

■ Structural reforms in the euro area

In the last two decades, trend growth in the euro area has decelerated noticeably. The global financial and economic crisis as well as the euro area sovereign debt crisis have certainly played a key role in this. However, there also appears to have been a slowdown in productivity growth in recent decades. Against this backdrop, structural reforms aimed at improving the institutional and regulatory framework for macroeconomic processes represent a key element of economic policy for promoting prosperity in a sustainable way.

Monetary policy, too, has an interest in reducing structural impediments. Flexible labour and product markets can facilitate the transmission of monetary policy measures by making it easier to steer the inflation rate towards the monetary policy target. An additional factor specific to the euro area is that monetary policy is set for the currency area as a whole. A reduction in national and regional structural asymmetries on factor and product markets can increase the effectiveness of monetary policy instruments within the single currency area. A reform-induced rise in potential growth will also lead to an increase in the equilibrium real interest rate.

The need for reform in the euro area is evident from macroeconomic metrics as well as structural indicators. For example, over the past 15 years, the euro area unemployment rate has been higher, and the employment rate lower, than in other advanced economies. The labour markets have also been characterised by a high, albeit declining, degree of regulation. Although product market regulation has been reduced considerably over time, international comparisons reveal that there is still scope for deregulation in individual countries and sectors. Institutional quality in some euro area Member States has also remained significantly below the highest ratings amongst OECD countries.

Although there is scope for reform as well as an expected positive long-term macroeconomic impact of structural measures, the momentum for reform in the euro area has slowed down in recent years. For some countries, the pressure to reform imposed by assistance programmes was removed. Irrespective of the good macroeconomic conditions, other Member States have evinced only limited willingness to implement reforms even though there is sufficient evidence that the transition costs of reform can be considerably lower in favourable environments. The argument that structural reforms are disadvantageous in the case of a binding lower bound on nominal interest rates due to a price-dampening effect is not convincing. Furthermore, any initial costs will generally be offset by the reform's strong, positive impact over the longer term.

Transition costs as well as undesirable distributional effects can be restricted by appropriately packaging different reforms. The sequence of reform measures can also encourage societal acceptance and improve political viability. However, the effectiveness of structural reforms will hinge not least on the credible commitment of political decision-makers to a path of reform.

■ Motivation

Improving the institutional and regulatory framework

In the last two decades, trend growth in the euro area has decelerated markedly. The global financial and economic crisis as well as the euro area sovereign debt crisis have undoubtedly played a key role in this. However, productivity growth also seems to have slowed down perceptibly. Against this backdrop, the question arises as to which measures – beyond monetary and fiscal policy – public institutions could use to sustainably foster macroeconomic prosperity and economic progress. In this context, structural reforms represent a key element of the options available to government. Structural reforms are generally defined as policy measures aimed at improving the institutional and regulatory framework for macroeconomic processes, thereby contributing to sustainable growth in employment, investment and productivity.

Alongside labour and product markets, potential reform areas also include public sector and financial markets

Structural reforms are often geared towards labour and product markets. For example, these reforms can focus on the nature of employment protection, the amount and duration of unemployment benefits, the design of active labour market policy, the removal of barriers to companies entering or exiting the market, or the reduction of red tape. However, structural reforms can also be extended to the public sector and the financial market. High-quality and high-performance judicial, administrative and educational systems play an essential role in creating a growth-friendly environment. The same is true for effective regulation and supervision of financial markets.

Monetary policy interest in reducing structural impediments

Monetary policy, too, has an interest in reducing structural impediments. Flexible labour and product markets can facilitate the transmission of monetary policy measures by making it easier to steer the inflation rate towards the monetary policy target.¹ An additional factor specific to the euro area is that monetary policy is set for the currency area as a whole. A reduction in national and regional structural asymmetries on factor and product markets

can increase business cycle convergence across Member States and thereby the effectiveness of the monetary policy toolkit in the single currency area. Furthermore, flexible labour and product markets can strengthen the entire monetary union's resilience to shocks, thus facilitating the implementation of stability-oriented monetary policy.² Reform-induced higher potential growth also increases the room for manoeuvre for conventional monetary policy measures, as the equilibrium real interest rate positively depends on the growth rate of potential output. A higher equilibrium real interest rate reduces the likelihood of monetary policy hitting the zero lower bound. Lastly, effective regulation and supervision of financial markets can facilitate monetary policy transmission and prevent critical escalation.

■ Structural impediments in the euro area

Evidence from macroeconomic indicators

The existence of structural impediments can be deduced from economic indicators. For example, a high level of unemployment that persists over a longer period of time could be indicative of rigidities in the labour market. In fact, from 2005 to 2018, the average unemployment rate in the euro area was considerably higher than in other advanced economies.³ Double-digit unemployment rates in particular,

Below-average labour market outcomes ...

¹ New Keynesian general equilibrium models can be used to show, for example, that rigidities in labour and product markets can dampen the effect of monetary policy on the rate of inflation. See, inter alia, Woodford (2003) and Christoffel et al. (2009). For more information on the implications of deregulation for monetary policy, see also Cacciato et al. (2016a).

² For more information, see Mundell (1961), Duval and Vogel (2008), Canova et al. (2012), Giudice et al. (2018), and Masuch et al. (2018). Nevertheless, some studies point out that the stabilising effect of wage and price flexibility – two specific forms of product and labour market flexibility – can be dependent on the macroeconomic environment as well as the responsiveness of monetary policy. See, inter alia, Bhattarai et al. (2018) and Billi and Galí (2019).

³ This reference period was chosen because the bounding years exhibited similar cyclical conditions.

Selected macroeconomic indicators					
Averages from 2005 to 2018					
Country	Growth in labour productivity ¹	Employment rate ²	Unemployment rate ³	Proportion of long-term unemployed ⁴	Youth unemployment rate ⁵
Euro area ⁶	0.8	64.0	9.6	45.5	19.9
Germany	0.9	71.4	6.4	46.8	9.3
France	0.8	61.3	9.0	40.1	21.9
Italy	0.1	57.4	9.5	52.5	30.9
Spain	1.0	60.0	17.5	37.2	38.0
Greece	-0.5	55.4	17.4	59.2	38.9
Portugal	0.7	65.4	10.6	50.6	25.3
Ireland	3.5	65.7	9.6	40.2	20.6
Selected industrial countries ⁷	0.9	69.0	5.7	22.6	12.5
United States	1.0	66.6	6.3	19.4	13.1
Japan	0.8	71.5	3.9	36.6	7.0
United Kingdom	0.5	70.3	6.0	28.7	15.9

Sources: OECD and Bundesbank calculations. **1** Real GDP per hour worked. **2** Number of employed persons as a percentage of the working-age population. Aggregation for the euro area and selected industrial countries based on population shares. **3** Number of unemployed persons as percentage of the labour force. Aggregation for the euro area and selected industrial countries based on population shares. **4** Number of long-term unemployed persons (12 months or more) as a percentage of total unemployment. Aggregation for the euro area and selected industrial countries based on population shares. **5** Number of unemployed persons aged 15 to 24 as a percentage of the youth labour force. Aggregation for the euro area and selected industrial countries based on the share of the labour force aged 15 to 24. **6** Excluding Cyprus and Malta. **7** Australia, Canada, Denmark, Japan, Norway, Sweden, Switzerland, the United Kingdom and the United States.

