

Mario Draghi: Europe and the euro 20 years on

Speech by Mr Mario Draghi, President of the European Central Bank, at Laurea Honoris Causa in Economics by University of Sant'Anna, Pisa, 15 December 2018.

* * *

Next month, we will celebrate the 20th anniversary of the launch of the euro.

The two decades in which the euro has existed have perhaps been exceptional. The first was the culmination of a 30-year upswing in the global financial cycle, while the second saw the worst economic and financial crisis since the 1930s. But, exceptional as they were, these two periods can teach us some useful lessons about what still needs to be done.

Monetary Union has succeeded in many ways, but it has not delivered the gains that were expected in all countries. This is partly the result of domestic policy choices and partly the result of Monetary Union being incomplete, which led to insufficient stabilisation during the crisis.

The way ahead, therefore, is to identify the changes that are necessary to make our Monetary Union work for the benefit of all member countries.

We need to make these changes as soon as possible, but we also need to explain why they are important to the people of Europe.

The rationale for one market, one money

The Single Market is often seen simply as an expression of the globalisation process, which over time has even eliminated exchange rate flexibility. But the Single Market and globalisation are not the same thing.

Globalisation has led to higher overall welfare for all economies, and for emerging markets in particular. But it is now clear that the rules that accompanied this process were not sufficient to prevent it from causing severe distortions. Open markets have heightened economic insecurity for people exposed to intensified competition, and added to their sense of being “left behind” in a world where the great wealth created has been concentrated in a few hands.

From the outset, however, the Single Market was designed to reap the benefits of openness while also tempering its costs for the most vulnerable; to promote growth while protecting the people of Europe from the injustices of untrammelled free markets. This was undoubtedly also the vision of Jacques Delors, the architect of the Single Market.

The Single Market was conceived during a period of weakness in the European economy. Annual growth had averaged just 2.2% from 1973 until 1985 in the 12 countries that would go on to form the euro area¹, down from 5.3% between 1960 and 1973. Growth potential had also fallen from about 5% per year at the beginning of the 1970s to around 2% per year by the beginning of the following decade.

The typical response of governments to low growth was to increase fiscal deficits. From 1973 to 1985, public deficits in the euro area 12 averaged 3.5% of GDP, while in Italy the average was 9% of GDP. Unemployment rose from 2.6% in 1973 to 9.2% in 1985 for the euro area 12. In Italy, it climbed from 5.9% to 8.2% over the same period.

But the EU had a powerful tool at its disposal to raise growth: the common market.

One reason that growth potential had decelerated was that intra-EU trade growth had stalled in the early 1970s, because the common market covered mainly intermediate goods where growth

was already saturated. Trade in sectors with high R&D and skill content was restricted by non-tariff barriers, preventing productivity spillovers.²

The Single Market offered a way to remove these barriers, reverse the decline in economic potential, and bring more people back into work.

Yet the Single Market was never just about this. It also aimed to protect people from some of the costs of the changes that would inevitably arise. This, in turn, would create a more favourable political environment for advancing the process of European integration, following the setbacks of the 1970s.

Unlike the wider process of globalisation, the Single Market allowed Europe to impose its values on economic integration – to build a market that, to the extent possible, was *free but just*. Product rules could be used to protect consumers from lax standards in other countries, and protect producers from unfair competition. And production rules could be used to protect workers by putting a floor on “social dumping” and upholding labour standards.

This is why the launch of the Single Market agenda in the mid-1980s went hand in hand with a strengthening of common rule-making in the EU and of powers of judicial review. The opening of markets was accompanied by the creation of a strong European authority to safeguard fair competition; product standards became tighter, with the introduction of the geographical indication protections for specific foods, for example. And safeguards central to the European social model were progressively embedded in EU law, in areas where the EU had the power to act.

