European Commission

ISSN 1725-3217 (online)
ISSN 0379-0991 (print)

Market Reforms at Work

in Italy, Spain, Portugal and Greece

EUROPEAN ECONOMY 5|2014

Economic and Financial Affairs

European Commission
Directorate-General for Economic and Financial Affairs

Market Reforms at Work

in Italy, Spain, Portugal and Greece

EUROPEAN ECONOMY 5/2014

EXECUTIVE SUMMARY

As part of the response to the crisis, a significant number of market reforms were introduced to boost economic activity and competitiveness. The intense reform effort appears to be showing early signs of effectiveness in some of Europe's most vulnerable countries.

Insufficient reform efforts in the years before the crisis has hampered the ability of many countries to adjust and made their current need for reforms all the more urgent. Vulnerable countries such as Italy, Spain, Portugal and Greece were more exposed because existing rigidities in product markets added to the difficulties their economies encountered when hit by the financial crisis.

Structural reforms improve an economy's flexibility and increase the efficiency of how and where productive factors are used. However, for reforms to deliver their full impact, the channels through which their effects are transmitted throughout the economy need to work properly. Well-functioning transmission mechanisms require that firms can enter and grow unimpeded and that inefficient ones can restructure or exit without hurdles; that prices and mark-ups are flexible enough to properly act as signalling devices; and that reallocation of resources takes place towards the most productive uses and activities. If the chain of transmission is hampered, the expected impact of a reform will not materialise.

This report focuses on estimating the potential impact of a selection of market reforms and provides first signs that suggests a positive response in the four countries. Cut off dates for various parts of the study vary depending on the availability of data but in some cases information has been taken into account as recently as April 2014.

Indicators measuring the overall regulatory environment show that Greece and Portugal are among the largest reformers: between 2008 and 2013, the two countries led the reform effort according to the OECD Product Market Regulation indicator. Italy and Spain, that started from a more favourable regulatory situation, also improved their regulatory environment over the same period. For the four countries though, the distance with other Member States with the most flexible regulatory framework in product markets is still significant. A look at traditionally protected sectors in detail reveals that although Italy, Spain, Portugal and Greece have done much to reform their professional services sectors, there is ample room for further reductions when compared to countries such as the UK or Finland.

The four economies are adjusting at different rhythms. The large reallocation of resources observed before the crisis towards low-productivity non-tradable activities has come to a halt in Spain, Portugal and very recently in Italy. This is good news for the correction of external imbalances. In the years leading up to the crisis, the amount of labour resources absorbed by non-tradable activities increased by over 5 percentage points in Greece and Spain: from 38 % to 44 % in Greece, and from 47 % to 52 % in Spain (between 2000 and 2007).

Although market reforms typically take several years to bear fruit, encouraging signs are already visible in Europe's most vulnerable economies as shown by short-term monitoring indicators.

In Spain, efforts to reduce the cost and complexity of registering new companies seem to have yielded results, as the entry rate for micro firms (firms with less than nine employees) in the retail sector rose significantly, from 9.4 % to 11.7 % between 2010 and 2013. Service sector liberalisation may have helped to attract many new foreign companies, particularly to the country's scientific and professional services sectors, despite a recession. The length of insolvency proceedings has also been substantially reduced from an average of more than 2.5 years to just one year -for simplified procedures- helping banks to curtail the deterioration of their loan portfolios and helping entrepreneurs to move on.

In Portugal, a pilot programme to replace authorisations and licensing procedures for the accommodation and the food and beverage sectors has contributed towards a 1 600 jump in the number of new firm registrations over the years 2011-2012 compared to 2009-2010. Public sector health authorities have slashed the amount of time they take to pay bills from 196 days in 2012 to 126 days in 2013. Reform of

Portugal's public procurement practices has also spread the use of public tenders, which should help get tax payers better value for money by fostering competition among bidders.

Italy has made progress in many indicators of business environment regulation and is starting to see some tangible benefits, although the momentum for reforms seems to have slowed. Improvements in pre-insolvency procedures, which allow companies to stay in business by providing creditor protection at an earlier stage, have been well received. Between their introduction in September 2012 and June 2013, almost 3 900 applications were submitted, far more than the 1 100 applications filed under the old scheme during the whole 2012. Measures to reduce late payments by public administrations remain very high but have improved slightly average payment duration from 190 days in 2012 to 180 days in 2013.

Greece has made significant efforts to improve its business environment and continues to do so but monitoring the implementation and actual take-up of reforms is difficult due to a lack of data. The introduction of an electronic registry to simplify the creation of new businesses and the introduction of a new form of limited liability corporation that has no capital requirement may have helped Greece rise 110 places to 36th out of 189 in the World Bank's Doing Business Report, the biggest improvement of any country between July 2012 and June 2013. There is also evidence to suggest that Greece's efforts to liberalise its heavily protected professions have made some headway.

In addition to reporting on these early signs of adjustment, the report presents a more in-depth empirical investigation of the effects of a number of reforms, selected on the basis of significance and data availability. Although the full effect of the reforms may not yet be visible, this analysis shows that the potential gains are significant. Gains estimated generally focus on microeconomic variables such as business dynamics and productivity. For a few reforms the impact on macro variables such as FDI and overall GDP is also estimated.

Data from the four countries confirms the large benefits of the EU's Services Directive and the power of business environment reforms. Reforms implemented by mid-2013 are estimated to boost labour productivity in the sectors affected by the Directive by around 4.3 % in Portugal, 5.7 % in Spain, 7 % in Italy and almost 9 % in Greece. Given that the directive covers an average of 40 % of GDP in the four countries, the full economy-wide effects should be considerable.

The measures taken since 2011 to lower the administrative costs of starting a business and to make it easier for companies to export are estimated to stimulate the creation of new firms and increased entry rates by 1 percentage point in Spain, 0.7 percentage points in Portugal and 0.5 percentage points in Italy. This reform could bring over 20 000 new firms in Italy and Spain.

The efficiency of justice is a fundamental consideration when making investment decisions or launching new business operations. Efforts to decrease the average length of trials and the backlog of court cases therefore bring significant positive economic effects. A 10 % reduction in trial lengths has the potential to increase the entry rate of firms by almost 1 percentage point. Over the period 2010-2012 only Portugal and Spain decreased trial lengths (by 10.7 %and 8.1 %, respectively).

Estimates for Italy, Spain and Portugal (no data was available for Greece) show that the liberalisation of protected professions has benefits for economic efficiency. In Spain, for example, reforms to professional services could trigger a restructuring of the sector leading to an estimated increase in the legal sector's efficiency by 2 percentage points, which will translate into a substantial gain in labour productivity. Gains are even larger for Italy.

The study also suggests that reforms to ensure that public authorities pay their bills within a reasonable time frame can have a real impact on the survival of many companies. Reforms introduced in Portugal to reduce late payments are estimated to have averted the exit of 4900 companies from the market between 2010 and 2013.

Reforms encouraging the digital economy appear to be paying off too. The auctioning of mobile telephony frequency spectrums has contributed to a 27.4 % fall in the cost of mobile phone usage in Portugal and a 26.9 % fall in the cost in Italy. Altogether, the combined effect of measures covering radio spectrum allocation as well as improvements in e-skills, e-commerce and fixed broadband are estimated to have a long term impact on GDP amounting to 1.5 % in Italy, 1 % in Portugal, 0.9 % in Spain and 0.6 % in Greece.

Boosting economic activity and competitiveness through targeted market reforms is a central part of the EU's response to the crisis and it is encouraging that market reforms underway in four of Europe's most vulnerable economies are showing early signs of success. The full gains of reforms adopted by the four countries are estimated to be significant though there is plenty of scope to do more.

I. Introduction 11

II. Setting the scene 15

II.1. What productivity growth shows 15
II.2. Benchmarking: a bird's eye perspective 19

III. Reform efforts across selected policy areas 21

III.1. Reforms and monitoring indicators in Italy 22
III.1.1. Reform of professional services 22
III.1.2. Insolvency procedures 23
III.1.3. Reform of civil justice system 23
III.1.4. Measures against late payment of commercial debts by the public administration 24
III.1.5. Telecommunications 24
III.2. Reforms and monitoring indicators in Spain 26
III.2.1. Liberalisation of services 26
III.2.2. Retail sector 27
III.2.3. Administrative simplification 27
III.2.4. Insolvency procedures 27
III.2.5. Measures against late payment of commercial debts by the public administration 28
III.3. Reforms and monitoring indicators in Portugal 30
III.3.1. Administrative simplification 30
III.3.2. Late payments 30
III.3.3. Public procurement 31
III.3.4. Telecommunication 32
III.4. Reforms and monitoring indicators in Greece 34

IV. The transmission channels of the effects of reforms 37

V. The economic impact of selected reforms 41

V.1. The impact of costs of doing business on business dynamics 42
V.2. The economic impact of selected justice reforms 46
V.3. The Economic Impact of Professional Services Liberalisation 51
V.4. The economic impact of the implementation of the services directive 56
V.5. The economic impact of reducing Late Payments in commercial transactions 60
V.6. The economic impact of digital structural reforms 64
V.6.1. The economic impact of spectrum reforms 65
V.7. The economic impact of e-skills reforms 67
V.7.1. The economic impact of e-commerce policies 68
V.7.2. The economic impact of fixed broadband policies 70

I. INTRODUCTION

The EU has fought the economic, financial and sovereign debt crisis by pursuing action on different fronts. Immediate action to strengthen government finances and stabilise the financial system were necessary in the midst of the crisis to avoid further instability and contagion. Although necessary, these measures alone were not sufficient to fix the EU's economies, so policymakers have increasingly focused on the medium, to long-term challenge of how to strengthen economic fundamentals to deliver sustainable economic growth and rising living standards. The EU has done a significant effort to put its *macroeconomics* in order; now it needs to finish what it started and put its *microeconomics* in order too.

In the context of the financial and economic crisis, several Member States have undertaken a significant reform effort aimed at unleashing the untapped potential of their economies, in spite of their fiscal constraints. Many of these reforms have been implemented under Memoranda of Understanding in programme countries such as Portugal and Greece, but reforms are also being closely monitored by the Commission in vulnerable countries such as Italy and Spain.

The measures undertaken by these countries have been broad in scope and have included structural reforms targeting the functioning of 'product markets,' the goods and services that individuals and businesses buy and sell. Product market reforms cover a wide range of policy measures; they can be seen as structural reforms of a microeconomic nature that aim to improve the functioning of markets by increasing competition amongst producers of goods and services and by improving their productivity growth. Despite their potential benefits and the fact that most product market reforms have no budgetary impact, these reforms are often 'unpopular' both among politicians and among influential stakeholders. This is because their economic benefits are mainly accrued in the medium, to long term and are widely spread across society, while their costs are concentrated, often affecting vested interests. As a result, product market reforms encounter frequent resistance.

