KfW Research
Focus on Economics

»» Is there no end to Germany's jobs boom? What we can do now to meet our skills needs in the future

No. 216, 16 July 2018

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Employment in Germany has been growing for thirteen years now and the unemployment rate has dropped by half in the same period. The German economy has not seen such an extended period of employment growth for more than 50 years. Germany appears to have found the right recipe for successful employment policy.

But the growing skills shortage is raising fears that the jobs boom will soon come to an end as the supply of new workers begins to tighten. That would not just hit domestic enterprises but also lead to more bottlenecks in the supply of goods and services. What is more, many employees fear losing their jobs to digitalisation and global competition.

Both worries are justified. For one thing, the demographic trend indicates that the skills shortage will worsen in the next decade. It is likely to create serious bottlenecks in wide sections of the economy after 2030 unless countermeasures are taken. For another, the faster pace of automation in production can lead to dismissals, even as workers are needed in other areas. This will require more qualification and more geographic and career flexibility from the affected workforce.

This paper examines the causes that have made the German 'jobs miracle' possible. Based on the findings, solutions will be proposed on how to meet the challenges facing the labour market as a result of demographic change and digitalisation without causing serious undesired developments. The analysis indicates that early action is necessary, also in order to proactively turn digitalisation into a source of opportunities for higher growth.

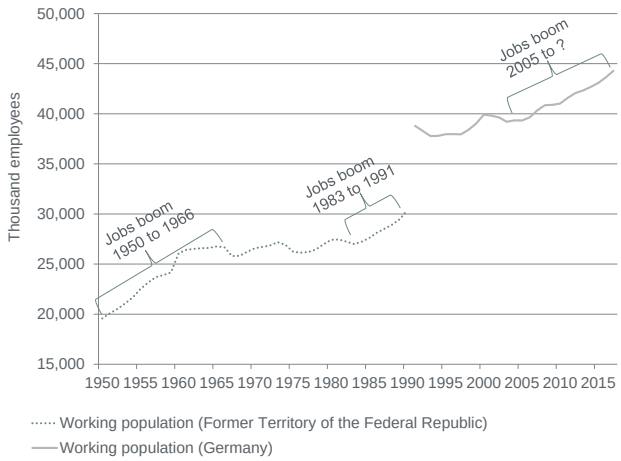
What caused the reversal on the labour market?

From the first oil crisis up to 2005, a base unemployment rate built up in Germany that grew with every recession. In 2005, the number of registered unemployed persons reached the highest level in the history of the Federal Republic of Germany. The Agenda 2010 with its Hartz reforms was designed to initiate a trend reversal. And indeed, hardly any country in Europe has since exhibited similar labour market successes:

- The total workforce grew by 5 million from 2005 to 2017 – the longest phase of jobs growth since 1966 (Figure 1).
- The number of unemployed workers halved to 2.5 million.
- The number of long-term unemployed persons halved to around 900,000 (Figure 2).
- The number of persons enrolled in qualification and support programmes with the Federal Employment Agency fell by 200,000.
- The now 470,000 refugees seeking employment have hardly affected this positive track record.

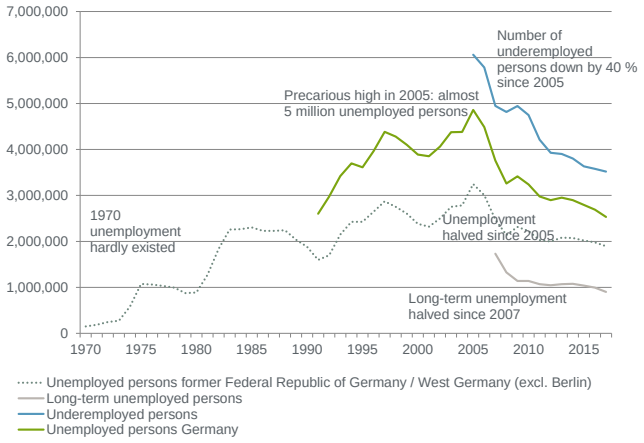
But these achievements are only partly attributable to Agenda 2010. They are due to a whole set of causes which we will look at more closely below.

Figure 1: The longest jobs boom since 1966. How long will it last?



Source: Destatis.

Figure 2: The reversal on the labour market: unemployment cut in half after a 40-year upward trend



Source: Federal Employment Agency.

Cause No. 1: Globalisation and digitalisation have generated crisis-proof jobs

The employment trend after the financial crisis exhibits a noteworthy particularity: In 2009, gross domestic product decreased sharply but the workforce did not – unlike the recession years 1975, 1982 and 2003. This unusual resilience of the labour market explains why the current jobs boom has continued for 13 years now.