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such as those in some euro area countries, can be interpreted as being indicative of dysfunctions. The same applies to entrenched underemployment in sub-sectors of the labour market, such as among young or older people, as well as long-term unemployment.⁴ The employment rate in the euro area has likewise been relatively low, even though Germany, for example, exhibits quite a high employment-to-population ratio by international standards.

In addition to the rate of employment, productivity growth is especially important for economic performance over the medium to long term. In the euro area, labour productivity growth has been subdued overall during the past 15 years.⁵ In this context, marked differences within the euro area become apparent. Even when measured against the dampened productivity growth in other industrial countries, some euro area Member States have lagged behind considerably.

Evidence from structural indicators

Indicators that seek to capture the degree and quality of regulation as well as the efficiency of government action can likewise be useful when looking for the causes of structural problems.

Here, it should be noted that individual structural indicators sometimes capture highly specific rigidities. Generally, however, such indicators can be useful in evaluating the importance of structural impediments.

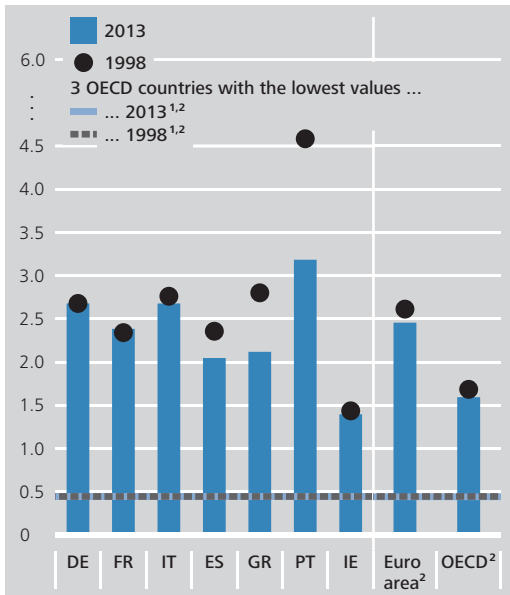
In order to assess labour market flexibility, for example, the OECD indicator for employment protection legislation for regular workers is frequently used. This indicator aims to capture barriers to terminating employment contracts on the part of the employer. Amongst other factors, notice periods and compensation payments are taken into account.⁶ The data obtained from annual surveys of OECD Member State governments are weighted and summarised in an indicator, which ranges from zero (least restrictive) to six (most restrictive). However, when interpreting the indicator, it should

Structural indicators as a tool for identifying the causes of structural problems

... and weak productivity growth as indicators of structural impediments

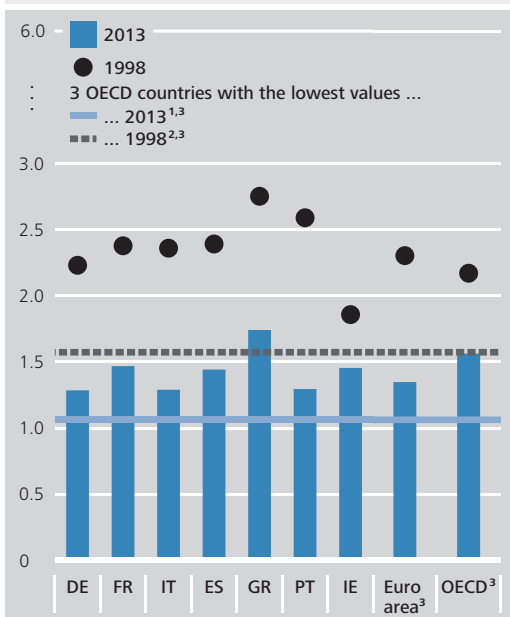
⁴ When interpreting the number of long-term unemployed persons as a percentage of total unemployment, it must be taken into consideration that a cyclical decline in unemployment can lead to a rise in the long-term unemployment rate for conceptual reasons. This contributes, for example – despite a considerable fall in unemployment – to the comparatively high average proportion of long-term unemployed persons in Germany between 2005 and 2018. ⁵ In addition, it should be noted that the euro area average is skewed positively by Ireland and the new Member States, which are catching up from a low starting level. For more information on the problems in measuring Irish growth figures, see Deutsche Bundesbank (2018). ⁶ A detailed description of the indicator, which is currently only available up to 2013, can be found in OECD (2013).

Employment protection* in the euro area and selected groups of countries



Sources: OECD and Bundesbank calculations. * The indicator measures the strictness of employment protection legislation for regular employees with regard to procedural aspects, notice periods as well as severance pay and dismissal-related regulations. The indicator ranges from zero (least restrictive) to six (most restrictive). **1** Canada, the United Kingdom and the United States. **2** Aggregation based on population shares. Deutsche Bundesbank

Product market regulation* in the euro area and selected groups of countries



Sources: OECD and Bundesbank calculations. * The indicator measures the strictness of regulation on product markets. The indicator ranges from zero (least restrictive) to six (most restrictive). **1** Austria, the Netherlands and the United States. **2** New Zealand, the United Kingdom and the United States. **3** Aggregation based on population shares. Deutsche Bundesbank

be noted that a low value for the employment protection legislation indicator is not an essential prerequisite for a good labour market outcome. Instead, this depends on the interaction between the various labour market institutions. Germany, for example, exhibits a medium intensity of regulation with regard to employment protection, but ranks highly in terms of labour market outcome. Nevertheless, there are indications that restrictive employment protection legislation adversely affects employment and productivity growth.⁷

According to the OECD indicator, regulatory intensity with regard to employment protection in the euro area diminished slightly between 1998 and 2013.⁸ This was due not least to the deregulation efforts in the countries that were hit hardest by the crisis – Greece, Portugal and Spain – which entered assistance programmes that were conditional on reform. Nevertheless, the indicator still exceeded the OECD average in 2013. Within the euro area, employment protection was least restrictive in Ireland and – despite considerable relaxation – most restrictive in Portugal.

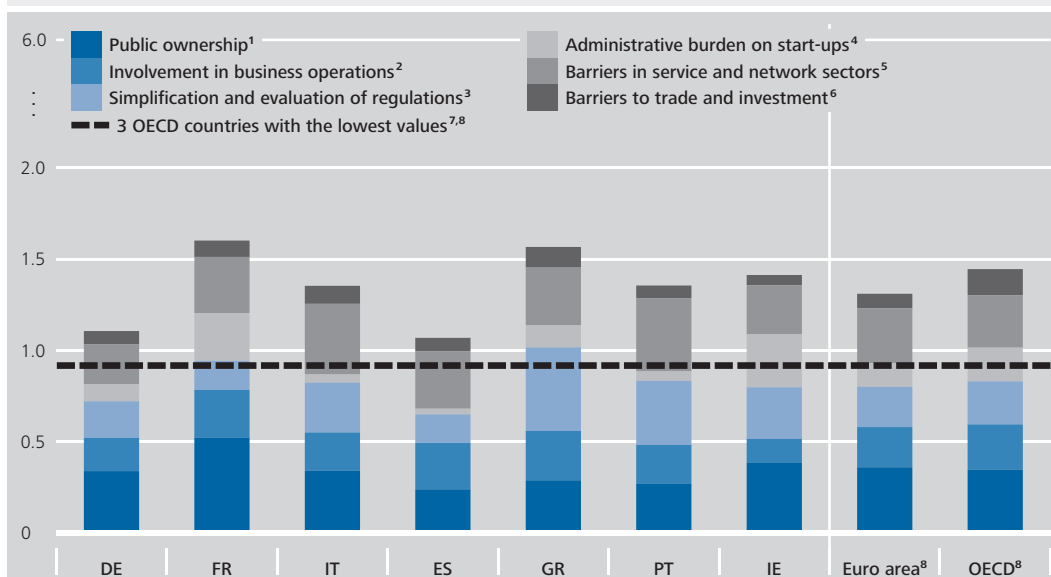
Relatively strict employment protection legislation in the euro area

