Inclusive Growth – an Agenda for Germany

Five action areas for a new growth strategy

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Inclusive Growth for Germany – Ten recommendations for increasing growth and inclusion in Germany

Germany is entering a new legislative period with a strong economic position. Across the board, current figures and forecasts for the near future are encouraging. But both the private sector and society are confronted with major challenges – globalization, digitalization and demographic shifts are transforming the demands made on our economy.

Current economic policy in Germany must pave the way for tomorrow's prosperity. This involves making a priority out of promoting growth that provides everyone an opportunity to participate in and thereby benefit from this growth. We need an Agenda for Inclusive Growth.

Five goals and ten recommendations for inclusive growth in Germany:

Goals	Recommendations
1. Improve location quality and protect public capital stock	1. Maintain traditional infrastructures, expand digital infrastructure 2. Increase public investment and build capacities
2. Increase labor-market participation	3. Expand childcare, improve education 4. Reform tax-and-transfer systems
3. Foster wealth creation	5. Wealth policies should target lower-income households 6. Expand access to productive capital
4. Foster entrepreneurial activity	7. Expand startup financing opportunities 8. Leverage migrant entrepreneur potential
5. Promote innovation	9. Promote inclusion through innovation 10. Strengthen innovation

Goal 1:
Improve location quality and protect public capital stock

Recommendation 1:
Maintain traditional infrastructures, expand digital infrastructure

Despite its economic standing, Germany lags behind in terms of public investment. Between 2005 and 2014, the government slated an average of 2.2 percent of its GDP for the development of roads, schools and preschools. In the same period, OECD countries directed on average 3.3 percent of their GDP toward investments. Germany's infrastructure is eroding as its public capital stock diminishes. **The federal government and states must reach an agreement on an investment package for the new legislative period. This package must include investment targeting the maintenance and expansion of traditional infrastructures as well as the expansion of a glass cable network throughout the country in order to ensure a digital infrastructure that is fit for the future. This package would involve the state spending an additional € 5 billion annually. Findings show that an investment of this nature would have positive effects on growth and employment.**

Recommendation 2:
Increase public investment and build capacities

Closing the investment gaps in key areas such as education and infrastructure require long-term planning. The fact that currently available funds are not flowing into these areas should not lead to the fallacious decision to not invest in the future. We must instead (re)build education and infrastructure capacities and improve the efficiency of administrative structures. Germany's debt rule is a sound instrument for reducing excessive debt in public budgets. However, at the same time, it should not prevent government from making necessary investments in the future. **In order to maintain public capital stock, both the federal and state governments must protect and increase public investment and thereby ensure net investment remains in the black.**

Goal 2:
Increase labor-market participation

Recommendation 3:
Expand childcare, improve education

Now, more than ever, is the time to invest in education. Expanding childcare would also enable more women to participate more fully in the labor market. A high-quality education system would help create the key factors needed for social mobility. **For the new legislative period, the federal government and states must reach an agreement on expanding full-day schools and the introduction of an optimal staff size for daycare facilities. Achieving these aims requires an annual € 10.4 billion investment. The impact would be significant: Educational attainment and vocational opportunities among youth would improve. More women would be in employment, which would help reduce income gaps. In the medium term, such investment would lead to higher GDP growth and a significant reduction in public debt levels.**

Recommendation 4:
Reform tax-and-transfer systems

Germany's tax-and-transfer systems are not aligned in such a way as to incentivize earning additional income. Low-income earners retain less of each additional euro earned than do higher income earners. In some cases, earning extra income among low-income earners can actually involve a net loss in household income. **Policymakers must address the need to reform Germany's tax-and-transfer system in this legislative period. The systems should be harmonized to ensure that additional work always yields payoffs. One option would be to integrate the child benefit, housing allowance and unemployment benefit II (Hartz reforms) into a coordinated transfer benefit with a constant transfer withdrawal rate of 60 percent.**

Goal 3:
Foster wealth creation

Recommendation 5:
Wealth policies should target lower-income households

In cross-national comparison, Germany stands out for featuring a relatively average level of wealth and considerable inequality in the distribution of wealth. Some 40 percent of the population has no appreciable wealth – a situation that can be attributed in large part to a rudderless wealth policy. And the challenges are growing: the unequal distribution of wealth only exacerbates growing gaps in income. **Wealth policy must be made a visible and tangible priority in the new legislative period. The key features of wealth policy reform must include the bundling of resources (which are currently distributed in ways confusing to most), an increase in the use of funds for palpable effect, and measures targeting low-income households.**

Recommendation 6:
Expand access to productive capital

To date, Germany's wealth policy has failed to ensure that all citizens have access to creating wealth. This has to do with the fact that government support has focused on retirement arrangements that yield little for those who save and waste considerable amounts on administration. In addition, despite the structural changes underway in the world of work, pension payment schemes and contracts are often linked to full-time employment. Increasingly, more people are and will fall through the cracks in such a system, which further fuels inequality in the distribution of wealth. **Everyone in society must have the opportunity to benefit from the productive capital of a society. This involves the state underwriting investment opportunities that are flexible, transparent, cost-effective and easily understood. In line with the changing conditions in the labor market, these investment opportunities should not be linked directly to employment. Wealth policy should not be limited to a narrow focus on pension schemes. People must be allowed to determine themselves what they do with their assets and when to take action.**

Goal 4:
Foster entrepreneurial activity

Recommendation 7:
Expand startup financing opportunities

The strength of Germany's social market economy relies heavily on the health of small and medium-sized enterprises. SMEs generate more than 50 percent of net added value in the German economy and play a key role in vocational training and employment. They are the drivers of key innovation efforts. However, increasingly fewer people in Germany are willing to take the risk of starting a business or taking over a company as a successor. **German policymakers cannot accept the ongoing decline in business founders and successors. We need a change in Germany's entrepreneurial climate. Specifically, this involves increasing funds for startup financing. Entrepreneurs in innovative sectors in particular must have greater access to venture capital. Policymakers at the federal and state levels must work together with local chambers of commerce and development banks in implementing transparent, easily accessible programs.**

Recommendation 8:
Leverage migrant entrepreneur potential

Increasingly more people with an immigrant background are starting businesses in Germany. They breathe new life into the German economy, create jobs and help clear paths of integration for themselves and others. In 2014, more than 2 million people were employed thanks to the entrepreneurial activity of migrants in Germany. **Advisory offerings that target this group in particular can help ensure the long-term success of startups. The input of decision makers at the federal state level and chambers of commerce alike is needed here. In addition, we must do more to remove the institutional barriers faced by entrepreneurs with a migrant background.**

Goal 5:
Promote innovation

Recommendation 9:
Promote inclusion through innovation

In the German economy, robots have not replaced human labor. In fact, they have instead created more than 250,000 high-paying jobs in the services sector since 1994. Digitalization and automation thus bear considerable potential in terms of creating and securing jobs which, in turn, promotes inclusion. This potential is undertapped – particularly in the MINT fields, where many jobs remain open as several companies desperately seek to fill specialized training positions with future skilled labor. **Germany must seize the opportunity to leverage innovation for greater inclusion. This will require generating excitement for digitalization in schools. The education system must target the goal of equipping students with the skills needed to navigate an ever-changing world of work. Lifelong learning is also crucial to ensuring the inclusion of aging employees and employers. Digital infrastructure must also be tackled in order to close the gap in broadband deployment, particularly in rural areas.**

Recommendation 10:
Strengthen innovation

Germany needs innovation – it's essential to ensuring productivity and long-term growth and prosperity. This means that its innovation efforts must change course. In the era of industrialization, Germany was a model for the benefits of an effective cooperation among industry, the state and academic research. Germany's vocational training system has also traditionally been a leader on international comparison. This environment helped facilitate disruptive innovations that gave the German economy a technological advantage which, in turn, had a positive impact on wages and job security. At present, innovations in the German economy are less disruptive – they are much more process innovations that have a limited effect on growth and jobs. **The new legislative period must introduce an initiative promoting Germany as the land of innovation. Spending on research and development must target more effectively efforts to sustainably increase productivity. Germany needs a strategy for venture capital in order to foster disruptive innovations. We also need a strategy to increase patent registrations if we are to sustain high standards in location quality. Regulatory policy can also help drive innovations by fostering greater competition among businesses in terms of best practices in driving innovation and growth.**

Contents

What's at stake?

Germany is entering the beginning of a new legislative period with a strong economic position. Current figures and forecasts for the near future are, across the board, positive.

But both the private sector and society are confronted with major challenges – globalization, digitalization and demographic shifts are transforming the demands on our economy. In addition, growing income and participatory gaps between individuals and regions demand that we rethink the underpinnings of social cohesion and prosperity.

A new push for growth offers a solution to these issues. Indeed, growth that provides everyone an opportunity to benefit must be made a priority. In Germany, this requires policymakers to align economic and social policies as part of an Agenda for Inclusive Growth that can renew the promise of the social market economy and ensure prosperity for all.

In concrete terms, such an agenda can be broken down into five action areas: investment in people and future-oriented fields, targeted reform of the tax-and-transfer system, a new wealth policy, diversity in entrepreneurial culture and new directions in innovation policy.

Where precisely these should be applied, and how we can make growth more inclusive – these are the subjects of this publication.

Between 2014 and 2017, the Bertelsmann Stiftung conducted a project that fueled discussion in Germany about international approaches to inclusive growth proposed by the OECD and other bodies. Building on this, we worked with German economists to identify action areas, measures targeting improvements in each, as well as the efficacy of these measures. The results of this process are the subject matter of this publication. Each action area has been the subject of close analysis documented in our "Inclusive Growth for Germany" series.

We wish to thank the following experts for their abiding support and collaboration throughout: Prof. Dr. Andreas Peichl and his team at the ZEW in Mannheim and at ifo in Munich, Prof. Tom Krebs, Ph.D., from the University of Mannheim and Prof. Dr. Martin Scheffel from the University of Cologne, Dr. Andreas Sachs and Markus Hoch from Prognos AG, Dr. Michael Böhmer at EY, Timm Bönke and his team at the FU Berlin, Prof. Dr. Thomas Lenk, Mario Hesse and their team at the Kompetenzzentrum Öffentliche Wirtschaft, Infrastruktur und Daseinsvorsorge e.V. at the University of Leipzig, Dr. Michael Thöne at the Institute for Public Economics at the University of Cologne, Prof. Dr. Wim Naudé and Dr. Paula Nagler from the universities of Maastricht and Rotterdam, and Prof. Dr. Friedrich Heinemann and his team at the Centre for European Economic Research in Mannheim.

