

B 3-1 Demography and skilled labour

The German innovation model is based on a specific combination of highly qualified graduates from the higher-education system and highly skilled workers trained in the dual vocational education system. This combination avoids a narrow focus on academic knowledge, and instead promotes the use of more varied, high-quality sources of knowledge.¹³⁵

Demographic developments and shortage of skilled labour

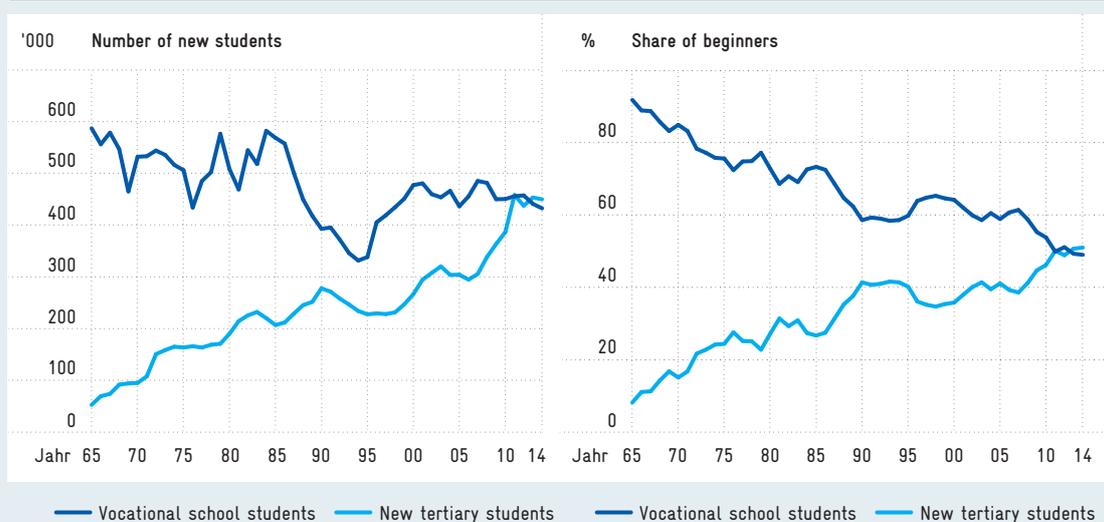
The structure of the skilled workforce available in Germany will change markedly over the coming

decades. First, demographic change will permanently transform the available potential of (qualified) skilled workers.¹³⁶ The number of people entering the labour market for the first time is falling relative to the number of older workers, leading to an ageing process in companies. It will no longer be possible to meet new qualification requirements by hiring new, young labour-market entrants; instead, these requirements will have to be met with the existing workforce.¹³⁷ Second, this shortage of skilled labour will be aggravated by the fact that the baby-boomer cohorts will be reaching retirement age in the next few decades, with many well qualified workers leaving their companies.¹³⁸

Fig. B 3-1-1

Download data

Beginners at tertiary education institutions and in their first year of the dual system of vocational schools in the former territory of the Federal Republic,* 1965 to 2014



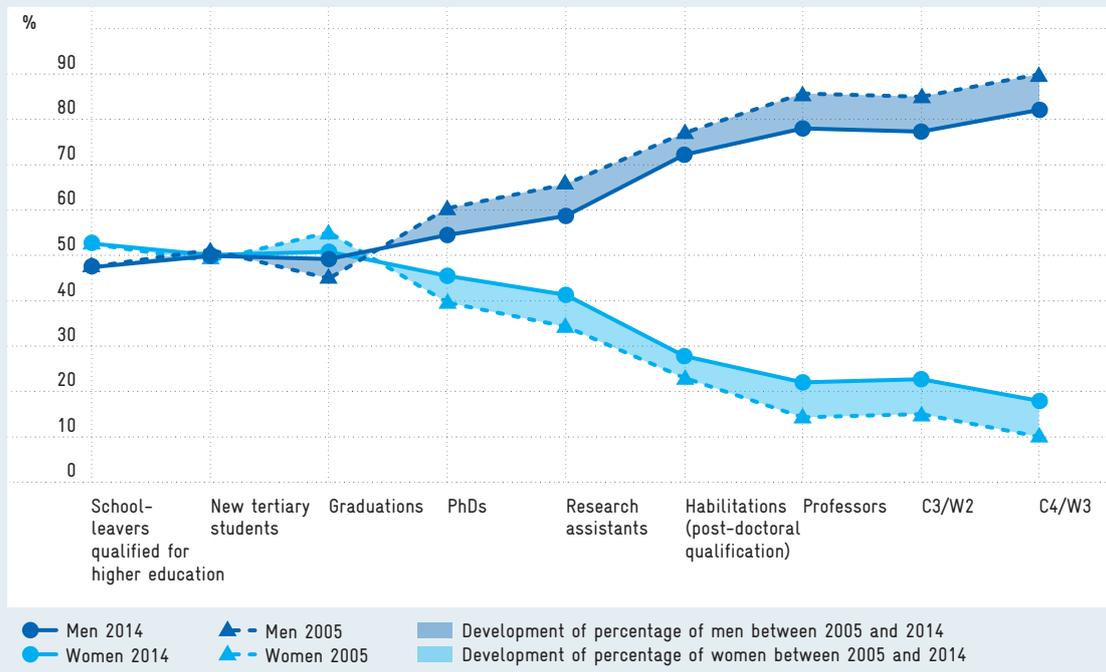
* Vocational schools including people with no training contract, including East Berlin 1991–2004 and from 2012. New tertiary students including East Berlin from 2002.

