

I. Economic resilience, the Single Market and EMU: a self-reinforcing interaction

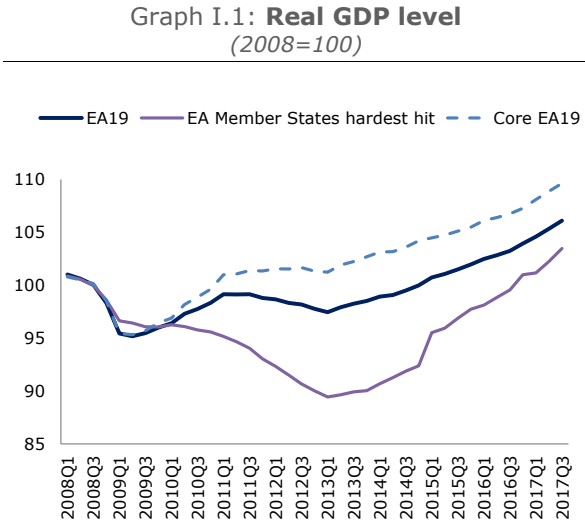
Convergence towards resilient economic structures entails three elements, i.e. a reduction in the economy's vulnerability to shocks, an increased capacity to absorb shocks and greater ability to swiftly recover from them. These features are key for the smooth functioning of Europe's Economic and Monetary Union, because exchange rates cannot be used as a channel to smoothen macroeconomic shocks in a currency union. The capacity of each national economy to adjust swiftly and effectively to shocks is vital to prevent the building up of unsustainable divergences between currency union members. This section discusses how completing the Single Market (more particularly deepening goods and services markets) can strengthen economic resilience in the EMU. The section starts with a brief overview of the remaining malfunctionings in goods and services markets, looking at some specific sectors. Next, it examines factors related to the deepening of the Single Market that affect the economy's vulnerability to shocks (such as the structure of the economy). It then investigates how completing the Single Market can strengthen shock absorption capacity through increased product diversification and price flexibility. Subsequently, it explores how the recovery following a shock may be accelerated by convergence towards best practices in terms of market openness, insolvency frameworks and business regulations within the Single Market. Finally, the section suggests that completing the Banking Union and making significant progress towards the Capital Markets Union are fundamental to realising the full benefits of further integrating goods and services markets. It also argues that completing the Single Market should also be complemented by well-designed automatic fiscal stabilisers and private financial risk-sharing mechanisms. ⁽¹⁾

I.1. Introduction

The economic recovery in the euro area has developed into a broad-based expansion. Economic output is now higher than before the recession of 2011-2013 and also above the levels recorded before the Great Recession of 2008-2009 ⁽²⁾ although notable differences across euro area (EA) Member States remain. Real GDP initially decreased more in core euro area Member States than in those that eventually were hit hardest by the crisis. Real GDP in the core euro area Member States, however, had fully recovered their 2008 levels by early 2011, whereas it continued to decrease until the beginning of 2013 in the EA Member States hardest hit and did not recover its 2008 levels until early 2017 (Graph I.1).

Against this background, and among other proposals to reinforce the monetary union, the Five Presidents' Report (2015) stressed the importance of increasing the resilience of euro area economies by strengthening the economic pillar of EMU. The report referred to the need of achieving

"similarly resilient economic structures throughout the euro area". ⁽³⁾



Source: Authors' calculation based on Eurostat, National Accounts.
 Note: EA Member States hardest hit covers IE, ES, EL, CY and PT. Core EA19 covers DE, AT, NL and FR.

The concept of economic resilience refers to an economy's vulnerability to shocks, its capacity to

⁽¹⁾ This section was prepared by Maya Jolles and Eric Meyermans. The authors wish to thank Katia Berti, Gabriele Giudice and Dominique Simonis for useful comments.
⁽²⁾ For more details, see, for instance, European Commission (2017), 'European Economic Forecast – Autumn 2017'.

⁽³⁾ A comparison of how this notion of convergence towards resilient economic structures interacts with other dimensions of convergence essential for EMU is provided in Section I of the second issue of the 2017 Quarterly Report on the Euro Area.

absorb them and its ability to quickly recover from them. ⁽⁴⁾ Thanks to these features, a resilient economy faces lower costs in terms of both lost output and increased unemployment in the short run after a shock hits. This reduces the risk of hysteresis in labour and capital markets, avoids pushing Member States down divergent paths and thus supports sustainable growth in the long run.

Economic resilience rests on idiosyncratic country-specific characteristics. However, favourable framework conditions at the EU level, including a well-functioning Single Market and effective macroeconomic stabilisation policies play a significant role for resilience as well, not just at country level but also for the EU as a whole.

A deeper Single Market can bring gains in terms of higher growth potential. ⁽⁵⁾ Stronger competition, stronger cross-border trade and investment, easier access to a wider range of suppliers and consumers, more innovation and faster technological development are at the source of such positive effects. ⁽⁶⁾ This is important for all Member States, but particularly for the euro area.

But the incompleteness of the Single Market (see the Monti report and the 2011 Single Market Act and the 2012 Single Market Act II) holds back the full gains that could be achieved. The Reflection Paper on the Deepening of EMU ⁽⁷⁾ recalls that Member States' commitment is essential to reap the full benefits. The Council Recommendation on the economic policy of the euro area, adopted by the ECOFIN Council in January 2018 ⁽⁸⁾, stressed the importance of completing the Single Market, particularly in services, including financial, digital, energy and transport.

This section examines how completing the Single Market in goods and services could strengthen convergence towards resilient economies across the euro area. In theory, completing the Single Market has the potential to affect resilience through a number of channels. It fosters a more supportive and dynamic business environment, allows firms to build more diversified import and export markets, and through competition and price flexibility it allows a faster and more sustainable reaction to (permanent) shocks. It also provides access to more diversified sources of funding although financial markets are outside the scope of analysis in this section.

The next two sub-sections review briefly the gradual integration of product markets since the signing of the Treaty of Rome and the subsequent set-up of the EMU, and provide a selective overview of euro area product markets that still have barriers that hinder the well-functioning of the Single Market. The following three sub-sections investigate the impact of completing the Single Market on the three pillars of resilience: i) an economy's vulnerability to shocks, ii) its shock-absorption capacity, and iii) its ability to recover from shocks. ⁽⁹⁾ The last sub-section draws conclusions. Where relevant, the role of interactions of product markets with labour and financial markets is highlighted. ⁽¹⁰⁾

1.2. The Single Market and the EMU

Since the Treaty of Rome (1957), the idea of achieving a common market has relied on the so called "four freedoms", i.e. free movement of goods, services, labour and capital. Initially, the free movement of goods was supported essentially by removing tariff barriers and quotas. Differences in product regulations and technical standards and difficulties in harmonizing them across Member States led nonetheless to the persistence of significant barriers to trade between EU countries.

Significant progress in abating technical barriers to trade was later achieved thanks to the principle of

⁽⁴⁾ See European Commission (2017), 'Economic Resilience in EMU, Thematic Discussions on Growth and Jobs, Note for the Eurogroup', as well as OECD (2016), 'G20 Policy Paper on Economic Resilience and Structural Policies'; IMF (2016), 'A Macroeconomic Perspective on Resilience'; ECB (2016), 'Increasing resilience and long-term growth: the importance of sound institutions and economic structures for euro area countries and EMU', *Economic Bulletin Issue 5*.

⁽⁵⁾ The 2014 report initiated by the European Parliament 'The Cost of non-Europe in the Single Market' lists nine studies between 1998 and 2014 that estimated the gains in closing the gaps in the Single Market under different methodologies.

⁽⁶⁾ For more details, see for instance https://ec.europa.eu/growth/single-market_en

⁽⁷⁾ European Commission (2017), 'Reflection paper on the deepening of the Economic and Monetary Union'.

⁽⁸⁾ See COM(2017) 770 final Recommendation for a Council Recommendation on the economic policy of the euro area and SWD(2017) 660 final Commission Staff Working Document, Analysis of the Euro Area economy.

⁽⁹⁾ Thereby following the analytical framework on resilience outlined in European Commission (2017), *op cit*.

⁽¹⁰⁾ For an analysis of cross-border risk sharing via financial markets, see, for instance, 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, pp. 7-18, and via labour markets, see, for instance, Arpaia, A. et al. (2015), 'Labour mobility as an adjustment mechanism', *Quarterly Report on the Euro Area*, Vol. 14, No. 1, pp. 19-25.