The Charter of Fundamental Rights has prevented a “race to the bottom” in terms of workers’ rights. Legislation was adopted to curtail unfair labour practices, such as the revision of the Posted Workers Directive this year. EU legislation also protects those in less secure employment. One example is the Directive on part-time work in 1997, which sought equal treatment for part-time and fixed-term employees. Last year the EU institutions endorsed the European Pillar of Social Rights to support equal opportunities and access to the labour market, fair working conditions, social protection and inclusion.

EU legislation has not led to a complete harmonisation of labour protections across Europe. But it has meant that the gap in labour standards across countries has gradually narrowed, even as lower-income countries have joined the EU. Research finds a process of upward convergence in significant areas of social expenditure in the EU since 1980, although this has tailed off in recent years.³ The same cannot be said at the international level.

But the Single Market required greater exchange rate stability than a free trade area, and this resulted in significant trade-offs for economic policy. These were well-articulated by Tommaso Padoa-Schioppa in his famous “inconsistent quartet”.⁴ If European countries wanted to have the benefits of managed open trade, they could not simultaneously have capital mobility, independent monetary policy and fixed exchange rates.

Governments initially responded to this conundrum by maintaining fixed exchange rates and introducing capital controls on short-term flows, which allowed a degree of monetary policy autonomy. But as financial integration deepened and capital controls were progressively eliminated during the 1980s, fixed exchange rates became unsustainable.

Due to the international financial storms raging at the time, the countries that had pegged their currencies to the Deutsche Mark (DM) within the European Monetary System (EMS) had to periodically decide either to maintain an independent monetary policy and devalue, or to maintain parity with the DM and lose any sovereignty over their monetary policy.

Given the frequency with which policymakers had to make these decisions, some countries lost

both the benefits of exchange-rate stability and their monetary policy independence. The social costs were high. This process came to an end with the ERM crisis in 1992-3, when it ceased to be credible for countries entering a recession to follow German interest rate rises.

At the same time, devaluing repeatedly was becoming incompatible with the deep Single Market that countries were trying to build.

Indeed, the prevailing view on devaluations was captured well by Nobel laureate Robert Mundell, who developed his theory of optimal currency areas in the belief that, “*I could not see why countries that were in the process of forming a common market should saddle themselves with a new barrier to trade in the form of uncertainty about exchange rates*”.⁵ Exchange rate flexibility would have undermined the Single Market in two ways.

First, it would have weakened incentives for firms to raise productivity, because they could have lifted competitiveness – if only temporarily – by devaluing rather than increasing output per head.⁶ Yet Europe had witnessed time and again that such actions did not lead to lasting welfare gains.

From the launch of the EMS in 1979 to the ERM crisis in 1992, the Italian lira was devalued seven times against the DM, losing around half of its value cumulatively vis-à-vis the German currency. Yet average annual productivity growth⁷ in Italy was lower than in the euro area 12 over this period, Italy’s GDP growth rate was roughly the same as that of its European peers, and its unemployment rate went up by 1.3 percentage points. At the same time, consumer prices in Italy grew cumulatively by 223%, compared with 103% in the euro area 12.⁸

Second, support for the Single Market would be undermined in the long run if firms that did invest in raising productivity could be deprived of some of the benefits by “beggar-thy-neighbour” behaviour through competitive devaluations in other countries. Open markets would not have lasted.

Europe had experienced the problems created by exchange rate flexibility in the 1960s with the common agricultural market. Absent a single currency, the common agricultural policy was based on prices quoted in units of account. But successive currency crises, in particular a revaluation of the DM and a devaluation of the French franc in 1969, jeopardised trust in the market, as the farmers affected demanded compensation for their losses.

The issue was smoothed over by introducing monetary compensatory amounts to mitigate sudden changes in farm prices caused by abrupt adjustments in exchange rates. But the system proved difficult to implement and sustain as it was virtually impossible to avoid distortions of production and trade, which poisoned intra-Community relations.⁹

So, faced with an “inconsistent quartet” of policy choices, a single currency provided, at least in principle, a way to resolve them. It would allow countries to maintain stable exchange rates and therefore benefit from openness within the Single Market, while managing as far as possible its costs.