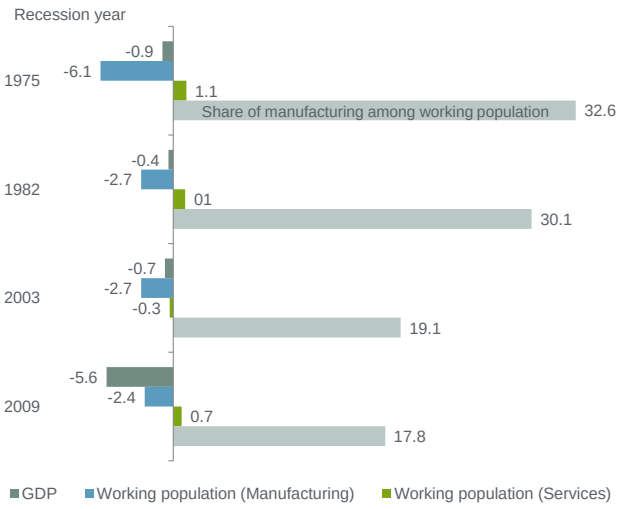
Possibly the most important cause for it is the strong increase in the role of the services sector. In all recessions, employment in manufacturing clearly dropped. But in 2009 this had a much lower impact because the share of manufacturing workers in the German labour force fell from 32.6 % in 1975 (before reunification) to 17.8 % in 2017 (after reunification) (Figure 3).The total labour force in the services sector, by contrast, has continued to grow, also in recession years. The only year since 1970 in which employment dropped in all service areas combined was 2003.

Global competition has helped German manufacturers step up labour productivity through technological innovations and shift less productive manufacturing processes into emerging and developing countries.[1] Economic shocks have triggered and accelerated this process since the 1970s. The goods exports of German manufacturers have grown so strongly since 1991 that the ratio of goods exports to GDP has climbed from 21 to 38 %. At the same time, labour productivity per employee has improved by 80 % and the workforce has been reduced by one quarter.

The reduced need for workers in manufacturing and the concomitant structural change enabled large numbers of new jobs to be created in services areas that are hardly exposed to global trade competition and have survived cyclical crises as well. One third of the jobs additionally created in the past ten years alone are in the areas of healthcare, nursing and social services, education and teaching and public administration. A further one fifth were created through services in information technology, retail and the catering industry. These are all sectors that are dependent on domestic service demand, which varies relatively little with business cycles. The structural change being driven in part by globalisation and digitalisation is thus a major reason that the risk of becoming unemployed in Germany is now lower than it has been in the past 35 years, at least for the majority of the labour force.

Figure 3: The growing importance of services stabilises employment in recessions

Variation in per cent



Source: Destatis.

Cause No. 2: Industrial firms dismissed fewer employees in the financial crisis

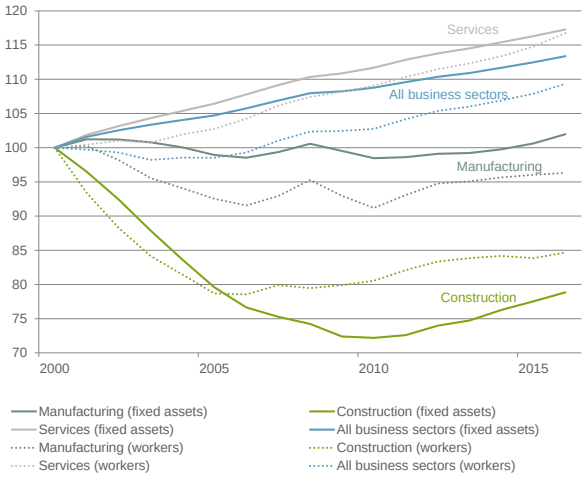
In 2009, gross domestic product plummeted by 5.6 %. Gross value added in manufacturing nosedived by nearly 20 %. The workforce in the manufacturing sector, however, contracted by a mere 2.4 %. This is probably due in part to work time accounts but especially to extensive payments of short-time allowances.[2] The number of short-time workers jumped from around 100,000 to more than 1 million in 2009.

Cause No. 3: Relatively high investment in the service sector

Since 2005, the service sector has gained 4.4 million workers but the manufacturing sector not even 400,000. This was primarily due to differences in investment. In services, net fixed assets at constant prices grew by 17 % between 2000 and 2016[3] but only by 2 % in the manufacturing sector (Figure 4).