This report presents the main results of a project aimed at assessing selected structural reforms in product markets adopted in the context of the crisis by a set of hard-hit countries namely: Italy, Spain, Portugal and Greece.([1]) The reforms covered include both sectoral regulations and horizontal efforts aimed at improving the business environment and fostering favourable overall conditions for economic activity. In particular, the focus is on three main areas: services liberalisation, with emphasis on regulated professions; the digital economy; and the business environment, with a focus on firms' entry barriers, civil justice and late payments. Given the extremely wide scope of areas covered by product market reforms, a comprehensive overview of all relevant measures was not possible. The selection of reform areas in this study takes into account the availability of data and information and covers horizontal as well as economically significant sector-specific measures.

An important characteristic of the approach followed is the emphasis on the transmission channels through which policy action might affect the economy. For example, many of the structural reforms are competition-enhancing with effects transmitted, inter alia, via the entry, growth and exit of firms, and via the signals sent by prices, wages and profits. Thus, for the full effect of a given reform to materialise, the underlying transmission mechanisms must be in place. It is therefore important to test whether these channels are in place and functioning. The project brings in empirical evidence testing the functioning of the transmission mechanisms.

Have the measures adopted worked? This question is difficult to answer directly for at least three reasons: first, because the full effects of structural reforms are typically only accrued in the medium to long run; second, because it is difficult to separate the effects of the reforms from the effects of the economic crisis; and third, because reforms have their biggest impact once confidence and economic activity pick up and recovery takes place under the better functioning market conditions created by them.

([1]) The focus is on a selection of countries under financial assistance programme or 'vulnerable', with scope for growth-enhancing product market reforms. Ireland is not addressed, insofar as the agreed Memorandum of Understanding has focused mainly on financial stability measures.

The assessment of reforms is approached in different ways: by trying to identify short-term effects (or first signs) of the reforms through 'monitoring indicators', and by econometrically estimating the potential economic effects of the reforms.

Monitoring the take-up of product market reforms is a step towards a proper assessment of their impact. The observation of simple descriptive statistics might be useful to have timely information about whether a reform is starting to deliver and whether it is on the 'right track'. To this end, the prompt collection of good quality data at national level is necessary. The availability of such monitoring indicators at present, however, appears limited. While in the course of this project an attempt was made to present suitable information to observe the take-up of recently implemented reforms, some difficulties emerged in finding the appropriate indicators (in all countries, but particularly in Greece). This calls for further efforts in the collection of monitoring statistics in Member States, including monitoring and evaluation processes as necessary components of the reform cycle.

Concerning the estimation of the potential impact of reforms, rather than predicting overall macroeconomic effects, the estimations concentrate on relevant micro variables such as prices and business dynamics (entry or exit of firms) or directly on productivity, which is the ultimate goal of most of the reforms. Business demographics and prices may not be the ultimate economic variable target; they are however, important intermediate variables and part of the chain of effects needed for the full impact of reforms to materialise.

Reflecting the heterogeneity of product market reforms, an eclectic econometric approach is adopted that uses different methodologies, different data sets and often different dependent or outcome variables. Given the strong micro-flavour of this project and its emphasis on transmission mechanisms, regression analysis is used to estimate the potential, expected effects of reforms on key micro variables such as entry or exit rates (reflecting business dynamics) and productivity. The approach followed here is complementary to others that estimate general equilibrium effects of reforms (e.g. via QUEST, the European Commission's global macroeconomic model): i) it complements the understanding of the assumptions underlying the transmission mechanisms of general equilibrium models; ii) it provides additional information for translating specific structural reforms into exogenous shocks to be simulated into computable general equilibrium models. As an example, this complementarity is illustrated in the report for the case of reforms in the digital area.

The approach followed is pragmatic and each reform is addressed independently of the others. Thus synergies across the different reforms are not considered and the estimated effects are *ceteris paribus*, with the subsequent implication that the effect of the different reforms cannot be accumulated. The alternative would have required adopting a uniform treatment across all reforms (same specification) which, given their heterogeneity and data limitations, would have been worse.

In short, this report can be seen as providing: i) an overview of product market reforms in selected areas in the four countries analysed; ii) a consistent and solid analytical methodology to assess reforms in product markets, which can be used beyond the four Member States under analysis, explicitly addressing the transmission channels of the impact of reforms; iii) indications that the reforms undertaken are starting to have effects as a number of monitoring indicators show first signs of the effects of reforms; iv) an estimation of the potential economic impact of a number of reforms, which are selected on the basis of their productivity-enhancing potential and as to include both sectoral and general, across-the-board measures. The effects estimated generally focus on microeconomic variables such as productivity and, reflecting the emphasis on the transmission channels of reforms, on transmission variables such as business dynamics. In a few cases the impact on macro variables such as on FDI and overall GDP is also estimated.

Section 1 of the report sets the scene. It describes productivity developments in the four countries and benchmarks reform evolution in the countries under analysis against the rest of the EU. Section 2 gives a snapshot of the reform efforts in product markets per country. Section 3 adopts a rather conceptual approach and it mainly discusses the

role of the transmission channels of the effects of product market reforms. Section 4 presents empirical evidence on the ongoing changes and reaction of countries to the crisis. Section 5 is the core of the analytical work and presents the econometric estimation of the economic effect of a selection of product market reforms in the areas of services (professional services liberalisation and Services Directive implementation); digital economy; and business environment (civil justice; red tape and late payments reduction). Section 6 concludes.

A final word on the timing of this type of analytical effort. Quantifying the potential outcome of recently undertaken or on-going reforms can give further momentum to the reform process. In addition, the assessment exercise carried out could help in the identification of further priorities and bottlenecks and, by improving our understanding of the impact of product market reforms, the effort may also contribute to a better design of the policy measures. Product markets reform is a wide area typically defined by default once labour and financial markets as well as fiscal-related reforms have been excluded. In part due to its broad coverage, and in part due to the difficulty to measure the effect of product market reforms, comprehensive approaches to this area do not abound.

II. SETTING THE SCENE

This section presents general economic background information as a scene setter for the rest of the report. It describes productivity in the four countries as this is the ultimate key variable affected by reforms in product markets, and benchmarks the evolution in the countries under analysis against the rest of the EU countries. The general picture before the crisis shows two growing economies, Spain and Greece; a stagnant productivity growth economy, Italy; and an economy unable to grow and create jobs at the same time, Portugal. The crisis and the adjustment period that followed have changed this general picture, though to different degrees. A large restructuring process is taking place in Spain and Portugal, while it seems to have been delayed in Greece and doesn't seem to be taking place yet in Italy.

II.1. WHAT PRODUCTIVITY GROWTH SHOWS

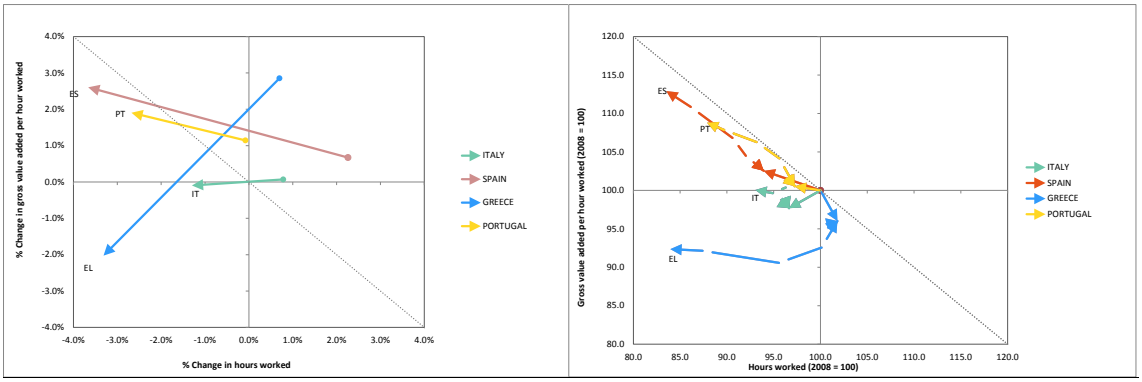
Productivity is the most straightforward measure of economic competitiveness, representing a proxy for technical progress, an indicator of proper market functioning (insofar as the reallocation of resources towards more productive firms increases overall productivity of a sector) and, ultimately, the main driver of long-run economic growth.

In this section productivity growth is proxied by labour productivity growth, which however needs to be carefully interpreted – in particular during the crisis, when different patterns of either labour hoarding or labour shedding might occur across countries and sectors. In order to attenuate these effects, average growth over several years is used, so as to smooth out the impact of the business cycle from labour productivity. But productivity developments cannot be considered alone and information on whether the underlying country/sector is expanding or contracting in terms of employment and of value added is needed to infer the "health status" and evolution of an economy.

Graph II.1 shows the average yearly labour productivity growth, measured as gross value added per hour worked, and the corresponding average yearly growth of hours worked for the whole economy. As the sum of these variables is an approximation for GDP growth, the position with respect to the diagonal contains information about value added. The figure on the left considers two time periods, before and during the crisis (2001-2008 and 2008-2013 respectively). The arrows indicate the trajectories followed by each country from the first period to the second one. The figure on the right shows the annual trajectory since the crisis and allows focusing on the immediate impact of the crisis and on the adjustment period. The different quadrants have different economic meanings, as explained in Box II.1.

The first figure shows that while after the crisis all four countries experienced negative growth rates of both value added (as the coordinates are placed on the left of the diagonal) and employment, their patterns in terms of productivity are different. Portugal and Spain are experiencing an overall increase of labour productivity, amounting respectively to yearly 1.9% and 2.6%. This, coming along with a decrease of hours worked (by respectively 2.7% and 3.7%), can be interpreted as a sign of on-going restructuring of their economies, lower employment being related to exit of less productive firms and a reorganisation of productive processes (which, nonetheless, comes at a cost: an increase in unemployment). On the contrary, Italy is not profiting from the negative juncture to restructure and maintains stagnating labour productivity, as observed in the period before the crisis, despite a reduction of hours worked (which is indeed lower than in the other countries, amounting to only 1.3% on average). Greece, finally, is showing an impressive joint decline of labour productivity and employment, respectively by 2% and 3.3%. However, in this case the importance of cyclical factors in determining the productivity performance might be predominant, due to the size and deepness of the recession that Greece is coping with.