Not all countries that had joined the Single Market also joined the euro, of course. Some countries, such as Denmark, pegged their exchange rates to the euro. For other countries, the Single Market represented the gateway to the euro. Five additional countries¹⁰ joined the euro in its first decade and three more in its second, but other smaller economies have stayed out so far.

Finally, there is the United Kingdom, the only large economy inside the Single Market that chose to stay out of the euro area. The United Kingdom is a particular case, not only for political reasons but also for structural reasons, such as the relatively low exchange rate pass-through it

had in the past.¹¹

The benefits of one market, one money today

We should consider what gains have been made as a result of having one market with one money.

With the euro protecting the Single Market, trade growth has increased, with intra-EU exports rising from 13% of EU GDP in 1992 to 20% today. Intra-euro area trade has risen both in absolute terms and as a share of total trade with advanced economies¹², even as emerging market economies have entered the global market. Foreign direct investment (FDI) flows within Europe have also grown¹³, with inflows from the rest of the EU to Italy increasing by 36% from 1992 to 2010.¹⁴

Behind the growth of intra-EU trade lies perhaps an even more important development, which is the much closer intertwining of European economies through the deepening of value chains. Since the start of the 2000s, supply chain linkages between countries within the EU have intensified at a faster pace and were more resilient during the crisis, compared with their supply chain linkages with countries outside the Single Market.¹⁵

The removal of customs barriers as part of the Single Market agenda has facilitated multiple border crossings during the production process. Europe-wide standards have boosted intra-EU value chains by providing more certainty for firms about the quality of production in other countries and encouraging the fragmentation of the production process that is typical of value chains.¹⁶ And the single currency has further enhanced the process by eliminating the costs of foreign exchange payments and settlements and of hedging exchange rate risk.

Participation in these value chains has brought gains for all countries, especially in terms of productivity spillovers. The imported inputs used in value chains generate a tangible boost to productivity.¹⁷ And higher productivity in turn leads to higher wages. Integration within value chains is associated with an increase in hourly compensation for all skill groups.¹⁸

Moreover, integrating into value chains has improved risk-sharing among European countries, since it has allowed the gains (and losses) of trade with the rest of the world to be more evenly spread. Within the EU, close to 20% of export-supported jobs are located in a country other than the one that exports the final product.¹⁹

Around half a million Italian workers are involved in the production processes of companies located in other EU countries that export to the rest of the world.²⁰ Italian firms themselves participate strongly in global value chains and this is positively associated with labour productivity.²¹

It is often this link to value chains that allows in particular the SMEs that are so typical of Italy's manufacturing sector to survive and grow. In a world that is increasingly dominated by scale, this permits Italy to retain one of its fundamental characteristics. Italy, through the Single Market and the single currency, is deeply integrated into the European production process.

The closer intertwining of European economies has had two significant effects on exchange rate relationships for euro area countries

First, the cost of not being able to devalue within Monetary Union has fallen. ECB analysis finds that misalignments of real effective exchange rates are smaller – albeit more persistent – for euro area countries than those between advanced economies or countries linked by pegged exchange rates, and these misalignments have actually become smaller in the second decade of EMU relative to the first decade.²²

At the same time, value chains have blunted the short-run benefits of competitive devaluations.²³ Since exports contain a greater share of imports, any boost to external demand associated with a hypothetical devaluation is now offset by higher input costs from imported intermediates. As a result, participation in value chains has been found to reduce the responsiveness of export volumes to movements in the exchange rate.²⁴

So, any country hypothetically looking to devalue to regain competitiveness would have to do so to a much larger extent than was necessary in previous decades. And devaluations of such size would not only threaten the existence of the Single Market. They would also result in a substantial loss of welfare within the country carrying out the devaluation owing to the greater negative impact it would have via higher import prices. And studies on non-EU countries suggest that the welfare loss would be greatest for the poorest in society, since poorer households tend to spend a larger share of their income on tradeable goods than richer households.²⁵ This is also typically the case in euro area countries.