In the manufacturing sector, the linear correlation between fixed capital formation in machinery and equipment and the development of employment is much higher than in the service sector. The correlation coefficient between the number of workers and fixed capital formation in machinery and equipment there was 0.85 for the period from 2000 to 2016.[4] The low employment growth in manufacturing can therefore be explained primarily with low fixed capital formation in machinery and equipment. A linear regression shows that in that period a good 24,000 jobs were created for every EUR 1 billion of fixed capital formation in machinery and equipment (Figure 5).

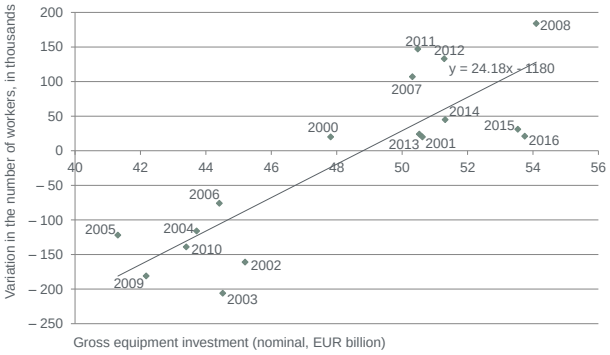
Figure 4: Service providers invest a lot, manufacturers invest weakly



Source: Destatis.

It is true that the decline in employment in manufacturing may have been overdrawn by the outsourcing of services such as cleaning and maintenance, legal advice and data processing to external service providers. But the potential for outsourcing in manufacturing has been largely exhausted since the 1990s, according to various studies.[5]

Figure 5: Manufacturing jobs depend heavily on fixed capital formation in machinery and equipment



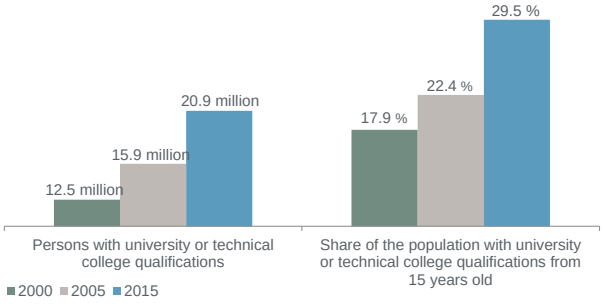
Source: Destatis.

Cause No. 4: Germans now have significantly higher levels of (vocational) education

In the year 2000, 18 % of the population had university qualifications and that share climbed to nearly 30% in 2015 (Figure 6). The unemployment rate for university graduates is 2.3 %, significantly lower than for other qualifications (Figure 7). For skilled workers with a completed apprenticeship the rate is 1.6 times higher, for low-skilled workers without qualifications it is eight times higher.

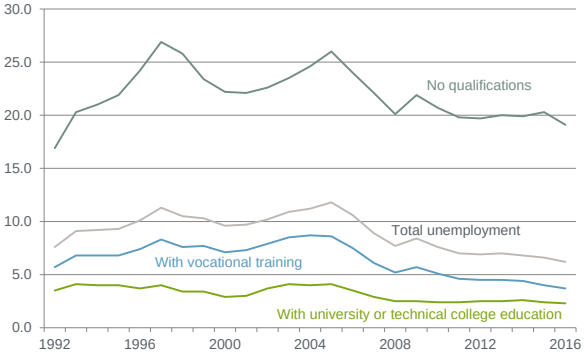
University graduates benefit from a higher degree of career and geographic flexibility. This also accounts for the much lower rate of graduate unemployment from economic shocks such as oil price crises and the collapse of the eastern German economy. But in-company training is not generally associated with higher employment risk. The unemployment rate for master craftspeople and technicians is slightly lower than for university graduates. Moreover, the risk of unemployment depends heavily on the occupation that was trained for. Thus, according to an analysis of the Institute for Employment Research (IAB), 17 % of painters and varnishers and 10 % of hairdressers who completed their training in 2013 and 2014 were unemployed for at least four months after passing their exams. For geriatric nurses it was only 3 % and bank professionals 2 %.[6]

Figure 6: More and more Germans have university entrance qualifications



Source: Destatis.