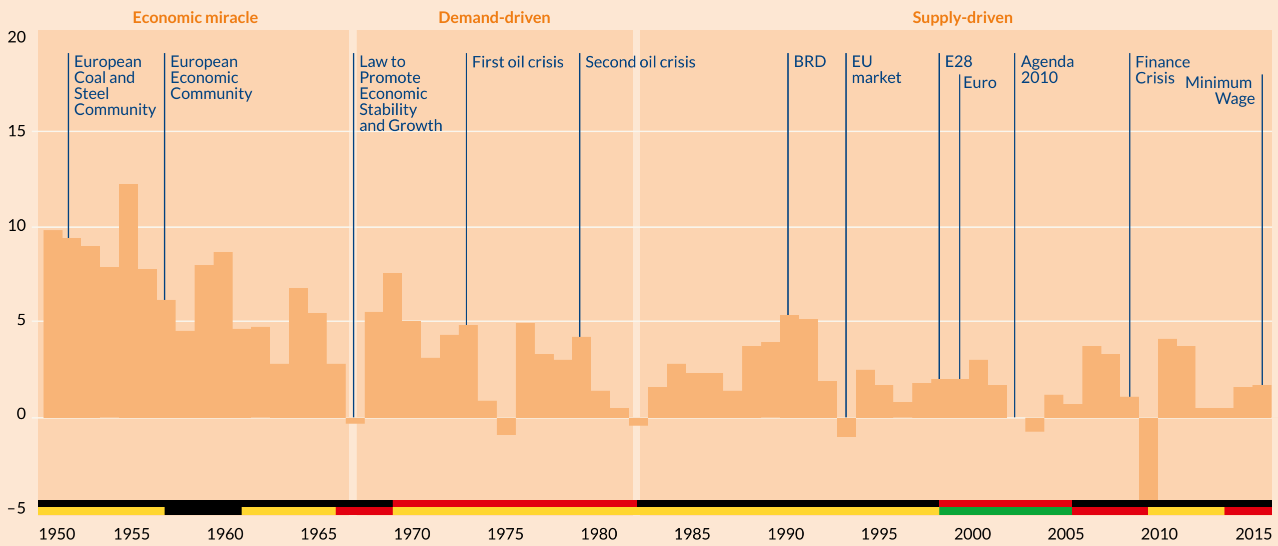
We would also like to express our gratitude to everyone who participated in our workshops and conferences, sharing their knowledge and expertise with us in what proved to be a profoundly fruitful process.

Why does Germany need inclusive growth?

Germany's national economy is currently in very good shape. While more than a few of its European neighbors are still feeling the after-effects of the financial crisis, the German economy issues one glowing progress report after another. Economic output has grown by more than 12 percent since 2010. The number of people in employment rose to a total of 44.3 million in 2017. In Ocotober 2017, the unemployment rate stood at 5.4 percent – the lowest level since re-unification. Employees' net wages and salaries have risen by more than 1.5 percent since 2013. And the budget has not just been consolidated, it is returning surpluses.

This is an impressive state of affairs. However, these positive figures tell us nothing about the German economy's capacity for dealing with social developments and global trends. Nor do these figures alone depict the social reality of Germany, and here it is important to consider three central challenges. The following challenges, which are changing the conditions of economic competition, have the potential to endanger social cohesion in Germany.

FIGURE 1: **Economic growth in the Federal Republic of Germany, 1950 – 2015**



Source: Peichl et al. 2017: 10; Data used: German Federal Statistical Office (Destatis) 2016

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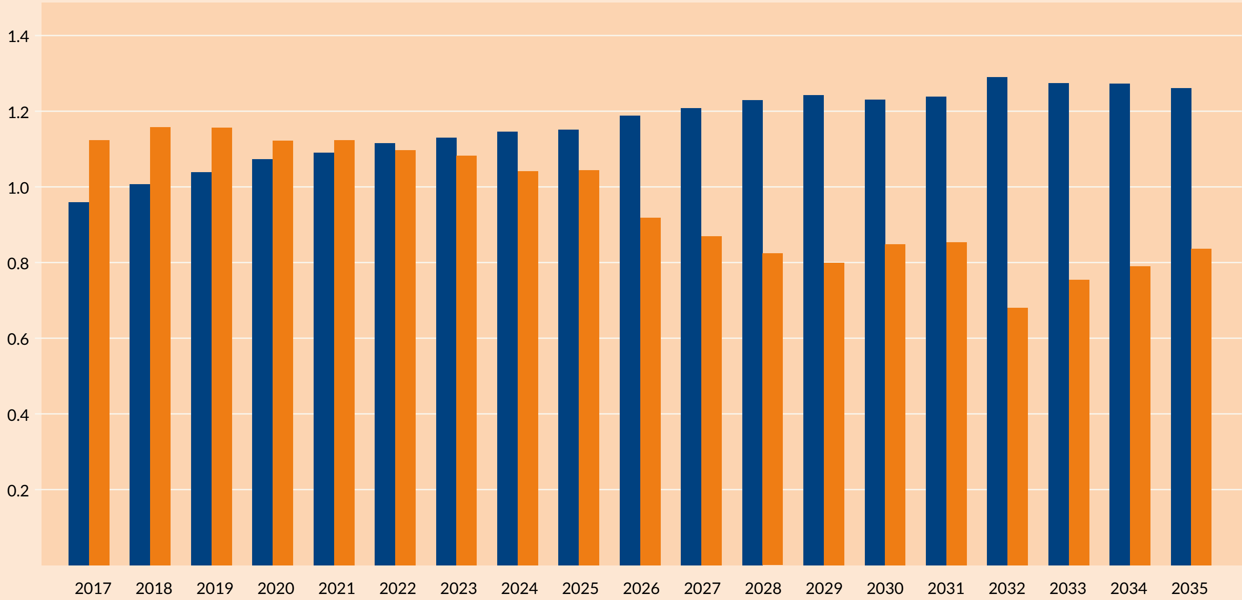
FIGURE 2: **Productivity and income growth through 2035**



Projected change in real GDP per capita and per person in employment from previous year, in percent
■ GDP per person in employment ■ GDP per capita

Source: IW 2017: 107

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1. Growth prospects are generally on the decline in industrialized countries, a development that is exacerbated in Germany by the demographic shift

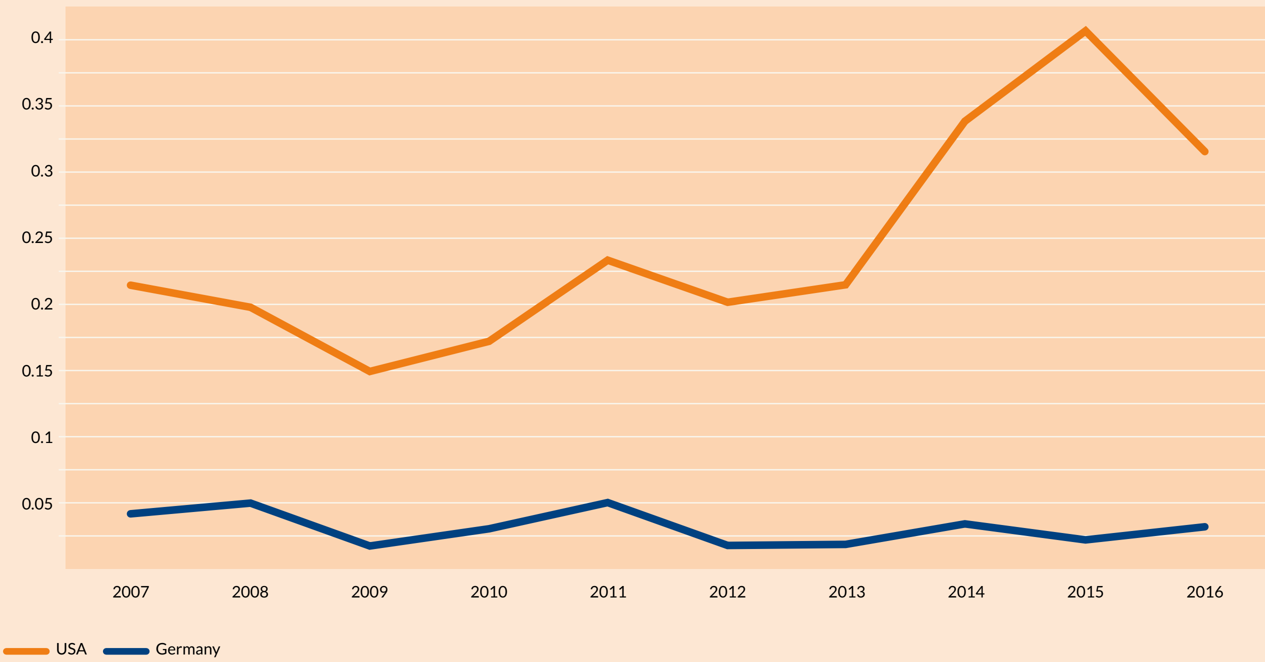
Germany's economic growth may appear robust in European comparison, but this should not obscure the fact that after recovering quickly from the crisis, the German economy only grew by 0.5 percent per annum in both 2012 and 2013 – a near recessionary rate. Mid-term growth prospects – though promising, are hardly outstanding.

In the mid-term, it is the demographic shift that will prove to be the major brake on growth. As a society ages, the working population drops considerably. While the old-age dependency ratio was 24 in 1990, it is currently 34 and is projected to reach 58 by 2040. In a current study, the Cologne Institute for Economic Research proceeds from the assumption that Germany's economic growth will more than halve by 2035. If this prognosis proves correct, the increase in the gross domestic product (GDP) would reduce to just 0.75 percent in 2035 (IW 2017).

