



## Slowing German trend growth does not seem to be a major issue in the electoral campaign

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The developed industrial countries have experienced a steady decline in trend growth since the mid-70s – and Germany is no exception. By 2025, trend growth looks set to halve again, to only ¾%.

The robust cyclical upswing is veiling this creeping erosion of growth. The situation is rendered even graver by the fact that policymakers did not adopt significant measures to support growth during the past legislative period; indeed, they even scrapped some important reforms.

The performance of the German economy depends on three input factors: labour, capital and technological know-how. Labour productivity growth is determined by capital intensity, the qualifications of workers and the pace of technological progress.

Labour, as an input factor, is suffering from the ageing and shrinking of the population. Demographic changes will reduce the workforce.

The capital stock is currently growing at a subdued clip and investment activity is moderate.

The current level of technological know-how is reflected in total factor productivity. The growth contribution of total factor productivity has recently declined, possibly because the benefits of specialisation are shrinking and because input factors have been reallocated less efficiently.

It is absolutely necessary to raise the participation rate. Against the background of accelerated structural change, this can be achieved only if the general level of qualification is raised and it becomes easier to reconcile a career and a family, particularly for women.

Better education and vocational training will also help to improve the quality (and thus raise the growth contribution) of labour. More day schools are a step in the right direction. At the same time, digitalisation increases the need for regular professional training.

Specialisation helps to lift productivity. That is only one reason why policymakers should support free global trade. If conditions for businesses are improved as well, Germany might see stronger capital stock growth and benefit from competitive advantages in the future.



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### Bundestag elections 2017

During the past 12 months, poll outcomes surprised observers several times. Outsiders were elected presidents, either against the will of their parties or with the backing of a newly launched movement. Or voters overthrew decades-old political tenets.

Against this background, German politics seem like a haven of stability. The surprise appointment of SPD leader Martin Schulz was the only event that temporarily caused some excitement. While Germany is in its best economic condition in years, the new government will nevertheless have to deal with several important issues, namely globalisation, the future of Europe, the new geopolitical situation, climate change and demographic challenges, which are becoming ever clearer. This is the first report in a new series, in which Deutsche Bank Research aims to examine how the political parties plan to address these and other important issues and analyse whether their proposed solutions are adequate. Of course, we do not aspire to provide a complete analysis of the electoral programmes.

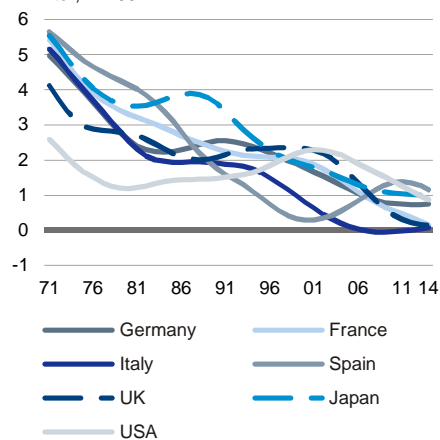


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### Trend growth

1

Change in real GDP per hours worked in % yoy, HP-filter,  $\lambda=100$

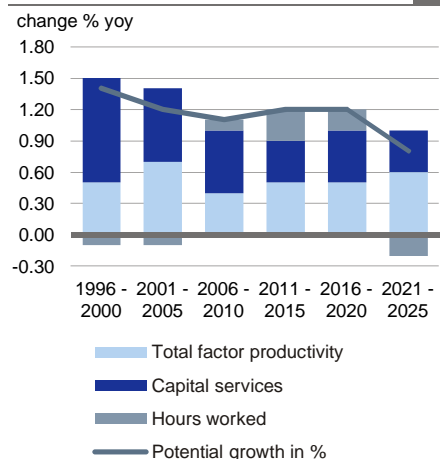


Source: German Council of Economic Experts

Since the mid-70s, many developed industrial countries have seen their real gross domestic product (GDP) growth rates steadily decline. As Germany is currently experiencing an upswing, discussion of this structural growth slowdown (to which Germany is not immune either) has receded into the background. It is therefore not surprising that both the Council of Economic Experts and the OECD think that policymakers have not made sufficient reform efforts during the past legislative period. The reasons for the slowdown in growth are the subject of a passionate academic debate. One camp of economists has coined the term “secular stagnation” and believes that the industrial countries cannot escape this development.<sup>1</sup> With regard to Germany, the demographic change is evident. To prevent trend growth from dropping clearly below 1%, labour market, education, tax and regional economic policies as well as immigration policies will need to change drastically and soon. Moreover, with scope for income growth and redistribution of wealth being clearly limited in the medium term, politicians should try to manage expectations instead of nurturing hopes of a (re)distribution of wealth.