The OECD additionally attempts to capture regulatory intensity in the product markets of its Member States. For this purpose, it collects information from governments regarding, amongst other things, price controls, restrictions on foreign direct investment, and administrative burdens on start-ups. For the retail trade sector, for example, information on regulations governing opening hours and sales is gathered. The indicator is equally weighted across sectors and, as of 1998, has been recalculated every five years. However, the calculation method was changed in 2018 without retroactive adjustment, allowing for a consistent intertemporal comparison only up to 2013.

⁷ For more information, see Boeri et al. (2015).

⁸ The employment protection legislation indicator for the euro area as a whole (excluding Cyprus and Malta) and for the OECD are each calculated as a weighted average using the population shares of the Member States.

Product market regulation* in the euro area and selected groups of countries in 2018



Sources: OECD and Bundesbank calculations. * Barriers to domestic and foreign market entry (grey) and distortions induced by state involvement (blue) are captured. The indicators range from zero (least restrictive) to six (most restrictive). **1** Scope of state-owned enterprises (SOEs), government involvement in network sectors, direct control over enterprises, governance of SOEs. **2** Price controls, regulation, public procurement. **3** Assessment of impact of government regulation on competition, interaction with stakeholders, complexity of regulatory procedures. **4** Administrative burden for limited liability companies and personally owned enterprises, including for obtaining licenses and permits, opening business accounts, taking out insurance policies. **5** Barriers to market entry in service and network sectors, including privileges of individual occupational groups with regard to performing certain services. **6** Barriers to foreign direct investment, tariffs, differential treatment of foreign suppliers, barriers to trade facilitation. **7** Denmark, Spain and the United Kingdom. **8** Aggregation based on population shares.
 Deutsche Bundesbank

Strong deregulation in euro area product markets

Overall, there was a considerable decline in regulatory intensity on euro area product markets between 1998 and 2013. These declines were especially pronounced in Portugal, Italy and Greece. However, Spain, Germany and France also saw considerable deregulation. The consolidation of the European Single Market undoubtedly played a role in this. Nevertheless, deregulation of product markets was not unique to the euro area. This development has, in fact, been a widespread international phenomenon, as shown by the change in the OECD average.⁹ However, in 2013, the euro area actually fell below the OECD average, which it had still exceeded in 1998.

Product market barriers still relevant at present

A similar picture is painted by the conceptually revised OECD indicator from 2018.¹⁰ The euro area is below the OECD average in this context, too. The distance from the average of the three OECD countries with the least restrictive product market regulation (EU Member States United Kingdom and Denmark as well as euro

area Member State Spain) nevertheless suggests that individual euro area countries still have comparatively restrictive regulation. However, these discrepancies are also partly attributable to state ownership of enterprises – as in the case of France – which the OECD records as a form of product market regulation. In other countries, such as Greece, it is due to complex administrative requirements. With re-

⁹ The product market regulation indicator for the euro area as a whole (excluding Cyprus and Malta) and for the OECD are each calculated as a weighted average using the population shares of the Member States.

¹⁰ Up until the overhaul in 2018, the indicator was composed of three sub-components: state control, barriers to entrepreneurship, and barriers to trade and investment. These areas have now been consolidated into two components (distortions induced by state involvement on the one hand and barriers to domestic and foreign entry on the other). In addition, new sectors (such as water and e-communications) were introduced, the survey of the services sector was extended to additional professions (including estate agents and notaries), and new elements, such as businesses' assessments of the impact of regulation on competition, were taken into account. For a detailed description of the calculation method used up until 2013, see Koske et al. (2015). The revised methodology is described in Vitale et al. (2019).

Regulation of the professional services in Germany

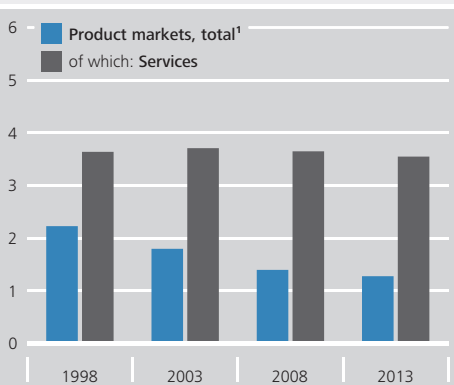
Since the late 1990s, Germany has seen a considerable reduction in barriers to trade and market entry on markets which, up to then, had been relatively highly regulated. Reform progress is reflected in the OECD's economy-wide Product Market Regulation (PMR) Indicator, which shows a considerable decline for Germany between 1998 and 2013.¹ Despite the considerable reform progress, including in network industries, Germany's services sector still appears to be quite highly regulated relative to other countries. International institutions, in particular, have already repeatedly proposed additional reforms, notably in what are known as the professional services.²

A breakdown of the OECD indicator by profession can give an idea of which professional services remain particularly highly regulated.³ There is evidence of overregulation if, for a given profession, the OECD indicator displays clearly more restrictive regulation than in the reference group of other EU countries.⁴ High indicator values in professions across countries, on the other hand, could be a sign that regulation, for instance, is intended to deliver on important consumer or health protection object-

ives. To that extent, this measure also takes into account that regulation is not necessarily disadvantageous or inefficient and therefore that relaxing regulation does not necessarily improve welfare.⁵

In order to ascertain those profession-related regulations that contribute significantly to the high value of the OECD indicator, it is possible to identify the individual regulations whose attributes exhibit above-average values for Germany. Of interest here are, in particular, areas in which regu-

Product market regulation in Germany*



Source: OECD. * The indicators range from zero (least restrictive) to six (most restrictive). ¹ Goods and services.
 Deutsche Bundesbank

¹ Indicators for the years 1998 to 2013 are based on a uniform methodology. The indicator has recently been overhauled by the OECD; see Vitale et al. (2019). Comparability between the updated indicator for 2018 with the values from previous years is extremely limited owing to the changes in the methodology. No consistent backcasting has yet been performed.

² See, for example, European Commission (2017a) and International Monetary Fund (2018). According to section 18 of the German Income Tax Act, the professional services comprise the "independent professional exercise of scientific, artistic, literary, teaching or educational activity, the independent professional occupations of physicians, dentists, veterinary practitioners, lawyers, notaries, patent agents, land surveyors, engineers, architects, trade chemists, accountants, tax consultants, consultant economists and business economists, chartered accountants, tax agents, non-medical practitioners, dentists, physiotherapists, journalists, photojournalists, interpreters, translators, pilots and similar professions".

³ The indicators refer to the following areas: e-telecommunications, electricity, natural gas, air transport, rail transport, road transport and water transport, as well as six professions in the services sector (lawyers, accountants, engineers, architects, notaries and estate agents). There are also indicators for retail distribution and retail sales of medicines.