But it is not just the demographic shift which is dampening growth prospects. Like many other industrialized countries, Germany has long recorded low productivity growth, despite accelerated technological transformation. Some economists refer to this phenomenon as social stagnation (see Berlin-Institut 2017). The record shows that there hasn't been a phase of growth exceeding the 2 percent mark since the early 1990s (Fig.1, see Peichl et al.).

Stagnating growth coupled with the prospect of decline not only endangers the sustainability of public finances, it means that future generations will have to contend with lower standards of living (Fig. 2).

FIGURE 3: **Venture capital investment as percentage of GDP in the United States and Germany, 2007 – 2016**



Source: Naudé and Nagler 2017, Data used: Statista

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2. Globalization and digitalization are increasing competitive pressure and risks in the economic process

Globalization increases competition, while digitalization is fundamentally changing the way we work. Closely interconnected, these processes require constant structural change and adjustments to the education and training system, in research and development, but also a modern, robust infrastructure with the capacity to adapt to shifting challenges – which is the backbone of any competitive economy.

However, a decline in investment over the years has raised doubts about German infrastructure and its fitness for the future. Digitalization presents the German economy and research landscape with new challenges to its capacity for innovation. It is primarily in process innovation that German productive industries lead the rest of the world. This has made Germany a true world champion in exports. But the country hasn't managed to keep pace in those areas where fundamental innovation is currently taking place, and it continues to lag far behind in terms of venture capital investment (Fig. 3). Along with the inherent vulnerability of an export-oriented economy to external shocks, there is a growing risk that Germany will be left out in the cold as new markets emerge, or even that it may ultimately become dependent on the new global players in the digital economy.

3. Despite growth, participatory opportunities are increasingly unequal

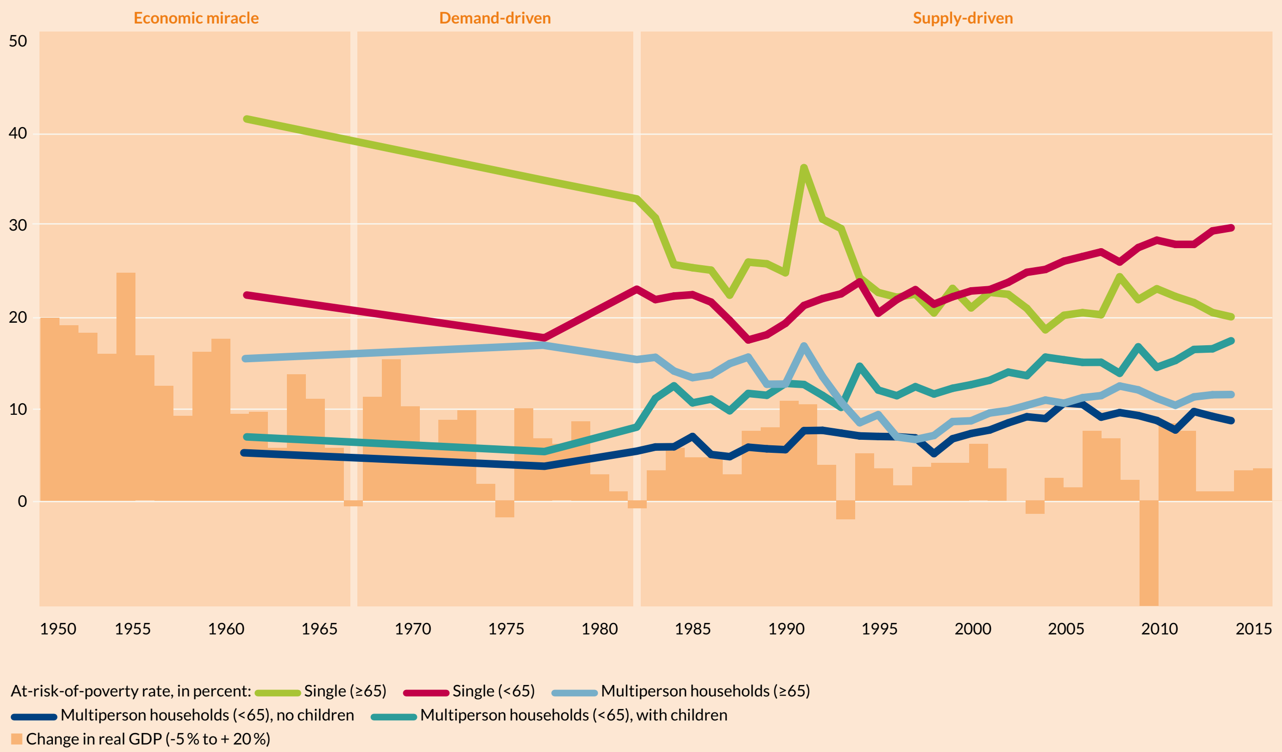
We can see this first of all in the labor market. Even as Germany approaches full employment, around one-tenth of its working population is dependent on unemployment benefits. According to the Federal Employment Agency, in August 2017, around 4.4 million people were drawing unemployment benefits while around 1.7 million received income support. Over 20 percent of the working population is currently employed in the low-wage sector. Women with children are often reliant on "mini-jobs" and part-time positions, usually with lower wages. Children from families with lower educational attainments have poor prospects for advancement, and their projected lifetime incomes are significantly lower than those of their contemporaries from better-educated families (see Krebs and Scheffel 2017).

Structural changes in the labor market, in technological progress, as well as integration into global value creation chains and the decline in wage agreements (with only around half of employees still subject to such industry agreements) – these factors have all played a part in these developments. Indeed, they account in part for the widening income gap between qualified and less-qualified employees. And there will also be a greater gulf between those working in internationally successful technology companies and employees in an expanding service sector which is primarily focused on the domestic market; two-thirds of job growth in the last 20 years came from the areas of social services, public administration as well as education and training (Bertelsmann Stiftung 2015a). Models for different growth projections indicate that this development will intensify in any case (Bertelsmann Stiftung 2015b).

Internationally, too, economies of developed nations are seeing wages for the lower two-thirds of the population stagnating or falling, with only the upper third profiting from growth (Milanovic 2016; Tyson and Madgavkar 2016). In its current Employment Outlook, the OECD points to increasing polarization in the labor market. While it seems that employment levels in most industrialized countries are returning to pre-crisis levels, not everyone is profiting from this recovery. Lower and mid-range wages are stagnating and the demand for mid-range qualifications is declining. This is likely to lead to greater wage inequality (OECD 2017c).

At the same time, there is a worrying trend whereby growth and low unemployment no longer necessarily reduce the risk of poverty, or increase financial leeway for low-income earners. The "at-risk-of-poverty rate" has been steadily rising in Germany since 2006, reaching 15.7 percent in 2015 – 1.7 percentage points higher than nine years ago. Across Germany, the duration of poverty has remained at a high average of over three years since 2002 (Fig. 4; see also Peichl et al. 2017). In the last two decades, annual GDP per capita in Germany has increased from € 19,754 in 1991 to € 36,211 in 2014. However, when adjusted with data on income distribution and poverty, GDP per capita has stagnated since 1991. Inclusive growth is not taking hold (Fig. 5; see also Peichl et al. 2017).

FIGURE 4: **Risk of poverty by household type, 1962 – 2014**



Source: Peichl et al. 2017: 41; Data used: Destatis 2016, SOEP (v.32), EVS 2016

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Despite nominally increasing wages, low-income households – particularly those with single parents – are suffering under the leap in the cost of living, particularly housing costs, and have no leeway for investing in their own education or that of their children, or to amass wealth (Sachs et al. 2017; SVR 2017: 419). Growing wealth inequality, and consequently income inequality, are the result (IWfD 10 2017).

Declining growth prospects and increasing adaptation requirements accompanied by increasing risks of globalization and digitalization as well as rising social inequality despite growth – these are the challenges that are already generating multiple conflicts in German society (see Bönke and Brinkmann 2015). Germany can confront these challenges by interlinking economic and social policy even more closely. And inclusive growth is the right model for achieving this.

Why focus on inclusive growth?

How can we increase growth and at the same time ensure that it is of greater benefit to all? This is a question that is increasingly being discussed under the concept of "inclusive growth." The Organisation for Economic Co-operation and Development (OECD) uses the term in its quest for alternative methods for measuring prosperity and developing economic policy recommendations, while the International Monetary Fund (IMF), the World Economic Forum (WEF) and the European Investment Bank (EIB) are all taking part in the debate (OECD 2017a; OECD 2014a; OECD 2014b; OECD 2014c; Kireyev and Chen 2017; IWF 2017; WEF 2017; WEF and EIB 2017). And the European Union has presented its policy using this term as part of its Europe 2020 strategy.

The term is comparatively new to German debate. Beyond economic policy circles, inclusion has generally been discussed in terms of the complete and equal participation of all members of a society – regardless of their background, ethnic identity, ability or other characteristics. People should be able to participate in all societal processes. The concept of inclusion has most prominently been used in Germany to describe the integration of people with disabilities into the formal labor market and the mainstream education system.

