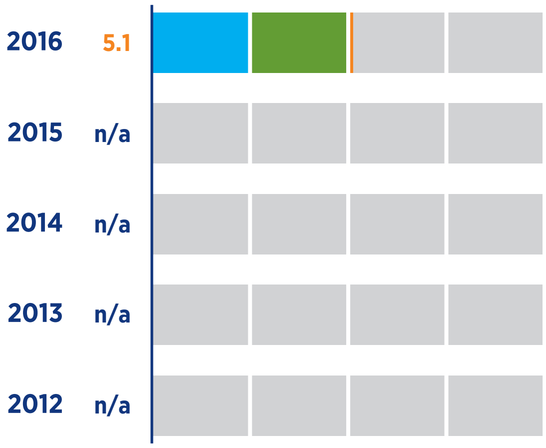
	2016	2017†
Population	30.8	**31.2**
GDP		
GDP (Billion MYR*)	1,296	**1,361**
GDP growth	4.2%	**5.0%**
GDP/head (MYR*)	42,088	**43,599**
Unemployment		
Unemployment rate	3.5%	**3.4%**
Long-term unemployment rate	n/a	**n/a**

*2017 prices †Average forecast figures for 2017

Overall Index score‡



Last five years



Note: Malaysia was included in the Hays Global Skills Index for the first time in 2016

‡ Due to the lack of availability of Malaysian structural unemployment data, we did not calculate the country's Talent Mismatch score and therefore the Overall Index score was calculated using six indicators

Key drivers

Labour market participation
Higher expected participation rates have further contributed to Malaysia's falling score, giving employers a larger pool of workers to hire from. The country has successfully increased female labour market participation.

Labour market flexibility
The World Bank's ranking of how regulated the Malaysian labour market is has improved, suggesting more flexibility for workers and employers relative to its competitors.

Overall wage pressure
Whole economy earnings are forecast to be unchanged this year.

For a full list of indicators scores, view page 52

View from the ground

Malaysia's economy has rebounded and continues to gain momentum across most industries. Although the attraction and retention of talent in Malaysia has eased in the unskilled working environment, the reality on the ground is that it remains a very competitive landscape for businesses to obtain and retain skilled employees. In almost every job function and nearly every industry within Malaysia, the skilled professional recruitment market has become more competitive this year and all indicators suggest this will not ease anytime soon. Businesses will need to show innovation and invest time in understanding what will attract the best talent in the future if they are to employ top talent in Malaysia and overcome the fundamental skill shortages that Malaysia experiences.

Tom Osborne, Regional Director, Hays Malaysia

Key skills in demand

- Cyber security experts
- Compliance professionals
- Digital marketing professionals
- Developers
- General managers

Note: The analysis on which the Hays Global Skills Index was based utilised data as of Q2 2017. Developments subsequent to this date are not reflected in the 2017 findings.

NEW ZEALAND

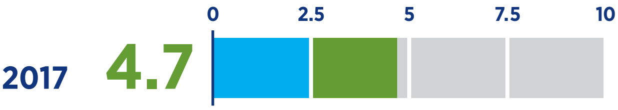
While New Zealand's economic growth is expected to moderate slightly in 2017 compared to 2016, employment is forecast to grow by 3.2 per cent, which is higher than the average for the last five years.

New Zealand's economy has benefitted from record high levels of net migration and labour force participation. A relatively high share (80 per cent) of New Zealand's immigrants are working age adults. These factors, contributing to a growing labour supply, have helped ease labour market pressures in the country.

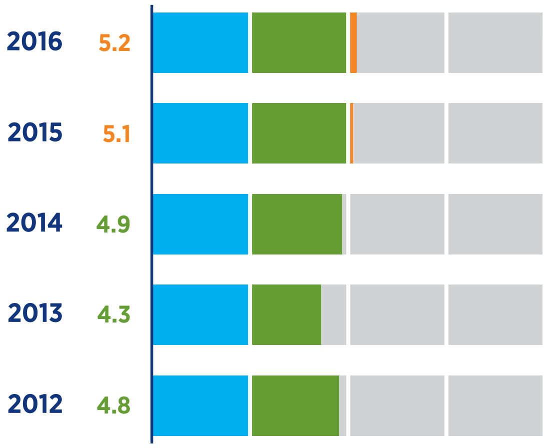
	2016	2017†
Population	4.6m	**4.6m**
GDP		
GDP (Billion NZD*)	269	**274**
GDP growth	3.6%	**1.9%**
GDP/head (NZD*)	58,947	**59,527**
Unemployment		
Unemployment rate	5.1%	**5.0%**
Long-term unemployment rate	0.72%	**0.71%**

*2017 prices †Average forecast figures for 2017

Overall Index score



Last five years



Key drivers

Labour market participation
New Zealand's participation rate has grown rapidly, reaching a record high of 70.5 per cent in the December 2016 quarter, according to the IMF. Strong working age population growth contributed to the growing labour supply.

Talent mismatch
New Zealand saw an improvement in its talent mismatch indicator, due to the number of people who have been out of work for a year or longer falling.

Wage pressure in high-skill industries
The average wage differential between workers in high-skill industries and lower-skill industries increased over the year.

For a full list of indicators scores, view page 52

View from the ground

Employers are capitalising on New Zealand's improved economy and flow of government and private projects by increasing permanent, temporary and contract headcounts. According to the Ministry of Business, Innovation and Employment, employment will grow by 2 per cent over the next three years to March 2020; the majority of growth will be for highly-skilled occupations. So while net migration and returning Kiwis are giving employers a larger pool of workers to choose from, the creation of new jobs is absorbing them, leading to high demand for skilled talent, particularly in high-skill industries. Adding to the skill shortage is a talent mismatch. In such a market, upskilling and talent management should be on the agenda of organisations large and small once more.

Jason Walker, Managing Director, Hays New Zealand

Key skills in demand

- Structural, civil and building services design engineers
- Professional practice auditors
- Quantity surveyors
- Software and digital technology specialists
- Project managers (construction and infrastructure)

Note: The analysis on which the Hays Global Skills Index was based utilised data as of Q2 2017. Developments subsequent to this date are not reflected in the 2017 findings.

SINGAPORE

Historically, Singapore's highly flexible labour market has kept labour market pressures to a minimum.

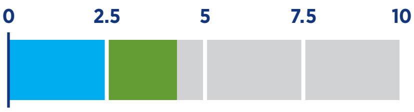
However, according to a UN survey about migration policy published in 2016, the Singaporean government is not seeking to attract as many skilled foreign workers as in previous years, which could lead to further skills shortages for sectors that rely heavily on importing people. Over the longer term, labour shortages may increasingly become worse, as the nation-state's working age population begins to decline within the next decade.

	2016	2017†
Population	5.6m	**5.7m**
GDP		
GDP (Billion SGD*)	416	**427**
GDP growth	2.0%	**2.7%**
GDP/head (SGD*)	74,073	**75,055**
Unemployment		
Unemployment rate	2.1%	**2.1%**
Long-term unemployment rate	0.8%	**0.8%**

*2017 prices †Average forecast figures for 2017

Overall Index score

2017 **4.3**



Last five years

Key drivers

Labour Market Participation
The labour market participation rate is forecast to rise by less in 2017 compared to the historical average increase for Singapore.

Talent mismatch
A fall in the rate of unfilled vacancies and falling structural unemployment suggests talent mismatch issues are declining.

Wage pressures in high-skill industries
The wage gap between high- and lower-skill industries narrowed, but remains high relative to past levels.

For a full list of indicators scores, view page 52

View from the ground

Singapore is well-positioned to be known as a smart nation, which is what the Economic Development Board wants to achieve. This will present Singapore as a digitally-networked environment with a particular focus on five key fields: transport, household and environment, productivity, healthcare and ageing, and the public services sector. Singapore's recruitment market continues to face disruption from current market volatility and the economic uncertainty that is fuelling it. The mounting challenge for businesses in the country will be to ensure their talent strategy is adapted accordingly to ensure they can attract, retain and engage talent.

Lynne Roeder, Managing Director, Hays Singapore

Key skills in demand

- Cyber security experts
- Change & transformation management experts
- Analyst and AVP level AML/KYC experts
- Accountants (commercially minded)
- Internal auditors (technology background)

Note: The analysis on which the Hays Global Skills Index was based utilised data as of Q2 2017. Developments subsequent to this date are not reflected in the 2017 findings.

AUSTRIA

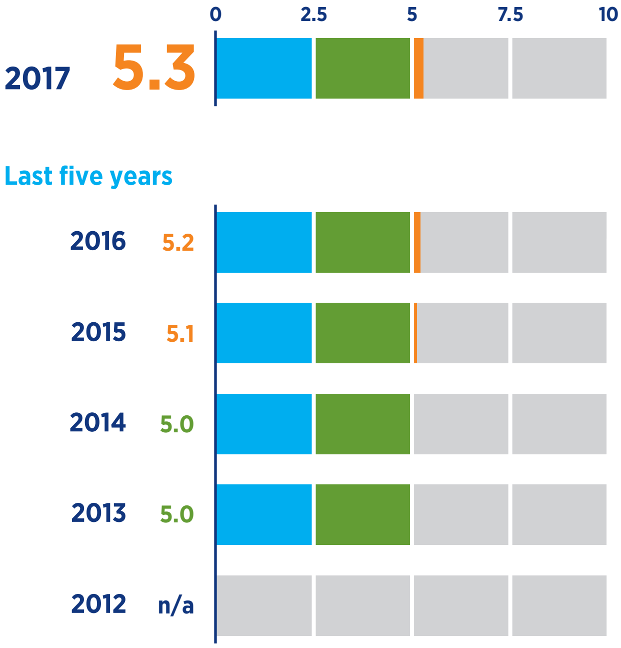
Austria's economy grew faster in 2016, at 1.6 per cent, than it had since 2011. If the economy expands by 2.7 per cent in 2017, as is forecast, there will be increased demand and competition for labour in the country.