But does being outside the euro provide additional benefits in terms of monetary policy sovereignty? This is not so obvious.

First, the single currency has actually allowed countries to regain monetary sovereignty compared with the fixed exchange rate regimes of the past. Decision-making over monetary policy, which effectively belonged to Germany under the EMS, is now shared among all euro area countries. And the size of euro financial markets has made the euro area less vulnerable to US spillovers, even as global financial integration has accelerated.

Second, it is worth noting that the supposed advantages of monetary sovereignty – such as the ability to engage in monetary financing of government spending – do not appear to be valued highly by countries that are members of the Single Market but not the euro. Such countries have a weighted average public debt of 68% of GDP (44% of GDP if the United Kingdom is excluded), compared with 89% for countries that use the single currency.

In any case, as the history of Italy has shown, monetary financing of government debt did not lead to real long-term benefits.²⁶ In periods where debt monetisation was more common in Italy, such as in the 1970s, maintaining a growth rate similar to its European peers required repeated devaluations. Inflation reached unsustainable levels and hit the most vulnerable in society.

Convergence and divergence in the euro area

But if it is true that the supposed advantages associated with the freedom of being outside Monetary Union belong to a memory that has been obscured by time and the dramas of the recent crisis, it is also true that in some countries various benefits that were expected from EMU have not yet materialised.

It was not mistaken, and nor is it today, to expect higher growth and employment to emerge from the “culture of stability” that Monetary Union would bring about. But it was inconceivable that joining Monetary Union alone would be sufficient to achieve this. We needed and continue to need much more.

To the founders of EMU, it was clear that establishing a well-functioning monetary union would be a long and gradual process. Historical experience suggested that opening markets could lead to differentiated gains, with some regions profiting more than others. This had been the experience of both Italy and Germany after unification in the 19th century.²⁷

Several euro area countries have achieved significant convergence, particularly the Baltic countries, Slovakia and, to a lesser extent, Malta and Slovenia. In these countries, the gap between real GDP per capita and the euro area mean has been reduced by around one-third

since 1999.²⁸ Others that also started far from the euro area average – such as Portugal and Greece – have on balance been unable to close the gap considerably.

But such divergences are not exclusive to the euro area. GDP per capita in the richest state in the United States is around twice that of the poorest state, which is roughly the same gap as in the euro area.²⁹ And the dispersion of growth rates across euro area countries has fallen considerably over time and, since 2014, has been comparable to the dispersion across US states.

So what has driven the different convergence trajectory of countries, and how much is it related to membership of the euro? Convergence can be thought of in two ways.

The first is convergence of real GDP per capita *levels*. This is a long-term process which is driven by factors such as rates of FDI, productivity growth and institutional quality. Such factors can be fostered by sharing a single currency, but they are not determined by it. Domestic policies, structural and institutional reforms, and contributions from EU structural funds are what play a crucial role here.

The second concept of convergence relates to *growth rates*, i.e. how much business cycles across countries are synchronised, especially when major shocks hit. This is determined more by monetary union membership, since the design of a monetary union affects the capacity of countries to adjust and stabilise demand during recessions.

In the case of Italy, we see both long-term and cyclical factors at play. Between 1990 and 1999 – that is, before the introduction of the euro – Italy already had the lowest cumulative per capita GDP growth of the original euro area members. From 1999 to 2008, it again had the lowest per capita GDP growth of all euro area members. From 2008 to 2017, it recorded the second lowest cumulative growth, behind Greece. And, if we look further back, the growth we saw in the 1980s was borrowed from the future, having been based on debt that was left for future generations to bear.

So, low growth in Italy is a phenomenon that dates back a very long time before the euro. This is a supply-side problem, which is clear if one looks at regional performance. There is a correlation between GDP per capita in different Italian regions and some structural indicators, such as – just to take an example – the ease of doing business index compiled by the World Bank: the values for the poorer regions are generally lower than those of richer regions.