“mutual recognition”, introduced in 1979 by the European Court of Justice ruling on 'Cassis de Dijon'. It stated that ‘any product lawfully produced and marketed in one Member State must, in principle, be admitted to the market of any other Member State.’ This jurisprudence was essential in stopping technical barriers from having an effect equivalent to quantitative restrictions. From then onwards, advances in the completion of the Single Market for goods relied on the parallel processes of mutual recognition and harmonisation.

The Single European Act which took effect in 1987 initiated the first review of the Treaty of Rome with a view to identify and remove remaining obstacles to free movement, notably non-tariff barriers to trade. It aimed at establishing the Single Market by the end of 1992. By that date, more than 90% of the objectives set in the so-called Single Market Programme were fulfilled. Additionally, with the Schengen Agreement (signed in 1985) and its integration in the Amsterdam Treaty (1997), physical barriers across the internal market were abolished, notably through the elimination of border controls between participating Member States.

After years of significant progress on the Single Market, particularly concerning the mobility of goods and capital, the creation of a Monetary Union was seen as the next logical progression in European integration. It soon became apparent that free trade, free capital movements, and exchange rate stability would be impossible to reconcile with independent national monetary policies in the long term (the so-called "impossible quartet").⁽¹¹⁾ This led to the proposal for the creation of a Monetary Union in the Delors report (1989).⁽¹²⁾ Progress on the Single Market had already contributed to a significant reduction in transaction costs but remaining national currencies and independent monetary policies (with their intrinsic exchange rate risks) set limits to further integration within the common market. By overcoming them and favouring more trade and competition, the single currency was expected to foster a better allocation of resources, stimulating

productivity and growth. The Maastricht Treaty agreed in 1992 therefore launched the process leading to the creation of the single currency in 1999.

The further deepening of the Single Market was subsequently pursued in combination with the Monetary Union through milestones.

Progress has been achieved with the adoption of the Services Directive in 2006⁽¹³⁾, and the adoption of new provisions in the Treaty on the Functioning of the European Union (2007). Soon after, the 2010 Monti report was translated in proposals spelled out in the 2011 Single Market Act and the 2012 Single Market Act II.

Even so, some barriers to the cross-border trade of services in the EU still remain in place.⁽¹⁴⁾ In October 2015, the European Commission therefore presented a new Single Market Strategy to deliver a deeper and fairer Single Market to the benefit of consumers and businesses.⁽¹⁵⁾ Overall, however, it is fair to say that, to date, the internal market remains incomplete.

I.3. Remaining barriers in the Single Market

An indicator that is commonly used to measure the degree of integration achieved in the Single Market is convergence in price levels across countries. As illustrated in Graph I.2, from 1995 until the beginning of the crisis, price dispersion decreased as prices in the euro area Member States with lower real GDP per capita increased more than in the richer euro area economies reflecting catching-up of prices and wages. For example, at the same time net earnings increased at a much stronger pace in the new euro area Member States than in the old Member States.⁽¹⁶⁾ Since 2008-2009, price

⁽¹¹⁾ Padoa-Schioppa during a lecture in Milan in June 1982 brought forward the incompatibility between free trade in a Single Market, free capital movement, independent domestic monetary policies and fixed exchange rates.

⁽¹²⁾ 'Report on economic and monetary union in the European Community', prepared by the Committee for the Study of Economic and Monetary Union.

⁽¹³⁾ The potential progress was limited by the fact that the original proposal of Services Directive from the European Commission was amended and the scope was narrowed down. For an overview of the final scope see presentation of the Directive by the European Commission, see http://eujog.im.kormany.hu/download/b/dc/01000/Emy%20Gustavsson_The%20Notification%20Obligation%20under%20the%20Services%20Directive.pdf

⁽¹⁴⁾ For more details on Member States' implementation of the Services Directive, see https://ec.europa.eu/growth/single-market/services/services-directive/implementation/evaluation_en

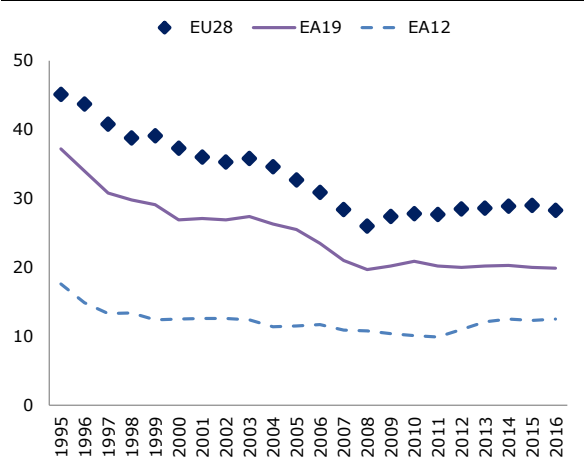
⁽¹⁵⁾ For more details on the Single Market Strategy, see https://ec.europa.eu/growth/single-market/strategy_en

⁽¹⁶⁾ For example, the available data indicate that net earnings of a single person without children earning the average wage increased between 2000 and 2007 by 137% in Estonia, 110% in Lithuania,

convergence in the euro area has stalled, reflecting in part a stagnation in real convergence within the euro area throughout the crisis.

While economic performance plays a role, the evolution of price convergence is affected by important barriers to cross-border trade and competition, that prevent a fully efficient allocation of resources across firms and sectors in the Single Market, as reported by, for example, European Commission (2015) and CPB (2015).⁽¹⁷⁾

Graph I.2: **Price dispersion**
GDP deflator
(Coefficient of variation of price level indices)



Source: Eurostat.

Most of these remaining barriers arise from heterogeneity in national regulations,⁽¹⁸⁾ which in part also reflect differences in national preferences, and in part result from vested interests. Differences along national borders may also reflect the fact that EU national authorities in the EU sometimes regulate and/or supervise without coordinating with each other. Heterogeneity of national regulations and technical standards, especially in services, raise trade and investment costs of service providers that do business in other Member States. In addition, the implementation of the mutual

recognition principle in goods markets remains unsatisfactory. Indeed, as the adoption of the Commission's "Goods package" in December 2017 showed, mutual recognition and harmonisation has not worked sufficiently well in the EU and scope for further progress still remains also in goods markets.⁽¹⁹⁾

In addition, implementation of EU legislation in the Member States is sometimes uneven and full enforcement of Single Market legislation at national level would improve the integration of the Single Market. As of 30 November 2016, 1 019 directives (together with 3 619 regulations) were in force to ensure the functioning of the Single Market. However, 1.5% of all directives were not transposed, and 0.7% of all directives were transposed incorrectly. Only eight Member States managed to stay under the 1% threshold. The level of average compliance deficit level stood at 0.7% in November 2013. Only nine Member States (down from 11) now have a compliance deficit of 0.5% or less.⁽²⁰⁾ This is not without serious consequences since if one or more Member States fail to transpose directives on time, the Single Market remains disproportionately smaller and fragmented. Such outcome adversely affects the economic interests of all Member States and their citizens.

The following sub-sections briefly recall some of the most important remaining barriers still affecting product markets.

I.3.1. Barriers to competition in national product markets

Competition fosters economic resilience to the extent that it induces the exit of inefficient firms and eases the entry of new more productive ones, promoting the reallocation of resources to more

105% in Latvia, compared to only 17% in Austria, 19% in Germany and 20% in Italy.

⁽¹⁷⁾ See, for instance, European Commission (2015), 'Report on Single Market Integration and Competitiveness in the EU and its Member States', Commission Staff Working Document, SWD(2015) 203 final, and Netherlands Bureau for Economic Policy (CPB) (2005), 'A quantitative assessment of the EU proposals for the Internal Market for Services'.

⁽¹⁸⁾ For instance, the EU has no common regulatory agencies for any of the network industries given the lack of an explicit legal basis providing for that in the Treaty. See Pelkmans and Luchetti (2013), 'Enjoying a single market for network industries, Notre Europe.'

⁽¹⁹⁾ Mutual recognition on goods lawfully marketed in another Member State does not function as it should, due to the lack of awareness, the legal uncertainty and the lack of efficient communication and cooperation among stakeholders. See, for instance, European Commission (2017), 'Proposal for a Regulation of the European Parliament and of the Council on the mutual recognition on goods lawfully marketed in another Member State', SWD(2017) 472 final. Pataki, Z. (2014), in the report 'The Costs of Non Europe in the Single Market' prepared for the Directorate-General for Parliamentary Research Services of the European Parliament, estimates that a reduction of trade barriers could lead to an increase of intra-EU trade of more than 100 billion EUR per year. The concept of trade barriers in this study is broader than mutual recognition, but it provides an estimation of the expected benefits.