Still, Austrian employers have benefited recently from increased labour supply because of restrictions on early retirement, increased female labour force participation and migration. Each of these trends act to ease the relative difficulty of attracting and retaining workers.

	2016	2017†
Population	8.6m	**8.7m**
GDP		
GDP (Billion EUR*)	355	**365**
GDP growth	1.6%	**2.7%**
GDP/head (EUR*)	41,161	**42,042**
Unemployment		
Unemployment rate	6.0%	**5.3%**
Long-term unemployment rate	1.9%	**1.7%**

*2017 prices †Average forecast figures for 2017

Overall Index score



Note: Austria was included in the Hays Global Skills Index for the first time in 2013

Key drivers

Talent mismatch
Employers in Austria may be struggling to recruit people with the right skills, with more unfilled job vacancies.

Labour market flexibility
The latest World Bank 'Doing Business' analysis indicates increased regulatory restraints in Austria's labour market which could restrict access to skilled migrants.

Overall wage pressure
Average employee earnings are forecast to fall slightly in 2017. Wage growth has been kept low by a growing supply of labour.

For a full list of indicators scores, view page 52

View from the ground

The relative easing witnessed recently in the wider labour market requires further examination to understand the different situation currently taking place within the highly-skilled labour market. The past year has shown that the demand for IT, life sciences and engineering professionals, as well as specific finance specialisms, has risen and there are more jobs than professionals available for the roles. This is creating additional pressure in highly-skilled sectors. Due to the collapse of the coalition government, there will be an election in Austria this year. As a result of the current international political atmosphere, the 'old' political parties are scrambling to show that they have new ideas and energy to carry Austria forward – only time will show what is to come.

Mark Frost, Managing Director, Hays Austria

Key skills in demand

- Software developers
- System engineers
- Risk managers
- Validation/qualification engineers
- Firmware developers

Note: The analysis on which the Hays Global Skills Index was based utilised data as of Q2 2017. Developments subsequent to this date are not reflected in the 2017 findings.

BELGIUM

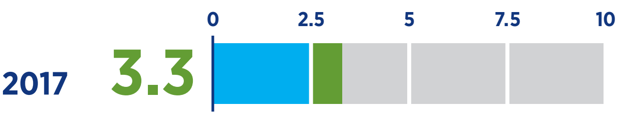
Belgium's labour market continues to exhibit a significant amount of slack, suggesting that many employers who want to expand and hire new people will not have great difficulty doing so in less high-skill niche areas.

Productivity growth, particularly in services, has been low in Belgium compared to its neighbours. Low productivity growth acts to dampen Belgium businesses' international competitiveness and reduces their demand for labour as a result.

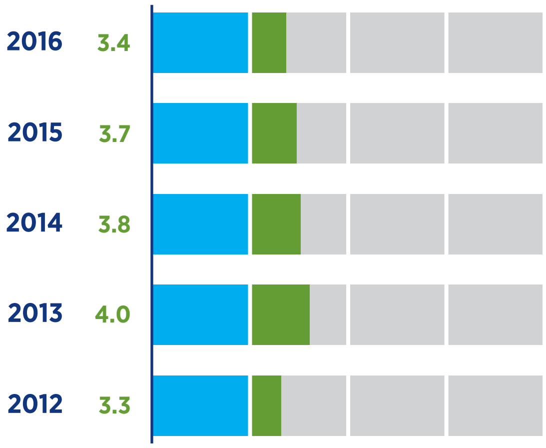
	2016	2017†
Population	11.3m	**11.4m**
GDP		
GDP (Billion EUR*)	429	**437**
GDP growth	1.2%	**1.7%**
GDP/head (EUR*)	37,846	**38,294**
Unemployment		
Unemployment rate	7.9%	**7.3%**
Long-term unemployment rate	4.1%	**3.8%**

*2017 prices †Average forecast figures for 2017

Overall Index score



Last five years



Key drivers

Labour market participation
Employers should benefit from Belgium's growing labour force. The largest rise in participation rates was among older workers.

Talent mismatch
The falling score indicates skills mismatch has improved in Belgium, meaning employers and employees are being more quickly matched in the labour market; however, skills shortages are still being experienced in highly-skilled niche areas.

Wage pressure in high-skill occupations
The difference in wages between high- and lower-skill occupations has increased, although it remains relatively low compared to the past.

For a full list of indicators scores, view page 52

View from the ground

2016 saw an increase of 59,000 jobs, of which over 44,000 were in the private sector. This means growth in jobs (1.4 per cent) was stronger than GDP growth (1.2 per cent) for the year. It's predicted that between 2017 and 2019 another 115,000 jobs will be created, with most of them in the industries and services sectors. Clear growth is expected in the scientific, and logistics and supply chain sectors: this is good news for Belgium, however, it means companies are finding it increasingly hard to find skilled professionals. Furthermore, Belgium is facing some challenges in the long-term: an ageing population, the advancement of technology, and the current global geopolitical environment. Belgium needs reforms to its labour market, the education system, mobility and the economic system.

Robby Vanuxem, Managing Director, Hays Belgium

Key skills in demand

- Engineers (industrial and civil)
- Technicians R&D/sciences
- Accountants
- IT developers/analysts
- Multilingual sales support

Note: The analysis on which the Hays Global Skills Index was based utilised data as of Q2 2017. Developments subsequent to this date are not reflected in the 2017 findings.

CZECH REPUBLIC

The Czech Republic working age population is expected to fall, according to the UN, by nearly 4 per cent between 2015 and 2020; although rising labour market participation rates have helped offset the challenges this would pose to companies looking to recruit workers in this environment.

While the Czech Republic's overall score does not suggest extreme pressures in its labour market, the direction of change indicates it has become harder to attract and retain unskilled workers.

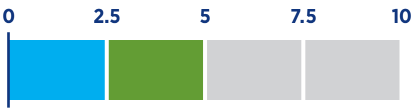
Two indicators of labour market tightness are that job vacancies increased in 2016, and the country's unemployment rate is forecast to fall from 4 per cent last year to 3 per cent this year.

	2016	2017†
Population	10.5m	**10.6m**
GDP		
GDP (Billion CZK*)	4,839	**5,007**
GDP growth	2.5%	**3.5%**
GDP/head (CZK*)	458,722	**474,259**
Unemployment		
Unemployment rate	4.0%	**3.0%**
Long-term unemployment rate	1.7%	**1.3%**

*2017 prices †Average forecast figures for 2017

Overall Index score

2017 **5.0**



Last five years

2016 4.7

2015 4.9

2014 4.8

2013 4.4

2012 4.6

Key drivers

Education flexibility
The proportion of graduates in the Czech population has been steadily increasing. All else being equal, this could help ease labour market pressures in the long term.

7.5

Talent mismatch
A sharp rise in unfilled vacancies suggests that employers in the Czech Republic are having an increasingly difficult time finding the employees they need.

5.3

Wage pressure in high-skill industries
The most recent data shows a narrowing of the gap in pay between people working in high-skill industries and lower-skill industries.

4.7

For a full list of indicators scores, view page 52

View from the ground

The positive development of the Czech economy continues, which is not only a reflection of strong export but also driven by an increase in household spend. Foreign companies and investors verified the competitiveness and quality of the labour force in the Czech Republic and have continued to shift operations with higher added value. Sectors such Manufacturing, IT and Business Services are continuing to expand, which leads to volume in newly created jobs and the need for new staff, followed by increase in wages in most sectors. Hunger for talent has brought the Czech Republic's unemployment rate to its lowest levels since the fall of the Iron Curtain. It's with regret that we're seeing insufficient flexibility from the education system to address actual business needs.

Ladislav Kučera, Managing Director, Hays Czech Republic

Key skills in demand

- Sales representatives
- IT developers
- QA engineers
- HR specialists
- English-speaking accountants

Note: The analysis on which the Hays Global Skills Index was based utilised data as of Q2 2017. Developments subsequent to this date are not reflected in the 2017 findings.

DENMARK

Denmark's score in the Hays Global Skills Index increased by more than any other country this year, indicating that employers may have a harder time attracting and retaining talented workers.

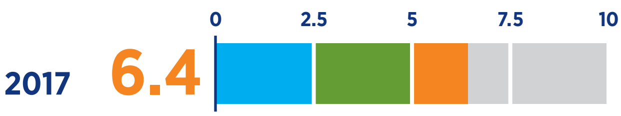
Labour shortages make it hard for Danish firms to find the talent they need in order to expand. Job vacancy rates rose in each of the last five years and in 2016 the rate stood at 1.8 per cent.

A rise in labour market participation could help, although Denmark's ageing population acts as a counterweight. In fact, within the next decade, the country's working age population is expected to decrease.