Figure 7: Education reduces the risk of unemployment to a fraction



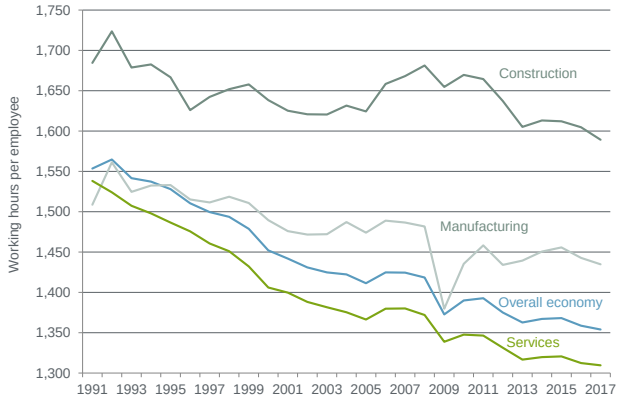
Source: Institute for Employment Research.

Cause No. 5: Part-time work has further increased female employment in particular

In 2005, a worker spent an average 1,411 hours at work, in 2017 it was just 1,354 hours (Figure 8). A decrease of 57 hours may appear minimal but when 44 million workers work 4 % less, that can generate 1.8 million additional jobs, with the total number of working hours remaining the same. Arithmetically, at least, more than one third of new jobs would be made possible by reducing working hours. Germans are not working less, they are merely distributing paid work across more workers.

The decline in the number of working hours per employee was due in particular to the strong growth in part-time work. Since the right to part-time work was introduced in the year 2001, the total part-time employment rate grew from 20 to 27 %. Nearly half of women today work part-time, mostly for family reasons. The entitlement to part-time work, paid and unpaid career breaks and more child daycare services and all-day schools have made it easier to take up employment, especially for parents and carers. Since 2000, the labour participation rate of women has grown from 61 to 75 %, that of men from 77 to 83 %.

Figure 8: Working hours per employee have decreased, allowing more people to work



Source: Destatis.

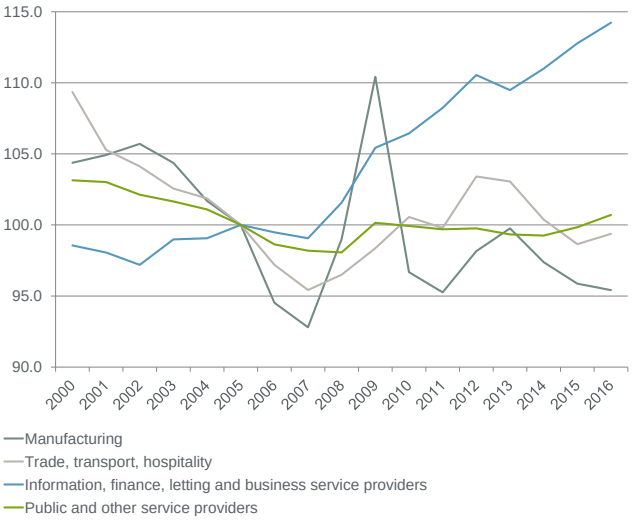
Cause No. 6: Job-securing Wage agreements have kept unit labour costs steady

From 2000 to 2017, real unit labour costs for the German economy have remained nearly unchanged. This means that enterprises have usually been able to pass on labour cost increases that exceeded productivity growth to their prices. Besides, employment has grown since 2005. Evidently, labour productivity growth since then has not led to job cuts as a result of labour-saving investment.

Efforts to set wages that secure jobs have been noticeable in the manufacturing sector in particular. Real unit labour costs have fallen by around 9 % here since 2000 (Figure 9, Box 1). This has to be seen in light of the fact that one quarter of industrial jobs were lost between 1991 and 2008.

Figure 9: Falling unit labour costs have helped stabilise employment in manufacturing

Real unit labour costs (2005=100)



Source: Destatis, own calculations.

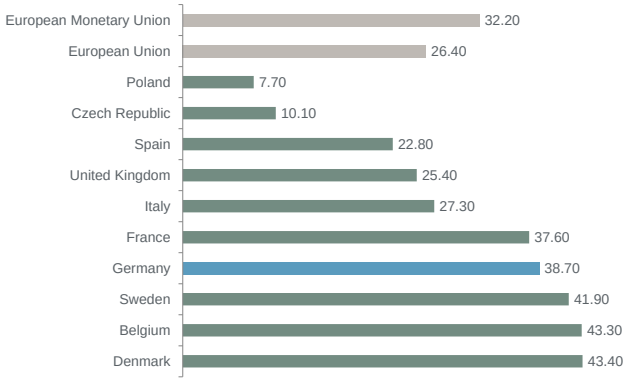
Box 1: Unit labour costs and margin of distribution

Real unit labour costs on an hourly basis are calculated using the following formula: gross wages and salaries per hour worked by dependent employees divided by nominal gross value added per hour worked by all persons employed. An increase in real unit labour costs means that wage and salary growth was higher than labour productivity growth and sales price growth combined. If this occurs over longer periods, it raises the incentive (or need) for enterprises to substitute labour with automation, shut down production or outsource it to low-wage countries. Whether they do this depends mainly on their possibilities, their competitive position and the costs they incur. If job cuts are to be prevented, the margin of distribution thus established must not be exceeded permanently. One major uncertainty in wage and salary negotiations is that the margin of distribution is usually not known in advance.