⁽²⁰⁾ More details at http://ec.europa.eu/internal_market/scoreboard/performance_by_governance_tool/transposition/index_en.htm

efficient use. Still, in product markets regulatory barriers remain that affect the cost of starting, operating and expanding a business, thus hampering competition (European Commission, 2017).⁽²¹⁾ Important limitations to market access include barriers to entrepreneurship (triggered by, among others, complex regulations, administrative burden for start-ups, regulatory protection of incumbents), state control (including price controls, as well as command and control regulation), barriers to trade and investment (including barriers to foreign direct investment) and differential treatment of foreign suppliers.⁽²²⁾

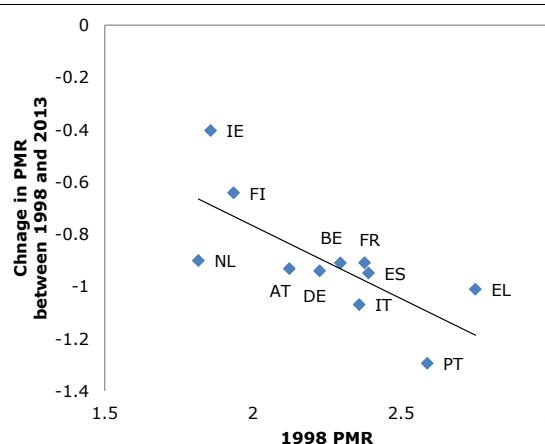
There has been an overall reduction in stringency of product market regulation in the euro area, as shown in Graph I.3, presenting changes in product market regulation between 1998 and 2013 (last year available) for all euro area Member States for which data are available.

Despite the recorded improvement, euro area countries still do not appear to be at the frontier of product market efficiency, as indicated in a recent ECB study.⁽²³⁾ In the study, product market efficiency is measured by aggregating different indicators such as the OECD Product Market Regulation indicators related to economy-wide regulation (e.g. state control) and industry-level regulation (e.g. barriers to trade in manufacturing) and the World Bank Doing Business indicators quantifying the regulations applying to small and medium-size companies throughout their life cycle (e.g. number of days to start a business). Using this metric, the study shows much lower product market efficiency for the euro area compared to the aggregate of the top-3 OECD countries (New Zealand, the United Kingdom and Denmark) and the US.

While aggregate product market composite indicators point to improvements over time, very divergent developments can be observed at sectoral level, with barriers to competition still prevailing in those sectors that are least exposed to trade. The

analysis by Bourles et al. (2015)⁽²⁴⁾ suggests that sectors more exposed to trade recorded stronger efficiency improvements, in contrast with non-manufacturing sectors often shielded from trade pressure. Their analysis also highlights that, at the same time, non-manufacturing sectors account for increasing shares of the total economy and of the intermediate inputs used in the economy. In this perspective, a closer scrutiny of how the areas of services and network industries work is necessary. Subsections 1.3.2 and 1.3.3 look at them more in detail.

Graph I.3: **Product market reform**
all sectors



(1) 1998 observation only available for EA12 Member States.
Source: Authors' estimates based on OECD data.

I.3.2. Barriers in services sector remain strong

While services account for two-thirds of the EU economy both in terms of employment and value added, the cross-border provision of services, though improving, is still limited. Services trade integration in the EU stands at 6.6% in 2015 compared to 20.6% for goods; trade integration in services nevertheless improved by 2.8% in 2014-15 compared to a 0.3% increase for goods⁽²⁵⁾. Despite their large share in economic activity, services account only for around one-fifth of intra-EU exports and imports. While certain services are by nature less tradable than goods, the smaller trade

⁽²¹⁾ See, for instance, European Commission (2017), 'Ease of Doing Business. Thematic Discussions on Growth and Jobs', Note for the Eurogroup.

⁽²²⁾ See, for instance, Koske, I., I.Wanner, R. Bitetti and O. Barbiero (2015), 'The 2013 update of the OECD product market regulation indicators: policy insights for OECD and non-OECD countries', *OECD Economics Department Working Papers*, No. 1200.

⁽²³⁾ ECB Economic bulletin, Issue 5 2016 – Article 3, Increasing resilience and long-term growth: the importance of sound institutions and economic structures for euro area countries and EMU.

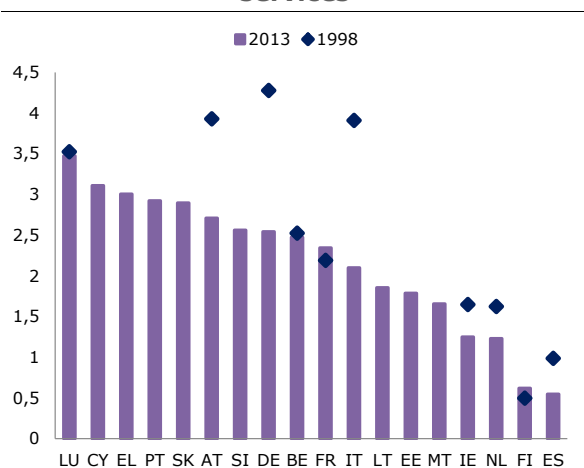
⁽²⁴⁾ Bourlès R., Cette G., Lopez J., Mairesse J. & Nicoletti G. (2015), "Do product market regulations in upstream sectors curb productivity growth? panel data evidence for OECD countries"

⁽²⁵⁾ Trade integration is measured as the average intra-EU imports plus exports divided by GDP, see 2015 data on http://ec.europa.eu/internal_market/scoreboard/integration_market_openness/trade_goods_services/index_en.htm

flows could also be the result of differences in national regulations governing the sector.

The most recent initiatives on deepening the Single Market have indeed essentially targeted the services sector, notably the 2006 Services Directive ⁽²⁶⁾ and the Services Package of January 2017 ⁽²⁷⁾. As such, about two thirds of intra-EU trade ⁽²⁸⁾ is covered by the Services Directive, while the other sectors (including financial - outside the scope of the analysis here) are covered by specific regulatory regimes. Network industries (treated specifically in the next sub-section) follow a specific regulatory regime.

Graph I.4: Regulation of professional services



(1) Indicator ranges from 0 to 6, with 0 least regulated. (2) Professional services include accounting, legal, architect and engineering.

Source: OECD data.

The business services sector, accounting for 10% of EU GDP, is the largest covered by the Services Directive. The EU business services markets, and in particular professional services, still exhibit a limited degree of integration and regulatory restrictions persist (see Graph I.4) ⁽²⁹⁾. In total, access and exercise in more than 5000 professions across Europe is subject to the possession of a specific professional qualification. ⁽³⁰⁾

⁽²⁶⁾ Services in the Internal Market Directive 2006/123/EC

⁽²⁷⁾ See the 10 January 2017 package of four initiatives that will make it easier for companies and professionals to provide services in the EU, at http://europa.eu/rapid/press-release_IP-17-23_en.htm

⁽²⁸⁾ Mustilli F. and J. Pelkmans (2013), 'Access Barriers to Services Markets', *CEPS Special Report* No. 77.

⁽²⁹⁾ Mustilli F. and J. Pelkmans (2013), *op cit*.

⁽³⁰⁾ For example, business services providers such as architectural, engineering or accounting firms who wish to provide services

Barriers, notably for doing business across borders, are present also for the new sectors that emerged from the "digital revolution". Online services are still mainly domestic, ⁽³¹⁾ which is also why the Commission has launched a cross-cutting EU Digital Single Market strategy. ⁽³²⁾

Overall, only 7% of small and medium-sized businesses in the EU sell cross-border. ⁽³³⁾ Just like in the internal market for goods, such limited exposure to competition from foreign producers and the protection of incumbents lead to higher prices, limited innovation and lower productivity growth. These effects are more marked for services than for goods partly because services are often shielded from international competition as they are less tradable.

Considering that services are also intermediate inputs in other production processes, barriers in this sector can significantly affect other sectors in a sort of "cascade effect". ⁽³⁴⁾ Productivity improvements in transportation, for instance, can lead to big benefits for sectors such as manufacturing, which uses transportation services as an input. In the end, positive feedback loops may improve the productivity in the transportation sector even further. ⁽³⁵⁾ This is particularly relevant

outside their own country, are often confronted with restrictive requirements such as legal form or shareholding requirements that are often country-specific. See, also, EC Fact Sheet (2015): A deeper and fairer Single Market.

⁽³¹⁾ European Commission (2017), 'Mid-Term Review on the implementation of the Digital Single Market Strategy', *Staff Working Document*, SWD (2017) 155 final.