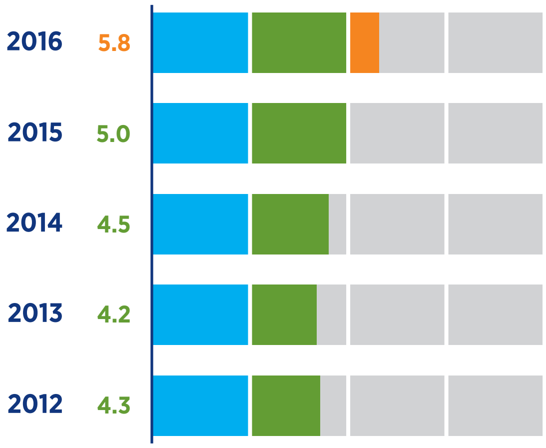
	2016	2017†
Population	5.7m	**5.7m**
GDP		
GDP (Billion DKK*)	2,097	**2,141**
GDP growth	1.7%	**2.1%**
GDP/head (DKK*)	368,885	**375,341**
Unemployment		
Unemployment rate	6.2%	**6.1%**
Long-term unemployment rate	1.39%	**1.36%**

*2017 prices †Average forecast figures for 2017

Overall Index score



Last five years



Key drivers

Talent mismatch
Higher unfilled vacancy rates suggest employers are having a more difficult time attracting and retaining the talented workers they need.

Overall wage pressure
The wage pressure facing Danish firms has increased considerably. Earnings growth is high relative to its European peers, a sign of the pressures present in its labour market.

Wage pressure in high-skill industries
The large increase in Denmark's overall score has been driven by a greater wage gap between high- and lower-skill industries.

For a full list of indicators scores, view page 52

View from the ground

Low employment in the Danish labour market has continued – especially regarding the highly-skilled labour market. However, there is a mismatch between the skills required by businesses and those skills available in the labour pool. This is evident in the amount of open positions across several industries and sectors, which are rarely filled with the available personnel. Education, training and retraining of individuals continue to be of vital importance in order to accommodate the needs of businesses going forward. The digitalisation of the workforce means that more and more companies are disregarding geographical location and turning to the option of looking across national borders in the search for the right talent.

Morten Andersen, Business Director, Hays Denmark

Key skills in demand

- Software developers
- Sales managers
- Business controllers
- Project managers
- Medical advisors

Note: The analysis on which the Hays Global Skills Index was based utilised data as of Q2 2017. Developments subsequent to this date are not reflected in the 2017 findings.

FRANCE

One of France's most persistent labour market issues is high unemployment. While good for businesses that want to expand their operations now, this may cause significant challenges in the long run.

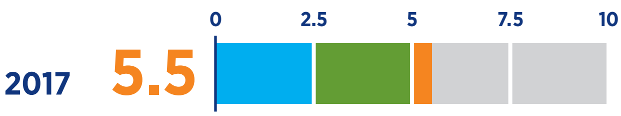
Nearly one in ten people who wanted a job in France could not find one in 2016. The persistently high unemployment rate could cause problems in the long run, since many people who could be in work, gaining skills and contributing to the talent pipeline of tomorrow, are currently unable to find employment.

This problem is even more pronounced among France's youth. Among those aged 15–24, one in every four people who want a job cannot find one.

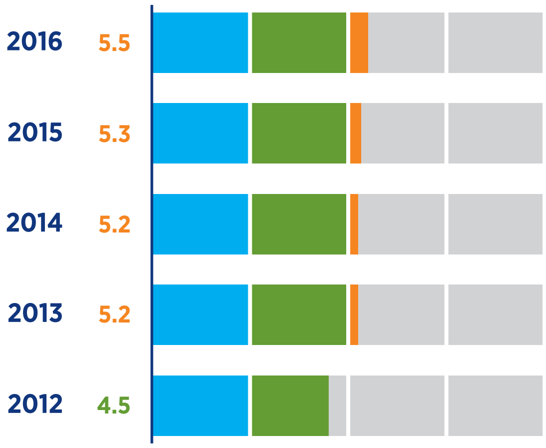
	2016	2017†
Population	66.6m	**66.9m**
GDP		
GDP (Billion EUR*)	2,245	**2,285**
GDP growth	1.1%	**1.8%**
GDP/head (EUR*)	33,680	**34,134**
Unemployment		
Unemployment rate	10.0%	**9.4%**
Long-term unemployment rate	4.5%	**4.2%**

*2017 prices †Average forecast figures for 2017

Overall Index score



Last five years



Key drivers

Talent mismatch
The gap between workers' skills and employers' needs has grown, with simultaneous high unemployment and job vacancies.

Overall wage pressure
Behind France's unchanged score, several indicators have moved considerably. Pressure on French employers has been eased somewhat by slower wage growth.

Wage pressure in high-skill industries
The wage premium on high-skill industries is high relative to the past, meaning employers are paying more to attract the skills they need.

For a full list of indicators scores, view page 52

View from the ground

The economic situation in France is gradually improving. Growth forecasts for the year 2017 are around 1.5 per cent according to INSEE and Banque de France sources. This is due to external factors such as oil prices, low interest rates and a low Euro valuation, as well as domestic influences including lower labour costs and low rates of tax. The labour market is benefiting from the recovery. The unemployment rate is falling but remains high and professionals are confronted with a strained market with almost full employment. Many companies are experiencing difficulties in finding the skills they need to develop. France is in a period of recovery but remains vulnerable to the slightest economic upset.

Tina Ling, Managing Director, Hays France & Benelux

Key skills in demand

- Tax specialists
- Cost estimation engineers
- Service technicians
- Developers
- Biostatisticians

Note: The analysis on which the Hays Global Skills Index was based utilised data as of Q2 2017. Developments subsequent to this date are not reflected in the 2017 findings.

GERMANY

Businesses looking to hire talented workers in Germany face a labour market with rising vacancies and a declining working age population.

Job vacancies have increased for two years in a row in Germany, standing at 655,000 in 2016. That figure continued to increase in the first half of 2017. Businesses looking to hire skilled people are likely to encounter a more pressured labour market than last year.

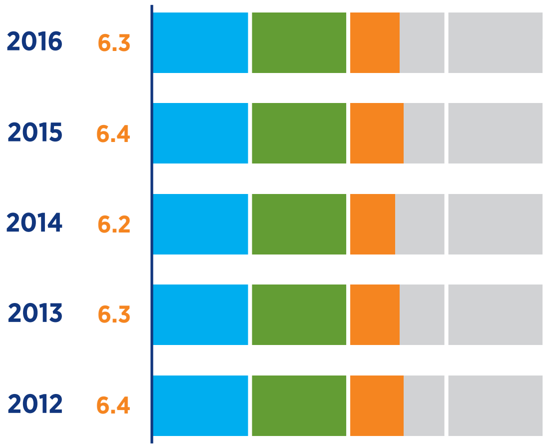
Further contributing to these challenges is Germany's falling working age population. The UN forecasts that in the five years between 2015 and 2020, the number of people between the ages of 15 and 64 will fall by about 3 per cent.

	2016	2017†
Population	82.2m	**82.6m**
GDP		
GDP (Billion EUR*)	3,165	**3,237**
GDP growth	1.8%	**2.3%**
GDP/head (EUR*)	38,483	**39,176**
Unemployment		
Unemployment rate	4.2%	**3.6%**
Long-term unemployment rate	1.7%	**1.5%**

*2017 prices †Average forecast figures for 2017

Overall Index score

Last five years



Key drivers

Overall wage pressure
Overall, German firms are benefiting from lower wage pressure. Wage growth has been slower than in recent years.

Wage pressure in high-skill occupations
Average wages in the highest-skill occupations have increased rapidly, putting pressure on businesses with these employees.

Wage pressure in high-skill industries
The gap in wages between high- and lower-skill industries continues to exert pressure on the labour market. Despite a slight fall, it was above historical averages.

For a full list of indicators scores, view page 52

View from the ground

The number of jobs in Germany is continuing to grow and is currently at a record level. This is mainly due to strong German business activities with foreign countries and greater investment by companies in digital business opportunities such as Industry 4.0. At the same time, the job market is continuing to narrow for digital professionals as demand increases and educational institutes need time to adjust to these new skills. Things are expected to become somewhat bleaker in the next few years as baby boomers begin retiring from 2020 and, due to low birth rates, won't be replaced in the market. The Government therefore needs to adopt a more flexible approach to retirement, as well as focusing on bringing in highly-skilled professionals from outside Germany when not available at home.

Klaus Breitschopf, Managing Director, Hays Germany

Key skills in demand

- Software developers
- Hardware developers
- IT consultants
- Project managers
- Business analysts

Note: The analysis on which the Hays Global Skills Index was based utilised data as of Q2 2017. Developments subsequent to this date are not reflected in the 2017 findings.

HUNGARY

The Hays Global Skills Index score for Hungary this year indicates continued pressures in its labour market.

Hungary's economy is forecast to grow by 3.7 per cent this year, up from 1.9 per cent in 2016. This healthy economic growth could lead to shortages in skilled labour for employers.

Two indications that show demand for skilled people is outpacing supply in Hungary include rising job vacancies in 2016 and forecasted real wage growth for 2017 at over 8 per cent, which would be the highest rate of growth since 2002.

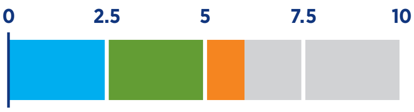
Part of the challenge for Hungary's employers is that the country's working age population is forecast to decline by nearly 5 per cent between 2015 and 2020.

	2016	2017†
Population	9.8m	**9.8m**
GDP		
GDP (Billion HUF*)	35,687	**37,025**
GDP growth	1.9%	**3.7%**
GDP/head (HUF*)	3,632,662	**3,775,930**
Unemployment		
Unemployment rate	5.1%	**4.4%**
Long-term unemployment rate	2.4%	**2.1%**

*2017 prices †Average forecast figures for 2017

Overall Index score

2017 6.0



Last five years

Key drivers

Labour market participation
The number of workers available to join the workforce continues to rise. This increases the pool of skilled labour available to Hungarian businesses.