At the same time, the fact that Italy – and other countries – diverged further from the euro area average during the crisis highlights two important points. First, that structurally weaker countries are more vulnerable to economic slowdowns than others; and second, that our Monetary Union remains incomplete in some key respects.

There is a fair amount of evidence that countries that implemented decisive structural policies recovered faster from the crisis than others. In countries that made such changes, the labour market is now more responsive to growth,³⁰ and the improved economic conditions have led to gains in employment.³¹ But alongside structural policies, different layers of protection are necessary to ensure that countries can stabilise their economies during crises.

Without appropriate backstops at the euro area level, individual countries in a monetary union can be exposed to self-fulfilling dynamics in sovereign debt markets. Such overshooting can aggravate adverse debt dynamics in downturns, inducing procyclicality in national fiscal policies, as we saw in 2011-12. Typically, sovereign borrowing costs should fall in a recession, but at that time economies representing one-third of euro area GDP saw their borrowing costs become positively correlated with risk aversion.³² The result was a lack of stabilisation that harmed both growth and fiscal sustainability.

So it is the structurally weaker countries that most need EMU to have instruments to diversify the risk of crises and counteract their effect on the economy. I have talked before about how countries like Italy, which had been weakened by decades of low growth and had no fiscal space when the crisis began, saw a crisis of confidence in government debt turn into a credit crisis with major repercussions for employment and growth.³³

Deepening private risk-sharing through financial markets is one key element in preventing such events from recurring. In the United States, around 70% of shocks are mitigated and shared across the individual states through integrated financial markets, whereas in the euro area the share is only 25%.³⁴ It is therefore also in the interest of the weaker countries in the euro area to complete banking union and to proceed with the construction of a genuine capital market.

But national budgets will never lose their function as the main stabilisation tool during crises. In the euro area, around 50% of an unemployment shock is absorbed through the automatic stabilisers in national public budgets, significantly more than in the United States.³⁵ The use of automatic stabilisers, however, depends on countries not being constrained by their debt level. So the necessary fiscal space will have to be created again so that budget interventions can be made in the event of a crisis.

Yet national fiscal policies also need a complement at the European level. We need an institutional architecture that gives all countries the necessary support to ensure that their economies are not exposed to procyclical market behaviour during downturns. This will only be possible if the support is temporary and does not constitute a permanent transfer between countries, which would result in a failure to put in place the necessary fiscal consolidation, let alone the fundamental structural reforms needed for a return to growth.

Conclusion

It is not a technocratic desire to see convergence across countries and the smooth functioning of Monetary Union that has led me to frequently mention the importance of structural reforms in recent years. Each country has its own reform agenda, but such reforms are the only way to create the conditions for sustainable growth in wages, productivity and employment and to underpin our welfare state.

In large part these measures have to be undertaken at the national level, but they can be supported at the European level by the recent decisions to launch an instrument for convergence and competitiveness.

However, to tackle future cyclical crises, the two layers of protection against shocks – the diversification of risk through the private financial system on the one hand, and public countercyclical support through national budgets and the fiscal capacity of the EU budget on the other – need to interact in a complete and efficient manner.

The more progress we make in completing the banking union and capital markets union, the less urgent – although still necessary – it becomes to construct a fiscal capacity, which could at times serve to complement national stabilisers. Inaction on both fronts heightens the fragility of Monetary Union in times of great crisis and the divergence between countries increases.

It is clear that completing Monetary Union is the best way to prepare the transition to a form of union that is more complete. Monetary Union, a necessary consequence of the Single Market, has become an integral and defining aspect – with its symbols and its constraints – of the political project whose central aim is a Europe that is united in freedom, peace, democracy and prosperity.

It was an exceptional response – or to paraphrase Robert Kagan³⁶ an anti-historical response – to a century that had seen dictatorships, war and misery, and in that respect was not dissimilar

to previous centuries. A unified Europe was part of that world order, itself the result of exceptional circumstances, which followed the Second World War.