⁴ Country-specific features (such as regulation through complementary instruments not covered by the OECD indicator) – given a de facto similar degree of regulation – can cause differences in the reported degree of regulation between countries. Results are similar if the OECD countries (excluding Germany) are taken as a reference group.

⁵ This approach is also conceptually suited to identifying professions with an especially low degree of regulation by international standards. According to the data regarding the professional services in Germany, this pertains to the activities of estate agents in particular.

lation does not appear to be urgently necessary in order to assure service quality.⁶

The professions that appear to be more strictly regulated in Germany by international standards are notaries, accountants and engineers. First, according to the OECD, barriers to market entry are quite high for these professions. In the case of notaries, this pertains to the regional distribution of business areas within Germany and regional quotas on the number of notaries. As regards accountants, the requirements relating to professional experience – in addition to the state examination – motivated by the need for quality assurance seem very high in some accountant training courses.⁷ For engineers, access to the market – especially for foreign graduates – is impaired. The recognition procedures for EU and EFTA (Iceland, Liechtenstein, Norway and Switzerland) citizens are currently the responsibility of the federal states and could potentially appear cumbersome and opaque to non-residents.

Second, more market-based price setting – as opposed to the current mandatory fee scale for notaries and the Official Scale of Fees for Services by Architects and Engineers (*Honorarordnung für Architekten und Ingenieure*) – could foster competition.⁸ Though it would be wrong to dismiss concerns about price competition at the expense of service quality, it is questionable whether the currently high level of regulation is justified.

Reducing the density of regulation in these areas would probably foster competition and bring about positive spillover effects to upstream and downstream sectors. As professional services do not make up a large share of aggregate value added, the macroeconomic impact of such measures is likely to be rather small.⁹ Nonetheless, this should not be construed as an argument in favour of maintaining regulation that inhibits competition. Special regulatory protections for some

Product market regulation for selected professions in 2018*

Professions	Germany	EU average excluding Germany ¹
Notaries	5.4	4.5
Lawyers	3.4	3.3
Accountants	2.6	0.9
Engineers	2.4	1.3
Architects	1.3	1.6
Estate agents	0.2	0.7

Sources: OECD and Bundesbank calculations. * The indicators range from zero (least restrictive) to six (most restrictive). ¹ No data for Bulgaria, Croatia, Cyprus, Estonia, Malta or Romania. Additionally, no data on notaries are available for Denmark, Finland, Ireland or the United Kingdom.

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individual areas tend to increase demand for such privileged treatment elsewhere. In addition, restrictions on market entry reduce social mobility and impair equality of opportunity. Lastly, reforms in the professions cited here by way of illustration could provide an impetus for similar measures in other sectors or professions. The macroeconomic impact of a more comprehensive reform package would then be higher.

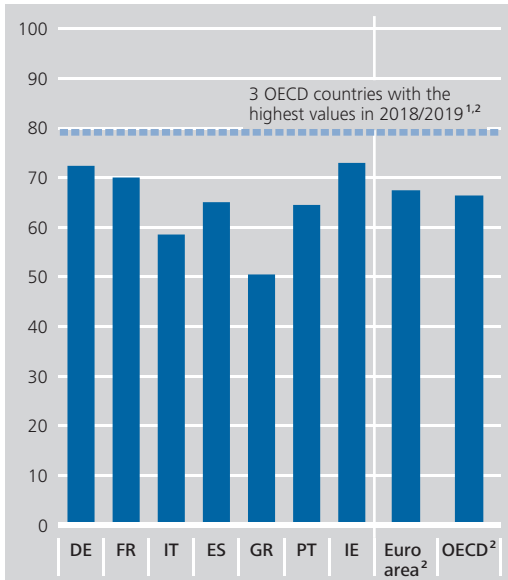
⁶ Asymmetric information or adverse selection can necessitate regulatory provisions in order to avoid watered-down quality standards or inefficient price or wage setting. This analysis abstracts from possible interactions between regulatory measures within the individual sub-categories. Nevertheless, various combinations of individual measures could bring about a similar effect on overall regulation.

⁷ As part of the Third Bureaucracy Relief Act (*Drittes Bürokratieentlastungsgesetz*), there are plans to reduce the amount of professional experience needed for admission to the accountant examination.

⁸ See also German Council of Economic Experts (2016). The European Court of Justice recently ruled that fixed minimum and maximum fees for services by architects and engineers pursuant to the Official Scale of Fees for Services by Architects and Engineers (*Honorarordnung für Architekten und Ingenieure*) violated EU law. Fixed minimum and maximum fees are therefore null and void. See European Court of Justice (2019).

⁹ Krebs and Scheffel (2016) use a DSGE model to analyse, inter alia, a reform scenario in which the price mark-up of professional services in Germany is reduced by 4 percentage points. Under such a hypothetical scenario, ten years after implementing the reforms, potential output, for instance, would be just over 0.1% higher than in a comparable scenario without reforms.

Institutional quality* in the euro area and selected groups of countries in 2018 and 2019



Sources: World Economic Forum and Bundesbank calculations.
 * The indicator measures institutional quality in selected sectors (including the judicial system and public administration). The indicator ranges from zero (low quality) to 100 (very high quality). ¹ Finland, the Netherlands and New Zealand. ² Aggregation based on population shares.
 Deutsche Bundesbank

gard to barriers to market entry, barriers in the service and network sectors¹¹ play a relatively large role. Particularly in Italy, Spain, Greece and Portugal, but also in Germany, these are the most significant barriers in terms of restrictions to market entry (see also the box on pp. 88-89). According to the OECD, market entry in other euro area countries, such as France and Ireland, is also adversely affected by the administrative burden on business start-ups.

However, the regulation of labour and product markets is not the only source of structural impediments. The overall quality of public administration as well as of the judicial and educational systems likewise has an impact on a country's economic performance. The World Economic Forum's competitiveness indicator, which is predominantly based on surveys of business managers, attempts to capture this aspect. In this context, a sub-indicator provides information on institutional quality, which com-

prises factors such as protection of property rights, judicial independence, and the strength of auditing and accounting standards.¹²

According to the "Institutions" sub-indicator, the quality assessment for the euro area in 2018 and 2019 corresponded to the OECD average.¹³ However, there are also considerable differences between the individual countries of the euro area. Some countries are well below the euro area average.¹⁴ Accordingly, there exist marked deviations from the average of the three OECD countries with the highest scores (euro area Member States Finland and the Netherlands, as well as New Zealand).

Despite the limited informative value of individual structural indicators, they add to the general picture outlined by the macroeconomic indicators. For instance, regulation in some euro area countries – despite substantial efforts towards deregulation on labour and product markets in some cases – remains strict by international standards. Moreover, institutional quality is not assessed as being very high in some euro area Member States. This also appears to be reflected in the macroeconomic indicators in some cases.

Institutional quality varies considerably amongst euro area countries

Overall view of macroeconomic indicators and structural indicators

Macroeconomic analyses of structural reforms

The expected macroeconomic effects of reducing the structural impediments described above can be assessed using quantitative economic methods. In addition to statistical regression exercises, structural macroeconomic models are

¹¹ These comprise, for example, barriers to entry for foreign energy producers and rail companies, or licensing requirements for the sale of certain products (e.g. pharmaceuticals).