4.3

Overall wage pressure
Overall, wages have grown rapidly in Hungary. This puts pressure on firms seeking to take on new workers.

5.0

Wage pressure in high-skill industries
The largest contributor to reduced labour market pressures has been the continuing fall in the gap in wages between high- and lower-skilled sectors.

5.4

For a full list of indicators scores, view page 52

View from the ground

While eye-catching headlines keep appearing about Hungary's lowering unemployment rate, companies have already started to feel the effects of the flipside of this phenomena. The scarcity of skilled workers is creating challenges nationwide and organisations are struggling to recruit the talent they need which makes it even more crucial for companies to retain their existing workers. Eastern regions are experiencing the biggest challenge when trying to recruit highly-skilled workers, as these regions offer 15–20 per cent less competitive salaries and as a result find it difficult when attempting to attract more capable and mobile workers from other regions.

Tammy Nagy-Stellini, Managing Director, Hays Hungary

Key skills in demand

- Quality engineers
- Automation engineers
- Java developers
- Data scientists
- Native mobile app developers

Note: The analysis on which the Hays Global Skills Index was based utilised data as of Q2 2017. Developments subsequent to this date are not reflected in the 2017 findings.

IRELAND

There are indications of less pressure in Ireland's labour market relative to the recent past. The country's lower Hays Global Skills Index score this year reflects that.

Ireland's economic growth has continued to outpace other countries in the Eurozone, which all else being equal would tend to increase demand for labour.

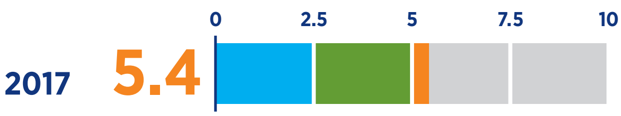
However, Ireland's working age population is growing. The UN forecasts 2.1 per cent growth between 2015 and 2020, partly due to the 1980 baby boom now bolstering the size of the working age population and partly through net inward migration.

In addition, Ireland's unemployment rate remains above the country's 2000-2008 average. These factors are helping to limit the difficulties employers might have attracting and retaining workers.

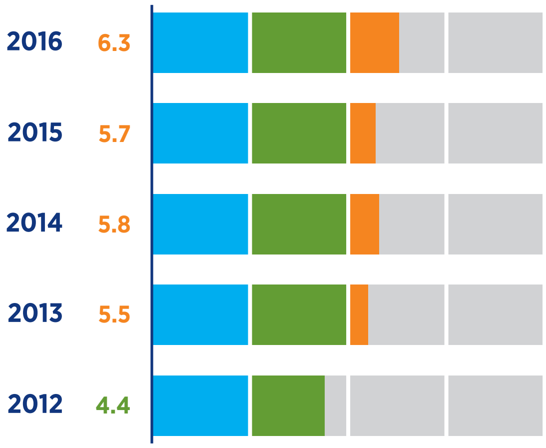
	2016	2017†
Population	4.7m	**4.7m**
GDP		
GDP (Billion EUR*)	278	**291**
GDP growth	5.1%	**4.5%**
GDP/head (EUR*)	59,160	**61,290**
Unemployment		
Unemployment rate	7.9%	**6.4%**
Long-term unemployment rate	4.4%	**3.5%**

*2017 prices †Average forecast figures for 2017

Overall Index score



Last five years



Key drivers

Labour market participation
The labour market is expected to benefit from rising participation rates. Demographics have been positive, with most of the increase in population coming from working age migrants.

Talent mismatch
Ireland's skills mismatch has improved, suggesting the imbalance between the skills employers are seeking and those workers are offering has declined. While employers are still finding it difficult to find in-demand skills, the situation has seen some improvement.

Overall wage pressure
Wage pressures on Irish firms eased across the economy, as overall real wage growth slowed considerably this year.

For a full list of indicators scores, view page 52

View from the ground

The Irish economy continues to go from strength to strength. The past twelve months has seen a real resurgence of activity in the construction sector, particularly much-needed investment in commercial development. Over the coming year we should see significant spending commitments in public infrastructure. Housing remains an issue and whilst demand continues to rise, we are yet to see this translate into significant new build volumes. Staff shortages prevail in the construction sector, and across the board there is an imbalance between supply and demand of many skills and professions. Salaries are starting to rise more than incrementally and renewed recruitment activity in the public sector is fuelling an already heated employment market.

Simon Winfield, Managing Director, Hays Ireland

Key skills in demand

- Software developers
- Bilingual sales roles (esp. German)
- Engineers
- Architects
- Auditors

Note: The analysis on which the Hays Global Skills Index was based utilised data as of Q2 2017. Developments subsequent to this date are not reflected in the 2017 findings.

ITALY

Unemployment has become a key long-term structural problem in Italy. Businesses looking to expand in the short term may benefit, but it will pose challenges in the future.

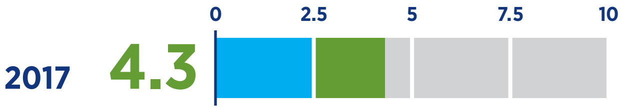
Nearly one in every eight people who want a job in Italy cannot find one and more than half of the unemployed have been so for a year or longer. Italy's youth unemployment rate is even more severe, at nearly 39 per cent.

Businesses looking for talented workers today therefore have a large pool of people to choose from. However, this could be a problem in the future, because unemployment will reduce the pipeline of experienced workers to tap into in the years to come.

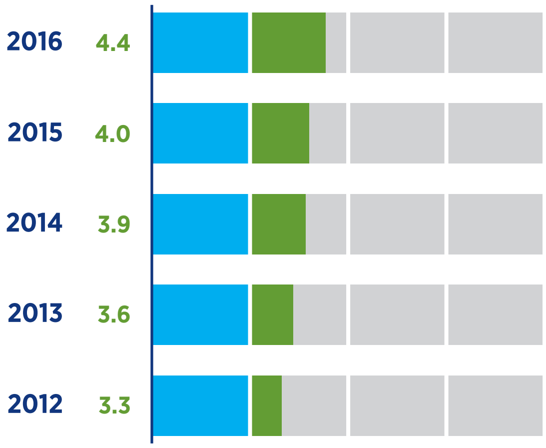
	2016	2017†
Population	61.2m	**61.2m**
GDP		
GDP (Billion EUR*)	1,683	**1,705**
GDP growth	1.0%	**1.3%**
GDP/head (EUR*)	27,491	**27,794**
Unemployment		
Unemployment rate	11.7%	**11.3%**
Long-term unemployment rate	6.8%	**6.6%**

*2017 prices †Average forecast figures for 2017

Overall Index score



Last five years



Key drivers

Labour market participation
Italy's labour market participation is forecast to decline slightly this year. This is unlikely to put significant pressure on growing firms, as high unemployment means there is less pressure.

Overall wage pressure
Wage pressure on Italian businesses has eased. Real wages are expected to fall this year, with modest inflation eroding small nominal increases.

Wage pressure in high-skill industries
Relatively large falls in average wages in high-skill sectors such as professional and scientific activities reduced the wage gap between high- and lower-skill industries.

For a full list of indicators scores, view page 52

View from the ground

Unemployment has become a key long-term structural problem in Italy, with the figure now standing around 11.5 per cent, and the picture is even more severe when looking at long-term youth unemployment, at 39 per cent. In the short term, this could be an advantage for businesses looking to expand as they have a large pool of skilled workers to choose from. However, the situation could affect businesses' growth ambitions in the future, as unemployment will reduce the number of experienced workers in the years to come. This year, the pressure on Italian businesses will ease as real wages are expected to fall and labour market participation is forecast to decline slightly. Moreover, the wage gap between high- and low-skilled industries will decrease due to the relatively large falls in average wages in high-skill sectors.

Carlos Soave, Managing Director, Hays Italy

Key skills in demand

- Export managers
- CFO/finance managers
- Operation managers/plant managers
- Customer service managers
- Purchasing managers

Note: The analysis on which the Hays Global Skills Index was based utilised data as of Q2 2017. Developments subsequent to this date are not reflected in the 2017 findings.

LUXEMBOURG

The Hays Global Skills Index score for Luxembourg increased this year, suggesting there is more pressure in the labour market.

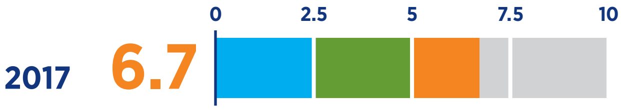
Overall wages are expected to grow in 2017 by 1.3 per cent, which is faster than in 2016 (0.5 per cent) and indicative of stronger competition among employers for talented workers.

Labour market pressures might be higher in Luxembourg if not for the country's growing working age population. The UN expects growth of 5 per cent between 2015 and 2020, which will increase the size of the labour pool. The increase is driven in large part by a high net immigration rate relative to the country's population.