Graph II.1: **Employment growth and productivity growth 2001-08 and 2008-13 (left); annual trajectory 2008-13 (right)**



(1) Yearly growth of hours worked and gross value added per hour worked. The diagonal is the locus of zero value-added growth.
Source: Own computation on Eurostat (National Accounts) data. Based on 2005 prices

The second figure depicts the yearly evolution since the crisis. Spain and Portugal show a clear restructuring pattern starting already in 2008, while the trajectory in Italy confirms its long-standing productivity disease. The largest trend change has occurred in Greece, which in the first years of the crisis managed to contain the employment loss by allowing labour productivity to sharply decline; since then Greece made a substantial adjustment in terms of employment while productivity stopped falling down.

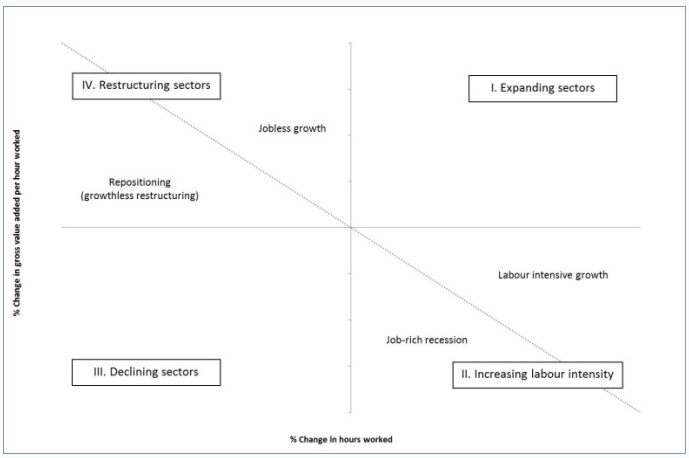
Sectoral employment changes can be used to illustrate the on-going degree of resources reallocation. ([2]) The first panel of Graph II.2 shows the evolution of the employment share of tradable and non-tradable sectors before and after the crisis, where the length of the arrow indicates the size of the change. Over the period 2000-2007, the share of employment in non-tradables increased in the four countries, though Greece and Spain exhibit the largest change.

The secular decline of manufacturing activities may be a key factor behind this trend, but incentives favouring the attraction of resources towards non-tradable very likely also played an important role (e.g. construction in Spain). The adjustment period that followed the crisis (2010-2013) suggests a changing tendency in Spain, Portugal and Greece as the reallocation towards non-tradables stopped and started to reverse. The second panel of Graph II.2, which shows value added shares, confirms this change for Spain and Portugal, which is driven by a big contraction of value added in the non-tradable sector while the tradable sector continues its timid expansion. A different pattern is observed in Italy where the tradable sector has started to contract while the non-tradable enjoyed till recently positive value added growth. In the case of Greece, both sectors are contracting during the adjustment period and the observed value added "reallocation" towards non-tradables is driven by different contraction rhythms across the two sectors.

([2]) A complete picture will require looking at other productive resources, although the focus on employment could be justified by the fact that much of the process of change affects jobs and workers. The indicator used underestimates the degree of resources reallocation as it is based on broad sectoral net employment flows.

Box II.1: **Labour productivity, employment and value added growth**

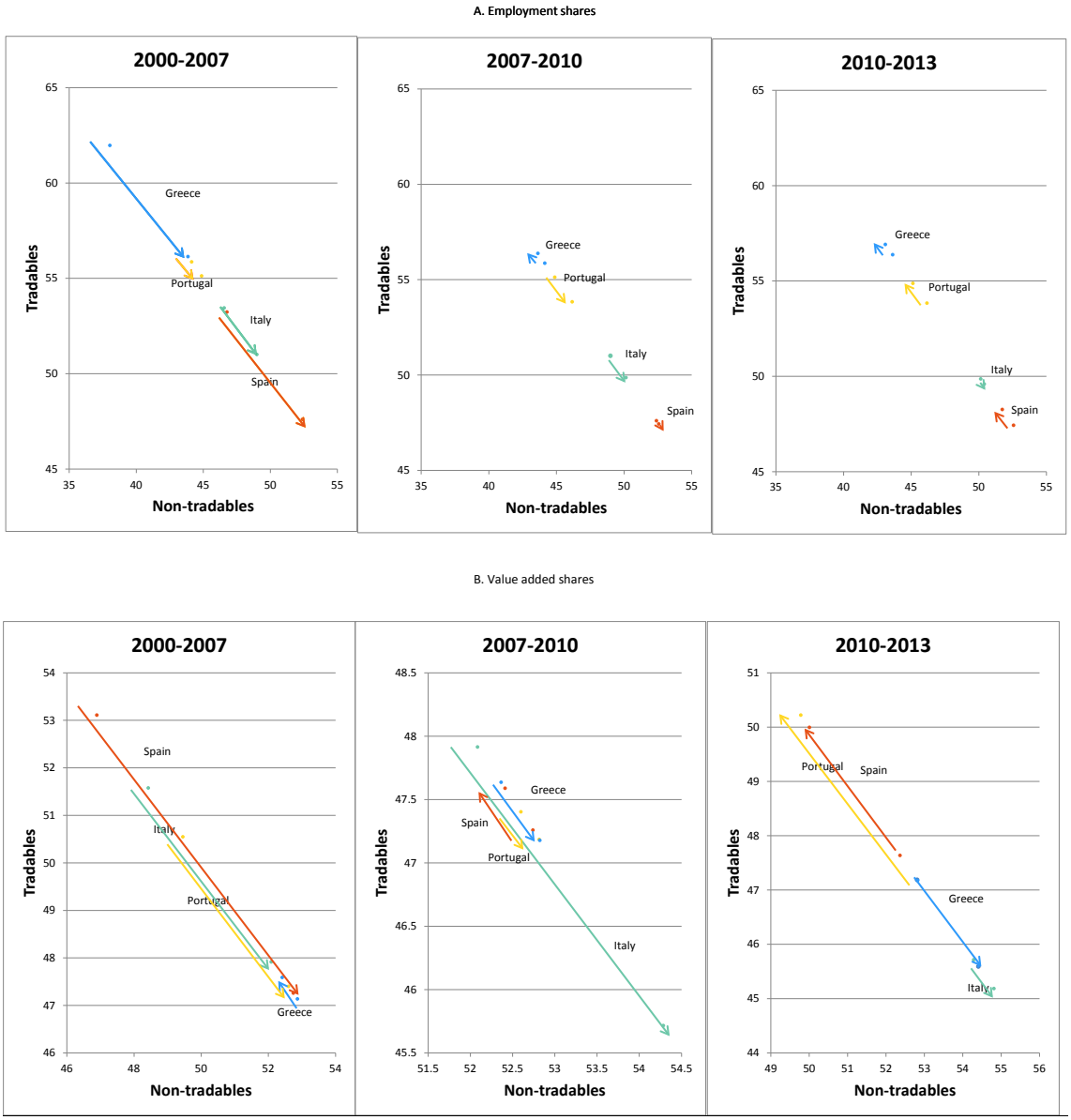
The figure below plots labour productivity growth and employment growth. The diagonal is the locus of points with zero value added growth (e.g. an increase of labour productivity is perfectly compensated by an equivalent decrease of employment): all combinations of labour productivity growth and employment growth situated on its right (left) are thus associated with an increase (decrease) of value added. The different quadrants thus have different economic meaning. The interpretation is straightforward for quadrants I and III, respectively indicating expanding sectors (both productivity and employment are increasing, and so is value added) and declining ones (both productivity and employment are decreasing, and so is value added).



Quadrants II and IV point at situations where a trade-off between employment and productivity is occurring. In quadrant II, where productivity decreases while employment grows, this can be seen as a consequence of increasing labour intensity. This, in turn, could be due to declining relative wages or less restrictive labour market regulation as well as to an intrinsic transformation of a sector towards more labour intensive (and lower labour productivity) activities. More specifically, the area on the right of the diagonal identifies sectors experiencing "labour intensive growth" (as value added is overall increasing), while the area on its left identifies sectors in "job rich recession" (i.e. employment is increasing, even if value added and productivity are shrinking). The latter situation, which could in principle appear puzzling, might be explained by several reasons, among which cyclical factors (e.g. labour hoarding) and an increasing incidence of self-employment (even if shrinking, some sectors could maintain higher than average profitability rates, so attracting self-employment in any case – this could be the case, for instance, of professional services).

Quadrant IV indicates a situation where employment is shrinking and labour productivity is growing. This situation could be easily depicted as one of on-going restructuring, as industries are shedding labour while increasing overall economic efficiency. At a sectoral level, this effect could be due either to the exit of less productive firms (or activities), or to the switch (within incumbent firms) towards more capital intensive techniques. Also in this case, two situations can be distinguished. The area to the right of the diagonal can be defined as one of "jobless growth", as it reflects increasing value added but decreasing employment. The area to its left, instead, identifies economies or sectors where, in spite of on-going restructuring (in the sense explained above), value added is contracting. We can interpret them as sectors in a "repositioning" phase, where restructuring is on-going but the overall output is lower – perhaps as a prevailing effect of the exit of less productive firms.

Graph II.2: **Tradables vs non-tradables - Share in total employment and value added**



Source: Eurostat National Accounts. 2013 data for Portugal and Italy estimated based in employment evolution from Eurostat Labour Force Survey

Table II.1: **The run-up to the crisis and patterns of adjustment**

	Before crisis	*Crisis and the adjustment*
Italy	Labour intensive growth; moderate shift of resources towards non-tradables	Growth- and job-less economy no-restructuring; shift of resources away from tradables continued till recently
Spain	Expanding economy; large shift of resources towards non-tradables	Growth- and job-less restructuring; shift of resources away from tradables stopped after the crisis
Portugal	Jobless grow; low shift of resources towards non-tradables	Growth- and job-less restructuring; shift of resources stopped only recently
Greece	Expanding economy; large shift of resources towards non-tradables	Declining economy; growth - and job-less economy; no clear pattern in terms of reallocation of resources as both tradable and non-tradable sectors are declining

Table II.1 summarises the economic performance before the crisis and the adjustment pattern. Despite huge job losses and the associated social and economic cost, the on-going restructuring in Spain and Portugal is setting the basis for a strong recovery as productivity keeps increasing. Unfortunately this is not the case in Greece despite the also considerable job losses. Although the Italian economy has suffered less in terms of employment losses, the stagnant productivity signals the lack of a sustainable adjustment that can bring long run growth once the right conditions resume. The shift of resources towards tradable sectors in Spain and Portugal is an additional signal of the on-going restructuring of the two economies.