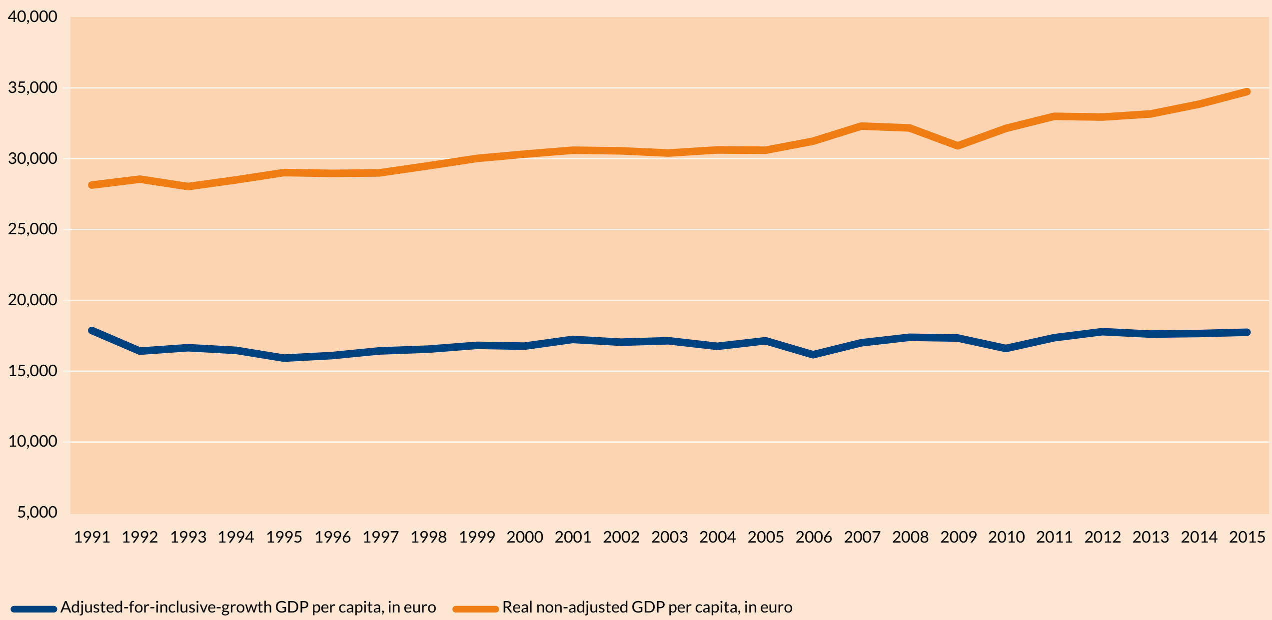
Development economists first applied the term "inclusive growth" around the beginning of the millennium. The initial idea behind this was that the world's poor should be in a position to profit from economic upturns in their countries. It was in this context that inclusive growth established itself as an independent term (Lopez 2011). And it is with this sense that international organizations like the IMF and the World Bank also use now the term (de Mello and Dutz 2012; Koch 2017).

It was only in the wake of the 2008 global financial crisis that the term increasingly spread beyond development economics to economic and social policy discourse in industrialized countries. The concept brings together two strains of discussion. On the one hand, there is the long-running discussion around a more comprehensive conception of prosperity to replace GDP. Around the early 1990s, criticism of GDP as an indicator of prosperity increased. Critics complained that it failed to represent factors such as quality of life, the environmental and financial sustainability of growth or issues of participation. This debate also drew in the OECD, the German Bundestag and the federal government, each of which examined alternative methods of measuring prosperity that might result in political measures (OECD 2015; Deutscher Bundestag 2013; Bundesregierung 2016).

The second strain of discussion developed in numerous OECD member states around 2008, in the immediate wake of the financial crisis. Here the key question was: How could these countries return to a stable path of growth, and how could this growth be configured in such a way that those who were particularly affected by the economic downturn and the ensuing state debt crisis would profit directly from the return to growth? It was the OECD that drove this discussion (OECD 2014a; OECD 2014b).

However, this discussion didn't end with crisis-affected countries. It became increasingly clear that the fundamental challenges facing Germany described earlier would also see other industrialized countries confronted with growth that came with increasing social inequality and greater risk to vulnerable elements of their populations. At the same time, the traditional systems and instruments of social equity came under increasing pressure. For these reasons the OECD is now joined by numerous international organizations and think tanks like the WEF (2017), the Center for American Progress (2015) and Bertelsmann Stiftung in the search for inclusive growth in industrialized countries.

FIGURE 5: **Indicator of inclusive growth and GDP per capita, 1991–2015**



The indicator for inclusive growth reflects GDP per capita adjusted with data on income distribution and poverty.

Source: Peichl et al. 2017: 43; Data used: Destatis 2016, SOEP (v.32), EVS 2016

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While there is no universally applicable definition of the term inclusive growth, there are three elements that are common to every approach:

1) Growth is a necessary prerequisite for inclusive growth. An assumption inherent in every actor's concept is that GDP growth is the key to raising the general standard of living. This puts the concept of inclusive growth at odds with the position of many critics of growth.

2) All actors recognize that economic growth cannot be an end in itself. It's not just about how much growth a national economy can generate. Rather, the broader issues addressed are the conditions in which growth is generated and who profits from this growth. Most definitions focus here on reducing concrete indicators of inequality and increasing societal participation among disadvantaged sectors of the population.

3) Another – essentially new – element common to the various approaches is that inclusive growth as a concept is intended to redefine the relationship between economic policy and social policy by anchoring both in principles of equity and participation. The social welfare state is a great historical achievement. It is the institutions of the social welfare state and its redistribution mechanisms that moderate the distribution inequality that arises from economic processes. However, as conditions in the globalized and digitalized economy intensify, these instruments are at risk of structural overload in the longer term. From the other side comes an economic policy perspective that regards increased competitiveness and more efficient economic processes as paramount. However, this inevitably aggravates inequalities and intensifies the pressures borne by the social welfare state – a conflict of objectives for which those advocating various concepts of inclusive growth aim to answer. How can the scope of participatory opportunities be expanded within and by the economic process?

Options for a new growth strategy

The call for inclusive growth is now being heard in German politics. Before Sigmar Gabriel switched from the Economic Ministry to Foreign Affairs, he presented the Annual Economic Report for 2017 (BMWi 2017a) with the subheading "For inclusive growth in Germany and Europe." His successor, Brigitte Zypries, soon picked up on this by presenting a ten-point plan for inclusive growth in Germany (BMWi 2017b).

This well-argued Economics Ministry paper is on target. Germany should be considering the issue of inclusive growth. It must not become a function of partisan politics. In this new legislative period specifically, all economic policy actors must make it their task to ensure that inclusive growth doesn't become a buzzword for one or other political camp. Particularly in Germany, the country that invented the concept of a social market economy, every actor should be aware that growth and participation, productivity and the cohesion of society must always be considered in concert. Political parties that wish to see the continuation of the social market economy cannot afford to ignore this.

And social partners who see Germany as more than just a production factor must subscribe to the goal of inclusive growth. We should see the current situation as an opportunity for a complete rethink of how we wish to grow while ensuring the maximum number of people can profit from this growth. A proper debate around inclusive growth must aim at making the German growth model fit for the future.

Germany can grow inclusively. There are strategic options for inclusive growth in five action areas. The Bertelsmann Stiftung has analyzed each of these fields in collaboration with specialists and developed recommendations that form the basis for an agenda of inclusive growth. We call for:

1. public investment in people and future-oriented fields;

2. an increase in employment incentives and a reduction of inequality through reforms targeting the interaction of taxes, duties and transfers;

3. a coherent and goal-oriented wealth policy that reduces wealth inequality and allows more people to participate in the opportunities of growth;

4. a new entrepreneurial culture built on the recognition that Germany is characterized by diversity and that companies run by people with a migrant background make a significant contribution to economic performance and social mobility; and

5. a rethink aimed at a new policy of innovation that will return Germany to the peak of technological development.

Action area 1:
Investing in people and the future

In a modern economy, investments are a key instrument for increasing economic growth and thus contributing to increased societal prosperity. Technological advances, the success of companies and the creation of qualified jobs are all impossible without modern capital stock. To ensure that Germany remains a business location equipped with the capacity to offer future generations prosperity and employment, investment must be undertaken today. This is where public funds have a particular role to play.

We have developed a number of scenarios to test how increased investment would impact Germany's economic development. They all conclude that greater public investment in the right areas would lead to higher GDP growth and to a more just distribution in the coming years. Increased investment would also result in greater growth in productivity, work volumes and the capital stock of the state while reducing the debt burden on the next generation. Germany must be prepared to spend money to reduce its investment deficit.

For all its economic strength, the country lags behind in investment. Between 2005 and 2014, the state made an average of 2.2 percent of its GDP available for development of roads, schools and preschools. In the same period, OECD countries as a whole put 3.3 percent of their GDP into investments. The German Institute for Economic Research (DIW) points to an average investment gap of 3 percent of GDP, or € 75 billion per year, for the period 1999 to 2012, when comparing Germany with the eurozone as a whole.

Finally, the Association of German Chambers of Commerce compared Germany with 17 other industrialized countries and found a cumulative investment shortfall of over € 600 billion between 2003 and 2012. The OECD has repeatedly warned of a loss of value in Germany's public capital stock (most recently: OECD 2017a).

Even allowing for a more broader view of investment – taking into account federal, state, city and regional authorities spending on property maintenance, leases and rents – does not change this poor picture of German investment (Hesse et al. 2017). And the need is great. A view of educational expenditure per pupil shows that Germany is in the midfield in comparison with other OECD countries, and at the primary and secondary levels expenditure is, in fact, below the OECD average (OECD 2016). According to Germany's development bank, the KfW banking group, German schools alone require around € 33 billion. Here it is the local authorities, along with roads and transport infrastructure, which have the greatest shortfall.

According to their own estimates, the local authorities' investment gap was € 136 billion in 2016 (Scheller et al. 2017). A comparison with the previous year does at least indicate a slight easing here. However, urgently required investments are still outstanding (Hesse et al. 2017).

In the previous legislative period, an expert commission was convened at the invitation of the Federal Economics Ministry; its recommendations included a call for a commitment to greater public investment (Expertenkommission 2015). In two studies, we examined what the impact of this increased investment would be. Developed in collaboration with Prognos AG, the study "Balanced Budget and Investment Rule: Two Sides of the Same Coin?!" included five scenarios that calculated the projected impact on the growth of investments of varying scale, particularly for public buildings, roads and transport infrastructure (Böhmer et al. 2017).

Were Germany to leave its rate of investment unchanged, by 2025 the average GDP would be 1.4 percent per year. But if Germany were to raise its investments from 2.2 percent to the OECD average of 3.3 percent of GDP, growth would rise to 1.6 percent per year. Germany would be able to generate an extra € 80 billion. Greater investment would result in a weaker state budget balance in the short term, but in the long term, the increased economic growth would have a positive effect on public finances. In every model projection, the current debt level of 70 percent would fall to below 50 percent in 2025 (IWfD 07 2017).