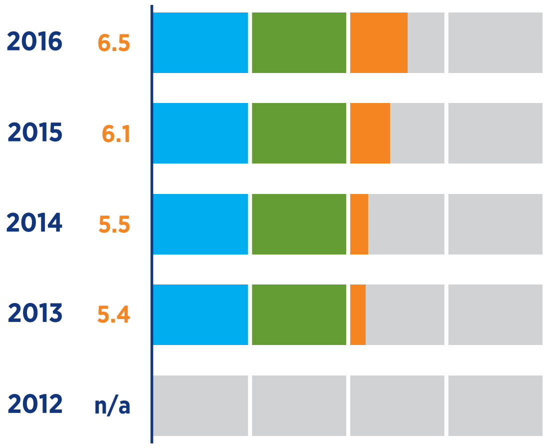
	2016	2017†
Population	0.6m	**0.6m**
GDP		
GDP (Billion EUR*)	56	**58**
GDP growth	4.2%	**3.8%**
GDP/head (EUR*)	98,558	**101,208**
Unemployment		
Unemployment rate	6.3%	**6.0%**
Long-term unemployment rate	2.5%	**2.4%**

*2017 prices †Average forecast figures for 2017

Overall Index score



Last five years



Note: Luxembourg was included in the Hays Global Skills Index for the first time in 2013

Key drivers

Talent mismatch
Skills mismatches are a problem for Luxembourg, as job vacancy rates have risen recently.

Wage pressure in high-skill industries
Rising wages in services and retail increased pressure on Luxembourg's high-skill industries, relative to lower-skill ones.

Wage pressure in high-skill occupations
High-skill occupations experienced slower earnings growth than lower-skill ones. Trade and service workers saw relatively strong earnings growth.

For a full list of indicators scores, view page 52

View from the ground

Employment in Luxembourg continues to grow and this has resulted in a low unemployment rate of the working population at 6 per cent. This decrease does not reflect the ongoing demand for skilled workers. All sectors have benefited from this increased confidence and dynamism. We have seen notable increases in real estate activities (+7.3 per cent), business services (+6.6 per cent) and IT (+3.5 per cent). We have also observed a contrast between the stagnating Luxembourg automobile market compared to the rest of Europe (+4.6 per cent). Investors and analysts are showing upward confidence for this year, particularly with a more relaxed and calmer European backdrop than in recent years.

Tina Ling, Managing Director, Hays France & Benelux

Key skills in demand

- Java developers
- Cost estimation engineers
- Trilingual sales (FR/ENG/GER)
- Trilingual controllers (FR/ENG/GER)
- Trilingual assistants (FR/ENG/GER)

Note: The analysis on which the Hays Global Skills Index was based utilised data as of Q2 2017. Developments subsequent to this date are not reflected in the 2017 findings.

THE NETHERLANDS

Labour market conditions in the Netherlands have not changed significantly since last year. At 5.7, the country's Hays Global Skills Index score suggests some mild labour market pressures relative to the past.

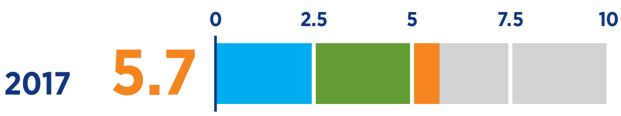
One example of labour market pressure is that job vacancies in the Netherlands grew in 2016, which indicates that employers are having some trouble finding the talented workers they need.

A fundamental structural challenge that employers in the Netherlands will likely encounter in the long run is that the UN expects the working age population to shrink by half a per cent between 2015 and 2020, and 1.8 per cent between 2020 and 2025. That means employers are increasingly dealing with a diminishing pool of talent.

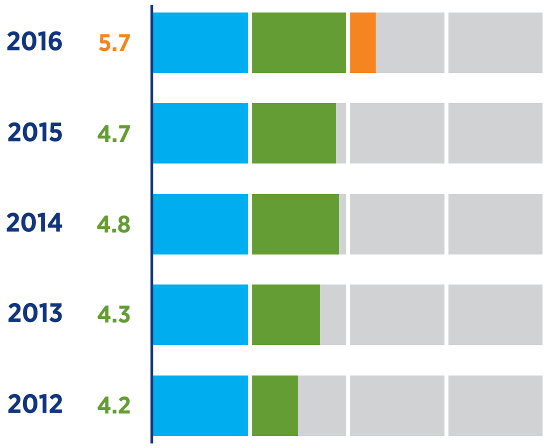
	2016	2017†
Population	17.0m	**17.0m**
GDP		
GDP (Billion EUR*)	710	**726**
GDP growth	2.1%	**2.2%**
GDP/head (EUR*)	41,823	**42,617**
Unemployment		
Unemployment rate	6.0%	**5.0%**
Long-term unemployment rate	2.6%	**2.1%**

*2017 prices †Average forecast figures for 2017

Overall Index score



Last five years



Key drivers

Talent mismatch
Last year the number of unfilled job vacancies rose for the third year in a row and the trend continued in the first quarter of 2017.

Overall wage pressure
While the Netherlands' labour market has remained stable overall, wage growth is expected to ease in 2017.

Wage pressure in high-skill occupations
Faster wage growth in high-skill occupations led to wider occupational wage dispersion than in the past. This puts pressure on businesses seeking highly-skilled staff.

For a full list of indicators scores, view page 52

View from the ground

At first glance the Overall Index score remains the same compared to last year; overall wage pressure is low and companies are able to recruit candidates for regular positions. At the same time the market has become tighter for highly-skilled positions; both the wage pressure and talent mismatch indicators show this with increases year-on-year. Employers are continuing to struggle to find candidates, while the number of vacancies has risen. In other words the market polarises: some niche markets are struggling for talent while others are having no issues recruiting for positions and therefore don't feel the same pressure. The new DBA Act for self-employed workers has created more uncertainty and will need amendments to it as soon as the new Government is appointed.

Robert van Veggel, Managing Director, Hays Netherlands

Key skills in demand

- Account managers
- Software engineers
- Project leaders
- Sales managers
- Online developers

Note: The analysis on which the Hays Global Skills Index was based utilised data as of Q2 2017. Developments subsequent to this date are not reflected in the 2017 findings.

POLAND

Overall, the Hays Global Skills Index score for Poland has fallen slightly this year because wages are expected to grow more slowly in 2017 than they did in the past.

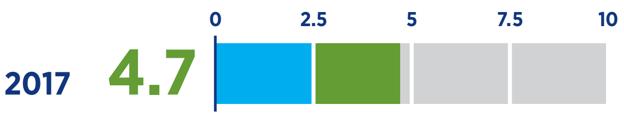
There is potential for this to change, however. The Polish economy is expected to grow faster in 2017 (3.9 per cent) than in 2016 (2.7 per cent), which could increase demand for skilled labour.

And like several other European countries, Poland's shrinking working age population – forecast by the UN to fall by 5.3 per cent between 2015 and 2020, partly because of net out migration – is reducing the talent pool available to businesses wanting to grow.

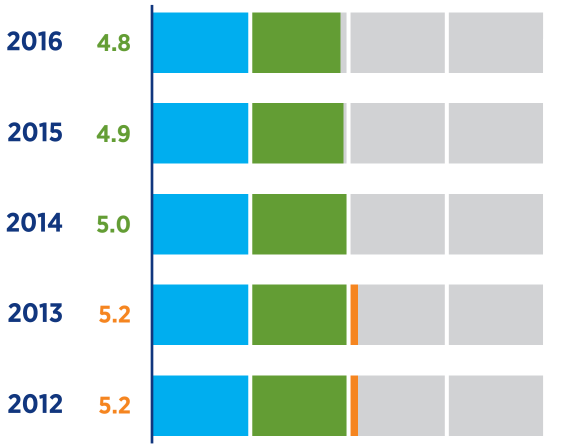
	2016	2017†
Population	38.1m	**38.1m**
GDP		
GDP (Billion PLN*)	1,899	**1,973**
GDP growth	2.7%	**3.9%**
GDP/head (PLN*)	49,906	**51,855**
Unemployment		
Unemployment rate	6.1%	**4.6%**
Long-term unemployment rate	2.1%	**1.6%**

*2017 prices †Average forecast figures for 2017

Overall Index score



Last five years



Key drivers

Talent mismatch
Last year the unfilled job vacancy rate rose for the third year in a row and the trend continued in the first quarter of 2017.

Overall wage pressure
Wage pressure eased in Poland overall. Wage growth was strong, but slower than the high increases seen in the past.

Wage pressure in high-skill industries
Downwards movement on Poland's overall score was driven by falling dispersion between wages in high- and lower-skill industries.

For a full list of indicators scores, view page 52

View from the ground

The continuation of solid growth and a record low unemployment rate, together with activities from new investors and the development of existing companies, is forecast to lead to faster economic growth in 2018. The labour market has performed well so far this year but is expected to tighten with a lowering of the statutory retirement age. Fiscal deficits are set to increase, reflecting higher public investment and social expenditures. Nevertheless, Poles rank among the top in the world in terms of optimism on the current state of the economy. In 2018 the labour force is forecast to continue shrinking. This results from a combination of a gradually falling working age population and recent policy measures that may discourage labour market participation, particularly of low-skilled people.

Charles Carnall, Managing Director, Hays Poland

Key skills in demand

- Developers
- Cyber security professionals
- Engineers (quality, process, R&D)
- Project managers
- HR business partners

Note: The analysis on which the Hays Global Skills Index was based utilised data as of Q2 2017. Developments subsequent to this date are not reflected in the 2017 findings.