II.2. BENCHMARKING: A BIRD'S EYE PERSPECTIVE

Global country rankings can also be useful to track reform efforts. Table II.2, which uses publicly available information underpinning global country rankings, shows a country's position relative to the EU average (red and orange for bad performance, green for good performance); the table also depicts the evolution (arrows). ([3]) Although any assessment based on the figure is necessarily partial as the *heatmap* only covers selected areas, the general picture emerging is one of relative bad performance in the four countries before the crisis. Since then, overall progress, evaluated in terms of "moving into green", is observed in Portugal, Italy and Spain (although there are some areas showing deterioration such as disposition time and enforcing contracts in Italy and Spain). Progress has been more limited in Greece and there are a number of arrows pointing downwards which reflect the deterioration of efficiency indicators of civil justice (e.g. contract enforcement, resolving insolvencies, disposition time). This deterioration is likely to be linked to the increase in the flow of cases due to the crisis and strikes in the sector. ([4]) In some areas such as the reduction of product market regulation the four countries have done a significant effort as measured by the evolution of three components of the OECD Product Market Regulation indicator. This may well be a reminder that reform effort is necessary, but not sufficient, to get a strong business environment conductive of growth and jobs.

([3]) Such rankings are based on various methodologies, ranging from perceptions surveys to reviews of legislations and to measures of costs of doing business. Despite their limitations they provide relevant information and shed light on actual and perceived strengths and weaknesses of countries business environment. They attract attention and are likely to influence the perception of investors about the economic situation of countries as well as the discussion about reform progress.

([4]) A wide-ranging reform of the judicial system is underway in the context of the adjustment programme. The new code of civil procedure should allow to tackle the stock of pending cases.

Table II.2: **Heatmap-business environment**

	Year		Greece	Italy	Portugal	Spain
	Before the crisis	Recent				
DB Dealing with construction permits	2008	2013	↗	↘	↗	↘
DB Enforcing contracts	2008	2013	↘	↗	↗	↗
DB Getting Credit	2008	2013	↗	→	→	→
DB Paying taxes	2008	2013	↗	↗	↗	↗
DB Protecting Investors	2008	2013	↗	→	→	→
DB Resolving insolvency	2008	2013	↘	↗	↗	↗
DB Starting a Business	2008	2013	↗	↗	↗	↗
DB Trading Across Borders	2008	2013	↗	↗	↗	↗
FI Business Regulation	2008	2011	↘	↗	↗	↗
WB Regulatory Quality	2008	2012	↘	↘	↘	↘
WEF Goods Markets	2008	2013	↘	↘	↘	↘
IJ Business Late Payments	2008	2013	↘	↘	↗	↘
IJ Public Late Payments	2008	2013	↘	↘	↗	↘
FI Legal Structure and Property Rights	2008	2011	↘	↗	↘	↗
WB Rule of Law	2008	2012	↘	↘	↗	↘
CEPEJ Clearance Rate	2008	2012*	↘	↗	↗	↗
CEPEJ Disposition Time	2008	2012*	↘	↘	↗	↘
PMR State control	2008	2013	↗	↗	↗	↗
PMR Barriers to trade and investment	2008	2013	↗	↗	→	↗
PMR Barriers to entrepreneurship	2008	2013	↗	↗	↗	↗

(1) Colours are assigned as follows: red refers to a value more than one standard deviation below the mean (mean and the standard deviation computed for both years); orange to a value between the mean and one standard deviation below the mean; light green to a value between the mean and one standard deviation above the mean and dark green to a value more than a standard deviation above the mean. (*) CEPEJ clearance rate and disposition time are computed for total non-criminal cases. Data for Spain refers to 2010.
Source: World Bank and International Finance Corporation Doing Business, World Bank Worldwide Governance Indicators, Product Market Regulation OECD, Fraser Institute, World Economic Forum, Intrum Justitia, CEPEJ

Note that the indicators selected reflect the business environment and cover regulation (e.g. OECD PMR) as well as outcomes (e.g. late payments – which reflect not just regulation but also the state of the macroeconomy and the financial sector). Since rankings do not capture distance between countries, the values of the indicators per se are used instead. Progress is measured by comparing the most recent available information with the information before the crisis. ([5]) Red and orange are synonymous of *bad* and *weak* performance, respectively; and light green and dark green represent *good* and *strong* performance, respectively.

([5]) The indicators chosen are widely used for benchmarking exercises and as a reference. Depending on data availability, not all 28 EU countries might be included for some indicators.

III. REFORM EFFORTS ACROSS SELECTED POLICY AREAS

The four countries have undertaken a significant effort to reform their product markets and this section summarises some of the key reforms per country. Comparative evidence on the recent reform record shows that all four countries, although to a different extent, acted in the direction of liberalising professional services and of simplifying the administrative framework, in particular as concerns business start-ups and licensing procedures. Major reforms of civil justice have been started in Italy and Portugal, but relevant measures in this area have also been taken by Spain and Greece. Other common areas for reform included insolvency procedures and late payment by public administrations. Cut off dates in this section varies across countries. In some cases information has been taken into account going up to April 2014.

To what extent the adjustment to the crisis is driven by natural adjustment forces (e.g. declining of oversized construction sector) and to what extent is the outcome of reform efforts is difficult to establish. But structural reforms in product markets can only facilitate and speed up reallocation of resources and the adjustment process while also creating better conditions for business to enter the market and to growth thus creating the much needed jobs. Measuring effects of the reforms is not easy and finding evidence of their impact is challenging, among other things due to the short time-span since the adoption of many reforms and to the difficulties in isolating from the effect of the current crisis. The section presents indicators of the on-going reaction of countries to the crisis and to the reforms undertaken. Available monitoring indicators suggest that most of these efforts are starting to deliver first effects on the economy. The information presented here complements the potential effects of reforms using econometric techniques presented later in the report.

Measuring reform efforts is not easy. The broad nature of the policy areas and heterogeneity of reforms covered under the heading of "product markets" makes it difficult to come up with aggregate unbiased indicators of reforms. The Product Market Regulation indicator by the OECD, with its different policy and sectoral layers, is probably the most widely used aggregate indicator. ([6]) Its three components (state control; trade and investment; barriers to entrepreneurship), presented in the heatmap above, showed that the four countries have undergone a reduction in their level of regulation over the last years.

Graph III.1 expands the country coverage and shows levels of regulation in 2008 and 2013 and the reform effort over the same period. The left panel shows a positive relationship between reform needs at the beginning of the crisis period and the regulatory reform effort since then, with Greece and Portugal leading the reform effort. It also shows that at the beginning of the crisis the two countries ranked high in terms of regulation in product markets, with Greece ranking the highest among the countries in the sample.

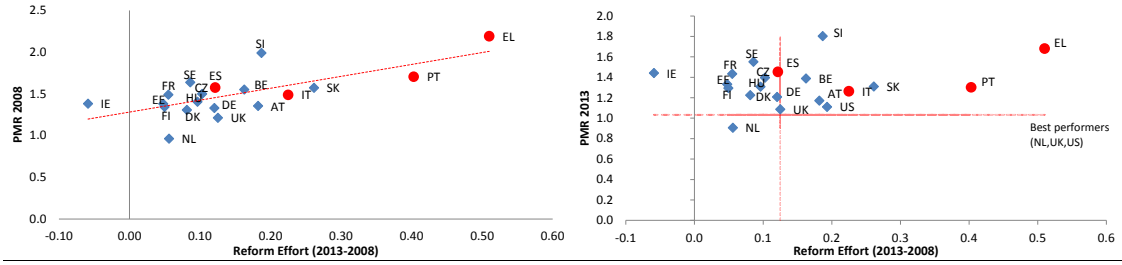
Has the effort been enough? The question is difficult to answer but a look at the "current" level of regulation (2013, right panel) shows that despite the significant effort the four vulnerable countries are far from the "best performers" identified as the three EU countries with the lower level of the indicator in 2013.

Proxying the reform effort with changes in the PMR indicator can only give an overall but partial picture. In practical terms discrepancies could occur between formal adoption of reforms as recorded by the PMR and their actual implementation, which might depend – for example – on the approval of necessary secondary legislation, on adequate advertising of new measures, on the effectiveness of the public administration, and so on.

Monitoring the take-up of product market reforms in the short term becomes an important first step towards a proper assessment of their impact. The observation of simple monitoring statistics might be useful to have timely information about whether a reform is starting deliver and whether it is on the "right track", while a full-fledged assessment, estimating the potential impact of a reform through econometric analysis, necessarily needs a longer term approach. In what follows, significant examples of specific reforms recently undertaken

([6]) Despite covering a large number of reform areas, there are many others not reflected in the PMR indicator (e.g. judicial) or only partly reflected (e.g. professional services only cover four regulated professions).

Graph III.1: **Level of regulation (2008) and reform effort**



(1) Reform effort is OECD PMR 2013-2008 (times [-1]). Best performers are the three countries with the lowest PMR level in 2013.
Source: Own Computations based on OECD PMR

are highlighted. These reforms inevitably vary across countries and should only been seen as an indication of the type of reforms adopted. The selection obviously leaves significant reforms out, whose coverage would be beyond the scope of this report. ([7])

The description of reforms is accompanied by some empirical evidence on the ongoing changes or "early signals" in the countries under analysis. The ideal *monitoring indicators* would show possible first signs of changes following reform efforts or a specific reform. They should be explicitly collected to monitor the reform, which is rarely the case, and should not be much influenced by the business cycle. The reality however is that available indicators to be used to monitor the impact of reforms are scarce and are typically collected for other purposes; thus their interpretation should be done with care.

III.1. REFORMS AND MONITORING INDICATORS IN ITALY

Italy has shown significant effort in product market reforms during the last three years, strengthening the reform stance after several years of relative inactivity. Momentum for reforms notably took place since end of 2011 and lasted till around mid-2013. During this period adopted reforms touched upon several areas: a selection of the most significant ones in the domains of liberalisation and business environment is presented in Box III.1. A close monitoring of their implementation is needed to ensure that concrete improvements are achieved. In some cases, the adoption of the secondary legislation is in fact still pending or action by other levels of government is required to put the reforms fully in place. The current reform agenda includes initiatives in the areas of business environment, administrative simplification and efficiency of the public administration. If fully and effectively implemented, these reforms could contribute to improving competitiveness and addressing some long-standing obstacles to growth.

III.1.1. Reform of professional services ([8])

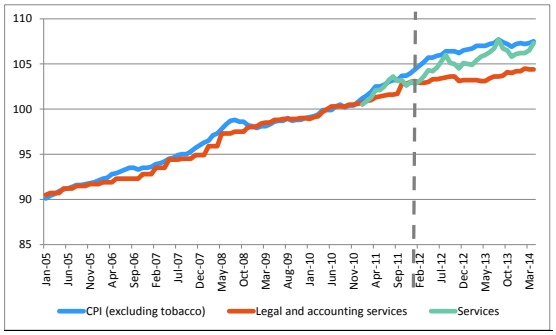
The main aim of this reform has been to create the conditions for a more competitive environment for the exercise of professional activities, rather than to facilitate the access to professions. This is reflected by a sharp decline in the average "conduct regulation" component of the OECD PMR indicator for professional services, decreasing from 2.06 in 2008 to 0.19 in 2013 (the overall indicator shifting from 3.02 to 2.10). In this respect, it is likely that the first effects of the reform will be visible in prices. As evident in Graph III.2, between January 2012 (when the reform became operational) and April 2014 the subcomponent of the consumer price index related to legal and accounting services (a proxy for the price of professional services) grew by 1.4%, compared to 3% growth for the overall CPI and 4.4% for services as a whole. This evidence emerges after a long period during which the evolution of legal and accounting services prices closely followed the overall CPI. However,

([7]) For Greece and Portugal, the Memorandum of Understanding contains detailed coverage on reforms adopted.