Source: Calculations by SOFI in: Gehrke et al. (2017a).

Percentages of men and women in academic careers, 2005 and 2014

Fig. B 3-1-2

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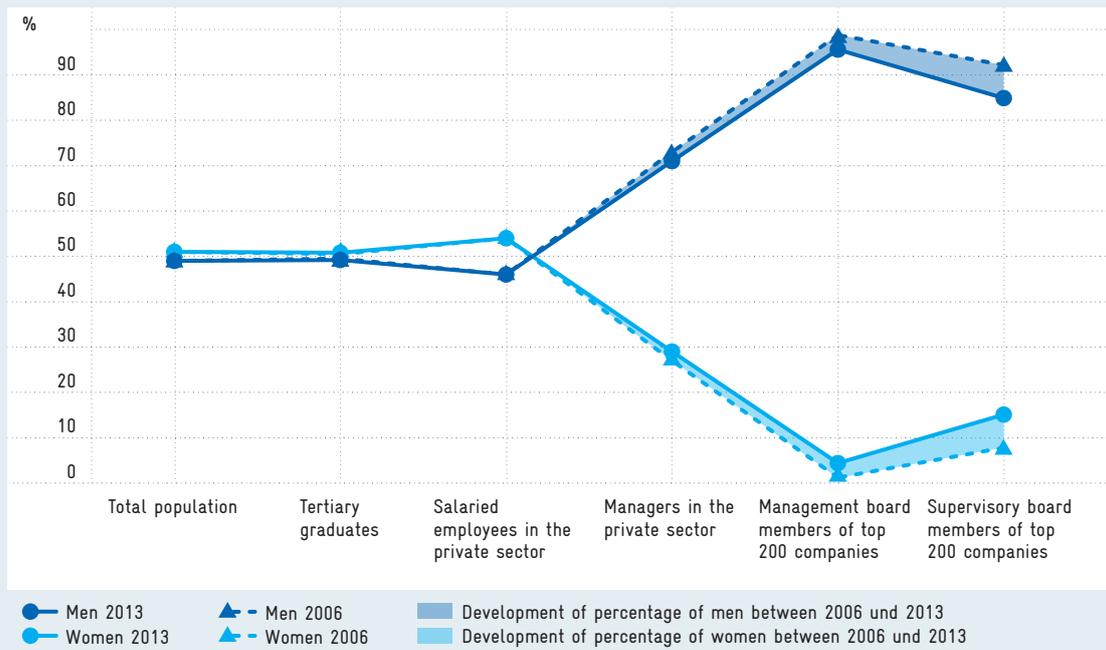


Source: GWK (2011, 2016a).

Percentages of men and women in the private sector in 2006 and 2013

Fig. B 3-1-3

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Source: DEW-Führungskräftemonitor 2015, Statistisches Bundesamt (Federal Statistical Office), Fachserie 11, Reihe 4.2, Statistisches Jahrbuch 2016.

Change in the qualification mix as a result of trends in the education system

The problem of a shortage of skilled labour is also influenced by shifts in the qualification mix. The ratio between apprenticeship training and higher education has shifted dramatically in favour of higher education (cf. Figure B 3-1-1). During the mid-1960s, 92 percent of all compulsory school leavers began apprenticeship training, and only 8 percent began a course of study at a higher education institution; by 2011, for the first time in the history of the Federal Republic of Germany, there were more beginners at higher education institutions (50.1 percent) than in apprenticeship training (49.9 percent).¹³⁹ This ratio has stabilised since then: in 2014, 51 percent of all beginners were studying, compared to 49 percent in apprenticeship training.