PORTUGAL

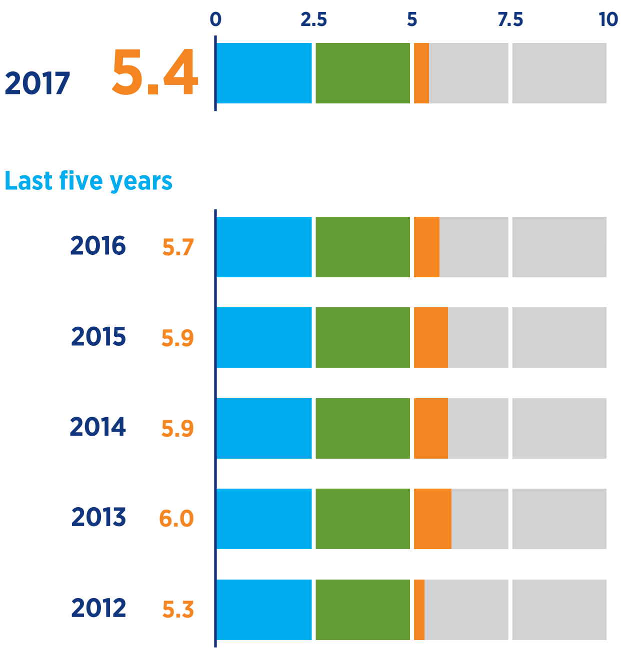
Eight years after the global recession, Portugal's economy remained 4 per cent smaller in 2016 than at the peak reached in 2008.

As Portugal's economy recovers, there are several labour market issues that will pose complications. For example, the country's high long-term unemployment, last measured at over 6.2 per cent and one of the highest among countries featured in the Hays Global Skills Index, means that many people will have seen their skills erode the longer they spend out of work. In addition, while a rising labour market participation rate may help offset the challenges of a declining working age population in 2017, in the years to come the country's demographics could cause problems for employers.

	2016	2017†
Population	10.4m	**10.3m**
GDP		
GDP (Billion EUR*)	188	**193**
GDP growth	1.4%	**2.9%**
GDP/head (EUR*)	18,144	**18,719**
Unemployment		
Unemployment rate	11.2%	**9.5%**
Long-term unemployment rate	6.2%	**5.3%**

*2017 prices †Average forecast figures for 2017

Overall Index score



Key drivers

Labour market participation
Labour market participation rates are expected to increase this year, helping to offset a declining working age population.

Talent mismatch
While talent mismatch remains an important issue for Portuguese businesses, long-term unemployment has declined, reducing the talent mismatch score.

Wage pressure in high-skill industries
Wage dispersion between high- and lower-skill industries has declined towards normal levels, driven by weak wage growth in several high-skill sectors.

For a full list of indicators scores, view page 52

View from the ground

After several years of instability, the Portuguese economy appears to have finally entered a positive cycle and this has been reflected in numerous growth opportunities for the labour market. Portugal has proved to be a preferred destination for foreign investment and the opening of several shared service centres has put some salary pressure on highly sought-after jobs or skills. Talent mismatch remains a big issue for Portugal but it is starting to be addressed, as the educational system seems to be making an effort to adapt its academic offering to the needs of the labour market.

Paula Baptista, Managing Director, Hays Portugal

Key skills in demand

- Full stack developers
- DevOps engineers
- Maintenance engineers
- Certified accountants
- Field market access managers

Note: The analysis on which the Hays Global Skills Index was based utilised data as of Q2 2017. Developments subsequent to this date are not reflected in the 2017 findings.

RUSSIA

The Russian economy shrank in each of the last two years, but is expected to begin to recover this year. This will likely increase labour demand.

However, businesses looking to expand and attract highly-skilled workers face a declining working age population. The number of people between the ages of 15 and 64 are forecast by the UN to fall by 5 per cent in the five years between 2015 and 2020. An expected rise in labour force participation rates in 2017, to just over 77 per cent, will partially offset this decline.

	2016	2017†
Population	143.4m	**143.3m**
GDP		
GDP (Billion RUB*)	89,809	**91,028**
GDP growth	-0.2%	**1.4%**
GDP/head (RUB*)	626,238	**635,058**
Unemployment		
Unemployment rate	5.5%	**5.4%**
Long-term unemployment rate	1.63%	**1.6%**

*2017 prices †Average forecast figures for 2017

Overall Index score

2017 **5.9**

Last five years

2016 5.9
2015 6.0
2014 6.1
2013 6.1
2012 5.7

Key drivers

Labour market flexibility
The inflexibility of Russia's labour market is making it difficult for businesses to manage their workforces as it is harder to hire the talent needed.

Talent mismatch
A slight fall in the rate of long-term unemployment contributed to the decline in the talent mismatch indicator.

Wage pressure in high-skill industries
There has been a recent narrowing of the gap between wages in high- and lower-skill sectors in Russia.

For a full list of indicators scores, view page 52

View from the ground

During the year, expectations from businesses with regard to sanctions being lifted weren't delivered; instead a further series of limitations made the situation even more severe. Despite this, companies have learnt to transform barriers into opportunities. This has translated into hiring activity, a decrease in the unemployment rate and overall stabilisation of the labour market. The coming years won't be easy either. The reason for this is a lack of relevant educational programmes, an ageing working population and a lack of high-skilled professionals. To ease these negative trends, the Russian Government proposes to prolong the retirement age, to reform the educational system and to introduce digital record books for employees. Businesses in turn are trying to attract regional workers via relocation programmes and are investing in training.

Alexey Shteingardt, Managing Director, Hays Russia

Key skills in demand

- Big data specialists
- Heads of international sanctions in compliance departments
- Regulatory managers
- Design engineers
- Sales and product managers

Note: The analysis on which the Hays Global Skills Index was based utilised data as of Q2 2017. Developments subsequent to this date are not reflected in the 2017 findings.

SPAIN

Last year, Spain's economy grew more rapidly than it had since 2007, and the unemployment rate fell from 22 per cent to under 20 per cent, suggesting demand for labour in the country is beginning to pick up.

If the economy continues to improve, one of the challenges for businesses looking to attract new people is the country's high long-term unemployment rate. Many people have seen their skills erode while out of work for extended periods of time, which will have diminished the pool of talent employers can choose from. In addition, Spain's working age population is expected to shrink by 1.3 per cent between 2015 and 2020, further restricting the number of people that the country's employers can tap into.

	2016	2017†
Population	46.3m	**46.2m**
GDP		
GDP (Billion EUR*)	1,126	**1,162**
GDP growth	3.2%	**3.2%**
GDP/head (EUR*)	24,320	**25,149**
Unemployment		
Unemployment rate	19.6%	**16.7%**
Long-term unemployment rate	9.5%	**8.1%**

*2017 prices †Average forecast figures for 2017

Overall Index score

2017 **6.1**

Last five years

2016	**6.5**
2015	**6.4**
2014	**6.3**
2013	**5.9**
2012	**5.5**

Key drivers

Education flexibility
Businesses in the skilled labour market should benefit from improving education flexibility, with a growing number of graduates in the recruitment pool.

Overall wage pressure
Wage growth is expected to be slightly negative overall this year.

Wage pressure in high-skill industries
Spain has experienced a recent narrowing of wide gaps in wages between high- and lower skill sectors. Many high-skill industries have seen low or negative wage growth in the recent past.

For a full list of indicators scores, view page 52

View from the ground

Political uncertainty has done little to dampen the economic recovery of Spain so far, with a sustained annual rate of GDP growth around 3 per cent. While this has generated an improved number of workers compared to recent years, we must remember that the labour market crisis has lasted a decade in Spain, yet we are still witnessing levels of unemployment that are triple the OECD average. Improved adaptation of worker skills to meet company needs is essential in order to build the balanced, sustainable model that must be the vision for the future. Flexibility is the watchword, with the areas of contract legislation and education and training potential areas for improvement.

Chris Dottie, Managing Director, Hays Spain

Key skills in demand

- Data analysts
- .net programmers
- Sales people with language skills
- Property portfolio managers
- Industrial engineers with language skills

Note: The analysis on which the Hays Global Skills Index was based utilised data as of Q2 2017. Developments subsequent to this date are not reflected in the 2017 findings.

SWEDEN

There are challenges for employers looking to attract and retain talent in Sweden, as indicated by the country's high score in the Hays Global Skills Index.

Wage pressures in Sweden, including overall wage pressures and those in higher-skill sectors of the economy, indicate that employers' demand for labour often outstrips supply.

A significant challenge is talent mismatch: the simultaneous existence of vacancies and people who are looking for a job yet cannot find one because the skills they offer are not those employers are seeking.

	2016	2017†
Population	9.8m	**9.9m**
GDP		
GDP (Billion SEK*)	4,474	**4,632**
GDP growth	3.0%	**3.5%**
GDP/head (SEK*)	454,426	**467,126**
Unemployment		
Unemployment rate	6.9%	**6.7%**
Long-term unemployment rate	1.2%	**1.1%**

*2017 prices †Average forecast figures for 2017

Overall Index score

2017 **7.0**

Last five years

2016 6.8

2015 6.7

2014 6.6

2013 6.3

2012 6.1

Key drivers

Talent mismatch
Swedish firms have been seeking to expand, with a growing number of job vacancies. The rate of these going unfilled indicate employers are struggling to find the right talent.

9.8

Overall wage pressure
Overall wage growth this year is expected to be slightly lower than the past.

7.2

Wage pressure in high-skill industries
Wage pressures continue to be felt unevenly. Fast wage growth in high-skill sectors such as ICT has led to a widening of the wage spread between high- and lower-skill industries.

10.0

For a full list of indicators scores, view page 52

View from the ground

The Swedish labour market is tougher than ever and as a result the Overall Index score has increased by 0.2 compared to the previous year. Companies in the high-skilled industries are struggling to find the right talent and thus wages in these niche industries are peaking. At the same time the Swedish labour market is becoming more fragmented as unemployment remains at rather high levels while wages are decreasing as politicians aim to create more jobs for the less-skilled workforce. In the short term we expect this trend to continue given little evidence of any changes to the Swedish education system in the near future. Today's system isn't flexible enough to adapt to the current needs of the labour market and produce the specific highly-skilled professionals that are desperately needed by businesses.