In 2016 the labour cost per hour worked in Germany's manufacturing sector was EUR 38.70, much higher than the EU average of EUR 26.40 (Figure 10). Labour costs per hour worked were higher only in Denmark, Belgium and Sweden. Over a long period of time, a wage policy aimed at securing employment enabled the parties to collective wage agreements in German industry to reduce the competitive disadvantage of labour-intensive production processes.

Figure 10: Labour costs in German manufacturing are above the EMU average

Labour costs per hour worked in manufacturing in 2016, in euros



Source: Destatis.

However, to what extent wage settlements that secured jobs contributed to the trend reversal in the labour market can hardly be determined. Unit labour costs alone are not a sufficient indicator for it. After all, the assertion that an only moderate increase in unit labour costs always leads to employment growth through enhanced competitiveness is neither theoretically nor empirically accurate. There are various reasons for this.

- Over long periods of time, manufacturing firms have lowered their unit labour costs by raising labour productivity and cutting jobs.

- Since the year 2000, employment in the economic sector information, finance, rental and business services has grown at the highest rate, although real unit labour costs there also increased the most. This apparent paradox can be partly explained with less competition from importers and high regional limitation of most services. Moreover, the importance of labour costs probably plays a role: In this economic sector, gross wages and salaries make up only 31 % of nominal gross value added. In manufacturing it is 50 % and in the remaining service areas 57 %.

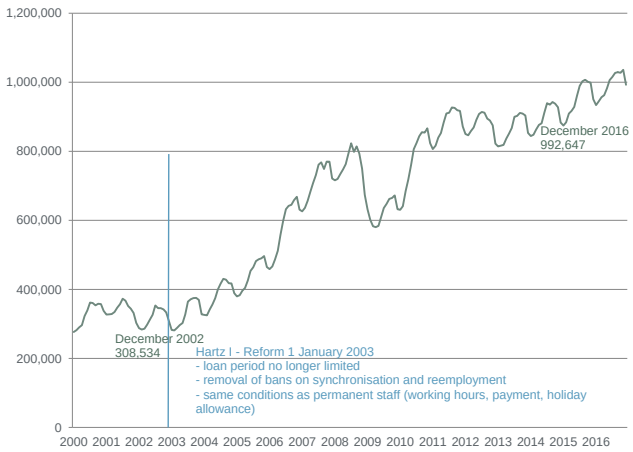
- Structural change and innovation also influence unit labour costs. They can rise if labour-intensive sectors gain importance. And e-books and online newspapers have higher unit labour costs than printed editions if the capital costs saved lead to falling prices or higher salaries and authors' royalties.

Cause No. 7: Strong increase in subcontracted work
The number of subcontracted (or temporary) workers has grown from around 300,000 to 1 million since 2002 (Figure 11). On the one hand, subcontracted work is associated with a high unemployment risk. On the other hand, it provides jobs to workers who cannot or do not wish to work for an employer in a permanent position. Various studies have found that subcontracted work has contributed considerably and sustainably to the prevention and reduction of unemployment.[7] Above all, it can improve employment opportunities for low-skilled workers without qualifications. Currently this applies to one quarter of subcontracted workers.

The number of mini-jobs increased only for second jobs, from 100,000 in 2003 to 2.6 million in 2016. Since 2004, slightly more than 5 million workers have been working in mini-jobs as the main source of income on a relatively steady basis.

Figure 11: Subcontracted work has grown strongly since 2003

Number of subcontracted workers



Source: Federal Employment Agency.

Cause No. 8: Reforms to job placement and unemployment benefits
In the years 2003 to 2005, a number of laws were passed under the Hartz reforms in a bid to reduce the record unemployment of the time. The reforms aimed at reducing barriers to recruitment and improving job placement. They also sought to improve the skills of unemployed workers and put more pressure on them to seek work again quickly. The measures included:

- The creation of 408 job centres to improve services for Hartz-IV recipients (awarding of benefits, job placement, training and ongoing professional development).

- Support for ongoing professional development by the Federal Employment Agency (education voucher).

- Start-up grants to support unemployed persons in setting up a micro-business (replaced in 2006 by the business start-up subsidy for unemployed persons).