Unused potential of skilled workers

In order to prevent a shortage of skilled labour and to avoid bottlenecks for the innovativeness and competitiveness of Germany as an industrial location, it will be increasingly important in future to make the most of a hitherto insufficiently used skilled workforce – the so-called hidden reserves of skilled workers who are currently not participating in the labour market.

At present, Germany has a large hidden reserve (in 2015, there were more than 200,000 people in the hidden reserves in the narrower sense¹⁴⁰, approximately two-thirds of them women¹⁴¹). For example, whereas the participation of women in the education system has increased enormously in recent decades, the percentage of women in employment has remained comparatively low.¹⁴² Despite slight improvements, women are still greatly underrepresented in management positions – even more so the higher the career level. Examples in Figure B 3-1-2 and B 3-1-3 show the development of the proportion of women across the academic career ladder and across leadership positions in the private sector.¹⁴³

Germany is thus wasting the potential from its expensive and valuable investments in the human capital of women – which it would urgently need in the light of demographic developments, global challenges and growing international innovation competition.¹⁴⁴ Furthermore, a better gender mix in teams and a greater participation of women in management positions would be especially valuable for the competitiveness of innovative companies.¹⁴⁵

The experience and knowledge of older workers also has great potential that could be put to better use by keeping them in employment longer. Empirical studies show that, contrary to many prejudices, the performance of older workers is not generally lower than that of younger workers. It is rather the case that even up to very old age there is a great variation in productivity, as well as in the ability to learn and the willingness to participate in further training.¹⁴⁶ Moreover, a company's productivity is not an individual matter; it is always the result of the interaction between workers with different skills and experience. Age-heterogeneous workforces can actually promote innovation in this context; attention should thus be paid to a suitable combination of older and younger workers.¹⁴⁷ Against this background, Germany should aim to keep older workers in the employment system for longer. Different proposals for pension-system reforms are currently being discussed.¹⁴⁸ Any further decoupling of life expectancy from the retirement age should be avoided, since this is the only way of reducing the foreseeable problem of a shortage of skilled workers and securing the financing of the statutory pension system.

Furthermore, in the view of the Commission of Experts a targeted immigration and integration policy is required in order to close the remaining gap in the number of skilled workers in the long term. Over the last few years, a number of improvements have been made to immigration regulations for well-qualified foreign workers, entrepreneurs and foreign graduates of German tertiary education institutions at both the national and European level.¹⁴⁹ In addition, strengthening national diversity through migration can also contribute to more innovation.¹⁵⁰

Flexibility and permeability in the education system

In the light of demographic change and the growing shortage of skilled labour, an increase in the flexibility in the education system and in longer-term labour-market mobility can make an important contribution to solving the problem of the shortage of skilled labour.

There are essentially two approaches available in the education system. First, existing educational programmes could generate graduates who can be deployed more flexibly. Second, a maximum degree of vertical and horizontal permeability could be guaranteed by further developing the education system.¹⁵¹

In this context, it is important to maintain a clear profile of each of the two pillars of the German education system – vocational education and training on the one hand, and higher education on the otherhand – and to ensure a high level of permeability between these two pillars.¹⁵² Life-long learning is also important in this context. Long-term flexibility is easier to achieve if the system provides good options for individual educational paths (‘kein Abschluss ohne Anschluss’ – ‘no dead ends in education’)¹⁵³ and if skills acquired in one job can be formally recognised after a change of job and transferred relatively easily to a new qualification.¹⁵⁴ Particularly important target groups for further-training measures are hitherto under-represented groups of workers – women, migrants and older workers.¹⁵⁵ In this context, digital forms of learning such as MOOCs can support life-long learning, since they can also reach people who are already in work or have major time constraints, as well as other sections of the population who, until now, have not found access to further education.¹⁵⁶

In addition, developments in the education system can be supported by appropriate changes in incentives on the labour market. In order to boost the strengths of Germany’s education system with its two pillars, employers can make an important contribution by investing in the attractiveness of vocational education and training. Aspects that can help here include in particular clear career prospects for talented and ambitious graduates of apprenticeship training programmes, highlighting opportunities for personnel development, and clearly communicating the permeability of the system.¹⁵⁷