### Medium-term projection of potential output

2



Source: Deutsche Bundesbank

This is easy to understand if we take a short look at how the standard of living develops. If real GDP per capita grows at an annual rate of 4% – a rate that was not unusual up to the 1970s – prosperity doubles within just over 17 years. If the growth rate declines to the current value of 1.4% (OECD), however, that outcome would take roughly 50 years. These figures show – particularly against the background of demographic change – that the time when policymakers could content themselves with paying lip-service to promoting prosperity is over.

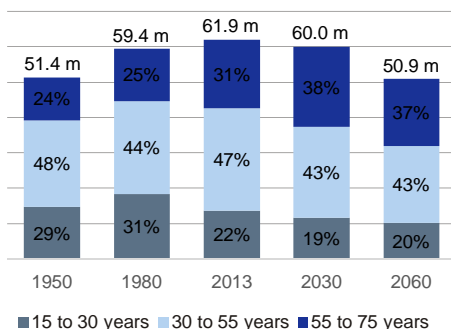
The electoral programmes of the traditional parties incorporate different positions on this key issue, as is to be expected. In general, however, we believe they rely too heavily on the favourable status quo and focus on distribution issues. The Liberals are the only exception.

### Input factor labour: demographics and education

A more detailed explanation of the relationships between input factors is provided in the appendix. One thing is clear, however: the contribution of the “labour” input factor to overall growth depends on the number and the quality of total hours worked. In principle, demographics limit the number of potential working hours. However, the actual number of hours worked may vary according to the participation rate of the workforce. The quality of each working hour is determined by the general level of education and professional training.

### Workforce in Germany

3



Figures 2030 and 2060 based on results of the 13th coordinated population projection (var. 2)

Sources: Federal Statistical Office of Germany, BiB

Labour supply depends on the participation rate of the workforce. In turn, the size of the workforce is determined by demographics. Germany recently registered net immigration. In the medium and long term, however, the German workforce looks set to age and shrink, unless there is significant additional net immigration.<sup>2</sup> According to Bundesbank analysis, the German workforce is likely to decline by about 2.5 million people in the medium term.<sup>3</sup> The current lack of qualified labour is a foretaste of this development.

The Bundesbank concludes that demographic developments will considerably weigh on trend growth in the medium term. According to its calculations, the potential growth rate will average 0.75% between 2021 and 2025.<sup>4</sup> Higher workforce participation and positive net immigration might cushion the decline.

<sup>1</sup> See L. Summers, Secular stagnation and monetary policy, Federal Reserve Bank of St. Louis Review, Second Quarter 2016, 98(2), pp. 93-110.

<sup>2</sup> See Federal Statistical Office: Germany's population by 2060, Results of the 13th coordinated population projection, 2015.

<sup>3</sup> Based on the results of the 13th coordinated population projection, assuming zero net migration.

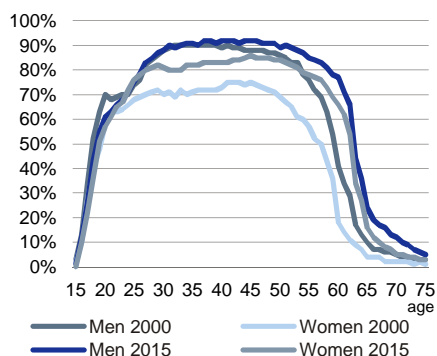
<sup>4</sup> See Deutsche Bundesbank, Demographic change, immigration and the potential output of the German economy, Monthly Report, April 2017, p. 35.



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Participation ratio by age and sex, 2000 and 2015

4



Sources: Federal Statistical Office of Germany, BiB

The OECD recommends increasing the workforce participation of women. This would require better childcare options. In addition, income tax incentives would help to make paid employment more attractive. Successful labour-market integration of refugees is another important issue.

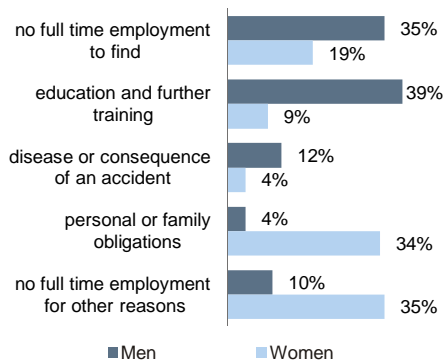
The Council of Economic Experts supports additional reforms to make the labour market more flexible, particularly to reduce long-term unemployment.