Johan Alsen, Managing Director, Hays Sweden

Key skills in demand

- Accounting
- Payrolling
- QA specialists
- Business/financial controllers
- Project management

Note: The analysis on which the Hays Global Skills Index was based utilised data as of Q2 2017. Developments subsequent to this date are not reflected in the 2017 findings.

SWITZERLAND

Switzerland's labour market is highly flexible and is therefore often able to avoid issues caused by pressures the labour market faces.

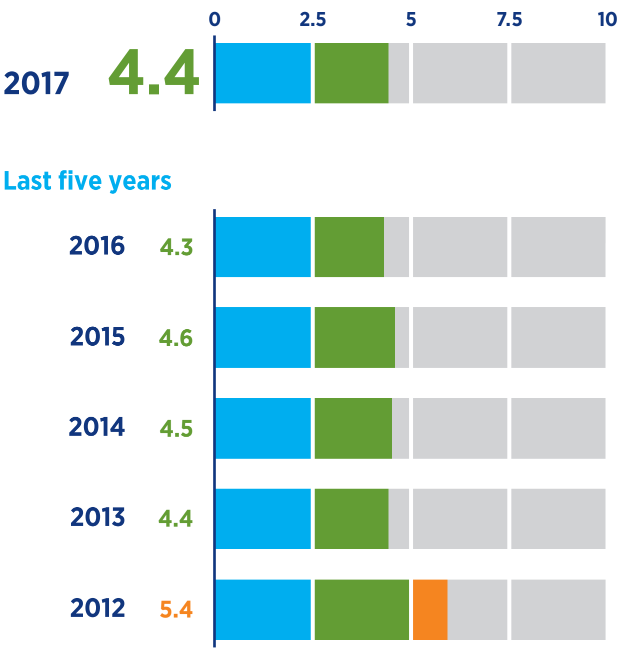
The country's flexible labour markets are underpinned by all-time high labour market participation rates – reaching 84 per cent of 15-64 year olds last year – and substantial net immigration rates relative to the country's population.

On the demand side, Switzerland's economic growth in 2016 was low relative to the historical average and growth is forecast to rise only slightly this year. If that expectation materialises, the strains on the country's labour markets are likely to be small.

	2016	2017†
Population	8.4m	**8.5m**
GDP		
GDP (Billion CHF*)	653	**663**
GDP growth	1.3%	**1.5%**
GDP/head (CHF*)	77,814	**78,205**
Unemployment		
Unemployment rate	3.3%	**3.5%**
Long-term unemployment rate	1.3%	**1.4%**

*2017 prices †Average forecast figures for 2017

Overall Index score



Key drivers

Education flexibility
Downward pressure came from a rise in education flexibility. Switzerland's ranking in the latest PISA release, relating to school education, improved, while graduate numbers rose.

Labour market flexibility
Switzerland's labour market continues to rank amongst the least regulated in the world, although dismissal costs can pose a challenge for employers.

Labour market participation
With participation rates already high compared to its peers, slow labour supply growth may put pressure on Swiss firms seeking to expand with a smaller pool of workers to choose from.

For a full list of indicators scores, view page 52

View from the ground

Switzerland's growth will be influenced strongly by the Swiss franc, digitalisation and demographic ageing. The Swiss franc has become a structural issue and is expected to stay strong in the long run. We expect digitalisation to create many opportunities for Switzerland as it will lead to structural changes and the emergence of new professional disciplines. The boundaries between IT and non-IT disciplines are becoming increasingly blurred. This is particularly the case in the engineering industry. As digitalisation requires skilled labour, we further expect that many outsourced projects will be transferred back to countries with highly-skilled labour forces such as Switzerland. We also see much innovation and growth potential in life sciences due to demographic ageing.

Marc Lutz, Managing Director, Hays Switzerland

Key skills in demand

- Quality specialists (life sciences)
- Hardware development engineers
- Clinical trial managers
- Software developers
- Relationship managers (banking)

Note: The analysis on which the Hays Global Skills Index was based utilised data as of Q2 2017. Developments subsequent to this date are not reflected in the 2017 findings.

UNITED ARAB EMIRATES

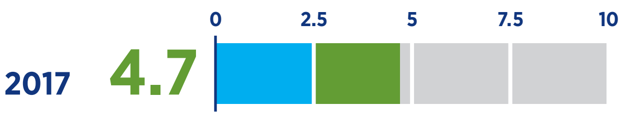
The United Arab Emirates' score in the Hays Global Skills Index is lower this year compared to last year, suggesting a larger pool of available candidates in the hiring market.

Employers in the United Arab Emirates are experiencing a growing working age population and high rate of immigration, both of which increase the country's skilled labour supply and contribute to high labour market flexibility. The United Nations Population Division's latest forecasts are that the number of people between the ages of 16 and 64 will grow by about 90,000 in 2017, an increase of 1.2 per cent compared to 2016.

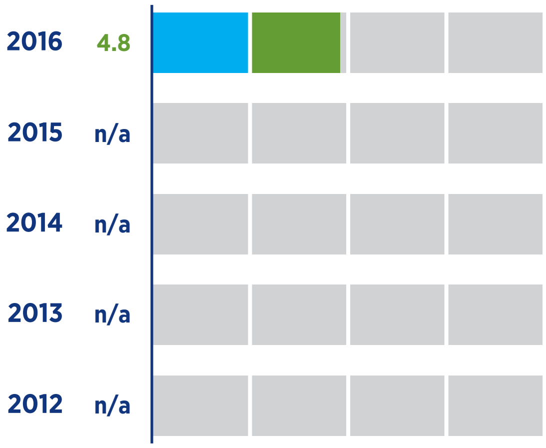
	2016	2017†
Population	9.3m	**9.4m**
GDP		
GDP (Billion AED*)	1,336	**1,359**
GDP growth	3.0%	**1.7%**
GDP/head (AED*)	143,833	**144,267**
Unemployment		
Unemployment rate	3.7%	**4.2%**
Long-term unemployment rate	n/a	**n/a**

*2017 prices †Average forecast figures for 2017

Overall Index score‡



Last five years



Note: UAE was included in the Hays Global Skills Index for the first time in 2016

‡ Due to the lack of availability of UAE structural and long-term unemployment and vacancies data, we did not calculate the country's Talent Mismatch score and therefore the Overall Index score was calculated using six indicators

Key drivers

Labour market participation
The fall in the UAE's overall score has been driven by increasing participation rates, providing firms with a growing labour supply. Youth participation is expected to grow significantly.

Labour market flexibility
The net migration rate fell slightly last year— although at 1.13 per cent the country still had one of the highest net migration rates in the world.

Overall wage pressure
Average wage growth in 2017 is forecast by Oxford Economics to be fairly similar to wage growth in 2016, albeit slightly lower.

For a full list of indicators scores, view page 52

View from the ground

Market conditions in the UAE remain challenging, with employers taking a cautious approach to hiring additional headcount. This, combined with the continued high level of immigration of labour in response to tax-free salaries, as well as cost-cutting activity (i.e. redundancies) that took place within many organisations in the previous 12 months, has seen an increase in the number of available candidates in the market. Optimistically, the high participation rates mean that there is no critical shortage of talent; however, the supply of candidates with specialist industry skills, who have amounted years of practical experience and who have already worked in the UAE market, are more limited than entry-level candidates.

Chris Greaves, Managing Director, Hays Gulf Region

Key skills in demand

- Senior sales managers
- Security specialists (information & cyber)
- Mobile development specialists (Android, IOS)
- Turnaround specialists – at FD/COO level
- Immediately available PAs – with past C-suite experience

Note: The analysis on which the Hays Global Skills Index was based utilised data as of Q2 2017. Developments subsequent to this date are not reflected in the 2017 findings.

UNITED KINGDOM

The UK economy grew faster than many expected following the June 2016 referendum vote to leave the European Union, although a fair amount of uncertainty about the future remains.

HM Treasury's comparisons of independent forecasts suggest subdued growth of between 1.25 per cent and 1.75 per cent in 2017 and 2018, as uncertainty over Brexit persists.

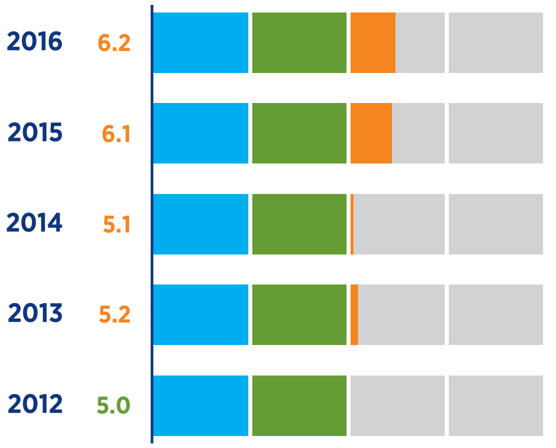
CBI survey evidence continues to point to the availability of skilled labour being a constraint in the immediate future. However, unlike several other major economies in Europe, the UK's working age population is growing, and the labour force participation rate is higher than it has ever been, at 78 per cent in 2016.