Tom Krebs from the Chair of Macroeconomics at the University of Mannheim and Martin Scheffel from the Center for Macroeconomic Research (CMR) at the University of Cologne have undertaken an even more detailed examination of the three areas of public investment activity which have the greatest need for action and which thus offer the highest prospects for return – preschools and schools, residential construction as well as transport and digital infrastructures. Using a previous needs analysis of these three fields as their basis, they calculated the effect on growth, employment, distribution and fiscal sustainability using a microfounded macroeconomic model.

The nationwide expansion of all-day schools with a supervision quotient of 80 percent and an optimal staffing ratio in preschools would require around € 10.4 billion per year. Making this investment would increase the educational success of children and thus expand their later opportunities in the labor market. Improved childcare would also increase the working opportunities available to women. The impact is significant – in 2020 the GDP would be € 11.4 billion higher than it would be without investment, with a differential of € 35.1 billion in 2020 and € 56.7 billion in 2050.

Employment, too, would profit greatly from an investment program aimed to strengthen childcare, with more than half a million additional full-time equivalent (FTE) positions by 2050 invoving a corresponding reduction of unemployment equivalent to over 346,400 positions in 2050. The investments would be amortized in 16 years and would have generated a return of almost 12 percent. They would also have a positive effect on the government debt ratio, which would fall by around five percentage points by 2050. Moreover, this investment would have a particularly positive effect on the incomes of single mothers, mothers with children and adults raised in families with lower educational attainments. Income inequality would fall (Krebs and Scheffel 2017).

We are convinced that Germany's investment gap can only be closed with a long-term spending program. The goal is to increase investment to guarantee a long-term planning horizon at every level and for all participants. Naturally, this also requires the availability of the requisite administrative capacities – particularly in local authorities. Therefore, the correct solution is to examine options for long-term, targeted investments in line with the principles of inclusive growth.

It is clear that we cannot burden future generations with an excess of debt. This was the thinking behind the debt brake, which in 2020 will be extended to Germany's states. While it is a valuable instrument for keeping expenditure under control, it is only one side of the equation. Burdening future generations by failing to sufficiently invest in the future is not a sustainable approach. This means that fiscal sustainability cannot be controlled exclusively by the debt rules enshrined in law, and thus the expenses side. Instead, public assets must be secured for the present generation and, above all, for future generations. Just as Germany has introduced rules for amassing debt, it also requires rules for stabilizing investments. Vacillating between large-scale expenditure and ruthless austerity comes at a cost to economic substance.

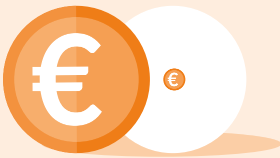
Action area 1:
Investing in people and the future

Baseline

Despite its strong economic position, Germany lags behind in terms of making the necessary investments

During the last legislative period,
the federal government increased public investment activity
by more than

40 percent



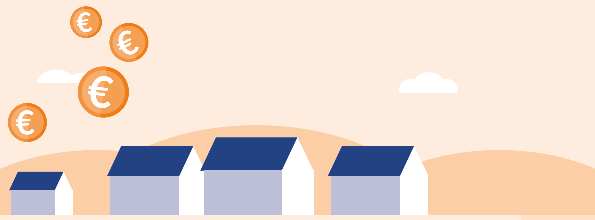
Yet the gross investment ratio has hovered
at just over 2 percent for more than 10 years
and is thus below the rate observed in the 1990s.

Data from the KfW Group's Kommunalpanel show the investment
shortfall among municipalities in Germany to have reached

€ 126 billion

Recommended action

Increase public investment in three key areas



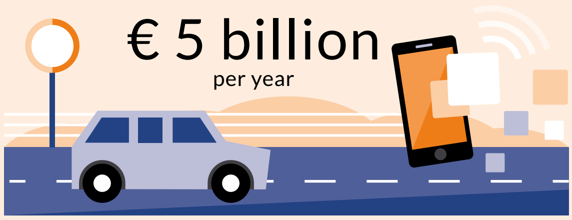
Good childcare (daycare and all-day schools)

€ 10.4 billion
per year

Affordable housing for lower- and middle-income earners

€ 5 billion
per year

Modern digital infrastructure



€ 5 billion
per year

Other necessary reforms

Regulations that help
stabilize investments
and debt (debt brake)

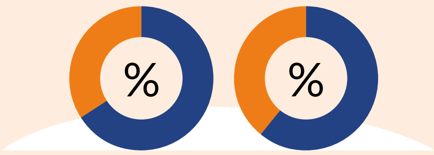
Effects

Public investment generates growth and prosperity

A sustained increase in public investment targeting childcare, affordable housing and a modern digital infrastructure fosters growth and prosperity.

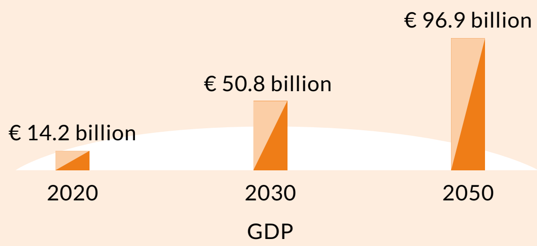
Public investment …

… reduces debt



Government debt ratio of 66 percent falls by 4.93 percentage points by 2050.

… increases growth



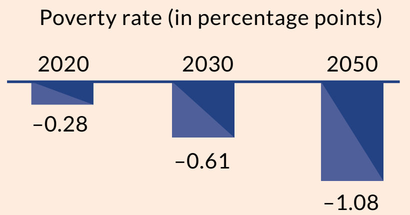
… creates jobs

+629,200
more in employment by 2050

… reduces unemployment

–441,400
fewer unemployed by 2050

… reduces poverty



Action area 2:
Strengthening employment incentives

The German tax-and-transfer system, underpinned by the principle that strong shoulders should bear more than weak ones, ensures that the net income of citizens is more equitably distributed than market incomes. A progressive tax-and-transfer system that promotes growth while creating employment incentives and strengthening public finances is a significant element of any agenda for inclusive growth. Herein lies the problem with the German system – as critics frequently point out, it is averse to growth and incentives. The OECD, the European Commission and other international organizations bemoan the fact that secondary earners as well as those on low or medium incomes face a particularly high burden of taxes and social contributions (see OECD 2017b; European Commission 2016).

In international comparisons, Germany emerges as a country with a high rate of income distribution. The extensive social security system is not just intended to help combat poverty, but also to help secure the living standards of older people, or those who are ill or unemployed. State transfers are the largest line item in the country's budget, with annual spending of around 18 percent of GDP. It is therefore even more important that money is deployed where it can help and where it has the greatest impact. Aside from basic income, analysis by the German Institute for Economic Research shows that many transfers do not benefit the needy, but rather members of the middle class or even the affluent (Bach et al. 2015).

Consequently, one target on the road to inclusive growth should be reforms to the tax-and-transfer system that increase individual employment incentives, allow for a balanced budget and prevent income from being inequitably distributed. International studies show that reforms have the greatest impact when they increase incentives to enter employment. Whether or not the tax-and-transfer system creates incentives is particularly apparent from the effective marginal burden.

The effective marginal burden indicates how much of each extra euro earned must be relinquished. This occurs through income tax, social contributions or from the fact of social transfers being withdrawn once an unemployed person re-enters employment, or a family draws an additional wage upon a second partner taking a job. Since reunification there have been various attempts to reduce this burden through lower marginal income tax rates and higher tax allowances. However, the German system of taxes, duties and transfers still has the disadvantage that the burden on mid-range incomes increases relatively sharply (OECD 2017b).

With regard to inclusive growth, the effect of the tax-and-transfer system on the lower income range is also relevant. Here it is important to pay particular attention to the interplay of the tax-and-transfer system. We therefore commissioned a report from the European Centre for Economic Research in Mannheim (ZEW) that investigated the incentive effect of different regulations in the German tax-and-transfer system. One focal point here was on how these regulations interact and affect each other (Buhlmann et al. 2017).

The report's findings show that the effective marginal burden for broad income levels deviates significantly from the familiar tax rates, such as the income tax rate. Among lower incomes, the marginal burden from withdrawal of transfers is particularly high and typically ranges between 80 percent and 100 percent. Once entitlement to transfers expires, the effective marginal burden through taxes and duties tends to range between 40 percent and 60 percent. In the current system, a single-income household with an annual net income of € 17,000 receives nothing from each additionally earned euro. A single-income household with an annual net income of € 75,000, on the other hand, retains 56 cents from each additionally earned euro.

There are frequent discontinuities in disposable income, whereby the positive effect of increased wages is exceeded by the withdrawal of transfers. This means that additional work – on a small scale, at least – just isn't worthwhile in some cases. These discontinuities must be removed for the tax-and-transfer system to create greater employment incentives and make its contribution to inclusive growth. Here the ZEW has developed various reform recommendations.

In order to estimate the real-life impact of these reforms, they were played out in simulations using a representative dataset of the population. This revealed how the recommendations would impact employment, income distribution and the state budget. For years, politicians have been calling for a reduction in the "middle class bulge" – that is, the particularly steep rise in progressive tax rates for low-income earners. In fact, the ZEW found that this was the most effective way of increasing employment. But this step would have a somewhat negative effect on income distribution. Such a reform would also see a marked drop of € 37.28 billion in income to state accounts.

Moreover, such a reform would barely reach the lower two deciles of income distribution. The average equivalence-weighted relief impact would be about nil for the lowest decile, around € 40 for the second decile and around € 1,253 for the top decile, which means that two of the intended targets would have been missed. To reduce the negative distribution impact and to advance closer toward inclusive growth, further steps would be necessary in this scenario. For instance, one option would be to increase the top income rate.

Comprehensive impact representing the greatest possible degree of inclusive growth could be achieved through another combination of reform steps: unemployment benefits, housing allowance and child supplements could be integrated into a "new" transfer with a constant transfer withdrawal rate of 60 percent. This rate would mean that the available income of a household that receives transfers would always increase by 40 cents for each additional euro of net income. Moreover, the joint tax deduction for married couples, which has previously offered little incentive for both partners to work, could be replaced by an actual joint tax deduction with a transferable maximum amount.