- Shortening the term of entitlement to Arbeitslosengeld I (*unemployment compensation I*).

- The combination of unemployment assistance and social welfare into Arbeitslosengeld II (*unemployment compensation II*) (Hartz IV). In some cases, unemployment compensation II was lower than the previous unemployment assistance payments.

- Tighter reasonability criteria: Unemployed persons without family ties must be ready to work anywhere in Germany from the fourth month of unemployment.

Studies by the Institute for Employment Research have concluded that the labour market reforms since the past decade have measurably contributed to counteracting the perpetuation of unemployment and thereby also reducing long-term unemployment.[8]

What do the causes of the 'job miracle' mean for the future?
Growing employment and falling unemployment suggest that Germany still remains well positioned with its employment policy. The German economy has so far managed to co-design globalisation and digitalisation successfully. However, the labour market today faces challenges that are almost diametrically opposed to those of 2005. At the time, there was a high surplus of jobseekers. Today, an advancing skills shortage has to be expected as a result of demographic developments. It requires new thinking and new solutions. Otherwise, the forseeable consequence would be supply bottlenecks and increasing conflicts over the distribution of scarce goods, services and workers.

According to the updated population projection of the Federal Statistical Office, Germany's population between 20 and 65 years of age will begin to shrink from 2019. It is true that raising the retirement age to 67 will mitigate the impacts on

the labour market until 2030 (Table 1). Still, based on official projections, the labour market potential in Germany will decrease by 1.6 million people from 2020 to 2030 and by 4.6 million by year 2040.[9] This projection assumes net immigration of 200,000 people per year from 2021.

But the challenge lies not so much in the contraction but rather in the fact that the labour force will need to provide not just for children and youths but for growing numbers of pensioners and retirees. Taking into account a retirement age of 67 years, the combined youth and old-age dependency ratio will increase from 67 % in 2020 to 79 % in 2040, with the highest increase taking place after 2030. This coefficient describes the number of children, youths and pensioners as a percentage of the working age population.[10]

Table 1: Increasingly fewer workers will provide for increasingly more pensioners

Population	2020	2030	2040
Under 20	15,064	15,191	14,253
Of working age	50,062	48,470	45,422
Of retirement age	18,324	19,196	21,610
Youth and old-age dependency ratio	66.7	70.9	79.0

Youth and old-age coefficient = under 20-year-olds and pensioners as a percentage of the working age population. Pensioners = over 65-year-olds in the year 2020 and over 67-year-olds from 2030.

Source: Destatis.

This demographic development will likely lead to a growing skills shortage unless we intervene in a timely and forward-looking manner. The current nursing shortage already shows what can happen if we fail to act. In 10 to 20 years, however, the shortage will presumably affect not just individual sectors but the entire economy. If we then fill one gap, another one will open up elsewhere.

Much has already been done to prevent such a development. But it appears to be advisable to take further action at an early stage to stave off the looming skills shortage, especially for the time after 2030.

1. **Immigration** is already filling many gaps in the labour supply. In order to increase it, policymakers and the business community must create the conditions to attract or train more foreign skilled workers with recognised, in-demand qualifications and sufficient German language skills. Large potential should be available not just in Europe but in Asia and Africa as well. It should be made easier for skilled applicants to find employment in Germany. For example, foreign qualifications and work experience can be recognised as sufficient under transparent criteria and upon examination.

Immigration alone will not be enough, however. The sustained intake would have to be twice as high as the expected 200,000 newcomers. This can hardly be expected, especially as nearly all EU countries face a similar demographic development as Germany. Besides, not all gaps can be filled with migrants. Construction workers and home carers with limited knowledge of German can be hired from abroad but desk officers for development authorities or doctors with relevant qualifications and very good German language skills can hardly be recruited there.

2. **Retirement at 67** will significantly mitigate the impacts of the demographic trend. Without it, the labour force potential would shrink by a further 2.6 million workers by the year 2030. Further raising the retirement age after 2030 could significantly alleviate the consequences of population decline and ageing for the labour market.

Proposals have been put forward to further raise the statutory retirement age after 2030 but to make the implementation of such an increase conditional on pre-established criteria. This would be a way of making the labour market more resilient to demographic change, in a similar way as the pension insurance with the pension formula. Suitable criteria could include the trend in per-capita GDP or skills shortages or life expectancy, as proposed by the Scientific Advisory Board to the BMWI.[11]

Raising the statutory retirement age customarily fails to unleash waves of enthusiasm. But if neither productivity increases nor immigration are sufficient to secure labour demand, it should be taken into consideration.