	2016	2017†
Population	65.6m	**66.1m**
GDP		
GDP (Billion GBP*)	1,980	**2,013**
GDP growth	1.8%	**1.7%**
GDP/head (GBP*)	30,161	**30,449**
Unemployment		
Unemployment rate	4.9%	**4.5%**
Long-term unemployment rate	1.3%	**1.2%**

*2017 prices †Average forecast figures for 2017

Overall Index score

Last five years



Key drivers

Talent mismatch
Businesses are finding it easier to recruit employees with the right skills, with unemployment, including long-term unemployment, falling. However, in niche high-skill areas skill shortages still persist.

Overall wage pressure
Overall wage pressure is expected to fall this year, as the growing labour force and a higher rate of inflation are forecast to cause real wages to fall, despite nominal growth.

Wage pressure in high-skill industries
Recent easing of wage pressures was most pronounced in high-skill relative to low-skill industries. ICT and professional services experienced the slowest growth as wages began to stabilise.

For a full list of indicators scores, view page 52

View from the ground

The UK economy remains relatively healthy despite the ongoing uncertainty due to Brexit and legislation, such as IR35, which is impacting on organisations' confidence to recruit and candidates' propensity to move. There is job growth in areas of continued investment, such as engineering and IT development/cyber security. Employers in these areas are competing for talent due to acute skill shortages and are looking for innovative ways to retain talent to enable them to remain competitive in these markets. Candidates in areas of skills shortages remain in high demand and can receive multiple job offers and counter offers. They are also commanding significant salary increases, but generally wage pressure is easing across the UK.

Nigel Heap, Managing Director, Hays UK

Key skills in demand

- IT security architects
- Data analysts
- Risk analysts
- Part-qualified accountants
- Civil engineers

Note: The analysis on which the Hays Global Skills Index was based utilised data as of Q2 2017. Developments subsequent to this date are not reflected in the 2017 findings.

2017 INDEX SCORES SUMMARY

Figure 10: Hays Global Skills Index indicators (by country)

	Overall Index score	Education flexibility	Labour market participation	Labour market flexibility	Talent mismatch	Overall wage pressure	Wage pressure in high-skill industries	Wage pressure in high-skill occupations
Australia	**5.5**	4.1	4.8	4.3	5.2	4.9	8.8	6.2
Austria	**5.3**	5.4	5.8	4.0	4.9	6.9	6.8	3.6
Belgium	**3.3**	5.9	5.6	3.7	0.4	2.7	0.0	4.5
Brazil	**5.5**	5.9	5.4	9.1	8.9	3.9	4.5	0.7
Canada	**5.3**	5.9	5.3	3.9	5.5	3.9	6.8	5.6
Chile	**5.2**	5.8	5.1	6.4	1.9	5.9	4.5	6.9
China	**4.0**	1.1	1.4	8.1	3.8	5.0	3.6	5.0
Colombia	**6.3**	5.9	8.3	7.3	6.7	6.1	3.3	n/a
Czech Republic	**5.0**	7.5	4.4	3.4	5.3	3.6	4.7	6.1
Denmark	**6.4**	6.0	4.7	3.5	9.1	8.7	8.2	4.9
France	**5.5**	4.1	4.5	8.1	7.6	3.9	6.2	3.8
Germany	**6.4**	6.2	5.4	6.9	3.5	5.7	9.7	7.5
Hong Kong	**4.3**	1.7	5.5	2.6	4.9	9.4	6.3	0.0
Hungary	**6.0**	8.0	4.3	4.9	9.5	5.0	5.4	4.7
India	**5.0**	0.8	4.1	8.7	5.0	6.5	4.9	5.0
Ireland	**5.4**	2.9	7.4	2.9	8.1	2.9	5.6	8.1
Italy	**4.3**	6.1	3.5	6.2	8.3	2.8	2.1	1.3
Japan	**5.7**	3.0	6.1	7.0	9.9	7.0	0.1	7.0
Luxembourg	**6.7**	5.5	4.5	3.6	10.0	9.8	9.1	4.4
Malaysia	**4.6**	5.3	3.6	5.8	n/a	3.0	5.1	4.8
Mexico	**5.5**	4.8	4.8	7.1	4.6	4.4	9.7	3.0
The Netherlands	**5.7**	4.7	6.9	4.6	5.3	5.3	7.8	5.5
New Zealand	**4.7**	4.7	3.3	4.2	4.6	2.6	10.0	3.3
Poland	**4.7**	4.9	4.4	6.7	6.1	3.9	4.5	2.7
Portugal	**5.4**	5.1	5.0	6.2	9.0	4.9	7.5	0.0
Russia	**5.9**	7.0	6.1	7.7	4.2	5.4	5.8	4.8
Singapore	**4.3**	0.7	5.6	0.7	5.9	2.5	8.2	6.3
Spain	**6.1**	4.2	7.3	5.2	10.0	3.9	7.9	4.0
Sweden	**7.0**	8.4	4.0	4.8	9.8	7.2	10.0	4.9
Switzerland	**4.4**	3.6	5.4	3.8	3.6	6.5	5.3	2.5
United Arab Emirates	**4.7**	8.7	4.8	1.7	n/a	6.5	1.5	5.0
United Kingdom	**5.2**	4.5	6.8	5.2	8.4	2.8	3.4	5.0
United States	**6.4**	6.5	3.6	4.7	9.3	5.8	9.8	4.8

CONTRIBUTORS

Hays

Hays has been helping organisations and businesses fill permanent positions, contract roles and temporary assignments, across the private and public sectors for nearly 50 years. As the world's largest specialist recruitment agency, last year alone Hays helped over a quarter of a million professional people worldwide find their next career role. With 10,000 staff operating from 250 offices across 33 countries, Hays is a market leader in the UK and Asia Pacific and one of the market leaders in Continental Europe and Latin America and has a growing presence in North America.

Hays works across 20 specialist areas, from healthcare to energy, finance to construction and education to IT. Its recruiting experts deal with 7 million CVs every year and conduct nearly 45,000 interviews per month. Last year Hays worked with clients, large and small, across the globe to find over 70,000 permanent employees and to fill 240,000 temporary assignments.

Every day Hays helps clients simultaneously dealing with talent shortages in certain markets, while having to reshape workforces in others. The nature of employment is also changing fast, with technological advances driving evolutions in the way people work. Hays understands these complexities and is uniquely positioned across its markets to solve them.

The depth and breadth of Hays' expertise ensures that it understands the impact the right individual can have on an organisation and how the right job can transform a person's life.

To find out more about Hays, visit haysplc.com

Oxford Economics

Oxford Economics was founded in 1981 as a commercial venture with Oxford University's business college to provide economic forecasting and modelling to UK companies and financial institutions expanding abroad. Since then, Oxford Economics has become one of the world's foremost independent global advisory firms, providing reports, forecasts and analytical tools on 200 countries, 100 industrial sectors and over 3,000 cities. The company's best-of-class global economic and industry models and analytical tools provide an unparalleled ability to forecast external market trends and assess their economic, social and business impact.

Headquartered in Oxford, England, with regional centres in London, New York, and Singapore, Oxford Economics has offices across the globe in Belfast, Chicago, Dubai, Miami, Milan, Paris, Philadelphia, San Francisco, and Washington DC. The company employs over 300 full-time people, including more than 200 professional economists, industry experts and business editors – one of the largest teams of macroeconomists and thought leadership specialists. The global team is highly skilled in a full range of research techniques and thought leadership capabilities, from econometric modelling, scenario framing, and economic impact analysis to market surveys, case studies, expert panels, and web analytics. Underpinning Oxford Economics' in-house expertise is a contributor network of over 500 economists, analysts and journalists around the world.

Oxford Economics is a key adviser to corporate, financial and government decision-makers and thought leaders. The company's worldwide client base now comprises over 1000 international organisations, including leading multinational companies and financial institutions; key government bodies and trade associations; and top universities, consultancies, and think tanks.

For more information, visit www.oxfordeconomics.com

Data sources for indicator scores

The analysis on which the Hays Global Skills Index was based utilised data as of Q2 2017. Developments subsequent to this date are not reflected in the 2017 findings.

Labour freedom
Heritage Foundation, Index of Economic Freedom

Improvements in education levels
Barro and Lee dataset (www.barrolee.com)

Change in economic participation rate (overall)
Oxford Economics Global Macro Model

Change in economic participation (15-24 year olds)
International Labour Organization (ILO)

Change in economic participation (55-64 year olds)
International Labour Organization (ILO)

Economic participation rate rank
International Labour Organization (ILO)

Long-term unemployment rate
Organisation for Economic Co-operation and Development (OECD), National statistical agencies

Vacancies (000s)
Organisation for Economic Co-operation and Development (OECD), Eurostat, National statistical agencies

GDP (LC, real, billion)
Oxford Economics Global Macro Model

GDP growth (real)
Oxford Economics Global Macro Model

Population (mn)
Oxford Economics Global Macro Model

Real earnings
Oxford Economics Global Macro Model

Earnings by industry
National statistical agencies

Earnings by occupation
National statistical agencies

Unemployment rate
Oxford Economics Global Macro Model

GDP/head (LC, real)
Oxford Economics Global Macro Model

Non-Accelerating Inflation Rate of Unemployment (NAIRU)
Oxford Economics Global Macro Model

CPI inflation
Oxford Economics Global Macro Model

Net migration
US Government

International Surveys of Educational Attainment in reading, mathematics, and science
PISA: Programme for International Student Assessment (OECD)
TIMSS: Trends in International Mathematics and Science Study (Boston College, TIMSS & PIRLS International Study Center)
PIRLS: Progress in International Reading Literacy Study
PIAAC: Programme for the international assessment of adult competencies (OECD)
LLECE: Latin American laboratory for assessment of the quality of education (UNESCO)
Educational Attainment (UNESCO)

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