¹² Details of the calculation can be found in World Economic Forum (2019). In some cases, these indicators represent the average value of 2018 and 2019.

¹³ The figures for the euro area and the OECD are, in turn, calculated from the national data as averages weighted by population share.

¹⁴ This is also the picture revealed by the World Bank's world governance indicators. See also World Bank (2019), <https://info.worldbank.org/governance/wgi/#doc>.

typically utilised when analysing the economic impact of structural reforms. The results of such analyses also serve as guidance for policymakers.

Studies based on structural macroeconomic models

Macroeconomic models for evaluating structural reforms ...

Structural reforms often have various spillover effects and must therefore be modelled accordingly. Dynamic stochastic general equilibrium (DSGE) models are especially suited to this purpose. These models seek to explain macroeconomic interactions and developments based on the individual optimal decision rules of rational economic agents.¹⁵ This allows for relatively detailed modelling of specific transmission channels and relationships.

... vary in their degree of detail

However, structural impediments are captured, in part, in a highly stylised way in DSGE frameworks and are modelled, for example, as imperfect competition on labour and product markets or as wage and price rigidities. Within such setups, structural reforms reduce trade unions' and firms' power to set wages and prices and also lower the costs of wage and price adjustments.¹⁶ Alternatively, structural reforms are modelled merely as exogenous changes in key macroeconomic variables, such as productivity or labour supply. These shocks are usually specified on the basis of empirical studies on the impact of structural reforms on these variables.¹⁷ By contrast, more complex DSGE approaches feature detailed representations of labour and product markets. In these model variants, specific reform measures – such as the reduction of barriers to market entry or adjustments to employment protection and unemployment benefits – can be investigated directly (see the box on pp. 92-93). In this way, the impact of reforms on the degree of competition as well as on productivity and employment are often endogenously determined.¹⁸

However, broad evidence of positive long-term impact of reforms

Despite these differences in the level of detail, DSGE analyses paint a uniform picture: measures that promote competition on labour and product markets can lead to strong increases in

productivity, employment and investment over the long term. The same applies to reforms that promote human capital through improved access to education and to the implementation of active labour market policies.¹⁹ DSGE studies show, for example, that the favourable labour market developments in Germany can be attributed not least to the labour market reforms of the mid-2000s.²⁰

The findings are less homogeneous with regard to the short to medium-run effects of structural measures. While structural reforms can have positive effects as early as the short run in some DSGE analyses,²¹ they can – if the macroeconomic conditions are unfavourable – also initially cause the overall economic situation to deteriorate. For example, DSGE simulations of the impact of a relaxation in employment protection indicate that the reform-induced rise in job-seeking would be amplified during a period of economic weakness.²²

Conversely, mixed picture with regard to short-term effects of reform

Studies based on statistical regression models

Statistical regression analyses can also help to shed light on the macroeconomic effects of structural reforms. These investigations look at individual country-specific reform measures or at the macroeconomic assessment of structural reforms across countries. However, obtaining evidence of reform effects is challenging from a

Statistical regression analyses also provide evidence of macroeconomic reform effects

¹⁵ DSGE models typically assume that economic agents do not make any systematic errors when forming their expectations and that they make optimum use of all the information that is available to them.

¹⁶ See, inter alia, Gomes et al. (2013), Galí and Monacelli (2016), and Bursian and Stähler (2019).

¹⁷ See Anderson et al. (2014a).

¹⁸ See, inter alia, Cacciatore et al. (2016b).

¹⁹ See, inter alia, Gomes et al. (2013), Anderson et al. (2014a), Varga and in 't Veld (2014), and Cacciatore and Fiori (2016).

²⁰ See, inter alia, Krause and Uhlig (2012), Krebs and Scheffel (2013), and Gadatsch et al. (2016).

²¹ See, inter alia, Gomes et al. (2013) and Anderson et al. (2014a).

²² For more information, see Cacciatore et al. (2016c).

Implementing structural reforms in DSGE models

Dynamic stochastic general equilibrium (DSGE) models are a standard tool in modern quantitative macroeconomics. This category of equilibrium models generally seeks to explain macroeconomic relationships and developments based on the individual optimal decision rules of rational economic agents.¹ In those models, market imperfections, such as distortion of competition or wage and price rigidities, can be taken into account. Therefore, DSGE models are also useful in assessing the effects of structural reforms. However, presenting specific causal relationships, even in their most simplified form, can create complex model structures. This might, at times, imply a trade-off between the models' tractability and their ability to precisely capture observable characteristics of the economy.

The potential importance of the selected degree of detail for the reported effects shows up, for instance, when modelling product market reforms. For example, the removal of competitive distortion in the product markets can be implemented in DSGE models in a relatively abstract manner using an exogenously assumed reduction in firms' price mark-ups.² Even though such an experiment is generally able to capture the macroeconomic reform effects, the scope for deriving actual policy measures is only very limited.

On the other hand, there exist modelling frameworks which provide a detailed representation of product markets. Such setups include DSGE models with endogenous market entry and exit, where a relationship between market concentration and price mark-ups is determined endogenously in the model.³ Reforms to intensify competition are modelled in such a framework as,

for instance, a reduction of barriers to market entry.

While the outcomes regarding the long-run real economic effects of reform are qualitatively consistent irrespective of the specific model used – intensified competition stimulates macroeconomic activity and employment – such an unambiguous causality does not hold in the short run, however.

Using a prototypical DSGE model, it can be shown, for instance, that the way product markets are modelled has a meaningful impact on the short-run price effects of competition-enhancing product market reforms. In a simple baseline New Keynesian model, an exogenous decrease in price mark-ups directly reduces the inflation rate, thereby leading to an increase in aggregate demand.⁴ Although the latter will tend to push prices up, this is not sufficient to offset the immediate decline in prices. Overall, prices are dampened.

The presence of endogenous market entry and exit by firms changes the situation with regard to price dynamics. Under these circumstances, intensified competition owing

¹ DSGE models usually assume that economic agents do not make any systematic errors when forming their expectations and that they make optimum use of all the information that is available to them. In this sense, they behave "rationally".

² See, inter alia, Gomes et al. (2013), Eggertsson et al. (2014), Arce et al. (2016), and Vogel (2017).

³ See, inter alia, Cacciatore and Fiori (2016), Cacciatore et al. (2016a), and Colciago (2018).

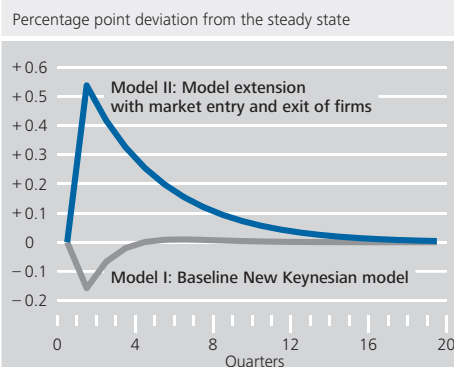
⁴ To this end, an exogenous reduction in price mark-ups from 30% to 25% was simulated. The analytical framework used here was a simple baseline New Keynesian model with imperfect competition, quadratic price adjustment costs and no physical capital. In this stylised model framework, the number of firms is assumed to be constant. The potential influence of competition-enhancing product market reforms on business dynamism is therefore ignored. For more information, see Ireland (2004).

to a reduction of barriers to market entry will tend to increase the rate of inflation.⁵ The price-increasing effect of the rise in macroeconomic demand outweighs the price-dampening effect of the endogenous reduction in margins. Demand is stimulated not only by expenditure for new firms to enter the market but also rising labour incomes on account of the increased demand for factor inputs.