As people live increasingly longer lives, however, they would not have to expect a shorter retirement horizon. According to the mortality table of the Federal Statistical Office, 64 % of women and 45 % of men reached the age of 80 in 2018 (Table 2). Given the current trend in life expectancy, in 2040 it will be 74 % of women and 58 % of men.

In the past, the average pension entitlement period has increased substantially with rising life expectancy. In 2016 it was 21.6 years for women and 17.6 years for men. In 2006, it was only 19.6 and 14.8 years, respectively. The pension entitlement period has nearly doubled since 1960.

Table 2: Germans are ageing

Percentage of age cohort that reach the age of	2018	2030	2040	2050
		Women		
80 years	64%	69%	74%	79%
90 years	24%	32%	38%	44%
		Men		
80 years	45%	52%	58%	65%
90 years	11%	17%	22%	28%

Guide: In 2018, 64 % of all women born in 1938 celebrated their 80th birthday and 24 % of those born in 1928 celebrated their 90th.

Variant 2 of the model calculation of the cohort mortality tables of the Federal Statistical Office for the age cohorts 1871–2017. The model updates the lifespans of the cohorts on the basis of the current trend.

Source: Destatis, own calculations.

3. **Favourable conditions for investment and innovation** can help in two ways: First, they are a precondition for safeguarding and creating jobs. Second, they can increase labour productivity, which has been growing only slowly since the financial crisis.[12] Favourable conditions include adequate financing schemes, investment-friendly taxation, state funding for research and the provision of **modern infrastructure**.

The KfW Municipal Panel identified an investment backlog of EUR 159 billion for 2017.[13] This included transport and information infrastructure. There is a great need to expand high-speed broadband internet services.[14] These can advance digitalisation and improve employment opportunities in more sparsely populated regions as well. With this in mind, digitalisation and Industry 4.0 should be understood as an opportunity and strategically promoted. The economic successes which Germany has achieved on the basis of technological innovation in the past give reason for optimism.

4. Providing outstanding **training and professional development** and **making further improvements to educational opportunities for children from low-income families** has proven to be the gold standard[15] of successful employment policy. In this way, unemployment can be reduced and existing potentials better harnessed in the future as well. Soft skills should also be imparted, such as positive and target-oriented thinking and acting, as well as communicative and team skills which are important for personal development and career success. Efforts should also be undertaken to promote the understanding that education is an investment in the nation's own human capital which will also pay off in the form of higher income and greater employment security. According to a recent OECD study, there is particular room for improvement in the school education of migrant children.[16]

5. **State support and flexible work arrangements aimed at reconciling career and family life** have helped to bring about rising female and male labour participation rates. Expanding the provision of free child daycare, particularly for children from financially disadvantaged families, and increasing the supply of nursing staff can further increase the employment rate.

6. In order for the jobs boom to continue, **collective wage and salary agreements must continue to provide incentives and scope for employment-creating investment**. At the same time they should not be too low, not only because that would weaken demand. Productivity growth combined with the ECB's target inflation rate is a good point of orientation, provided the market situation permits this price increase.

Furthermore, wage and salary levels should be high enough to attract candidates precisely to those occupations where skills shortages exist. As skills shortages become acute, employers will realise more and more that attractive salaries and pay rises, as well as remuneration systems perceived as fair, are necessary to attract, retain and motivate highly skilled workers in the long term.

It would generally be desirable to have an 'early warning system' that allows skills shortages to be diagnosed and forecast early on in order to take countermeasures in due time. The nursing shortage shows that this would be possible. The Federal Statistical Office forecast the current shortage as early as in 2010 and predicted a 'massive skills shortage' for the economy as a whole from 2025.[17]

Where low-paid work enables neither an income nor social security above the basic needs level, state support through qualification measures and financial assistance would be a solution that promotes employment.

7. Apart from the fact that increasingly more Germans are ageing in good health, there is another positive aspect to the demographic trend. The growing skills shortage is generating favourable conditions for further reducing the unemployment rate. The financial crisis has demonstrated that even a recession no longer has to translate into an employment slump. An increase in the unemployment rate may temporarily occur when the high number of refugees in search of work have completed their language courses and qualification measures. But the trend of declining unemployment is likely to continue. If we succeed in further lowering the long-term unemployment rate to a significant extent, there is a good chance that we will have full employment in ten years.[18] ■

[1] Cf. Council of Economic Experts (2015): Zukunftsfähigkeit in den Mittelpunkt, Jahresgutachten 2015/16 (*Focus on sustainability, annual report 2015/16* – our title translation), subparagraphs 605 ff (in German only).