⁽³²⁾ The Digital Single Market strategy was adopted on the 6 May 2015 with a view to strengthen opportunities for new start-ups and existing companies, to offer better opportunities for citizens, including better access to information and culture and improve their job opportunities, as well as to promote modern open government. It is built on three pillars: i) better access for consumers and businesses to digital goods and services across Europe; ii) creating the right conditions and a level playing field for digital networks and innovative services to flourish; and iii) maximising the growth potential of the digital economy. Following the 2017 mid-term review of the Digital Single Market Strategy, the Commission has identified three main emerging challenges: i) to ensure that online platforms can continue to bring benefit to our economy and society, ii) to develop the European Data Economy to its full potential, and iii) to protect the Europe's assets by tackling cybersecurity challenges. More details at <https://ec.europa.eu/digital-single-market/en/policies/shaping-digital-single-market>

⁽³³⁾ See, , https://ec.europa.eu/commission/priorities/digital-single-market_en and 2016 cross-border e-commerce barometer (May 2016) by E-commerce Europe

⁽³⁴⁾ Ariu, A., H. Breinlich, G. Corcos and G. Mion (2016), 'The Interconnections Between Services and Goods Trade at the Firm-Level', *CESIFO Area Conferences 2016*.

⁽³⁵⁾ See Corugedo, E. and E. Ruiz (2014), 'The EU Services Directive: Gains from Further Liberalization', *IMF Working Paper* WP/14/113.

in light of the share of services in the total value of intermediate inputs in the EU. ⁽³⁶⁾ In 2014, the latter was estimated to amount to 5.5% for business services, 3% for wholesale trade, and 2.3% for retail trade ⁽³⁷⁾

As barriers of many types remain for many services that are used as inputs, it is difficult to fully exploit both the positive spillover effects from services to others sectors (see European Commission, 2013), ⁽³⁸⁾ and the potential of the services sector to attract investments.

I.3.3. A specific focus on remaining barriers in network industries

In this sub-section a closer look is taken at the degree of market integration and competition in network industries, which are particularly important for the Single Market in two respects. Network industries supply general purpose goods and services that underpin economic activity. As such, a well-functioning single market of network industries ⁽³⁹⁾ not only fosters potential productivity growth ⁽⁴⁰⁾, but by integrating networks across the EU, should foster more flexible prices and production in key areas such as energy that are more exposed to exogenous shocks. This would also significantly increase Member States' capacity to withstand and recover from shocks.

The quality and the cost of the services provided by the network industries have an important impact on the production costs of other sectors of the economy and overall investment levels. The incompleteness of the internal energy market in the EU, for instance, negatively affects energy-intensive sectors, as well as both energy-intensive and foreign-energy-dependent countries. Progress on the Energy Union has therefore been identified as an important priority for deepening the Single Market. ⁽⁴¹⁾ A well-functioning telecommunication sector is also particularly important to generally support the thriving of economic activities in EU countries in the era of the digital economy. ⁽⁴²⁾

Despite being service-providers, EU network industries do not fall under the 2006 Services Directive because of their specificities (which are briefly reviewed below), and are instead covered by dedicated regulatory regimes ⁽⁴³⁾. Some network industries (previously often publicly owned) provide services of general interest such as access to postal services ⁽⁴⁴⁾. In addition, some network industries are characterized by large sunk costs linked to investments in physical infrastructure (e.g. railway, telecommunications) and have special features of natural monopolies. ⁽⁴⁵⁾ Because of this, the incumbents may make better use of resources than small firms in a perfectly competitive environment. Thirdly, network industries are characterized by economies of scale and network externalities that derive from incentives for interconnection or compatibility among users (e.g. in telecommunications). All these characteristics make network industries "special" in terms of how to ensure competitive and well-functioning markets for the services provided.

⁽³⁶⁾ European Commission (2017), 'European Semester: Thematic factsheet – Services markets – 2017'

⁽³⁷⁾ Servitisation, i.e. the addition or replacement of services to products (e.g. maintenance contracts for capital goods), blurs the distinction between services and manufacturing, with the former are likely to play a higher role than currently measured.

⁽³⁸⁾ See for instance European Commission (2013), 'Section 2.4. Interlinkages between manufacturing and services' in *EU Industrial Structure Report 2013, Competing in global value chains*.

⁽³⁹⁾ Market mal-functioning of network industries is often associated with public ownership with high market shares, low cross border interconnection and price regulation. See, for instance, European Commission (2013a), 'Market Functioning in Network Industries: Electronic Communications, Energy and Transport', *European Economy Occasional Papers* 129.

⁽⁴⁰⁾ Estimating the impact of network industries on potential growth and job creation is not straightforward. While building and maintaining the necessary infrastructure to operate network industries have a direct impact on growth and jobs, more important are the indirect effects. For example, the deployment of wireless high-speed broadband will affect economic growth via several channels including changes in business processes (such as inventory optimization), introduction of new applications and services (e.g., new forms of financial intermediation) as well as new business models (such as outsourcing in value chains). See, for instance, European Commission (2014), 'Market Functioning in Network Industries - Electronic Communications, Energy and Transport', *European Economy Occasional Papers* 204 and Katz, R. (2012), 'The Impact of Broadband on the Economy: Research to Date and Policy Issues', *ITU report*.

⁽⁴¹⁾ Along with improving energy efficiency, decarbonising the economy, diversifying Europe's sources of energy and prioritising research and innovation to drive the transition of the energy system. More details at https://ec.europa.eu/commission/priorities/energy-union-and-climate_en#documents

⁽⁴²⁾ More details at <https://ec.europa.eu/digital-single-market/en/news/fibre-investment-europes-recovery>

⁽⁴³⁾ It should be noted that the existence of specific regulatory regimes does not mean that there is already a well-functioning Single Market for the regulated network services, see Pelkmans and Luchetta (2013), *Enjoying a Single Market for network industries, Notre Europe*.

⁽⁴⁴⁾ These services are subject to European internal market and competition rules. However, there may be derogations to these rules if necessary to protect citizens' access to basic services, see: https://ec.europa.eu/info/topics/single-market/services-general-interest_en

⁽⁴⁵⁾ Historically, even network industries not characterized by natural monopolies used to be state-owned. The natural monopoly argument is not valid for sectors like postal services or airlines.

Addressing the question as to which additional forms of network industry regulation should be implemented to strengthen economic resilience in euro area Member States, several specificities should be taken into account. First, network industries provide goods and services of general purpose use: a secure supply of their output is key to absorb and recover from a shock. In addition, heterogeneity in cross-border regulation resulting in fragmented markets may weaken the effectiveness of common macro-economic policies and hence the resilience of economies. Moreover, each network industry has its own characteristics and specificities. Some sectors are characterized by much larger physical infrastructure investment needs, such as railways in comparison with airlines. Finally, without increasing regulatory uncertainty that may discourage long-term investment, the necessary regulatory flexibility should be available to accommodate new challenges and opportunities posed by the ongoing technological developments. ⁽⁴⁶⁾

The situation in most euro area Member States for which data are available, shows that product market regulation in network industries decreased between 2000 and 2013 (Graph I.5 and I.6), in line with the overall trend in product markets (Graph I.3). Barriers nonetheless remain and they are typically identified as referring to entry, ownership, degree of vertical integration, market structure as well as political economy dynamics. ⁽⁴⁷⁾ In each network industry, barriers nonetheless differ, as do advancements in tackling them.

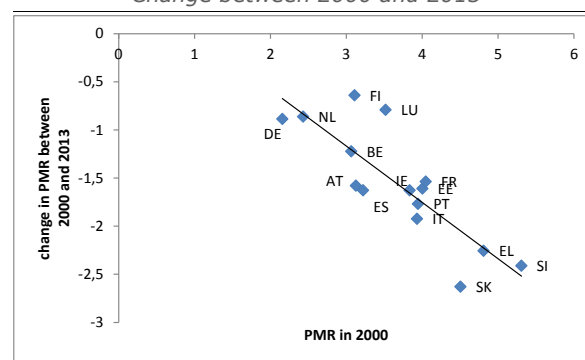
Both the Monti report in 2010 and the "Single Market Act II" in 2012 highlighted the persistent lack of integration in network industries. These are also regularly the subject of country-specific recommendations addressed to Member States in the context of multilateral surveillance in the European Semester. ⁽⁴⁸⁾

All in all, in order to strengthen the stability and resilience of the network industries, which are crucial for the resilience of the economy as a whole, adequate regulation at EU level should be taken into account. Poor market functioning in network industries is often associated with public ownership with high market shares, low cross border interconnection and price regulation. ⁽⁴⁹⁾

I.4. Vulnerability to shocks

This sub-section examines the possible impact of completing the Single Market for goods and services on the vulnerability to shocks of euro area economies, as one of the components of economic resilience (the impact on the capacity to absorb and recover from shocks is analysed in following sub-sections). ⁽⁵⁰⁾

Graph I.5: **Product market regulation**
All network industries
Change between 2000 and 2013



(1) Product market regulation indicator ranges from 0 to 6, with 0 least regulated.