In contrast to the status quo, married partners would essentially be individually taxed, but the first earner would be able to transfer up to € 13,805 of his or her taxable income to the second earner. Such a reform would increase employment by over 27,300 FTE positions, reduce inequality – by expanding work opportunities, particularly to women – and increase public income by a total of more than € 5 billion.

These steps would lead to increased employment and, at the same time, result in a slight reduction of income inequality. The introduction of actual splitting would also slightly increase tax revenues. And introduction of a constant transfer withdrawal rate would have a number of positive effects. Lower incomes, in particular, would rise appreciably. More people would enter employment. Because this would also have to integrate the basic income, housing allowance and child supplement, there would be lower administrative expenditure (Buhlmann et al. 2017).

Action area 2:
Strengthening employment incentives

Baseline

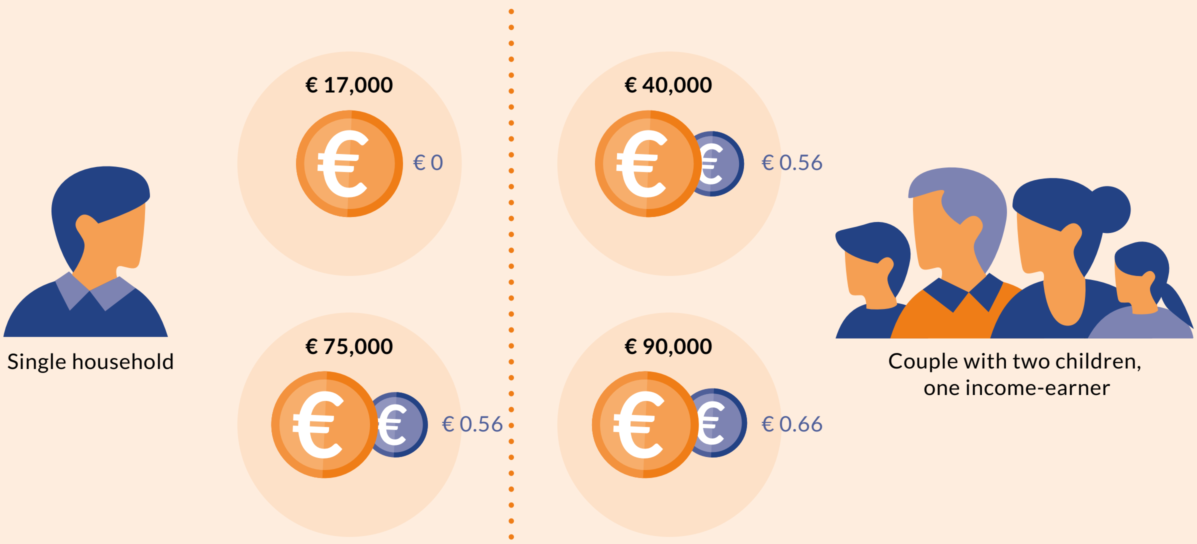
Germany's tax-and-transfer system

Interaction of German tax, duty and transfer systems

For lower-income earners, additional work and increased income could spell for less disposable income. Top earners retain more of each additional euro earned.

Effective marginal burden

How much of each additional earned euro is left (netto) after social transfers, income tax and social contributions have been deducted?



Recommendations and effects

Strong shoulders should bear a heavier burden

Recommend reform 1:
Transfer withdrawal rate

60 %
transfer withdrawal rate

Taxes, duties and transfers should be harmonized to even out the effective marginal burden and to make sure that additional work is always worthwhile.

Incentivizing employment: 40 cents of each additional euro is retained.

€ 1

€ 0.40

More people take up employment (137,700).

Savings in public administration costs

Employment incentives increase

Recommended reform 2:
Replace the Ehegattensplitting (a joint tax deduction for married couples that disincentivizes employment for both) with an actual joint tax deduction (maximum transfer of € 13,805).

Female employment increases by approximately 27,300.

Public revenue increases by approximately € 5 billion.

Action area 3:
A new wealth policy

"Prosperity for all," Ludwig Erhard's motto for the social market economy, applied to income and wealth in equal measure from the outset. The German economic and social order should allow the population as a whole to participate in increasing prosperity. While politicians in recent years have concentrated on income, wealth has returned to focus in the current debate around inequality. Recommended solutions continue to revolve around the issue of how the state can distribute wealth through taxes – through inheritance and wealth taxes, for instance.

But state wealth promotion is falling short. So, together with Timm Bönke and his team from the Freie Universität Berlin, we examined the question of whether current funding instruments are capable of fostering wealth creation (Bönke and Brinkmann 2017). In a rapidly changing labor environment, it is vital for the participation of further sectors of the population and thus for greater inclusive growth that wealth inequality, and consequently income inequality, be cushioned.

Since the mid-1980s, owners of capital have increasingly profited from economic growth, while this is less so the case for wage earners. The labor market alone no longer guarantees broad-based economic participation. Some households are even worse off than those in the preceding generation (Bartels and Jenderney 2015). Wealth creation is becoming more difficult, not just for low-income earners, but in the mid-range sector as well (Sachs et al. 2017).

When you examine how disposable household incomes have developed between 2002 and 2012 in Germany, an alarming picture emerges – the lower 60 percent have experienced an above-average growth in disposable equivalent household income and the lower 30 percent have actually seen their incomes drop in real terms in the course of those ten years. That the lower two-thirds of the population have seen their incomes decline or stagnate while the upper third are profiting from growth is a phenomenon seen not just in Germany, but also in other developed economies throughout the world (Milanovic 2016; Tyson and Madgavkar 2016).

A view of working-life incomes, that is, the income that an employee subject to social contributions earns throughout his or her entire working life, from first job to retirement, completes this picture of income development. It is striking that those born in 1950 or earlier have profited equally from growth, regardless of where they stand in the income distribution scale. For those born later, the situation has changed dramatically. While the upper working-life incomes experienced moderate growth and the mid-range tended to stagnate or fall slightly, incomes at the lowest level have dropped considerably.

Here income earners are losing out in real terms and falling to the working-life income levels of those born in 1937. This can be explained by increased interruptions to professional careers, with long phases of unemployment and falling actual wages and shifts in employment. It is particularly the less-qualified born after 1950 who are affected. This polarization impacts statutory pension allowances and retirement benefits (Bönke et al. 2015).

Current studies indicate that 50 percent of private wealth is held by around 5 percent of households (Grabka and Westermeier 2015). The real net wealth of private German households actually shrunk by more than 15 percent between 2002 and 2012. This is particularly surprising considering that the savings ratio in the same period was about 10 percent of income. So what happened? The negative real returns for private wealth can be partly explained by the fact that prices for owner-occupied property were in decline up until 2010. On the other hand, private households are not investing their money profitably. Besides owner-occupied property, they prefer to put their money in liquid yet low-return investments such as savings or current accounts. In periods of extremely low interest rates, low current income with negative real interest rates results in a devaluation of wealth. Private wealth is thus decoupled from the development of the national economy.

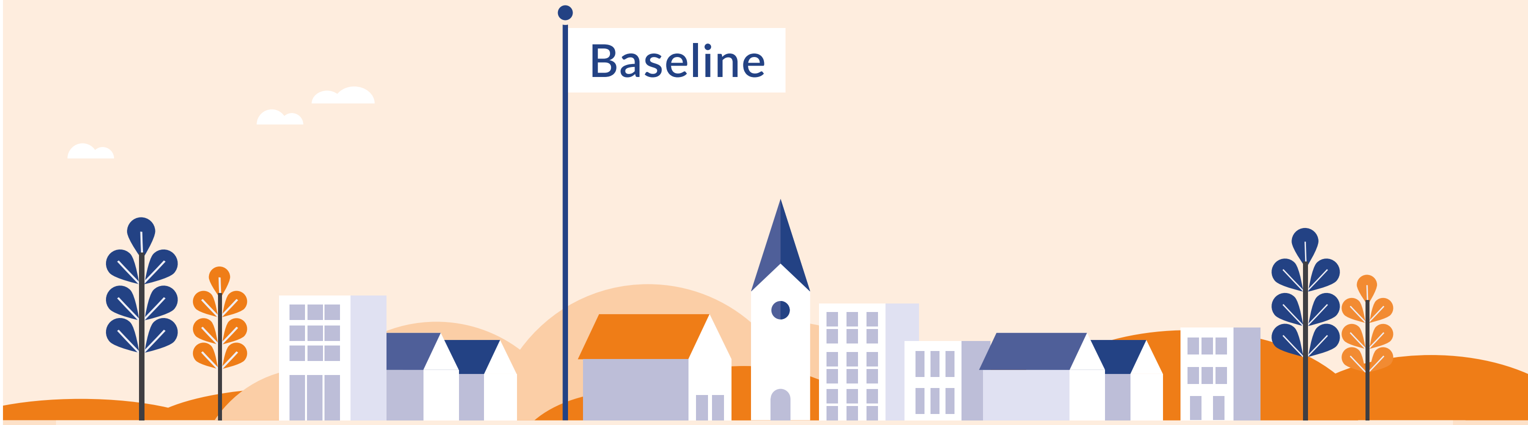
From this, we see that it is the quality, not the quantity, of household investments that is problematic. Germans are particularly averse to investing in productive capital. Shareholding is still uncommon (Deutsche Bundesbank 2016). In 2014 only 10 percent of households held shares. But for the wealthiest 20 percent of the income distribution, this proportion was 32 percent. The proportion of households who own funds has even declined. There is also no discernible trend toward greater share ownership. In fact, the number of shareholders fell once again in 2014. On the one hand, there is widespread complaint about low-interest policies and the so-called "expropriation" of German savers. On the other hand, few take advantage of the opportunity to profit from a bull market which has endured for years now. The security argument which is so often used barely holds water in time of state debt crises and negative real interest rates. Perhaps, as is often claimed, there is a more emotional aversion to shares. Bolstering financial knowledge could be one option for supporting households in wealth creation.