This finding is noteworthy inasmuch as potential short-run price-reducing effects of structural reforms have assumed quite a prominent role in the recent economic policy debate, in which – referring to DSGE analyses⁶ – the potential short-run costs of structural reforms given a binding zero lower bound (ZLB) have been discussed.⁷ Specifically, it has been argued that – given a binding nominal ZLB – a reform-induced dampening of prices would push up real interest rates.⁸ However, an increase in real interest rates usually dampens aggregate demand. This has, not least, resulted in calls for policy measures to boost demand in order to supplement structural reforms.

The simulation analysis presented here illustrates, however, that such model results could prove not to be very robust and should therefore be interpreted with caution.⁹ More recent studies likewise show that it is the macroeconomic situation, more than the general interest rate environment, which drives the short-run effects of structural measures. Specifically, the findings indicate that, during a phase of cyclical weakness, structural reforms are more likely to be associated with temporary macroeconomic costs than in a favourable macroeconomic environment.¹⁰

Impact of product market reform on the rate of inflation*



* Impulse responses of the quarterly inflation rate to a competition-enhancing product market reform using New Keynesian DSGE models.

Deutsche Bundesbank

5 The baseline New Keynesian model was expanded here such that firms first have to decide whether, given the costs of market entry, they wish to enter the market (endogenous market entry). The number of market participants determines firms' market power and thus the size of price mark-ups. A detailed description of the mechanism may be found, inter alia, in Jaimovich and Floetotto (2008). For the sake of comparability, in this simulated scenario firms' entry costs were reduced to such an extent that the intensified competition triggered by the subsequent increase in the number of firms operating in the market causes price mark-ups to likewise drop from 30% to 25%.

6 For more information, see Eggertsson et al. (2014) and Vogel (2017).

7 See, inter alia, OECD (2016), European Commission (2017b) and Brand (2018).

8 This relationship follows from the "Fisher equation".

9 See also Fernández-Villaverde (2014), Fernández-Villaverde et al. (2014), Gomes (2014), Andrés et al. (2017) and Cacciatore et al. (2017).

10 See, inter alia, Bouis et al. (2012), Cacciatore et al. (2017), Duval and Furceri (2018) and Bassanini and Cingano (2019).

methodological perspective.²³ One reason for this is that cyclical developments or other economic policy measures can mask the effects of structural reforms. For instance, disentangling the impact of a reform measure adopted during an economic downturn from the side effects of a subsequent macroeconomic recovery is no straightforward task.²⁴ Another reason is that the cyclical position as well as economic policy stances are likely to have a major influence on the effectiveness of structural reforms. For example, reform-induced adjustment processes may unfold more slowly during a period of economic weakness.

Assessing the macroeconomic effects of structural reforms also requires that relevant policy measures be properly identified. This is a challenge especially in the case of cross-country analyses. While structural indicators could signal that reform measures are being implemented, these indicators sometimes tend to represent rough approximations. For example, the difference between reform resolutions and their actual implementation is not always clear cut. Additionally, it is difficult to measure the depth and scope of various reforms or reform programmes adequately. “Narrative approaches” that identify structural reforms by analysing the content of relevant media may serve as a supplement in this regard.²⁵ Ultimately, however, this method is based on subjective selection criteria.

In general, regression analyses also provide clear evidence of the positive long-term macroeconomic effects of structural reforms.²⁶ A number of studies show that adjustments to the amount and duration of unemployment benefits, the design and deployment of active labour market policy measures and the lifting of impediments to competition in labour and product markets may contribute, on average, to a sustainable increase in investment, employment and productivity.²⁷ For instance, there are numerous examples that show the positive macroeconomic effects of the labour market

reforms that were carried out in Germany in the mid-2000s.²⁸

Analyses of the short-run impact of structural reforms once again present a mixed picture. While some studies already find positive reform effects in the short term, other analyses suggest signs of a negative impact, especially given an unfavourable macroeconomic situation.²⁹ In this respect, some empirical evidence indicates that labour market reforms during an economic downturn are more likely to cause temporary negative employment effects compared to reforms conducted under favourable economic conditions.³⁰ Studies on the impact of labour market reforms in Germany and Spain indicate at least a clearly muted positive reform effect during recessions.³¹ These findings suggest that it is preferable to implement reforms during favourable cyclical periods.

By contrast, short-run effects not clear either

Reform intensity in the euro area

Existing reform potential and the expected positive long-run macroeconomic impact of structural measures would suggest that reform intensity has increased in the euro area – especially since the macroeconomic environment has improved significantly in recent years and is now more supportive of successful reforms. This does not appear to have been the case recently, however.

Regression analyses with clear signs of positive long-term reform effects

²³ See also Bordon et al. (2018), Parlevliet et al. (2018) as well as Bassanini and Cingano (2019).

²⁴ See also Deutsche Bundesbank (2014).

²⁵ Duval et al. (2018a), for example, identify substantial structural reforms by evaluating OECD publications, amongst other things.

²⁶ See also Boeri et al. (2015) and Parlevliet et al. (2018).

²⁷ See, inter alia, Bassanini and Duval (2006), Bassanini and Duval (2009), Bouis and Duval (2011), Bourlés et al. (2013), Cette et al. (2016), Égert (2016), Duval and Furceri (2018), Duval et al. (2018a) and Égert (2018).

²⁸ See, inter alia, Klinger and Rothe (2012) as well as Klinger and Weber (2016).

²⁹ See, inter alia, Boeri et al. (2015).

³⁰ See, inter alia, Bouis et al. (2012), Duval and Furceri (2018) as well as Bassanini and Cingano (2019).

³¹ See Gehrke and Weber (2018).

Implementation of OECD and European Commission economic policy recommendations is an indicator of reform intensity

This is at least what is indicated by reports on implemented reform measures in specific countries and groups of countries by the European Commission and the OECD. They refer to the economic policy recommendations that are prepared on a regular basis by the European Commission³² and the OECD,³³ respectively, and in some cases in cooperation with the national governments and experts. These recommendations target best practices while taking into account country-specific circumstances, including its macroeconomic situation. Often, the recommendations of both institutions overlap, but not always.

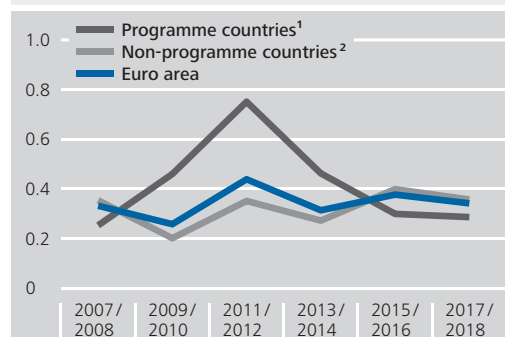
Recently only moderate reform intensity in the euro area, according to OECD

Since 2008 the OECD has published a corresponding annual indicator on reform progress in the member countries.³⁴ For the euro area as a whole, the indicator has recently signalled merely moderate reform intensity, after the implementation of recommendations reached its peak in 2011-12. The high reform intensity in the aftermath of the global financial and economic crisis and during the sovereign debt crisis was primarily attributable to measures in the programme countries Greece, Ireland, Portugal and Spain. Thereafter, the reform intensity subsided markedly in these countries and dropped below the level of non-programme countries in 2015. Meaningful progress was subsequently made only in Ireland and Greece. The OECD's latest references to functional shortcomings in the labour markets and labour market institutions as well as to potential improvements in public administration suggest that, despite the extensive measures taken, this group of countries is still in need of reforms.³⁵ In the rest of the euro area Member States, the status of implementation of OECD recommendations at the current end was at the level of 2007-08. Here, too, the OECD has identified further potential for reform in the labour markets, in the education system and in public administration.