Source: Authors' estimates based on OECD data.

⁽⁴⁶⁾ Such developments are discussed in more detail in sub-section I.4.1.

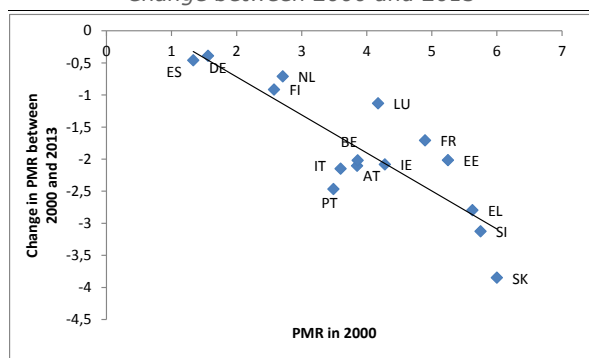
⁽⁴⁷⁾ A detailed account of the differentiated advancement of the various network industries is for instance provided in European Commission (2013), *Market Functioning in Network industries – Electronic communications, Energy and Transport* and in Pelkmans and Luchetta (2013) op cit.

⁽⁴⁸⁾ In particular, the 2013 Annual Growth Survey develops more in details the issue of network industries, noting that the performance of network industries across Europe also has a critical knock-on effect on the rest of the economy and can be significantly improved.

⁽⁴⁹⁾ See European Commission (2013), 'Market Functioning in Network Industries: Electronic Communications, Energy and Transport', *European Economy Occasional Papers* 129.

⁽⁵⁰⁾ While discussing the impact of deepening the Single Market on the three dimensions of resilience separately, it should be kept in mind that a change in a specific Single Market regulation may affect all dimensions of resilience, and that changes in regulation in one market may be offset by changes in regulation in other markets if not coordinated. See, for instance, Duval, R. and L. Vogel (2008), 'Economic Resilience to Shocks: The Role of Structural Policies', *OECD Economic Studies* No. 44, 2008 showing, for instance, that stringent product market regulation dampens the initial impact of shocks while strict employment protection legislation increases persistence.

Graph I.6: **Product market regulation**
Electricity
Change between 2000 and 2013



(1) Product market regulation indicator ranges from 0 to 6, with 0 least regulated.

Source: Authors' estimates based on OECD data.

I.4.1. Factors affecting vulnerability

Vulnerability to shocks refers to the frequency and intensity with which an economy is hit by a shock. ⁽⁵¹⁾ Shocks can take several forms, including symmetric or asymmetric, temporary or permanent. ⁽⁵²⁾ However, the underlying structure of the economy and the efficiency of markets and institutions have a very significant impact on whether and how strongly a shock will hit and how long it will take for the economy to adjust.

In this respect, one of the main advantages of well-integrated product markets lies in the fact that producers can diversify their sales markets across countries, which in turn makes them less vulnerable to demand shocks arising in particular market segments. It also allows producers to source their inputs from different areas, thereby making them less vulnerable to possible shocks affecting specific supply markets. This is, for example, the consideration that lies behind the focus on the interconnection between energy networks in the context of the EU Energy Union. ⁽⁵³⁾ Widening the range of energy providers

would reduce the vulnerability of the economy through diversification. ⁽⁵⁴⁾

At the same time, strong openness to international trade may increase the vulnerability of the economy to external shocks, especially when combined with strong concentration of production in specific sectors. In this respect, it is also important to assess the impact that economic integration has on product specialisation and export composition, especially whether more inter-industry or intra-industry trade increases as a result of it. ⁽⁵⁵⁾

Data show that in most euro area Member States the sectoral composition of the exported goods converged to the euro area average between 2002 and 2016 (Graph I.7). ⁽⁵⁶⁾ This broad similarity in sectoral export composition can be expected to reduce the risk of external sectoral shocks becoming country-specific shocks.

⁽⁵⁴⁾ For more details on the EU Energy Union, see European Commission (2015), 'A Framework Strategy for a Resilient Energy Union with a Forward-Looking Climate Change Policy', COM/2015/080.

⁽⁵⁵⁾ In case of inter-industry specialisation, the Member States would be more vulnerable to asymmetric shocks, while in the case of intra-industry specialisation they are more likely to experience common shocks. Economic theory does not provide a clear-cut answer how production patterns develop in a Single Market with a single currency. On the one hand, with further deepening of the Single Market, Member States will get stronger opportunities to specialize in those activities in which they have a comparative advantage, which may trigger less diversification on the supply side. See, for instance, Krugman and Venables (1996), 'Integration, specialization, and adjustment', *European Economic Review*, Vol. 40, pp. 959-967. On the other hand, if specialisation occurs within industries rather than along different industries (because of product differentiation of the same type of goods or imperfect competition), production structures across Member States become more similar and shocks therefore become symmetric. See, Frankel and Rose (1999), 'The Endogeneity of the Optimum Currency Area Criteria', *The Economic Journal*, Vol. 108, pp. 1009-1025. However, the available evidence is not always clear-cut on this ambiguity. For example, ECB (2013), 'Intra-euro area trade linkages and external adjustment', January Monthly Bulletin reports on the basis of empirical analysis that "euro area countries export relatively similar but well-diversified baskets of goods. This arguably reduces the incidence and aggregate impacts of asymmetric shocks"; while evidence in Papadimitriou, T., Gogas, P. and G. Sarantitis (2016), 'Convergence of European Business Cycles: A Complex Networks Approach', *Computational Economics*, Vol. 47, No 2, pp. 97-119 supports the specialisation hypothesis especially if a distinction is made between the core and the peripheral Member States.

⁽⁵⁶⁾ Notable exceptions are Slovakia which recorded a strong increase (compared to the Euro area average share) in its export share of machinery and transport equipment, and Ireland which recorded a (relative) strong increase in its export share of chemicals and related products including medicinal and pharmaceutical products. Latvia and Malta recorded the strongest convergence: while the former recorded a sharp increase in its (relative) strong export share of machinery and transport equipment, the latter recorded a sharp decrease.

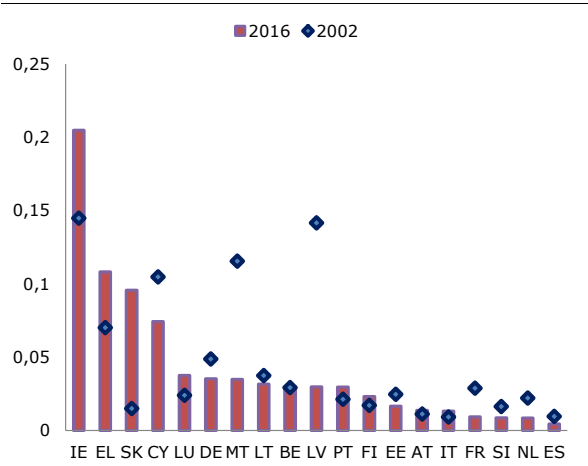
⁽⁵¹⁾ Reducing the vulnerability of economies to severe shocks is a form of ex-ante resilience, while strengthening the capacity to absorb and overcome such shocks is a form of ex-post resilience.

⁽⁵²⁾ See, for instance, Cochrane, J. (1994), 'Shocks', *NBER Working Paper* No. 4698.

⁽⁵³⁾ A fully-integrated internal energy market is one of the five pillars of the EU's energy union strategy. The other pillars are energy supply and solidarity, energy efficiency, decarbonizing the economy, research and innovation. See https://ec.europa.eu/commission/priorities/energy-union-and-climate_en for more details.

Finally, disruptions in particular segments of the economy such as domestic network industries' output, in sectors like energy and telecommunication, can have a strong adverse impact on a Member State's economic activity. Such disruptions can be tempered if economic agents have the possibility to draw their intermediary inputs from a diversified source free from any technical or regulatory barriers - as would be the case in the Single Market of network industries. A well-functioning Single Market may reduce a Member State's vulnerability to shocks arising in the domestic network industries. However, this vulnerability is also conditioned by a Member State's economic structure. For example, a Member State's vulnerability to shocks in the supply and price of energy increases with the energy-intensity of its economy. Policies at national level are crucial to improve resilience from this perspective.

Graph I.7: **Sectoral export composition goods**
(compared with EA average)



(1) Indicator based on difference between a Member State's and euro area's industry's share in total exports. The indicator shows the sum of squared differences of these product shares, the lower the value the closer the national export composition to the euro area's industrial export composition. Products are classified along the United Nation's Standard International Trade Classification (SITC).
Source: Authors' estimates based on Eurostat.