The intervening years have confirmed the rationality of the choices made at the European and the global level. The challenges that have arisen have become ever more global in nature and need to be tackled together, not alone. And this is even more true for Europeans, both at the level of their individual nations and for the continent as a whole: rich but relatively small; strategically exposed, militarily weak.

Yet today, for many, the memories that inspired those choices seem distant and irrelevant, and the rationale behind them has been undermined by the misery created by the great financial crisis of the past decade. It does not matter that we are emerging from the crisis. Elsewhere in the world, the fascination with illiberal prescriptions and regimes is spreading; we are seeing little steps back in history.

And this is why our European project is even more important today. It is only by continuing to make progress, freeing up individual energies but also fostering social equity, that we will save it through our democracies, with a unity of purpose.

-
- ¹ Austria, Belgium, Finland, France, Germany, Greece, Ireland, Italy, Luxembourg, the Netherlands, Portugal and Spain.
 - ² See Study Group appointed by the Commission and presided by Padoa-Schioppa, T. (1987), "Efficiency, stability, and equity: a strategy for the evolution of the economic system of the European community: a report".
 - ³ See Caminada, K., Goudswaard, K. and Van Viet, O. (2010), "Patterns of Welfare State Indicators in the EU: Is there Convergence?", *Journal of Common Market Studies*, 48(3), pp. 529–556; Paetzold, J. (2012), "The Convergence of Welfare State Indicators in Europe: Evidence from Panel Data", Working Paper No 201204, University of Salzburg; Athanasenas, A., Chapsa, X. and Michailidis, A. (2015), "Investigating Social Protection Convergence in the EU-15: A Panel Data Analysis", *European Research Studies Journal*, vol. 0(2), pp. 79–96.
 - ⁴ See Padoa-Schioppa, T. (1982), "Capital Mobility: Why is the Treaty Not Implemented?", in Padoa-Schioppa, T. (1994), *The Road to Monetary Union in Europe* (Oxford: Clarendon Press.).
 - ⁵ Mundell, R., "Optimum Currency Areas", luncheon speech at Tel Aviv University, 5 December 1997.
 - ⁶ See Eichengreen, B. (2007), "The European Economy since 1945, Coordinated Capitalism and Beyond", Princeton University Press.
 - ⁷ Real GDP per hour worked.
 - ⁸ Reference period is 1979–1991, excluding Italy.
 - ⁹ European Commission (1980), "[Reflections on the Common Agricultural Policy](#)", *Bulletin of the European Communities*, Supplement 6/80.
 - ¹⁰ Greece was one of the original signatories of the Maastricht Treaty but only joined the euro area in 2001.
 - ¹¹ See, for example, Campa, J.M and Goldberg, L.S. (2002), "Exchange Rate Pass-Through into Import Prices: A Macro or Micro Phenomenon?", *NBER Working Paper*, No. 8934.
 - ¹² Euro area plus Australia, Canada, Denmark, Japan, Sweden, United Kingdom and United States.
 - ¹³ Carril-Caccia, F. and Pavlova, E. (2018), "Foreign direct investment and its drivers: a global and EU perspective", *Economic Bulletin*, Issue 4, ECB.
 - ¹⁴ Percentage increase of five-year centred average.
 - ¹⁵ Schmitz, M., Fidora, M. and Gunnella, V. (2017), "[The impact of global value chains on the macroeconomic analysis of the euro area](#)", *Economic Bulletin*, Issue 8, ECB.