[2] The Federal Employment Agency expanded the maximum term for cyclically induced short-time work and temporarily covered part of the employers' social security contributions for short-time workers.

[3] A good 60 % of net fixed assets in services is invested in real estate and housing. If this is subtracted, net fixed assets at constant prices also grew by 17 % for the other service areas combined between 2000 and 2016.

[4] Here, the correlation was calculated on the basis of nominal investments. The correlation coefficient for fixed capital formation in machinery and equipment in real terms and the variation in employment in manufacturing is 0.82. For the service areas the correlation sufficient for fixed capital formation in machinery and equipment in nominal terms is 0.53 and in real terms 0.39.

[5] Cf. Eickelpasch, A. (2012): Industrienahe Dienstleistungen, Bedeutung und Entwicklungspotenziale, Expertise im Auftrag der Friedrich-Ebert-Stiftung (*Industrial services, significance and development potentials, expertise commissioned by the Friedrich-Ebert Foundation* – our title translation), p. 42 (in German only), and Council of Economic Experts, (2015): Zukunftsfähigkeit in den Mittelpunkt, Jahresgutachten 2015/16 (*Focus on sustainability, annual report 2015/16* – our title translation), subparagraphs 609 ff (in German only).

[6] Institute for Employment Research (2017): They usually manage a seamless transition, Berufseinstieg nach der betrieblichen Ausbildung, (*Career start after in-company training* – our title translation), Institute for Employment Research, short report 20/2017, p. 5 (in German only).

[7] RWI (2012): Durchlässiger Arbeitsmarkt durch Zeitarbeit? (*Permeable labour market through subcontracted labour* – our title translation), study commissioned by the Bertelsmann

Foundation (in German only), and Institute for Employment Research (2017): Aktuelle Entwicklungen der Zeitarbeit, Blickpunkt Arbeitsmarkt (*Recent developments in temporary employment, focus on the labour market* – our title translation, in German only), July 2017, p. 15 f.

[8] Cf. Walwei, U. (2017): Agenda 2010 und Arbeitsmarkt: Eine Bilanz, Bundeszentrale für politische Bildung, **http://www.bpb.de/apuz/250663/agenda-2010-und-arbeitsmarkt-eine-bilanz?p=all** and Institute for Employment Research (2013): Die Vorteile überwiegen, Makroökonomische Perspektive auf die Hartz-Reformen (*The advantages predominate, a macroeconomic perspective on the Hartz-Reforms* – our title translation, in German only), Institute for Employment Research, short report 11/2013.

[9] Here, labour force potential was defined as the age group of 20 to under 65-year-olds for 2020 and 20 to 67-year-olds for 2030. I have followed the age groups defined by the Federal Statistical Office in its population projection.

[10] Here, working age means 20 to 65 for 2020 and 20 to 67 for 2030.

[11] Cf. BMWi (2016): Nachhaltigkeit in der sozialen Sicherung über 2030 hinaus, Gutachten des Wissenschaftlichen Beirats beim Bundesministerium für Wirtschaft und Energie (*Sustainability in social security beyond 2030, Report by the Scientific Advisory Board to the Federal Ministry of Economics and Energy* – our title translation), in German only.

[12] Cf. Borger, K. and Gerstenberger, J. (2018): **Weak productivity: different causes require different therapies**, Focus on Economics No. 200, KfW Research.

[13] Cf. KfW Research, German Institute for Urban Affairs (2018): **KfW Municipal Panel 2018**.

[14] Cf. Brand, S. (2017): **Glasfaser statt Asphalt? – Breitband als wichtiger Standortfaktor der Kommunen (*Fibreglass instead of bitumen? – Broadband as major location factor for municipalities* – in German only)**, Economics in Brief No. 130, KfW Research.

[15] Here, the expression gold standard is based on medicine, not monetary policy. In medicine the recognised standard for the treatment of a condition is referred to as gold standard.

[16] Cf. OECD (2018): The resilience of students with an immigrant background: Factors that shape well-being, OECD Publishing, Paris. http://dx.doi.org/10.1787/9789264292093-en

[17] Afentakis, A. and Maier, T. (2010): Projektionen des Personalbedarfs und -angebots in Pflegeberufen bis 2025 (*Projections of labour demand and supply in nursing occupations up to 2025* – our title translation, in German only), Federal Statistical Office, Wirtschaft und Statistik, p. 1001.

[18] If we continue the current trend in the reduction of unemployment, Germany's unemployment rate will drop to below 3 % in 2027.