I.4.2. Ongoing structural trends shape vulnerability

Ongoing structural developments, such as greater integration of value chains in the euro area and increased use of digital platforms ⁽⁵⁷⁾, can be

⁽⁵⁷⁾ Digital economic platforms refer to transactions between suppliers and demanders of goods and services facilitated by web-

expected to increase potential output growth in euro area economies. ⁽⁵⁸⁾ At the same time, they can also be expected to affect the resilience of the economy. They may increase vulnerability through cross-border spillover effects (e.g. due to greater integration in global value chains). Price setting may at the same time become more flexible (e.g. due to increased online competition), which may strengthen the capacity of economies to respond to shocks. As such, the net impact of these ongoing structural developments varies from case to case, as the following empirical evidence illustrates, and no clear-cut conclusions of some ongoing trends can be drawn on a more general level.

First, value chains based in the euro area tend to have strong internal euro area linkages. ⁽⁵⁹⁾ The latter may reduce Member States' vulnerability to shocks arising within their domestic market or outside of the euro area, while making them more vulnerable to shocks in other euro area Member States, depending on the structure of the value chain and their position in it. ⁽⁶⁰⁾ More particularly, Frohm and Gunnella (2017) report that the strength of the transmission of idiosyncratic shocks depends greatly on the presence of global hub sectors, which are either large suppliers or purchasers of other value chain partners' inputs. In such cases, shocks to the global hub may adversely affect the partners, who do not have the means to offset shocks hitting the hub. ⁽⁶¹⁾

Participating in value chains may also make national labour markets relatively more sensitive to

based intermediaries. Examples are crowd-funding, occasional self-employed and Peer-to-Peer transactions. See, for instance, Tirole, J. (2017), *Economics for the Common Good*, Princeton University Press.

⁽⁵⁸⁾ See, for instance, OECD (2015), *The Future of Productivity*

⁽⁵⁹⁾ For instance, Amador, J., Cappariello, R. and R. Stehrer (2015), 'Global value chains: a view from the euro area', *ECB Working Paper Series* No 1761, estimate that the export share of foreign value added sourced within the euro area was more stable than that sourced from other blocks. They also estimate that Germany played the largest role in the internal euro area linkages, representing 28.8 per cent of value added supplied and 23.0 per cent of value added consumed in 2011.

⁽⁶⁰⁾ I.e. being the weakest link (such as assembling parts imported from other Member States) or being the strongest link (such as senior management and design) in the value chain may make a difference in terms of vulnerability.

⁽⁶¹⁾ Here it should be noted that, while upstream hubs (dealing with design and overall management) tend to be located mostly in developed economies, the share of Chinese downstream hubs has increased notably in recent years, making euro area Member States more vulnerable to idiosyncratic shocks originating overseas. See, for instance, Frohm, E. and V. Gunnella (2017), 'Sectoral interlinkages in global value chains: Spillovers and network effects', *ECB Working Paper Series* No 2064.

labour market conditions in value chain partners, leading to increased vulnerability and defensive responses. For example, local employers who are price takers may be more inclined to hire workers on a temporary contract, as this gives them more flexibility to adjust to a possible restructuring of the global value chain. ⁽⁶²⁾

Domestic inflation may also become more sensitive to conditions in value chain partners, if value chains extend beyond borders. As such, production costs can be transmitted more easily across borders. Nevertheless, highly integrated and competitive markets may also limit this type of transmission to the extent that downstream firms have the opportunity to substitute upstream production. ⁽⁶³⁾ The net effect is therefore unclear, and a matter of empirical investigation. ⁽⁶⁴⁾

The rise of online trade (such as e-commerce) is another relevant ongoing structural development that is expected to further raise intra-euro area trade, as greater market transparency and competition lead to greater price flexibility – which in turn may reduce business cycle fluctuations. ⁽⁶⁵⁾

⁽⁶²⁾ See, for instance, Lehdorff, S., and Voss-Dahm, D. (2005) 'The delegation of uncertainty: flexibility and the role of the market in service work', in Bosch, G., Lehdorff, St. (eds): *Working in the service sector – a tale from different worlds*. London and New York: Routledge: 289 – 315

⁽⁶³⁾ The empirical research on the significance of such transmission mechanisms is not unambiguous. For example, Auer, A., Borio, C. and A Filardo (2017), 'The Globalisation of Inflation: The Growing Importance of Global Value Chains', *CESIFO Working Paper No. 6387* report evidence that as GVC expand domestic inflation becomes more sensitive to output gaps of value chain partners, while domestic inflation does not seem to be sensitive in most of the 19 advanced economies investigated by, for example, Mikolajun, I. and D. Lodge (2016), 'Advanced economy inflation: the role of global factors', *ECB Working Paper Series No 1948*.

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⁽⁶⁵⁾ In New-Keynesian models "menu costs" (i.e. the cost to change prices) are important drivers of price rigidity and thus also of the business cycle. See, for instance, Mankiw, N. (1985), 'Small Menu Costs and Large Business Cycles: a Macroeconomic Model of Monopoly', *Quarterly Journal of Economics*, Vol. 100, pp. 529-539. Hence, to the extent that e-commerce would lower the cost to adjust prices, business fluctuations would be tempered. However, available research suggests that while online prices are more flexible than prices in conventional stores, they are still showing considerable friction. See, for instance, Gorodnichenko, Y., O. Talavera and S. Sheremirov (2005), 'Will e-commerce make prices more flexible?', *VoxEU*.

All in all, given the observed pace of ICT development, most of the aforementioned effects triggered by technological innovation can be expected to further strengthen in the coming years, though the effect on resilience is not clear cut at this stage.

I.5. Shock-Absorption Capacity

Several channels can be distinguished via which the further deepening of the Single Market can affect the shock absorption capacity of euro area Member States. These include diversification (on the supply and demand side) and price flexibility – although their impact may point in different directions so that determining the net effect becomes an empirical matter.

I.5.1. Diversification

While diversification reduces Member States' vulnerability to shocks, as discussed in the previous sub-section, it can also increase their capacity to absorb shocks: in a relatively more diversified economy, a sectoral shock has a smaller impact on the economy as a whole. As such, the shock puts a smaller burden on national automatic fiscal stabilisers and access to financial markets tends to be less strained. Absorption capacity of the economy is stronger as a result.

Further integration of product markets across euro area Member States can also be expected to provide greater opportunities for an export-led recovery in case a euro area Member State is hit by an asymmetric shock. This may be especially relevant for smaller EA Member States. If all euro area Member States are hit by a common shock, but adjust at different rates, there may still be room for the hardest hit to export to the least hit.

Through diversification, deepening the Single Market can therefore be expected to increase shock-absorption capacity, thereby fostering economic resilience.

I.5.2. Price flexibility

The further deepening of the Single Market can be expected to affect price flexibility through stronger competition among firms ⁽⁶⁶⁾ and increased

⁽⁶⁶⁾ While the deepening of the Single Market promotes competition between firms, it also allows Member States to exploit their

customer search for lower prices and better quality. (67) The ensuing greater price flexibility reinforces the economy's ability to absorb shocks.

However, when assessing the impact on price flexibility a distinction has to be made between aggregate and relative price flexibility, as they affect macro-economic outcomes via different transmission channels.

The net impact of further economic integration on resilience through aggregate price flexibility is not unambiguous and should be assessed taking into consideration, among others factors, the nature of the shock and the endogenous monetary policy response, but also whether it is a phase of transition to a more integrated Single Market, or if it is the new steady state.

In the transition to a more integrated Single Market, for example, a lower aggregate inflation rate induced by more competition through more integration would increase household disposable income and international price competitiveness, leading to greater domestic and external aggregate demand. At the same time, an anticipated decrease in inflation may also trigger the opposite effect through a rise in real interest rates lowering interest-sensitive expenditures and aggregate demand. (68) The latter effect may of course be tempered by cuts in nominal policy rates, highlighting the fact that the final impact also depends on the endogenous response by monetary policy authorities and on agents' perceptions about future inflation rates. This "endogenous policy reaction channel" may nonetheless be unavailable for an individual country in a currency union (where common monetary policy cannot target

country-specific needs) (69), or for the currency union as a whole in a liquidity trap situation. (70)

In a new steady state of a deeper Single Market, macroeconomic stabilisation would likely be improved in the monetary union thanks to increased aggregate price flexibility, to the extent that prices will adjust more rapidly to changed economic conditions and impulses, allowing for a more effective transmission of the common monetary policy.