([8]) See section on the *Economic impact of professional services liberalisation* which presents estimates of the predicted impact of liberalization of selected professional services.

although hinting at a successful uptake of the reform, it should be clear that it is impossible to assess whether this trend is due to the reform or to other reasons (e.g. the crisis) based on the monitoring of a single indicator.

Graph III.2: **Evolution of the legal and accounting services subcomponent of the CPI**



(1) 2010=100. The dotted line indicates the entry into force of the latest reform
Source: Italian National Institute of Statistics (ISTAT)

III.1.2. Insolvency procedures

The 2012 reform of pre-insolvency procedures (*concordato preventivo*) allows a continuation of the activities of the company thanks to the blocking of private enforcement actions by creditors at an early stage. The take-up of new rules has been remarkably good. Between the entering into force of the new regulation in September 2012 and June 2013, almost 3,900 applications have been submitted. This figure is significant, as the total number following the old scheme amounted to about 1,100 during the whole 2012. However, starting from the second quarter of 2013, the take-up has slightly slowed down due to new restrictions introduced to prevent abuses by firms in the utilisation of this tool (the average number of applications per semester decreasing from almost 1,400 to about 800). First analyses ([9]) show anyway that the reform has contributed to an early surfacing of business crises, and that companies applying the new scheme are generally in better financial health than those going bankrupt.

([9]) Conducted by Cerved Group.

III.1.3. Reform of civil justice system ([10])

The main objectives of the reforms adopted during 2012 and 2013 were to improve the efficiency of the judicial system and to decrease the litigation rate in order to reduce the congestion of tribunals. As a consequence of the reorganisation of judicial districts, the total number of first instance courts, including local offices and small claims courts, has decreased from 1318 (pre-reform) to 686 in April 2014, i.e. from around 2.2 per 100,000 inhabitants to around 1.1 (against a median value of 1.6 across the EU in 2010). The simulated new distribution of courts by size (only considering first instance general jurisdiction tribunals, thus excluding local offices and small claims courts) is presented in Table III.1, where assumption is made that all judges from suppressed courts are transferred to the absorbing ones. The reform would cause a reduction in the share of smaller courts: those with less than 20 judges would decrease from 53.4% of the total to 32.9%. ([11]) A detailed assessment of selected aspects of the reform is presented in Box V.3.

Table III.1: **Distribution of courts by size class in 2011 and after the reform**

Size class (no. of judges)	Average resolved cases per judge in 2011	Before the reform		After the reform	
		No. of courts	Share (%)	No. of courts	Share (%)
0-9	438.4	27	16.4	6	4.5
10-19	502.2	61	37	38	28.4
20-49	571.7	58	35.2	70	52.2
50-99	583.5	13	7.9	14	10.5
100+	463.8	6	3.6	6	4.5
Total	**520**	**165**	**100**	**134**	**100**

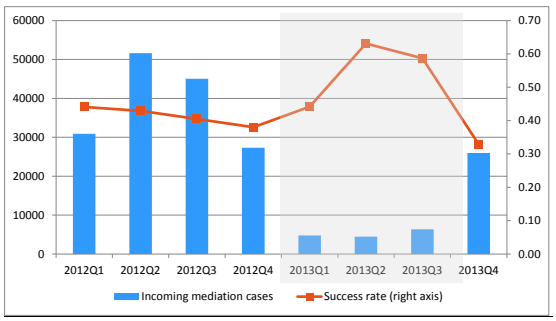
Source: Own computation on Italian Ministry of Justice data

Some first effects of the reform of mediation, which re-introduced it as compulsory in a number of civil law matters in December 2013, are also already observable. As it emerges from Graph III.3, the take-up of mediation (in terms of incoming cases) sharply dropped in the first quarter of 2013 (after a decision by the Constitutional Court which ruled it out, due to irregularities in the legislative process), to increase again after its reintroduction in September 2013. Unsurprisingly, when the mediation was voluntary,

([10]) Section on *The economic impact of selected justice reforms* presents estimates of the predicted impact of selected civil justice reforms.
([11]) Notably, the new distribution of courts is likely to increase courts efficiency, as larger courts show higher than average resolved cases per judge.

its recourse was lower, but its success rate was higher.

Graph III.3: **Incoming mediation cases and success rate**



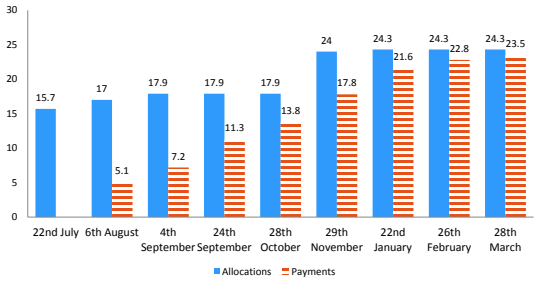
(1) Success rate is defined cases solved by mediation as a proportion of total incoming amount of mediation cases.
Source: Own computation on Italian Ministry of Justice data

III.1.4. Measures against late payment of commercial debts by the public administration ([12])

According to Eurostat estimates (considering current expenditures only) the stock of trade debt accumulated by the public administration in Italy is the largest in the EU, amounting to EUR 51.3 billion in 2013 (3.3% of GDP), though decreasing from the peak of 67 billion in 2011 (4.3% of GDP). Several other sources confirm the difficult situation of Italy in terms of trade debt stock and payment delays. ([13]) Specific measures have been adopted to accelerate the payment of arrears in order to alleviate liquidity problem of firms, especially SMEs and in April 2013 funds were allocated for the payment of arrears. In March 2014, see Graph III.4, EUR 24.3 billion were allocated to debtor entities (at central and regional/local level) for the repayment of arrears, out of around EUR 47 billion earmarked for 2013 and 2014. Of these allocations 96.7% were actually spent. These data show a significant take-up of the adopted measures which, according to the Bank of Italy, contributed to a slight reduction of the average payment duration of contracts from 190 days in 2012 to around 180 days in 2013 (still well above the limits established by the Late Payment Directive).

([12]) See section on *The economic impact of reducing late payments* in commercial transactions.
([13]) The Bank of Italy estimates total commercial debt (including capital expenses) at around EUR 75 bn in 2013, on the decrease from EUR 90 bn in 2012 (-16.7%).

Graph III.4: **Evolution of allocations and payments in 2013 (billion Euro)**



Source: Italian Ministry of Economy

III.1.5. Telecommunications ([14])

Various reforms have been implemented in Italy over the past years in terms of broadband investments and despite progress overall fixed broadband penetration currently remains 22% lower than the EU average. The same applies to next-generation networks (NGA) coverage (14%, compared to a EU average of 54%) and take-up (below 1%, compared to a EU average of 6%) respectively the worst and the third worst in the EU, despite slight progress especially over 2012. In terms of spectrum policy, Italy made important progress in recent years and the gradual progress has been marked by a decrease in concentration of the mobile communications market by 5.4% (above the EU average of 3.6%) per year between 2006 and 2012, and a decrease in sectoral retail prices by 11% per year between 2006 and 2011, in line with the EU average: as of 2011, both sectoral concentration and final prices were significantly below the EU average. Some competition-enhancing measures have also been adopted in the Italian fixed communications market. Overall, over 2012, the fixed broadband incumbent's market share decreased by 3% (above the EU average progress by 1.6%), although remaining still 22% higher (amounting to 51.4%) than the EU average.

([14]) See section on *The economic impact of digital structural reforms* which presents estimates of the predicted impact of selected reforms in telecommunications.

Box III.1: **Selected reforms in Italy**

Professional Services

In the last three years the regulated professions sector in Italy has been subject to various legislative actions aimed at improving its functioning through increased competition. The main measures, taken in 2012, concerned the abolition of compulsory minimum tariffs, more relaxed terms for traineeship (when compulsory), the right to establish companies among professionals ([1]) and free advertisement. Regrettably, in parallel to the general reform, a specific measure providing reference values for lawyers' fees has been approved, which can be considered as a partial backtracking. The abolition of regulated tariffs, the removal of restrictions on legal form and the freedom of advertising is expected to translate into lower average fees. The reform is not expected to affect the number of professionals in the short run (except for an increase in the number of notaries' seats by 500).

Administrative simplification (including start-up procedures)

Various initiatives aimed at administrative simplification have been undertaken in the recent past, with a focus on start-up procedures. Among the main measures, it is worth mentioning the introduction in 2012 (with amendments in 2013) of a "simplified" limited liability company, with lower minimum capital requirements and reduced administrative costs. Simplification measures have been approved over 2012 and 2013 in a wide number of areas, including environmental and building permits, certification and electronic filing of administrative requests. In 2012, some amendments have also been made to the act transposing the Services Directive in Italy (d.l. 59/2010) with the aim of simplifying access to a number of services not subject to planning restrictions (e.g. food retail, door-to-door sales, courier and porterage services, etc.)

Insolvency procedures (concordato preventivo)

In 2012 an important reform of insolvency procedures has been introduced in Italy, aiming at simplifying access to composition with creditors (concordato preventivo). The new rules allow entrepreneurs to present a "blank" application for this procedure, without the concurrent submission of a restructuring plan, which can now be submitted at a later stage (within 60 to 120 days). Some (minor) changes to this discipline have been introduced in the course of 2013, following complaints about possible abuses by firms presenting applications just to block payments to creditors, with the aim of delaying liquidation or bankruptcy.

Reform of civil justice system

In 2012 a major reform of the geographical organisation of courts was initiated, aiming at merging tribunals and closing down smaller and less efficient ones. This reform, operational as of September 2013, increases the average size of courts, with the aim of achieving scale economies and promoting specialisation of judges. In the framework of the reform, specialised courts for businesses have also been established. Moreover, measures to limit the excessive recourse to appeals have been introduced (through a filter for eligibility to appeal) as well as an increase in court fees and the re-introduction of compulsory mediation ([2]) ahead of initiating a civil lawsuit before a court. The aim of the latter measures is to reduce litigation rates and the overall backlog of cases.