As the workforce ages, flexible working-hour schemes might create an incentive to work longer. As a side benefit, this would help to ensure a transfer of knowledge to younger employees.

This issue is the one where the parties differ most. While the left-wing parties want to create further incentives for early retirement and, in particular, categorically reject another hike in the retirement age, the conservative and liberal parties aim to increase flexibility and extend working lives. As the available workforce looks set to shrink in the future, the conservative standpoint appears more growth-friendly. However, the measures implemented during the past legislative period run counter to this goal (retirement at 63, hike in pensions paid to mothers).

Reasons for part-time\* 2013

5



\*Excluding those who did not give a reason.

Sources: Federal Statistical Office of Germany, BiB

### Lifelong learning starts right from the cradle – education is key

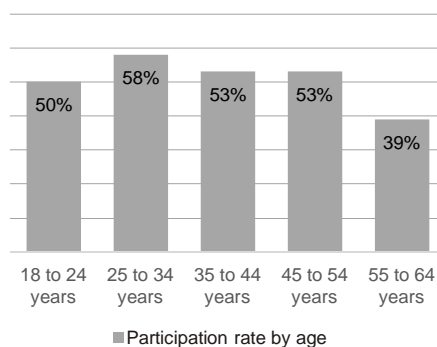
The quality of labour must improve steadily to strengthen the growth contribution of this input factor. Digitalisation presents particular challenges and opportunities in this context. The education system will need to become more flexible and adapt to new challenges – after all, lifelong learning starts right from the cradle.

In particular, childcare options and kindergarten education should be improved. If better childcare is available, women will find it easier to work full time.

The OECD has emphasised that the correlation between the social and economic backgrounds and academic success of a child is particularly close in Germany. Measures should be taken to ensure equal opportunities for all children.

Participation of those aged 18-64 in professional training measures, 2014

6



Source: Federal Ministry of Education and Research

Much remains to be done in terms of university education and vocational training, too, particularly since more and more young people prefer going to university to starting an apprenticeship.<sup>5</sup> At the same time, many university students drop out of their courses. The universities will need more staff and more funds to meet higher demand. Providing them with better resources would also help to ensure that students receive academically based professional qualifications and that universities can conduct research at the same time. The “Higher Education Pact 2020” was a step in the right direction, we believe. Policymakers will also need to resolve the lack of qualified labour under the dual vocational training system, which is already evident in several fields. The number of school drop-outs should be reduced further.

The labour market reforms implemented at the beginning of the millennium helped ensure that numerous people with lower qualifications found a job. Most of them were employed in the services sector. This reduced the average level of qualification and, in turn, labour productivity in that sector. There is thus considerable room for improvement via professional training, not least because digitalisation (also called “Industry 4.0”) will also affect the services sector.

As baby boomers retire, a large number of very experienced workers will drop out of the labour market. Beyond dealing with the sheer number of retirements, companies will also have to organise the necessary transfer of knowledge.

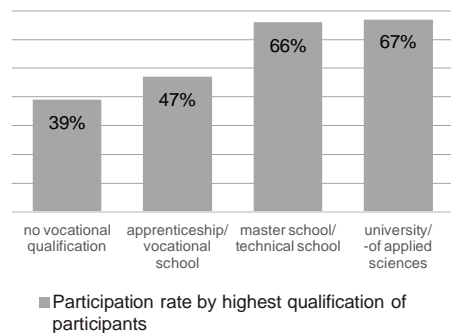
<sup>5</sup> See Authoring Group Educational Reporting, Education in Germany 2016, 2016, p. 141 et seq.



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Participation of those aged 18-64 in professional training measures by highest qualification achieved, 2014

7



Source: Federal Ministry of Education and Research

The large number of refugees is another challenge, particularly because their qualifications differ considerably. Learning German is an important precondition for their labour market integration. Just like the OECD, we believe that measures in this area should be intensified.

This shows that there are several potential avenues in the field of education that can be explored to counteract the slowdown in growth. Quite rightly, education plays a key role in almost all electoral programmes. It remains to be seen which measures are ultimately implemented. In any case, there is a lot to do.

### Input factor capital

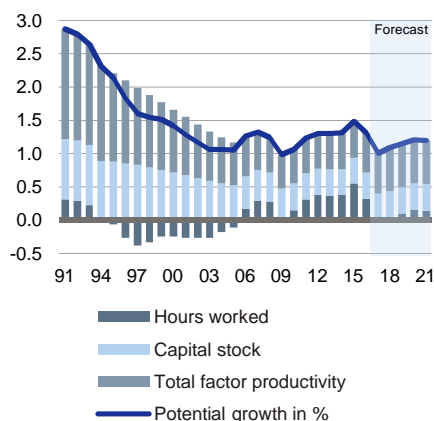
Capital contributes about one-third<sup>6</sup> to overall GDP growth.<sup>7</sup> This already suggests that this input factor is of lower importance than labour.