- ¹⁶ Blind, K., Mangelsdorf, A., Niebel, C. and Ramel, F. (2018), “Standards in the global value chains of the European Single Market”, *Review of International Political Economy*, 25(1), pp. 28–48.
- ¹⁷ See, for example, Halpern, L., Koren, M. and Szeidl, A. (2015), “Imported Inputs and Productivity”, *American Economic Review*, 105(12), pp. 3660–3703.
- ¹⁸ Schmitz et al. (2017), op. cit.
- ¹⁹ European Commission (2018), “[Fact Sheet](#)”, 27 November.
- ²⁰ European Commission (2018), “[Exports Mean Jobs, Italy](#)”.
- ²¹ Agostino, M., Giunta, A., Scalera, D. and Trivieri, F. (2016), [Italian Firms in Global Value Chains: Updating our Knowledge](#)”, *Rivista di Politica Economica*, vol. VI-IX/2016.
- ²² Fidora, M., Giordano, C. and Schmitz, M. (2017), “Real exchange rate misalignments in the euro area”, *Working Paper Series*, No. 2108, ECB.
- ²³ Devereux, M. and Yetman, J. (2014), “Globalisation, pass-through and the optimal policy response to exchange rates”, *Journal of International Money and Finance*, 49(PA), pp. 104–128.
- ²⁴ See Amiti, M., Itskhoki, O. and Konings, J. (2014), “Importers, Exporters, and Exchange Rate Disconnect”, *American Economic Review*, 104(7), pp. 1942–1978; Swarnali, A., Maximiliano, A. and Michele, R. (2017), “Global value chains and the exchange rate elasticity of exports”, *The B.E. Journal of Macroeconomics*, 17(1), pp. 1-24; Rodnyansky, A. (2018), “(Un)Competitive Devaluations and Firm Dynamics”, mimeo.
- ²⁵ See Cravino, J. and Levchenko, A. (2017), “The Distributional Consequences of Large Devaluations”, *American Economic Review*, Vol. 107, No. 11, November.
- ²⁶ Fratianni, M. and Spinelli, F., *A Monetary History of Italy*, Cambridge University Press, Cambridge, 1997.
- ²⁷ See Toniolo, G. (1990), “Economic Problems of the Unification” in *An Economic History of Liberal Italy*, Routledge; Study Group appointed by the Commission and presided by Padoa-Schioppa, T. (1987), op. cit.
- ²⁸ Diaz del Hoyo, J., Dorrucci, E., Frigyes, F.H. and Muzikarova, S. (2017), “Real convergence in the euro area: a long-term perspective”, *Occasional Paper Series*, No. 203, ECB, December.
- ²⁹ Adjusted for purchasing power in euro area countries and excluding Luxembourg and Ireland.
- ³⁰ Based on a static relationship between changes in the employment rate and percentage changes in GDP for the period between the first quarter of 1999 and the second quarter of 2015. The period of recovery analysed is from the second quarter of 2013 to the second quarter of 2015. See the article entitled “What is behind the recent rebound in euro area employment?”, *Economic Bulletin*, Issue 8, ECB, 2015.
- ³¹ See Banco de España (2015), “Competitive adjustment and recovery in the Spanish economy”, *Annual Report*, Box 2, pp. 39–63; Vansteenkiste, I. (2017), “Did the crisis permanently scar the Portuguese labour market? Evidence from a Markov-switching Beveridge curve analysis”, *Working Paper Series*, No. 2043, ECB, April; and Sestito, P. and Viviano, E. (2016), “Hiring incentives and/or firing cost reduction? Evaluating the impact of the 2015 policies on the Italian labour market”, *Questioni di economia e finanza (Occasional Papers)*, No. 325, Banca d’Italia, March.
- ³² As measured by the VIX index (ECB calculations).
- ³³ See Draghi, M. (2018), “Risk-reducing and risk-sharing in our Monetary Union”, speech at the European University Institute, Florence, 11 May.
- ³⁴ European Commission estimates. See Nikolov, P. (2016), “Cross-border risk sharing after asymmetric shocks: evidence from the euro area and the United States”, *Quarterly Report on the Euro Area*, Vol. 15, No. 2.
- ³⁵ Dolls, M., Fuest, C., Kock, J., Peichl, A., Wehrhöfer, N. and Wittneben, C. (2015), “Automatic Stabilizers in the Eurozone: Analysis of their Effectiveness at the Member State and Euro Area Level and in International Comparison”, Centre for European Economic Research, Mannheim.
- ³⁶ Kagan, R. (2018), *The Jungle Grows Back*, Penguin Random House.