Measures against late payment of commercial debts by the public administration

Italy has suffered in recent years from chronic delays in government-to-business transactions, which led to the accumulation of large trade arrears by the public administration. The European Late Payment Directive (2011/7/EU), establishing 30 days as normal payment terms in G2B transactions, has been transposed into the Italian law at the end of 2012, with provisions applying to contracts concluded after 1st January 2013. In

([1]) Specific legal forms existed already allowing the practice of professions in the associative form and in the form of partnership. Though liberalizing legal form, the reform introduced a limit for the participation of external stakeholders in terms of capital ownership and voting rights.

([2]) Compulsory mediation had been in place from March 2011 to December 2012, but Constitutional Court ruled it out, due to irregularities in the legislative process (abuse of legislative delegation by the government).

(Continued on the next page)

Box (continued)

order to accelerate the payment of contracts concluded before that date, exceptional measures have been undertaken as from April 2013. In particular, specific funds have been allocated for the payment of debts which were "certain, liquid and payable" at 31st December 2102, totalling EUR 27 billion in 2013 and 19.8 billion in 2014. The Ministry of the Economy has set up a monitoring system on the state of progress of these measures. Further measures are foreseen in the course of 2014 (e.g. the creation of a register for electronic invoices, the provision of sanctions for administrations not paying in due time, and the streamlining of procedures for transfer of credit to financial bodies with a discount on the principal).

Telecommunications

In 2012, Italy adopted a national strategy for the extension of the national fast broadband network, still characterised by coverage and penetration below the EU average, especially in rural areas. Namely, following the Commission's approval of the framework notification for the ultra-fast broadband strategic plan in December 2012, procedures for publicly funded investment projects were launched in many Regions, although contracts have so far been awarded only for one major project. In order to incentivise ongoing private projects extending optical fibre closer to customers, some measures have also been adopted to reduce roll-out costs (e.g. facilitating wiring in jointly-owned parts of a building). In terms of spectrum policy, past allocations ensure that by January 2013 all four mobile operators are able to use frequencies below 1 GHz. Instead, alternative operators still face difficulties to access the legacy fixed network on the terminating segment, not least pending final decisions on regulated access conditions and functional unbundling: the sectoral regulator AGCOM has given preliminary consent to the separation that should ensure equal treatment of all providers in using the landline infrastructure.

III.2. REFORMS AND MONITORING INDICATORS IN SPAIN

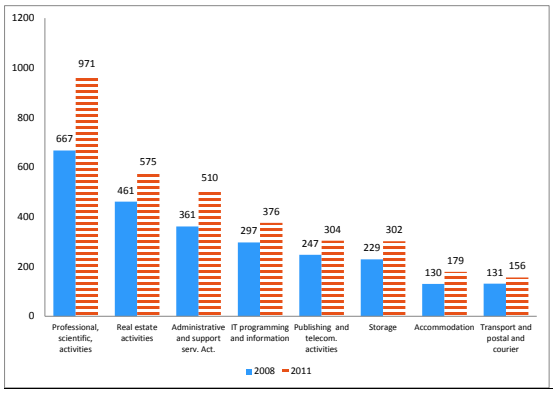
Over the last years Spain has been implementing an ambitious structural reform agenda in the product market field to improve its medium and long-term growth potential and several far-reaching reforms in key areas are underway. Reforms touch upon several areas, of which the following appear the most significant: services liberalization (namely the transposition of the Services Directive), late payment by public authorities, reforms reducing entry and exit barriers, judicial system, telecommunication and energy sector and more recently the transport sector. However progress on structural reforms has been uneven across policy measures, for instance the reform of professional services and associations continue to be delayed and implementation of other reforms, such as in the judicial system, remains at an early stage. Box III.2 contains a summary of key reforms in the area of product markets.

III.2.1. Liberalisation of services ([15])

The transposition of the Services Directive has liberalised the services sector by removing direct obstacles to trade and cross border establishment of firms and by simplifying domestic regulation. The first mechanism is expected to have an impact on the international channel, in particular by increasing foreign direct investments in the sector. A sign that this channel seems to be properly working is visible in Graph III.5, showing that the number of affiliates of foreign companies in Spain has significantly increased from 2008 to 2011 in all services sectors. The increase has been particularly significant in professional and scientific activities. As this increase has occurred in the context of an economic recession, it seems that the simplification of the regulatory framework for cross-border provision has also had an impact.

([15]) See sections on *The economic impact of the implementation of the Services Directive* and on *The economic impact of professional services liberalisation*

Graph III.5: **Number of Affiliates of Foreign Companies in Spain**

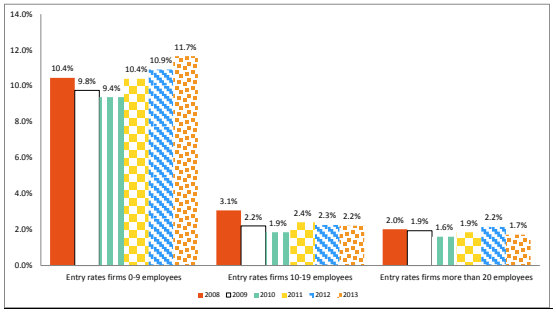


Source: Spanish National Institute of Statistics (INE)

III.2.2. Retail sector

Since the onset of the crisis the evolution of the number of firms in the retail sector has been continuously shrinking across all size classes (at an average of -2% per year). However, when looking at entry rates in detail, it is found that since 2010 the entry rate of micro firms (less than 9 employees) has been not only increasing, but also at rates well above the entry rates of small and medium companies (Graph III.6). This relative high number of micro companies entering the market could be partly seen as the outcome of removing authorisation schemes, and in particular licensing requirements for small retail establishments.

Graph III.6: **Entry rates for the period 2008-2013 in the retail sector**



Source: Spanish National Institute of Statistics (INE). DIRCE

III.2.3. Administrative simplification ([16])

When looking at the cost of opening a business, and in particular the time needed, one interesting indicator is the evolution of number of companies created electronically. ([17]) Table III.2 shows that the number of businesses created through electronic means has been steadily increasing, in particular since 2011 as the new 2010 Corporate Law allows individual entrepreneurs to start the procedures for running a business electronically – interestingly, the number of individual businesses and Limited Liabilities Companies newly created through electronic procedures grew by 73% and 46% respectively from 2012 to 2013. Even if their percentage over the total number of companies entering the market is low, it has been steadily on the rise. It could be expected that measures reducing administrative burden on companies have brought some benefits, in particular to individual entrepreneurs, in terms of costs by simplifying procedures and speeding up the time to start up a business.

Table III.2: **Number of firms created electronically by type of business**

Year	Limited Liability Companies	Individual Entrepreneurs	Limited liability companies + entrepreneurs	% of Total companies(*)
2003	115	0	115	
2004	538	0	538	
2005	629	0	629	
2006	1111	0	1111	
2007	1278	0	1278	
2008	1405	0	1405	0.40%
2009	1273	0	1273	0.40%
2010	1641	1166	2807	1%
2011	2401	4250	6651	2.50%
2012	3342	6538	9880	3.30%
2013	4875	11320	16195	5.50%

(1) Ratio of the number of companies created electronically to total number of companies entering the market.

Source: Spanish Ministry of Industry, Energy and Tourism

III.2.4. Insolvency procedures

Since the onset of the crisis, the use of insolvency procedures increased dramatically. The reform in 2009 extended the scope for the simplified insolvency procedures, reduced their costs and

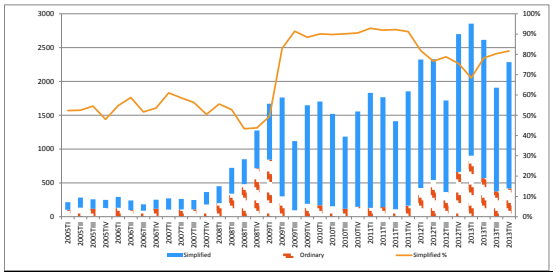
([16]) See section on *The impact of costs of doing business on business dynamics* which summarises estimates of the impact of "red tape" reduction.

([17]) The ministry of industry reported that time required to create a business electronically in 2012 for most individual entrepreneurs was less than 1 day.

simplified the pre-insolvency procedures (see Box III.2). As evidenced by Graph III.7, the number of simplified procedures rapidly increased since 2008 growing from 1558 in 2008 to 7394 in 2013, while the ratio of ordinary and simplified procedures changed substantially in favour of the latter.

According to the Association of Property and Mercantile Registrars, the average duration in days of the two procedures has also sharply dropped after the 2009 reform: For instance, the length of the simplified procedure with and without liquidation phase has decreased from an average of more than 2.5 years to one year. For the ordinary procedure, the average duration is slightly higher, though it also fell from more than 2.5 years to 1.2 years. Finally, the reforms undertaken include a set of provisions regarding pre-insolvency solutions. Before 2009 the number of early agreements was insignificant (only 4 early agreements with creditors were registered in 2006). Even if this number increased after the reform, it only represents a small fraction of all insolvencies (108 procedures were registered in 2013, that is, 1.1% of total insolvencies). Given that Spain faces significant deleveraging needs, additional reforms have been adopted in the area of insolvency (e.g. the Royal-Decree Law 4/2014) though further measures may be necessary to tackle the shortcomings of existing restructuring procedures.

Graph III.7: **Number of insolvency procedures by type**

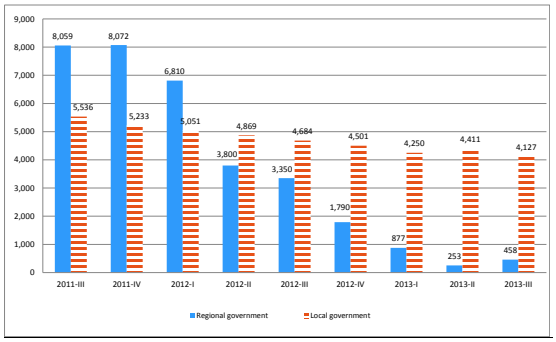


Source: Spanish National Institute of Statistics (INE)

III.2.5. Measures against late payment of commercial debts by the public administration ([18])

The government created in 2012 the Suppliers' Payment Scheme in order to decrease the large public sector arrears deriving from regions and local entities' commercial debt. Graph III.8 shows a decrease of the transactions in financial claims which stem from late payment for transactions in goods or services for regional and local governments that are a major concern for Spanish companies providing services and products to the public sector. This reduction, more significant for the regional government, has occurred in the context of the crisis, which signals to the efficacy of the adopted measures.

Graph III.8: **Late payments by regional and local administrations (million EUR)**



Source: "Trade credits and advances" from Financial Accounts, Spanish Central Bank.

([18]) See section on *The economic impact of reducing late payments* in commercial transactions.