The input factor “capital” is determined by investment activity and depreciation. In general, there are three types of capital: equipment, buildings and other assets.

Potential output

8

Percentage Points



Sources: German Council of Economic Experts, Federal Statistical Office of Germany

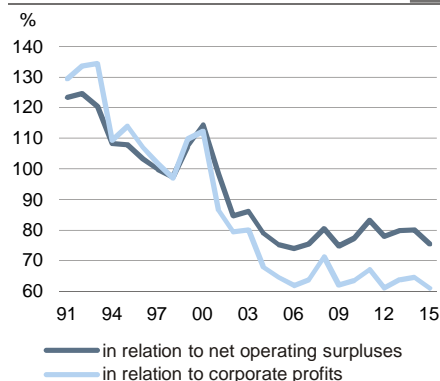
In Germany, corporate investment activity is low. This has recently triggered discussions about an investment gap.<sup>8</sup> In response, the Federal Ministry for Economic Affairs and Energy has established an expert committee, which is to work on strengthening investment in Germany. The committee concluded that investment activity was significantly lower than necessary in both the public and the private sectors.<sup>9</sup> Of course, this conclusion met with considerable opposition, particularly with a view to private-sector investment: after all, private-sector investment activities cannot be steered directly according to political preferences. The Bundesbank has pointed out that subdued investment activity may also be due to the fact that companies are adapting to demographic change.

Moreover, subdued investment activity may also be due to less wear and tear or to the fact that assets are already quite up to date.<sup>10</sup> From a purely academic vantage point, it is impossible to assume a clear causal relationship between suspected weakness in investment activity and low productivity growth.<sup>11</sup>

Political decisionmakers should therefore focus on improving the economic framework conditions rather than on achieving a fixed overall investment ratio, which would depend on political rather than economic considerations. The liberal and conservative parties support this approach, whereas the left-wing parties favour tighter regulations.

Investment compared to net operating surpluses and corporate profits

9



Source: German Council of Economic Experts

<sup>6</sup> See German Council of Economic Experts, Annual Report – “More confidence in market processes”, 2014, p. 114.

<sup>7</sup> See Appendix, equations (1) and (2).

<sup>8</sup> See German Institute for Economic Research, Wirtschaftliche Impulse für Europa, DIW Wochenbericht 27, 2014.

<sup>9</sup> See Federal Ministry for Economic Affairs and Energy, Wesentliche Fakten zur “Investitionsschwäche” in Deutschland, Monthly Report 11, 2014.

<sup>10</sup> See Deutsche Bundesbank, Demographic change, immigration and the potential output of the German economy, Monthly Report, April 2017, p. 35.

<sup>11</sup> See German Council of Economic Experts, Annual Report – “Focus on Future Viability”, 2015, p. 304.



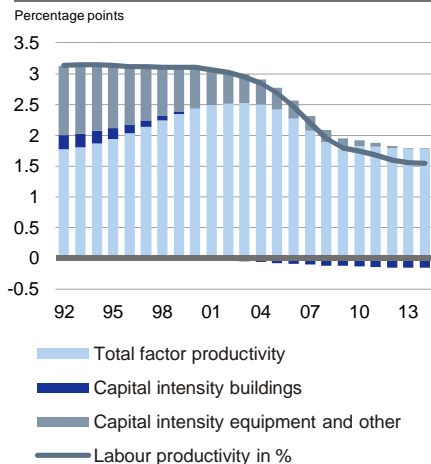


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### Total factor productivity – technological know-how

Growth contributions to trend labour productivity in the manufacturing sector

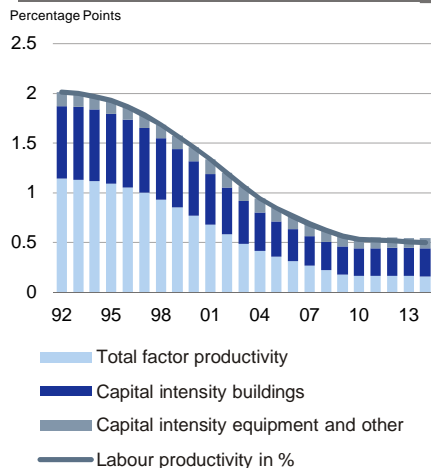
10



Source: German Council of Economic Experts

Growth contributions to trend labour productivity in the service sector

11



Source: German Council of Economic Experts

The current level of technological know-how is reflected in total factor productivity (TFP). TFP cannot be observed directly. Rather, it is equivalent to the difference between the growth rate of total output and the sum of the growth contributions of both labour and capital. TFP therefore reflects all product and process innovations. Its growth rate has declined to about 0.5% during the past 20 years.