From this perspective, German wealth policies present a sobering picture. They have not cleared the path to wealth for all sectors of society. It is those who have less need of state support who are profiting most from current programs. The bulk of support is currently going into rigid, complicated pension scheme products which combine high administrative costs with low returns. Politicians should instead turn their focus to a wide range of capital investments with lower risk profiles. Wealth creation should be supported in a way that every level of society can profit from the productive capital of society. Investment opportunities must be flexible, transparent and readily comprehensible, accessible to all without excess bureaucracy. Administrative costs should be kept as low as possible. And above all, there should be a healthy risk-benefit ratio.

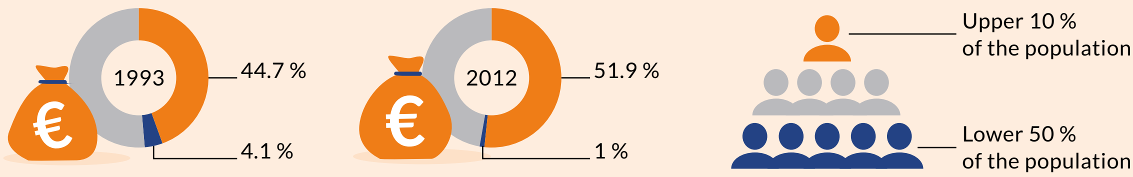
There are three aspects which should be front and center in any reform of wealth policies. There should be fewer instruments, but more money should be put into them. Secondly, politicians should no longer concentrate so heavily on pension schemes – people should be free to decide how they use their wealth. And in a shifting labor environment there must be an urgent rethink in the coupling of payments and contracts to employment relationships. All this would bring the urgently required flexibility and discretionary power over personal wealth. Finally, a cost-effective basic package freely available to all would further increase the appeal of wealth creation. If private providers are unable to offer such a product, the state should step in with a solution. One example of this is the Swedish bond fund (Bönke and Brinkmann 2017).

It is clear from a view of functional income distribution and wealth development that the problem will only grow in the future and therefore undermine public trust and faith in the institutions underlying a social market economy. So there is much to be said for rapid reform and active revitalization of wealth policy in Germany.

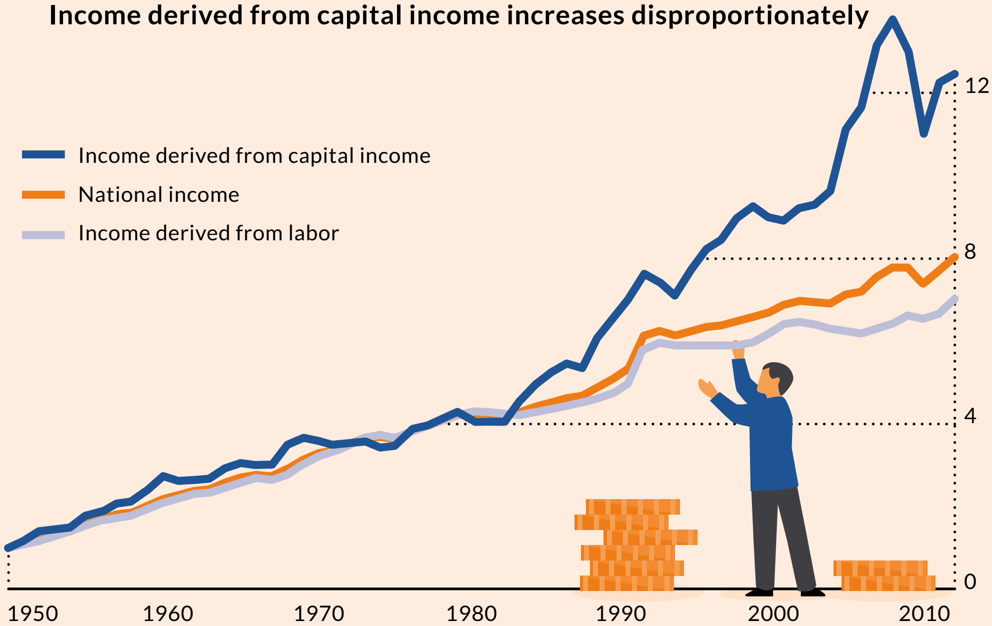
Action area 3:
A new wealth policy



Share of private wealth



Income derived from capital income increases disproportionately



Income derived from labor

New wealth fell by more than 15 % from 2002 to 2012, although the savings rate hovered at 10 % of income. This is attributed in part to an ineffective savings approach (low-interest investments devaluate assets) and aversion to investing in productive capital. As a result, assets shrink and are decoupled from the national economy.

Recommendations

Policymakers should foster wealth creation by expanding investment opportunities in productive capital to include those otherwise excluded

Provide flexible, affordable and easily understood investment opportunities that help households with limited assets build their wealth. These investment opportunities should not be coupled with an employment contract or pension scheme and thereby allow flexibility in access to one’s assets.

Investment in productive capital

Funds and shareholding become more profitable

Action area 4:
A new entrepreneurial culture

Germany rarely fares well in international comparative studies on entrepreneurial activity. These studies repeatedly show that fewer new companies are being established here than elsewhere (Sternberg and von Bloh 2017). This is also an indicator of a healthy labor market. Wherever secure, well-paid jobs are on offer, fewer people are inclined to take the leap into self-employment with its inherent risk and major challenges (Evers 2017; Metzger 2017).

But the strength of the social market economy is not based on the success of major corporations alone. It is based on a diverse, high-performing landscape of small and medium-sized enterprises (SMEs). Calculations of the Institute for SME Research in Bonn (IfM Bonn) show that around 3.45 million companies in Germany are SMEs – 99.6 percent of all companies. In 2015, they generated more than € 2.2 trillion and contributed almost 55 percent to overall net value creation in the German economy. It is the employment effect of SMEs that is particularly overwhelming – 16.85 million people were working for SMEs in 2015. This represents 58.5 percent of all employees subject to social contributions. At the same time, SMEs employ 81.8 percent of all trainees (IfM Bonn 2017).

But the SME landscape will only remain successful with constant additions of newly founded companies. This is because growth is not solely generated through the expansion of production capacities in existing companies. Those who found companies contribute to an improved competitive climate by bringing innovative business ideas to existing sectors or driving development in whole new areas of business. In this way, they increase pressure on established companies to become more efficient and creative rather than resting on their laurels (Piegeler and Röhl 2015; Metzger 2014).

With this in mind, it is worrying that the number of company founders in Germany continues to fall. The KfW Start-up Monitor 2017 shows that the number of company founders fell to a new low in 2016. At 672,000 individuals this is 91,000 fewer who have entered self-employment than in the previous year (Metzger 2017). Germany's Chambers of Commerce and Industry (DIHK) Start-up Report 2017 paints a similar picture with a view to the number of discussions with founders conducted by the chambers of commerce. In 2016, they fell for the sixth year in succession (Evers 2017).

But there is one trend which offers cause for optimism – people with a migrant background are taking part in entrepreneurial activity in Germany in ever greater numbers. Introducing new ideas, they are enlivening the private sector with startups and mid-sized companies. In 2014, around 40 percent of all business founders in Germany had non-German citizenship. In all, the proportion of foreign business founders in the private sector has more than doubled since 2005 (Kay and Günterberg 2015; see also Bijedić et al. 2017).

But founders without German citizenship only form a small subsection of a diverse society. Those with a migrant background – that is, people with or without German citizenship who either migrated themselves or have at least one parent who did so – is much larger. In 2014, this encompassed 16.4 million people in Germany; 709,000 of these were self-employed in 2014, according to an analysis of microcensus data carried out by Prognos AG and commissioned by the Bertelsmann Stiftung (Sachs et al. 2016).

But it is not just the quantitative contribution made by people with a migrant background to entrepreneurialism in Germany that is remarkable. The qualitative dimensions of the trends are also compelling. People with a migrant background have extensive familiarity and good relations with their countries of origin, which means they can help open up new markets and internationalize the

German mid-sized sector which, in 2015, accounted for 17.1 percent of the export revenues of all German companies (IfM Bonn 2017).

And entrepreneurs with a migrant background are increasingly moving away from the old clichés about grocery stores and fast-food outlets. The range of sectors in which immigrants have been founding businesses has been changing for years. In 2005, 38 percent of the self-employed with a migrant background were active in retail and catering; this proportion has fallen by 10 percent over the last ten years. A far greater proportion of the self-employed with a migrant background is now in other service sectors, and in the productive industries (Sachs et al. 2016; Leicht and Langhauser 2014; Bijedić et al. 2017).

Entrepreneurs with a migrant background also make a major contribution to Germany's positive employment levels. We commissioned a study which showed that between 2005 and 2014, the number of employees subject to social contributions employed by migrant companies had risen from 947,000 to 1.3 million (Sachs et al. 2016). Migrants who successfully establish and operate businesses also increase their opportunities for earning greater income. In Germany, this is a highly relevant topic for migrants and their offspring as they still tend to earn less than those without a migrant background as our study (ibid.) and that of the DIW (Grabka et al. 2016) show.

Politicians would be well advised to offer greater support for immigrants and their offspring on the road to self-employment than they have to date. The economic contribution of migrant companies is already considerable. When you add the opportunity for increased income for the self-employed and their model character as examples of successful integration, migrant entrepreneurs are doubtless already an engine for inclusive growth.

A better-equipped advisory infrastructure could contribute to the success of entrepreneurial plans (García Schmidt and Dierks 2016). Moreover, institutional barriers to self-employment must be removed (OECD 2017a; Niemann and García Schmidt 2015). Residency permits and settlement procedures for non-EU nationals should be simplified. Finally, migrants must be better involved in central regulatory institutions of the economy. In the long term, one particular key to increasing the number of businesses founded lies in education (Sachs et al. 2016).

Action area 4:
A new entrepreneurial culture

Baseline

Increasing numbers of people with a migrant background are founding businesses in Germany. The social market economy is dependent on the creation of new SMEs.

Entrepreneurs with a migrant background create jobs

567,000
2005

+9 %

709,000
2014

Self-employed with a migrant background

947,000
2005

+32 %

1,284,000
2014

Self-employed people with a migrant background create jobs

Self-employed migrants earn more than conventionally employed people

Employees with a migrant background

Average monthly net income

€ 1,537
2014

€ 1,274
2005

€ 2,994
2014

€ 2,498
2005

Self-employed entrepreneur with a migrant background

Higher income – less inequality and risk of poverty

Creation of migrant-owned businesses

Good international relationships with their countries of origin are a benefit, facilitating internationalization and the development of new markets.