Box III.2: **Selected reforms in Spain**

Professional services

In 2009 the implementation of the Services Directive into national law established a modern regulatory framework for professional services. Tariffs restriction were abolished (except for notaries) and professional associations were not even entitled to recommend tariff rates; restrictions on advertising were alleviated, and for some professions it became easier to exercise their activities belonging to different regulated professions at the same time. A new law on professional services and on professional organisations is scheduled to be adopted by the end of 2014. The law is planned to lift some of existing reserves of activity, leaving pending some others for subsequent regulatory developments. It will clarify competences of professional associations, also when compulsory membership is not required.

Reforms in the retail sector

The retail trade sector is subject to a wide ranging set of regional regulations, though the central government has the power to establish basic general economic rules. The transposition of the Services Directive in 2009 removed authorisation schemes (without prejudice to licences by virtue of local authorities' powers in the sphere of town planning, for example). In 2012, a new law established minimum requirements on opening hours, sales period and minimum number of holidays. More recent legislation simplifies the requirements for opening small-scale retail outlets and removes municipal licences for the premises or operation of small shops (under 750 m²).

Administrative simplification

Several reforms have been undertaken over the last years to improve the business environment, foster productivity and facilitate firms growth. One of the most recent is the approval of Law on the guarantee of market unity at the end of 2013, which aims at addressing the fragmentation of the domestic market. It rationalises and simplifies the regulatory framework on economic activities and eliminating overlaps, mainly by establishing the principle of national unique validation (which means that goods and services lawfully produced in one region can be supplied without any additional formalities in all the national territory). The law on entrepreneurship (approved in July 2013) creates more flexible company forms and introduces a series of administrative simplifications for start-ups, reducing the cost of creation of private limited companies and allowing partial debt discharge in the event of corporate insolvency. Less recent reforms contained measures to reduce administrative burden on companies, in particular by speeding up the time and simplifying procedures to start up a business. For instance in 2003 for companies and then in 2010 for individual entrepreneurs, the Spanish Corporate Law allows to start the procedures of running a business electronically.

Insolvency procedures

The Spanish insolvency system entered into force in 2004 and has been modified twice since. The aim of the revisions were to speed up the insolvency procedure, to reduce its costs and offer insight into alternatives (pre-bankruptcy proceedings or *Situación preconsursal*), which implies that business transactions can be extended to allow a company to avoid bankruptcy by merging, splitting or transferring loss-making components and allowing continuing to run the business activity. Additional measures have been taken recently to facilitate further negotiation of refinancing agreements to accelerate the deleveraging process.

Measures against late payment of commercial debts by the public administration

Spain's public sector records high payment duration and this led to the emergence of accumulated arrears in public administration payments to providers. As a consequence, in 2012 the government created the Suppliers' Payment Scheme that provided €41.8 billion of liquidity to enterprises to regularise the arrears of Regional and Local Governments prior to January 2012. Additionally on February 2013 the European Late Payment Directive was transposed into the Spanish Law. It enforced an average payment period to

(Continued on the next page)

Box (continued)

commercial suppliers of 30 days across all government levels, or, in exceptional circumstances, within 60 days.

Reform of the judicial system

In recent years, the government has implemented two big reforms on court fees and mediation, aiming at reducing the number of litigious cases and refinancing the financial deficit in the Spanish judicial system. The reform on court fees introduces new taxes or fees on judicial proceedings in the civil and labour court and courts dealing with public disputes for citizens (before the reform only firms had to pay fees in specific cases but with the reform it became mandatory also for citizens). The reform on mediation provides rules for mediation in civil and commercial matters, and in particular, the reform lays out a specific training to professional mediators; a register of accredited mediators in order to increase transparency in the mediation activity; introduces a contract of liability insurance covering potential damages resulting from the performance of mediator's duties and simplifies the electronic mediation procedure.

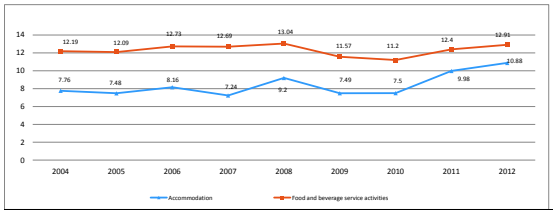
III.3. REFORMS AND MONITORING INDICATORS IN PORTUGAL

From mid-2011 to May 2014 Portugal implemented a Macroeconomic Adjustment Programme negotiated with the European Commission, the European Central Bank and the International Monetary Fund. The Programme's objectives were to restore confidence, put public finances on a sustainable footing, safeguard financial stability and enable the economy to return to balanced growth. In this context deep and frontloaded structural reforms to boost potential growth and improve competitiveness took place. In particular, the Programme included reforms of the services and network industries, the judicial system and licensing and the business environment. See Box III.3 for a summary of selected reforms.

III.3.1. Administrative simplification ([19])

In 2011 the government launched the "Zero Authorisation" project, an online procedure that simplifies business establishment by abolishing authorisations/licensing and substituting them with a declaration in an online platform. One of the expected outcomes of removing authorisation schemes is the increase in the number of companies entering the market. The evolution of birth rates in two of the economic sectors targeted by the project, accommodation and food and beverage activities, began to pick-up as of 2011 (mainly in the case of micro firms) reaching higher levels than those reported in the years previous to the economic recession, in particular in case of the accommodation sector (see Graph III.9).

Graph III.9: **Birth rates of companies**



Source: National statistics Portugal

III.3.2. Late payments ([20])

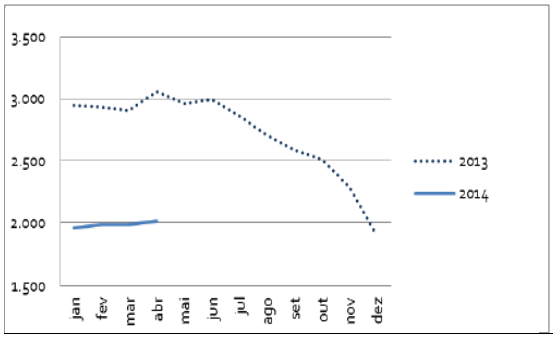
The Portuguese administration has accumulated high stock of arrears over the last years. Specific measures were deemed necessary to accelerate the payment of arrears and reduce their long-standing problem of accumulation. A strategy for the settlement of arrears of more than 90 days was adopted in the health sector, and as a result the stock of arrears was reduced and the payment time in days fell from 196 days at the second quarter of 2012 to 126 days one year later.

([19]) See section on *The impact of costs of doing business on business dynamics* which summarises estimates of the impact of "red tape" reduction.

([20]) See section on *The economic impact of reducing late payments* in commercial transactions.

Graph III.10 reports the evolution of the stock of arrears in the public administration (including all levels of the administration), where we can see its sharp decrease during 2013. All in all the total stock of arrears has been more than halved over the last 3 years (from EUR 4.3 billion in 2011 to EUR 2 billion). This reduction seems to be the consequence of the adopted measures and might have contributed to the slight decrease of the average payment duration of contracts (from 139 days in 2012 to 133 days in 2013), though still well above the limits established by the Late Payment Directive. Nevertheless, the reduction of arrears reported does not mean that an accumulation of new arrears is no longer taking place.

Graph III.10: **Evolution of the stock of arrears in the public administration (million €)**

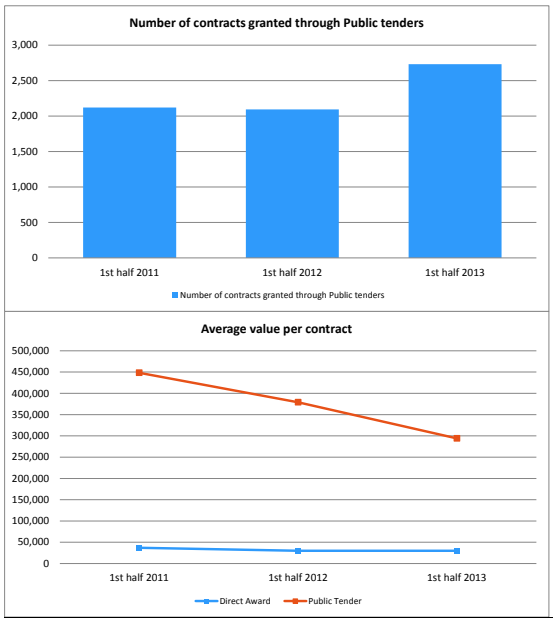


Source: Portuguese Ministry of Finance

III.3.3. Public procurement

The Public Procurement Code was amended in July 2012 to ensure compliance with the Public Procurement Directive. Graph III.10 compares the number of contracts granted through public tenders before and after the reform. ([21]) It shows that the number of public tenders has increased and the average value per contract has fallen, which is one of the expected outcomes of improving award practices to ensure a more transparent and competitive environment. One particular legislative amendment aimed at removing public foundations exemptions permitting the direct award of public contracts above the Public Procurement Directives thresholds. Preliminary data showed that the number of new contracts launched different from direct awarding in public foundations increased after the reform (from 111 to 490 for the case of the education sector which is one of the sectors most affected by the reform) and the average expected value per contract drop sharply.

Graph III.11: **Number of contracts granted through public tenders and average value**



Source: Portal BASE, Portugal

([21]) As the reform was adopted in the second half of 2012, a comparison of the number of contracts and their average value in the first halves of the years 2012 and 2013 is provided.

III.3.4. Telecommunication ([22])

Competition enhancing measures have been recently adopted in the fixed communications market. At the end of 2013, fixed broadband covered 100% of homes in Portugal (97% in the EU) and Next Generation Access capable of providing at least 30 Mbps download was available to 84% of homes (62% in the EU). However, even if overall fixed broadband penetration rate (subscriptions/100 people) increased over the last years, in 2013 it remains lower than the EU average (24.6 and 29.8 number of subscriptions per 100 people respectively). On the mobile side, the take-up rate (subscription per 100 people) of mobile broadband increases from 34% in 2012 to 37% in 2013, however it remains well below the EU average of 62%. Following the 2012 multi-band auction for the assignment of new spectrum frequencies, 4G/LTE services were introduced in the market. Finally mobile termination rates were reduced by 80%, from a price of 6.5 cents per minute to a price of 1.27 cents per minute in 3 years (beginning 2011 to 2013), putting Portugal among the European countries with the lowest termination rates after France, Denmark, Belgium.

([22]) See section on *The economic impact of digital structural reforms* on the impact of reforms.

Box III.3: **Selected reforms in Portugal**

Liberalisation of services and the regulated professions sector

The Services Directive (SD) was transposed into the Portuguese law through a horizontal law in 2010 and sector-specific amendments, with some of them still pending for adoption. An on-line platform to fully seize the benefits of the transposition of the SD as well as the Professional Qualifications Directive was made operational, which provides information about the requirements applicable to services providers and makes available on-line forms to comply with administrative procedures. In order to ensure a more open access to a number of highly regulated professions a horizontal framework law reforming professional services governed by professional associations was adopted in 2012, which needs to be followed by the enactment of the professional associations' amended relevant bylaws in conformity with the principles laid down in the horizontal framework law.