The reasons for this development are currently being discussed. One potential explanation is that the pace of innovation might have slowed after the boom in information technologies during the 1990s. Several very pessimistic observers even believe that the time of groundbreaking technological progress is over. Of course, others are heavily opposed to this idea. Turning to the German economy, it makes sense to differentiate between the manufacturing and the services sectors. TFP declined particularly strongly in the services sector. As a result, much of the development in Germany can be explained by the disproportionate expansion of the services sector. In addition, the growth of manufacturing depth has slowed.

Financing conditions are another potential reason for the slowdown in TFP growth. It is possible that the low-rate environment has ensured the survival of many not very innovative companies in the last few years. This may have prevented new, innovative companies from entering the market. According to this hypothesis, capital market interventions have hampered a reallocation of the production factors.

Generally speaking, international specialisation helps to realise production potential. This applies to both the intra- and the intersectoral reallocation of production factors. We believe policymakers should therefore work to promote free global trade.

An environment that is conducive to research is a precondition for increasing the growth contribution of technological know-how. This factor will have an impact on overall growth only if innovative companies – in particular manufacturing companies – can successfully enter the market.

Generally speaking, all established parties have included research and development as an important topic in their electoral programmes, even though their foci are different. The coalition parties and the liberals support education and research in general. The Greens aim to introduce additional regulation as well.

The average age of the members of the two large parties (60 years) and of the MPs (about 50 years) is perhaps one reason why policies in this field are not exactly forward-looking. In addition, the slowdown of trend growth is a gradual macro process, which is hardly felt by individuals. However, the short-term costs of the necessary political adaptation measures will rise if policymakers remain idle for long. Indeed, there may well be a “point of no return”, after which it becomes almost impossible to find majorities for the necessary measures, either within the parties or among the electorate.

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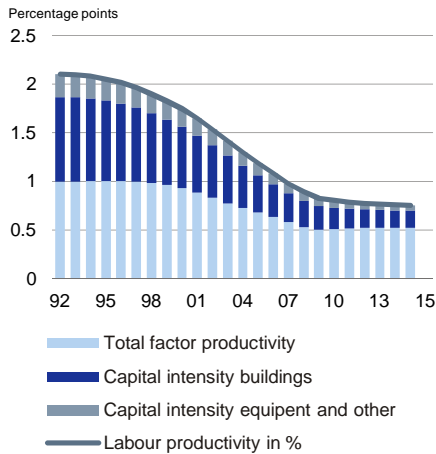


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### Appendix

Contributions of the individual components of trend labour productivity

12



Source: German Council of Economic Experts

This section will briefly explain how the different factors that influence output growth can be defined.

It is easiest to use the economic production function for this purpose. We assume that economic output can be described by the following Cobb-Douglas production function:

$$(1) \quad Y_t = A_t \cdot K_t^\alpha \cdot (N_t \cdot E_t)^{(1-\alpha)}$$

Output in the period  $t$ , i.e.  $Y_t$ , is equivalent to the product of the input factors “hours worked” and “average qualification level”,  $N_t \cdot E_t$ , “capital”  $K_t$  and the “level of technological know-how”  $A_t$ . Technical know-how is captured by total factor productivity. The exponent  $\alpha$  describes the output elasticity for the input factor capital. This model assumes complete competition on the factor markets and linear homogeneity and constant scale effects in the production function.<sup>12</sup>

Using the logarithm and calculating the total differential helps to redefine the equation above and describe the relationship between different rates of change:

$$(2) \quad \Delta \ln Y_t = \Delta \ln A_t + \alpha \cdot \Delta \ln K_t + (1 - \alpha) \cdot \Delta \ln E_t + (1 - \alpha) \cdot \Delta \ln N_t$$

$$(3) \quad \Delta \ln y_t = \Delta \ln A_t + \alpha \cdot \Delta \ln k_t + (1 - \alpha) \cdot \Delta \ln E_t$$

Equation (3) shows that the growth rate of labour productivity  $y_t$  consists of the weighted sum of the growth rates of technological progress, capital per unit of labour  $k_t$  and the development of the average level of qualification.

<sup>12</sup> See B. Gräf, Deutsche Bank Research, German growth potential: facing the demographic challenge, Current Issues - Demography Special, 2003, p. 5 et seq.



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