Willingness to reform also waning according to European Commission

In the context of the European Semester, the European Commission annually assesses the implementation of country-specific reform recommendations.³⁶ This evaluation covers, inter

Reform intensity* in the euro area



Sources: OECD and Bundesbank calculations. * The indicator measures reform intensity based on the implementation of OECD policy recommendations. The indicator ranges from zero (low reform intensity) to one (high reform intensity). Aggregation based on population shares. **1** Greece, Ireland, Portugal and Spain. **2** Other euro area countries.

Deutsche Bundesbank

alia, measures to improve the performance of product and labour markets as well as of the judicial and education system and public administration. No distinction is made with regard to the scope and depth of the reforms. Likewise, the withdrawal of measures is not taken into account immediately. These data also show a waning reform momentum. It is particularly noteworthy that none of the measures already initiated in the reform areas listed above can be classified as "full progress" according to the European Commission's assessment. However, it should be highlighted that the implementation of structural reforms is often accompanied by a lengthy legislative process, which is reflected in the high proportion of measures that have achieved "some pro-

³² In accordance with Art. 121(2) and 148(4) of the Treaty on the Functioning of the European Union, the European Commission reviews the economic and fiscal policy of EU Member States in the context of the European Semester based on the national reform programmes submitted by national governments as well as the Stability and Growth programmes, and issues country-specific recommendations which are passed by the EU Council.

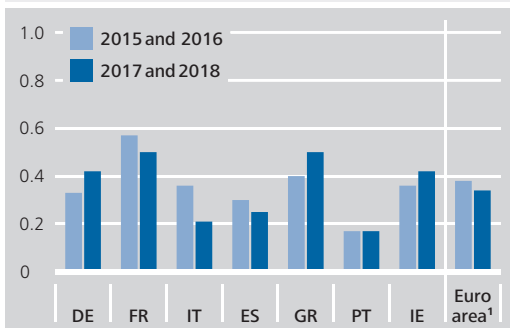
³³ The OECD's "Going for Growth" reports, which are published regularly, identify priority reform areas for OECD countries and put forward appropriate policy recommendations.

³⁴ For a detailed description of the indicator, see OECD (2010).

³⁵ See OECD (2019).

³⁶ The level of implementation is divided into five categories: no progress, limited progress, some progress, substantial progress and full progress. For further information, see, inter alia, Angerer et al. (2019).

Reform intensity* in the euro area at the current end



Sources: OECD and Bundesbank calculations. * The indicator measures reform intensity based on the implementation of OECD policy recommendations. The indicator ranges from zero (low reform intensity) to one (high reform intensity). ¹ Aggregation based on population shares.

Deutsche Bundesbank

gress". Their share, however, declined in 2018 as well. Differences between the euro area countries have also become evident in the implementation of country-specific recommendations. Since 2016 the French government, for example, has initiated a series of labour market and educational reforms and taken liberalisation measures in the services and transport sectors. By contrast, the implementation of country-specific recommendations has been rather sluggish in other euro area countries, including Germany.

Resistance to structural reforms and ways to overcome it

Reservations regarding structural reforms

The evaluations of the OECD and the European Commission illustrate that reform intensity in the euro area has abated in recent years. Only a few countries have taken advantage of the more favourable macroeconomic conditions to implement additional reform measures. The question arises as to how this can be explained. Concerns over transition costs certainly play a role. Unemployment can rise temporarily after employment protection rules are relaxed.

Opposition to reform an explanation for weak reform drive

Moreover, an improvement in business dynamism caused by the reforms can also dampen labour demand in the short run.³⁷ However, it is especially in a weak macroeconomic environment that adverse transition effects occur.³⁸ This is noteworthy in that severe crises are at times seen as triggers for structural reforms.³⁹ In this case, however, the urgent necessity for structural reforms may overshadow any potential transition costs, even if these are amplified by the crisis.

In the economic policy debate in recent years, considerations of potential additional short-term costs of structural reforms in a low-interest-rate environment have also played a role. If an economy is constrained at the (nominal) zero lower bound and the scope for monetary policy is therefore limited, labour and product reforms, which – due to a boost in competition – tend to weigh on wages and prices, could dampen economic activity in the short term via the real interest channel.⁴⁰ On closer inspection, however, it appears that this result is not very robust (for more information, see the box on pp. 92 f.).

Besides reform-induced transition costs, ...

Unwanted distributional consequences also represent a potential obstacle to reform. For instance, cuts in unemployment benefits could reinforce the incentive to take up full-time employment and contribute to an improvement in the overall situation on the labour market. For some people, however, this could entail a long-term loss in income owing to lower unemployment benefits and lower wages. Reform-induced income gains may also vary markedly between income classes.⁴¹ Even though such considerations on the distributional impact of structural reforms have thus far been based solely on a small number of empirical find-

... possible distributional effects ...

³⁷ See, inter alia, Cacciatore and Fiori (2016).

³⁸ See, inter alia, Bouis et al. (2012), Cacciatore et al. (2016c), Duval and Furceri (2018) as well as Bassanini and Cingano (2019).

³⁹ For more information, see Duval et al. (2018b).

⁴⁰ See Eggertsson et al. (2014).

⁴¹ See also Blanchard and Gavazzi (2003), Röhe and Stähler (2018) as well as Roeger et al. (2019).

ings,⁴² they may nevertheless serve as an explanation for the low social acceptance and political viability of structural reforms.⁴³ In this context, it is important to note that the existing uncertainty about the consequences of structural measures can already dampen the willingness to implement reforms.⁴⁴ Moreover, it should be noted that even small interest groups can exert distinct political influence.⁴⁵

... and the time horizon of policymakers are causes for reform reservations

A lack of willingness to embrace reforms may also be explained by the delayed impact of structural measures. While the full effects of structural reforms are typically only seen in the medium to long run, the time horizon of policymakers is at times rather short and aligned with national electoral cycles.⁴⁶

Instruments to support structural reforms

Tailored reform packages may counter reform resistance and costs by ...

If short-term adjustment costs and distributional effects obstruct reforms that promise to be effective in the long run, there are a variety of strategies to address this. Besides focusing on key reform areas and packaging measures, their decisive implementation plays a pivotal role.⁴⁷

... strengthening the impact of reforms ...