Relative price flexibility is even more important than aggregate price flexibility as it induces a reallocation of resources. Relative prices of goods and services are mainly affected by relative (marginal) production costs and mark-ups (71), and completing the Single Market can have an impact on both. (72) Production costs and mark-ups can reasonably be expected to decrease when bringing down barriers to trade and strengthening the mobility of production factors. The latter are expected to promote gains on allocative efficiency (whereby marginal costs and marginal benefits get closer), productive efficiency (whereby a lower amount of inputs is used to produce the same amount of output or higher quality output) and dynamic efficiency gains (whereby innovation is stimulated). Nevertheless, price flexibility at the level of firms can be restricted by financial frictions, for instance, as firms may be less likely to cut prices in order to avoid costly external financing, if an adverse shock induces a sufficiently severe deterioration in internal liquidity. (73)

comparative advantages to the fullest - which requires a reallocation of resources across firms and sectors.

(67) Generally speaking, fully flexible prices are prices that continuously adjust to equilibrate demand and supply. In the absence of fully flexible prices a distinction can be made between "price stickiness" if prices adjust infrequently, and "price rigidity" if prices do not fully adjust to their equilibrium value. See, for instance, Dhyne, E., J. Konieczny, F. Rumler and P. Sevestre (2009), 'Price rigidity in the euro area — An assessment', *European Economy Economic Papers* No. 380.

(68) In addition, deflationary pressures may also affect the supply side adversely due to, inter alia, higher real debt burden, liquidity failures, rising real wage bill, etc.

(69) See, for instance, Galí, J. and T. Monacelli (2016), 'Understanding the Gains from Wage Flexibility: The Exchange Rate Connection', *NBER Working Paper* No. 22489.

(70) See Eggertsson, G. and P. Krugman (2011), 'Debt, Deleveraging, and the Liquidity Trap: A Fisher-Minsky-Koo Approach', *The Quarterly Journal of Economics*, Vol. 127, No. 3, pp 1469–1513.

(71) Other factors affecting prices include price regulations and VAT rates.

(72) See, for instance, Sauner-Leroy, J-B (2003), 'The impact of the implementation of the Single Market Programme on productive efficiency and on mark-ups in the European Union manufacturing industry', *European Economy Economic Papers* No. 193.

(73) See, Gilchrist, S., Schoenle, R., Sim, J. and E. Zakrajsek (2015), 'Inflation Dynamics During the Financial Crisis', *Federal Reserve Board Finance and Economics Discussion Series* No 2015-012.

Box I.1: Sectoral price flexibility across EA Member States Some empirical results

In the following empirical analysis, sectoral price flexibility is measured as the responsiveness of prices to changes in underlying production costs. Using quarterly, sectoral national account data the responsiveness is estimated making the following assumptions. ⁽¹⁾

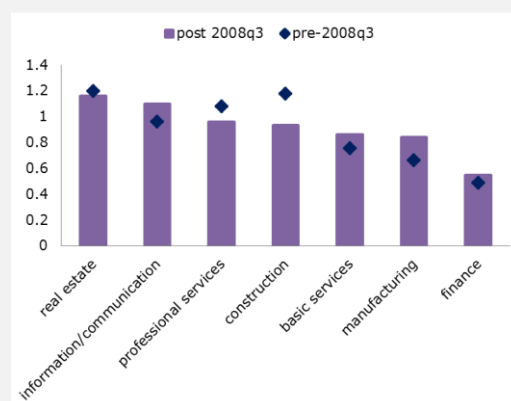
For each sector i the price of its composite good (P_i) is adjusted for only x_i percent of the composite good in period t , i.e. $\log(P_{it}) = (1-x_i)\log(P_{it-1}) + x_i \log(PR_{it})$, with PR_{it} the new price of the part that undergoes a price change in period t . However, only y_i percent of the price change reflects the marginal production cost (i.e. the unit labour cost), while $(1-y_i)$ percent is reset in an ad-hoc way by increasing the price of the previous period by the change in the general price level which is available at no cost, so that $\log(PR_{it}) = y_i \log(ULC_{it}) + (1-y_i) [\log(P_{it-1}) + \log(PGDP_t/PGDP_{t-1})]$. Inserting the latter equation into the former, yields then

$$\log(P_{it}/P_{it-1}) = y_i \log(ULC_{it}/P_{it-1}) + x_i (1-y_i) \log(PGDP_t / PGDP_{t-1})$$

For estimation purposes the equation has been augmented with a measure of the business cycle and a stochastic term, and a distinction has been made between responses before and after the third quarter of 2008 using slope dummies. ⁽²⁾

The estimation results (for the 1995Q1-2017Q2 period) summarised in Graph 1 suggest that market sectors that are more affected by international competition such as manufacturing, show the weakest dispersion in flexibility ⁽³⁾ - before as well as after the crisis.

Graph 1: Dispersion of price responsiveness per sector across EA Member States
(Before and after the crisis)



(1) Basic services covers wholesale and retail trade, transport, accommodation and food service activities. Unbalanced

⁽¹⁾ Along the lines introduced by Calvo, G. (1983), 'Staggered Prices in a Utility Maximizing Framework', Journal of Monetary Economics, Vol. 12.

⁽²⁾ The slope dummy (=0 before 2008q4 and =1 as of 2008q4).

⁽³⁾ Measured as the coefficient of variation of point estimates across the EA MS (excluding MT) for each sector.

Relative price flexibility plays a dual role in supporting shock absorption capacity, as well as the speed of the recovery. First, more flexible relative prices may help to absorb output (and employment) losses in the sectors hardest hit by letting their prices decrease in relative terms, thus stimulating demand for the products concerned.⁽⁷⁴⁾

Second, relative price flexibility is an essential condition to support resource reallocation across sectors. Competition and relative price flexibility provide the right signals and incentives to foster resource reallocation from sectors which have experienced excessive (unsustainable) growth in a boom phase (as was the case for construction and non-tradables after the 2008 crisis) to sectors with sustainable growth potential.⁽⁷⁵⁾ However, in some cases price flexibility may exacerbate cyclical swings, in which case other policies may be needed to prevent excessive imbalances.

Available evidence suggests that prices are still not sufficiently flexible in all sectors in euro area Member States. For instance, Dhyne et al. (2009)⁽⁷⁶⁾ report that prices of services are adjusted less frequently compared to prices of manufactured goods. This can be explained by insufficient competition in the services sector and by the role played by wages in the sector's cost structure. Vermeulen et al. (2012)⁽⁷⁷⁾ report that euro area producer price changes are noticeably smaller than U.S. producer price changes. The econometric results presented in Box I.1 indeed suggest that sectors that are more exposed to international competition, such as manufacturing, show the weakest dispersion in price responsiveness to changes in nominal unit labour cost.

I.6. Ability to recover

Economic recovery after a shock also requires a smooth reallocation of production factors towards activities that have higher growth potential, as

highlighted by the recent economic and financial crisis. The Single Market can affect reallocation in different ways. While so called 'framework conditions' improve reallocation efficiency in product markets across the board, specific characteristics of individual product markets (in terms of factor inputs, demand and market structure) also have a direct impact on short-term reallocation, as better explained below.

I.6.1. Framework conditions

The 'framework conditions' that influence the reallocation of production factors can be broken down into the framework conditions that have a direct impact on a firm's entry, growth, decline and exit as well as the framework conditions that affect the business environment in which firms operate such as the quality of public infrastructure, procurement rules and corruption.

The first areas to consider relate to the conditions of market entry for new firms. Available data suggest that the number of days and procedures required to start up a business decreased notably in several Member States between 2008 and 2016 – with Spain (down by 33 days), Lithuania (22.5 days) and Slovenia (by 13 days) recording the strongest decreases in the number of required days. Nevertheless, the number of days still vary considerably across the euro area. It takes 28 days to start a business in Malta, 22 days in Austria and 18.5 days in Luxembourg compared to just 2.5 days in Portugal and 3.5 days in Estonia and Lithuania.⁽⁷⁸⁾

The entry of firms is to a large extent influenced by the ease of doing business (European Commission, 2017).⁽⁷⁹⁾ In this respect, improving the business environment via Single Market reforms would include, among others, removing barriers to investment, raising the quality of the public administration, ensuring greater regulatory predictability, as well as fostering deeper and more integrated capital markets.⁽⁸⁰⁾

⁽⁷⁴⁾ In the absence of price flexibility the decrease in demand would be fully absorbed by adjustments in quantity (provided this is not hindered by regulations).

⁽⁷⁵⁾ In case the economy is hit by a permanent shock, transition to the new equilibrium is required – which requires changes in relative prices and reallocation of production factors.