SMEs are important factors in the social market economy's performance

99.6 % of all businesses in Germany are SMEs.

82 % of all apprentices

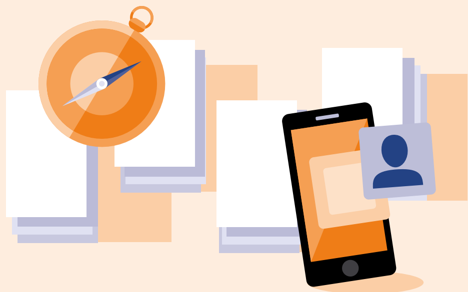
58 % of all employed people

SMEs contribute nearly 55 % to value creation in Germany

Recommendations

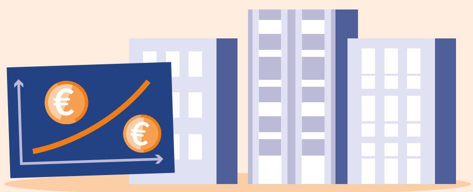
Facilitate the creation of more new companies, and enhance migrant entrepreneurs' potential

Further reduce bureaucratic and institutional hurdles to company creation in Germany



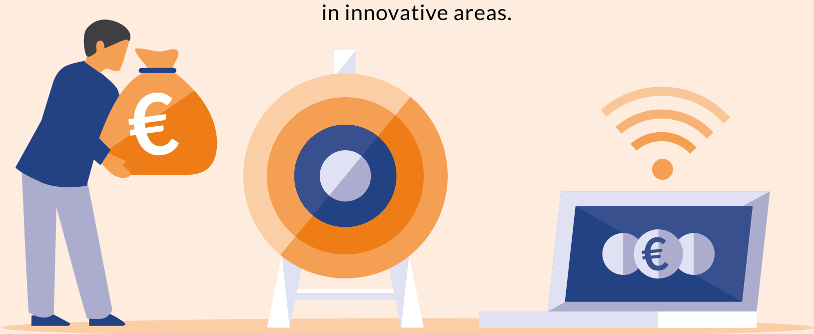
Expand target-group-specific advisory services that help new companies achieve sustainable success

Integrate entrepreneurs with a migrant background more strongly into business institutions



Make it simpler for self-employed people from non-EU countries to obtain residence visas

Provide more financial resources to support company creation. More venture capital must be made available to entrepreneurs in innovative areas.



Action area 5:
Strengthening innovation

Germany's processing industries require innovation to remain competitive, to continue producing outstanding goods, and to retain their leadership as exporters and employers. Digitalization, in particular, offers enormous potential for creating new, future-oriented jobs, which can foster participation and inclusive growth. But these innovations are also associated with risks, as automation can replace jobs and exacerbate social inequality. Digitalization can lead to a fragmented labor market which undermines existing protective mechanisms.

Are the challenges facing Germany attributable to digitalization and similar trends alone, as is often stated? Explanations for the increase in income inequality in industrialized countries often reference the technical innovations of recent years. These developments, it seems, will replace jobs carried out by humans and result in a disproportionate increase in the income of particularly well-qualified experts (Acemoglu and author 2010). An Oxford University study forecasts that more than half of all the jobs in Germany could fall victim to the coming wave of automation (Frey and Osborne 2015). The specter of the job-destroying robot is also ubiquitous in the media.

However, to date, there have been few indications that things really will be this grim. Instead, the reason for the increased inequality in wages since the 1990, according to an analysis by economists Wim Naudé from the University of Maastricht and Paula Nagler from the University of Rotterdam, is precisely the opposite – Germany's comparatively weak and declining successes in technical innovation (IWfD 19 2017). Campaigns would have us believe that Germany is the "land of ideas," a leader in technical development. And admittedly the numbers are impressive – Germany spends a large and growing amount on research and development.

The total research expenditure of state and private institutions combined exceeded the € 90 billion mark for the first time in 2015. In that year alone, more than 400,000 scientists were working on innovations in business. Most of them were helping to keep Germany's global lead in the productive industries competitive. This sector accounts for a quarter of all jobs in Germany and ensures the strength of German exports.

But this doesn't necessarily mean that productivity is rising rapidly in Germany. In fact, it has been dropping steadily since the 1970s. This doesn't fit with the image of rapid technical innovation nor with the idea of the productive robot replacing human workers on a large scale (Yglesias 2015).

True, Germany remains a leader in traditional sectors such as the auto industry and machine construction. Through process innovations and specialized product innovations, German companies have retained global market leader status in strictly defined areas, in some cases over decades. This applies not only to Germany's global players like the auto industry, but also to many highly specialized mid-sized companies which, in contrast to many of their foreign competitors, seize the opportunities of globalization primarily through their research edge. It is precisely these hidden champions who have secured employment in Germany, while the economies of countries such as the UK and the USA have undergone painful deindustrialization processes in recent decades.

Yet process innovations in familiar territory aren't enough for the long term. That is because innovation is currently happening in new fields. And Germany has long since relinquished its lead in the development of semiconductors, the computer industry, 3D printing and the Internet of Things, nanotechnology, robotics and artificial intelligence – precisely those highly innovative fields that are the key disruptive drivers of the fourth Industrial Revolution. These fields are also giving rise to developments that will have a significant impact on the global economy as a whole, and also on the business models of the productive industries. Venture capital investments in Germany fall far behind those of the United States, or even China.

One example suffices to illustrate the potential danger – the entire auto industry could be reduced to the status of supply industry to global data-driven companies in the data-driven development of driverless vehicles. According to an OECD study, overall value creation is increasingly shifting to non-material, particularly data-oriented processes (OECD 2017d). Here German companies are lagging behind competitors from the United States, Japan, South Korea and, increasingly, China (Naudé and Nagler 2017).

Germany must increase its productivity through innovation. This means that its innovation efforts must change course. In the era of industrialization, Germany was a model for the highly effective cooperation of industry, government and university research, and the German education model has long been a world leader. But today the refusal to relinquish tradition is hampering Germany in many fields. The speed of transformation today must lead to a rethink of interfaces. What conditions do school, vocational and university education have to fulfill and what degree of flexibility must systems have to enable lifelong learning and capacity for innovation – not just in people, but also in companies and authorities?

How must interfaces between university and private research be configured to keep pace with global developments? What role does the state have in this period of upheaval? All of these questions must be on the table in the new offensive for Germany as a land of innovation. Germany's present problems do not stem from an excess in the number and pace of technical innovations, but rather the contrary. Experience shows that as long as Germany drives innovation, income inequality constantly falls. For nearly 30 years, this inequality has instead been growing. It is time to push for an innovation policy, that is, for new, inclusive growth.

Action area 5:
Strengthening innovation

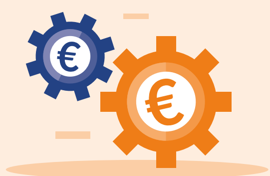
Baseline

Germany's innovation capacity is under pressure

At the same time, inequality has risen, particularly since the 1990s.

Problem:
Germany is a leader in process innovation, but is increasingly falling behind with regard to far-reaching innovations – the key drivers of future sustainable growth.

Among other signs, this is evident in the fact that the patent “success rate” (the ratio of patents granted to the total number of applications) has declined – even as other countries are becoming more successful.



In addition, labor productivity has stagnated, although spending on research and development has increased.

Recommendations

Enable participation through innovation

Germany must enable digital participation for broad portions of the workforce.

The digital infrastructure must be expanded in order to close gaps in broadband deployment, particularly in rural areas.

In the education system, a generalist approach and lifelong learning must be promoted alongside traditional specialization – in this way, workers will always be prepared for the changing working world.

Effects

Innovation capacity strengthens inclusive growth

Strengthen innovation capacity

The federal and state governments must mount a concerted campaign promoting Germany as a country of innovation.

Research and development spending should be focused more strongly on far-reaching technological progress.

Germany needs a strategy for far-reaching innovation, more successful patents and more venture order to better support new businesses and technologies.

Sustainable growth can, in turn, lead to more – and better "future-proofed" – employment, while also increasing productivity.

This leads to more employment in "good" jobs with fair wages – a key condition for reduced income inequality.

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The Inclusive Growth for Germany project

From 2014 to 2017, the Inclusive Growth for Germany project explored a variety of approaches from around the world designed to ensure Inclusive Growth, thereby raising awareness of the issue among the German public. A number of primarily German economists were then involved to identify Germany's action areas, develop measures that should be taken, and assess their impact. The results are documented in the "Inclusive Growth for Germany" series and the "Wachstum im Wandel" and "Deutschland in Nahaufnahmen" book publications (both available in German only). The studies presented in the "Inclusive Growth for Germany" series can be downloaded free of charge from the Bertelsmann Stiftung website. The two book publications can be ordered from the Bertelsmann Stiftung Verlag.

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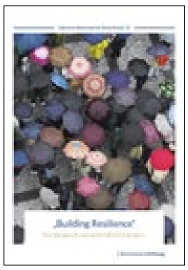

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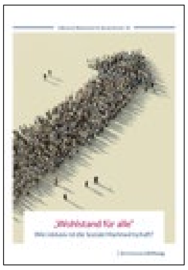

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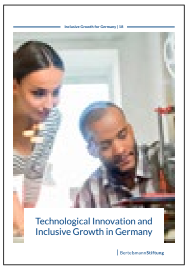

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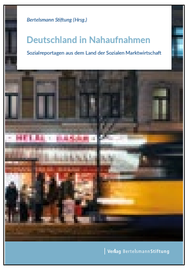

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The “Inclusive Growth for Germany” series is published by the Shaping Sustainable Economies program at the Bertelsmann Stiftung. Despite Germany’s strong economic standing, the country‘s growth in recent years is not inclusive. In fact, gaps in income between various groups in society, generations and regions are growing. In order to ensure that the success of the social market economy continues into the future, we must rethink the links between growth and social inclusion. Our publication series contributes to this important debate with a variety of analyses and feasible recommendations.

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