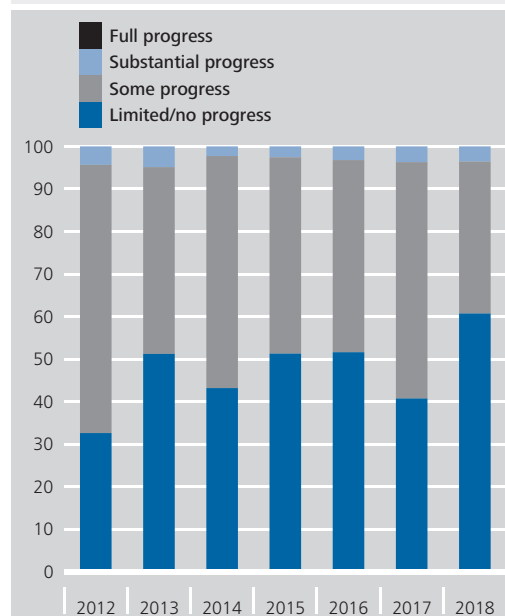
First, a package of measures is more likely to have a stronger macroeconomic impact than individual measures.⁴⁸ This packaging of measures is especially effective if complementarities come into play. For instance, it can be shown that the positive impact of wage flexibility for countries in a monetary union crucially hinges on product prices being sufficiently responsive.⁴⁹ The success of labour and product market reforms is influenced markedly by the quality of the judicial, public administration and education systems.⁵⁰ The implementation of structural reforms will scarcely be possible if public institutions are insufficiently efficient.

... and absorbing adverse reform effects

Second, coherent packages of reforms may counteract the adverse effects of individual measures. Certain structural reforms, such as

Implementation of country-specific recommendations in the euro area*

Percentage share of recommendations



Sources: European Commission and Bundesbank calculations.
 * The indicator measures the implementation of reform recommendations during the European semester. Reform progress is shown in selected segments (product and labour markets, judicial and education systems and public administrations). Aggregation based on population shares.
 Deutsche Bundesbank

relaxing employment protection regulations, may dampen demand in the short run. Well-designed packages of product and labour market reforms can mitigate this effect.⁵¹

In this context, the sequence of reform measures is also important. The sequential order in which measures are implemented may increase

⁴² See Koske et al. (2012), Causa et al. (2015), Causa et al. (2016) and Causa (2018).

⁴³ See also Leiner-Killingner et al. (2007), Heinemann and Grigoriadis (2016) as well as Parlevliet (2017).

⁴⁴ See, inter alia, Samuelson and Zeckhauser (1988), Alesina and Drazen (1991), Fernandez and Rodrik (1991) as well as Høj et al. (2007).

⁴⁵ See also Grossman and Helpman (2001).

⁴⁶ See also Buti et al. (2010), Dal Bó and Rossi (2011) as well as Conconi et al. (2014).

⁴⁷ See, inter alia, Edwards (1989) and Hausmann et al. (2008).

⁴⁸ See, inter alia, Anderson et al. (2014b).

⁴⁹ See Galí and Monacelli (2016).

⁵⁰ See, inter alia, Rodrik et al. (2004), Prati et al. (2013) and Cette et al. (2018).

⁵¹ For example, Cacciatore et al. (2016b) demonstrate that removing barriers to entry in the product market may counteract a temporary drop in real wages caused by labour market reforms.

Sequencing structural reforms to increase their social acceptance ...

or decrease their social acceptance and political viability.⁵² For instance, the implementation of product market reforms that raise purchasing power could make labour market reforms that are likely to dampen wages easier for the public to swallow.⁵³

... and their overall economic impact

Furthermore, the macroeconomic environment may suggest a specific sequencing of reforms. While, for instance, an easing of employment protection legislation may initially worsen the overall economic situation due to dampening effects on demand, especially when macroeconomic activity is subdued, this does not appear to hold for competition-enhancing product market reforms.⁵⁴ It is therefore conceivable that product market reforms that bolster demand are preferred during a macroeconomic downturn.

Recognition of regulatory and institutional setting vital for successful reform packages

Due to various interdependencies, consideration of the specific regulatory and institutional environment is a requirement for successful measures. For example, the effects of product market reforms also depend on how flexible the labour markets are.⁵⁵ Conversely, the impact of labour market reforms can also be influenced by the product market situation.⁵⁶

Effectiveness of structural measures depends on credible commitment to reforms

The effectiveness of structural reforms can be strengthened by a credible commitment of policymakers to a reform path.⁵⁷ In this case, the expectation of long-term productivity and income growth can already stimulate demand in the short term.⁵⁸ These income and confidence effects may counteract short-term reform costs, especially in a weak macroeconomic environment.⁵⁹

Fiscal policy can support implementation of structural reforms

Fiscal policy, too, can support the implementation of structural reforms.⁶⁰ Measures that stimulate demand can counteract short-term reform costs. In addition, fiscal policy has the ability to respond to undesirable distributional effects. For instance, a possible decline in wages in the course of labour market reforms can be countered by easing the tax burden on labour, as during the German labour market re-

forms of the first half of the 2000s.⁶¹ However, this requires a sufficiently large fiscal buffer. The impact of debt-financed fiscal measures, for example, depends crucially on the trust in the sustainability of public finances.⁶²

Lastly, reforms implemented at the EU level can also help to remove structural impediments. These include, besides the banking union already initiated, a deeper integration of capital markets and measures to facilitate cross-border labour mobility. EU-wide reforms can only supplement national efforts, however. The responsibility for key policy areas in the EU remains at the national level. The country-specific recommendations in the European Semester can only initiate and support reform processes; national ownership is crucial for their implementation.⁶³

Institutional reforms at the EU level can help remove structural impediments

■ Conclusion

Despite, in some cases, considerable reform progress, especially in the aftermath of the global financial and economic crisis and the subsequent sovereign debt crisis, structural impediments continue to pose economic policy challenges to the economies of the euro area. In this context, the recent trend of declining reform intensity raises doubts as to whether the

⁵² See, inter alia, Edwards (1989) and Hausmann et al. (2008).

⁵³ See, inter alia, Blanchard and Giavazzi (2003) as well as Roeger et al. (2019).

⁵⁴ See Cacciatore et al. (2016c) as well as Duval and Furceri (2018).

⁵⁵ Empirical studies provide a mixed picture of these interrelationships, however. Fiori et al. (2012), Cacciatore et al. (2016b) and Duval and Furceri (2018), inter alia, find that pronounced labour market rigidities boost the effectiveness of product market reforms. By contrast, Berger and Danning (2007) as well as Bassanini and Duval (2009) point to pre-existing complementarities between labour and product market reforms.

⁵⁶ See, inter alia, Koeniger and Prat (2007).

⁵⁷ See, inter alia, Bertola and Ichino (1995).

⁵⁸ See, inter alia, Anderson et al. (2014b).

⁵⁹ See, inter alia, Fernández-Villaverde et al. (2014).

⁶⁰ See, inter alia, Anderson et al. (2014b) and Bordon et al. (2018).

⁶¹ See, inter alia, Gadatsch et al. (2016) as well as Röhe and Stähler (2018).

⁶² See, inter alia, Bi (2012), Corsetti et al. (2013), Röhe and Stähler (2018) as well as Bonam and Lukkezen (2019).

⁶³ For more information, see Duval et al. (2018b).

favourable macroeconomic environment has been used adequately for the implementation of reforms. The primary responsibility for implementation lies at the national level, and structural reforms are intended to foster economic prosperity first and foremost in the individual Member States. At the same time, it should be emphasised that a successful common monetary policy requires well-functioning labour, financial and product markets. For that reason, the removal of structural rigidities is also of interest from a monetary policy perspective.

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