⁽⁷⁶⁾ See, for instance, Dhyne et al. (2009), op cit. and ECB (2006), 'Competition, productivity and prices in the euro area services sector', *ECB Occasional Paper Series* No 44.

⁽⁷⁷⁾ See Vermeulen, P. et al. (2012), 'Price Setting in the Euro Area: Some Stylized Facts from Individual Producer Price Data', *Journal of Money, Credit and Banking*, Vol. 44, No. 8, pp 1631-1650.

⁽⁷⁸⁾ World Economic Forum competitiveness database (2017).

⁽⁷⁹⁾ See, for instance, European Commission (2017), 'Ease of Doing Business. Thematic Discussions on Growth and Jobs', Note for the Eurogroup.

⁽⁸⁰⁾ Substantial differences remain across the area especially in terms of business regulation and quality of public administration. See, for instance, Canton, E. and M. Petrucci (2017), 'Ease of doing business in the euro area', *Quarterly Report on the Euro Area*, Vol. 16, No. 2, pp. 21-29.

The second areas to consider are the effective and efficient insolvency frameworks ⁽⁸¹⁾ and second chances for entrepreneurs which are key to facilitate the redeployment of resources. Effective insolvency frameworks in particular may also strengthen the recovery after a shock. Start-ups may get a boost, for instance, when capital goods (such as real estate) of bankrupt businesses can be acquired at a low price (especially during a downturn), while new businesses may trigger an increase in demand (for intermediary goods and services), which may in turn support new start-ups.

In this respect, it is important to notice that the time needed to resolve insolvency still varies greatly across euro area from half a year in Ireland to four years in Slovakia. Furthermore, while failed entrepreneurs show a strong preference for entrepreneurial activity, activities are often constrained by the complexity of the regulatory framework in case of honest failure. ⁽⁸²⁾ Against this background, the Commission proposed a new approach to business insolvency in Europe, which should promote early restructuring as a means to support growth and protect jobs. ⁽⁸³⁾

Finally, other conditions that determine broad regulatory quality favouring an efficient reallocation of productive factors include a well-functioning justice system, an efficient public administration, a low level of corruption (including in public procurement), the availability of high-quality public infrastructures, and an effective intellectual property rights framework. ⁽⁸⁴⁾

Reforms in the aforementioned areas should not be seen in isolation. They need to be accompanied by

further integration in financial markets, particularly with respect to financing new firms and SMEs with strong innovation potential. While beyond the scope of the current analysis, well-functioning financial markets are particularly important to support the reallocation and redeployment of resources as financial frictions may hamper reallocation, especially for small firms. This calls for completing Banking and Capital Market Union and further reduction of non-performing loans. ⁽⁸⁵⁾

A well-functioning Single Market also requires well-functioning labour markets and social and education systems capable of providing a well-trained labour force with active labour market policies to favour smooth and painless transitions. It also requires a level playing field in terms of employees' social rights (as stipulated in the European Pillar of Social Rights) ⁽⁸⁶⁾ to prevent competition on the basis of labour conditions that may undermine social cohesion and the political acceptability of the Single Market project in the future. ⁽⁸⁷⁾

1.6.2. Sector-specific conditions

Sector-specific conditions can also contribute to facilitating or hindering the reallocation of resources by affecting firms' entry decisions in the specific sector. The impact on the overall economy of obstacles to reallocation in specific sectors depends of course on the size of the sector and its multiplier effect. The deepening of the Single Market for network industries in particular may have a strong potential to facilitate economic recovery after a shock given the relatively high size of the estimated multiplier effects. ⁽⁸⁸⁾

⁽⁸¹⁾ See http://ec.europa.eu/newsroom/fisma/item-detail.cfm?item_id=54294&utm_source=fisma_newsroom&utm_medium=Website&utm_campaign=fisma&utm_content=Insolvency&lang=en

⁽⁸²⁾ This includes an integrated approach in improving the regulatory framework, improvement in entrepreneurial skills through lifelong learning, systematic recognition of honest vs. dishonest entrepreneurs. Access to finance is paramount for a second chance. See, for instance, Expert Group (2015), 'A second chance for entrepreneurs'.

⁽⁸³⁾ European Commission (2016) 'Proposal for a directive of the European Parliament and of the Council on preventive restructuring frameworks, second chance and measures to increase the efficiency of restructuring, insolvency and discharge procedures and amending Directive 2012/30/EU', COM(2016) 723 final.

⁽⁸⁴⁾ See Sondermann, D. (2016), 'Towards more resilient economies: the role of well-functioning economic structures', *ECB Working Paper 1984*. The paper analyses the impact of framework conditions (e.g. efficiency of the judicial system, strength of the regulatory environment, amount of administrative burdens) on resilience.

⁽⁸⁵⁾ For Commission measures to address the risks related to NPLs see for instance https://ec.europa.eu/info/publications/180314-proposal-non-performing-loans_en

⁽⁸⁶⁾ For more details, see https://ec.europa.eu/commission/priorities/deeper-and-fairer-economic-and-monetary-union/european-pillar-social-rights_en

⁽⁸⁷⁾ Such interaction should be seen as an opportunity to reinforce the working of the Single Market as it prevents social dumping undermining fair competition and an efficient allocation of resources. See, for instance, European Commission (2017), 'Report of the public consultation', accompanying the document 'Establishing a European Pillar of Social Rights', *Commission Staff Working Document*, SWD(2017) 206 final.

⁽⁸⁸⁾ More particularly, based on World Input-Output Database, autonomous investments in these sectors are estimated to increase aggregate output by an amount close to or above 2 times the initial investment.

Monitoring sector-specific regulations ⁽⁸⁹⁾ helps to identify factors that influence the market structure and the conduct of firms in specific sectors. Such monitoring reveals that some sectors have been largely opened to competition, such as telecommunications and airlines, in large part thanks to the far-reaching liberalisation achieved in the EU. Openness and competition in other sectors, such as professional services, remains in need of improvement (see, for instance, Pelkmans, 2016). ⁽⁹⁰⁾

I.7. Conclusions and policy implications

The analysis in this section suggests that the further deepening of the Single Market in goods and services may lead to a decrease in Member States' vulnerability to shocks via the access to more diversified export markets and sources of intermediate inputs. At the same time, the absorption capacity of Member States can reasonably be expected to increase, as further progress in economic integration would foster flexibility in (relative) prices, thereby containing business cycle fluctuations in output and employment.

Further deepening the Single Market can also be expected to raise the economy's capacity to swiftly recover following a shock, thanks to a swifter reallocation of resources. This is all the more the case if the shock requires a structural reallocation of resources from activities that experienced unsustainable increases during a previous boom towards activities with more sustainable growth potential.

The analysis in this section suggests also that further strengthening of Member States' overall economic resilience calls for a further fine-tuning of the existing regulatory framework of network industries to better deal with ongoing technological changes – which have a direct impact on economic resilience.

While this section focused exclusively on the deepening of the Single Market for goods and

services, such process should necessarily be accompanied by progress on other dimensions of the Single Market (capital and labour markets). In particular, completing the Banking Union and advancing significantly on the Capital Markets Union are essential to fully exploiting the benefits of further integration in goods and services markets. Further strengthening labour market and social policies along 'flexicurity' principles is also essential to ensure that stronger economic resilience results from a deeper Single Market, while ensuring the political acceptability of the project going forward.

Moreover, further integration across borders and competition-enhancing reforms that foster even stronger interlinkages between markets should be complemented by well-designed automatic fiscal stabilisers and potentially a common stabilisation mechanism as well as by private financial risk-sharing mechanisms with a view to strengthening economic resilience and limit adverse spill-over effects.

Overall, bringing down remaining barriers in the Single Market to foster resilience in the EMU would require decisive action on different fronts. Identifying priority areas to increase the resilience of the EMU is part of the Eurogroup's thematic discussions. The question arises of how progress can be made in relevant areas of the Single Market which belong to the competence of different Council of Ministers formations and ministers at national level. There would be benefits in having them focus on actions of highest priority for the functioning of the EMU. In addition, more decisive action at national level to achieve full enforcement of the Single Market legislation would be important, alongside the powers exerted by the European Commission to launch infringement proceedings concerning EU Member States that do not comply. Finally, the multilateral surveillance in the context of the European Semester has a role to play, as areas of relevance to the Single Market where further progress is needed are regularly highlighted in the recommendations to Member States and to the euro area as a whole.

⁽⁸⁹⁾ The OECD offers indicators of sectoral regulation related to professional services, retail trade and network sectors.

⁽⁹⁰⁾ Pelkmans, J. (2016), *op cit.*