Administrative simplification

An ambitious reform agenda was developed in relation to licensing procedures, based on the principle of moving from an ex-ante approach, which requires prior verification and authorisation by the administration, towards a Zero-Authorisation approach with only ex-post compliance verification. Comprehensive legislative reforms based on this new principle have been completed in several key sectors, such as industry, commerce and tourism. In addition similar reforms in the area of environmental and territorial planning are expected to be adopted soon. Municipalities have played a key role in this context as local licensing was a major bottleneck on business.

Measures against late payment of commercial debts by the public administration

To reduce the high stock of arrears accumulated by the Portuguese administration (namely regional and local) and improve the liquidity conditions of the business sector, a strategy was adopted in 2012 for the settlement of arrears of more than 90 days, in particular in the health sector. In addition new national legislation transposing the Late Payment Directive was adopted in 2013, though there is some concern regarding its full compliance.

Public procurement

The government modified the national public procurement legal framework and improved public award practices with the aim to ensure a more transparent and competitive business environment and improve efficiency of public spending. A significant revision of the public procurement code was published on 2012 that addresses the regime for the award of additional works and services, errors and omissions; eliminates exemptions permitting direct awards; and removes the requirement to invest in R&D projects on contracts above EUR 25 million.

Telecommunications

The Portuguese authorities took clear action to open up telecom markets to competition hindered by entry barriers. A new regulatory framework was adopted, transposing into national legislation the EU Regulatory Framework for Electronic Communications, aiming at facilitating the establishment of telecom operators and cross-border communication services, and at strengthening the powers of the sectoral regulator authority. Decisive action has been taken by the national regulatory authority to lower mobile termination rates with a view to improving market functioning. Measures have been adopted to increase competition in the fixed communications market by improving the mobility of consumers. A tender procedure for the designation of universal service provider was awarded. Finally a spectrum auction took place, making available a significant amount of spectrum at the same time, and providing greater flexibility and choice to operators, thus favouring technological and service innovation and more competitive mobile markets.

(Continued on the next page)

Box (continued)

Reform of civil justice system

In the context of the Financial Assistance Programme, Portugal implemented an ambitious judicial reform. The new Code of Civil Procedure adopted in 2013 aims at expediting the court process in commercial and civil litigation and introduces measures to accelerate the closure of inactive cases. The new Judicial Organization Act, on course of implementation, aims at improving the efficiency and professionalism of court management (e.g. reduction of the number of courts, enlargement of the courts' territorial jurisdiction, a more flexible allocation of staff resources and the introduction of a national system of workload measurement and performance targets). A new law strengthening the discipline and efficiency of the enforcement profession and hasten the clean-up of long-pending cases was adopted in 2013. Since 2011 several alternative dispute resolution regimes were revised, i.e. the civil and commercial arbitration regime and the justice for the peace court regime, while others were created such as the mediation regime and the tax arbitration regime.

III.4. REFORMS AND MONITORING INDICATORS IN GREECE

Greece has been under an adjustment programme since 2010. The reform plan under the programme constitutes a comprehensive short- to long-term agenda for growth and employment. While the programme still pays strong attention to the stabilisation of public finances and of the financial system, it also puts great emphasis on the implementation of a wide range of structural reforms to create new opportunities for investment, innovation and employment. ([23])

The current reform agenda is ambitious and addresses critical areas that affect the business environment. The reform of the public administration in order to be more effective and efficient is one of them; the judicial system with the aim to facilitate the business environment is another, and reforms that facilitate the ease of doing business in the country, is a third. Product market reforms are a key part of the policy package. These reforms have advanced in key areas in support of the business environment during 2013. Barriers to competition have been removed in the sectors of building material, food processing, retail trade and tourism. Licensing procedures are being overhauled, reforms of trade facilitation have been stepped up and the authorities have taken measures to improve land use for economic development. A selection of reforms addressing the business environment as well as indicators showing that business regulation has indeed being simplified is presented in Box III.4. Unfortunately, monitoring indicators of the actual take-up of reforms are scarce and the Box includes only one indicator that allows for some monitoring of efforts in the professional services front.

Yet, a lot needs to be done still. In some cases, legislative reforms are still ongoing or legislative reforms have been adopted on paper but the public administration is still adjusting to the new regimes. Once fully and effectively implemented, these reforms will contribute to improving competitiveness and in a longer term would boost growth. What is also at stake is to identify an effective monitoring mechanism for their implementation in order to ensure that concrete improvements are achieved on the one hand and to secure that the country will reach its ultimate growth targets on the other.

([23]) See European Economy. Occasional Papers. 192. The Second Economic Adjustment Programme for Greece. Fourth Review. April 2014:
http://ec.europa.eu/economy_finance/publications/occasional_paper/2014/pdf/ocp192_en.pdf

Box III.4: Selected reforms in Greece

Addressing red tape ("ease of doing business")

Greece is making a significant effort to improve the business environment by reducing administrative burdens and addressing structural problems. In order to overcome the fragmentation in business registration procedures and databases, the Government launched on April 4, 2011 the General Electronic Commercial Registry (GEMI). Serving 2,200 notaries and the 59 Chambers of Commerce, this system provides a unified registry of companies. GEMI has registered all companies created since April 4, 2011 and re-registered companies created previously. Through the so-called one-stop shop, GEMI allows the electronic processing of scanned copies of documents for business creation and the profiling of company details via the business database (www.businessportal.gr). GEMI is also connected to TAXIS, the tax authority's electronic database for the provision of the company's tax identification number and the entrepreneur's tax certificates.

Apart from simplifying the procedures for business registration, Greece also established a new company type. As part of the Business Friendly Greece law of 2012, Greece introduced a new form of limited liability company ("IKE") with no minimum capital requirement. Such companies also benefit from additional simplifications, such as no social security certificate, no documentation of the official company seat and no mandatory drafting of articles of association by a notary. These reforms had a significant impact in the international ranking of the country:

- The World Bank's Doing Business report highlighted Greece's reforms to simplify starting a business through the creation of GEMI and the introduction of a new limited liability company with no capital requirement which allowed Greece to close the gap towards global best practices during July 2012 to June 2013, and jumped 110 ranks to 36th position among 189 countries. This is Greece's best ranking among the 10 dimensions of ease of doing business. Greece closed the distance to the frontier, defined as the best performance across all economies across time, from 33 percent in the Doing Business Report 2011 to 11 percent in the Doing Business Report 2014.
- The simplification of business registration has reduced the time needed to set up a company since early 2013, with the exception of the Societe Anonyme (Public Limited Company) which saw little change. In addition, the reforms have made the setting up of a company less costly.
- Among the limited liabilities types of companies, IKE has become the most popular type, since early 2013. Apart from the absence of a minimum capital requirement, and the short start up time also the costs went down. The estimated administrative burden and charges for setting up an IKE company are EUR116, compared to close to EUR 300 for a regular limited liability company.

For further simplifications of business registration, better coordination of key agencies will be important. This would involve the coordination of system development, upgrades and new services, as well as the integration of data management and sharing across key agencies.

Professional Services (Liberalisation of Professions)

Closed professions were a major source of large rents and economic inefficiencies. The regulations on professional services were among the strictest in the EU and OECD countries. This curbed competition, kept firm size small and held back innovation. Strict regulations also translated into high mark-ups and high prices of professional services. This increased the transaction costs of firms and lowered the purchasing power of consumers. The country introduced framework legislation (Law 3919/2011) in February 2011 to establish the principle of professional freedom. The legislative changes abolished in principle, fixed prices or compulsory minimum fees and the requirement for an administrative license to practice a profession, substituting instead a simple notification accompanied by the necessary supporting credentials.

The professional services regulation index of the OECD provides quantitative evidence on the reforms. It focuses on legal changes for four professions without evaluating the degree of implementation. According to OECD indicators, the regulations of professional services in the country were significantly loosened from

(Continued on the next page)

Box (continued)

2008 to 2013, although legal professions remain highly regulated. In 2014, the Government has adopted legislation to open mediation to non-lawyers and intends to assess notaries' fees to align them with best practices in the EU.

An assessment of the liberalisation of 20 professions through the 2011 law by the Centre of Planning and Economic Research (KEPE, 2013) shows that the reforms liberalised professions substantially. The regulation index, which ranges from zero (no restriction) to 12 (maximum restrictions) declined on average from 5.8 before the reform to 2.3 after the reforms. As a result, 74 percent of the restrictions of the 20 professions were abolished. For non-scientific professions, the share went up to 83 percent. While regulations remained high for some professions, especially legal professions, the report argues that the remaining restrictions were broadly justified in view of the special nature of the services offered.

Regarding the monitoring mechanism, the country has a long way to go but some steps have been made towards the right direction: the Ministry of Finance has started to monitor the evolution of professions (number of new entries) since 2011. The table below shows the progress of certain professions since 2011. As seen, the number increased for most professions, such as accountants, tax consultants or travel agents, in spite of the economic crisis, maybe an indication that that reforms are helping to open access for new professionals.

Number of Professionals

Professions	2011	2012				2013			
		Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
Auditors	983	1,049	1,050	1,050	1,050	1,012	1,037	1,037	1,037
Audit firms	28	39				42			
Accountants and tax consultants	66,072	68,212				68,849	69,507	70,293	
Energy inspectors of buildings	5,453	5,466	7,763	8,250	8,412	8,479	8,505	9,292	
Energy inspectors of heating systems	3,598	3,598	5,339	5,708	5,822	5,872	5,892	6,033	
Energy inspectors of air conditioning systems	3,370	3,371	5,071	5,439	5,552	5,600	5,620	5,735	
Travel agents	4,105	4,094	4,128	4,124	4,079	4,107	4,235	4,279	4,328
Tourist guides	1,904	1,909	1,913	1,915	1,915	1,916	1,920	1,990	1,997
Private labour consultancy offices	93	95	88	89	89	89	86	86	85
Custom brokers	2,369	2,211				2,108			
Real estate agents	5,050	5,066	5,047	5,039	4,986	5,001	5,015	5,029	5,053
Actuaries	74	74	77	77	77	77	81	81	81
Chartered valuers		11	11	11	11	9	81	158	201
Geo-technicians (agronomists)	19,597	19,518	19,705	19,844	19,952	20,089	20,198	20,296	

Source: Ministry of Finance

Although Greece has advanced in the liberalisation of profession in recent years, the liberalisation was uneven across professions and further progress will depend on tackling remaining rigidities, ensuring a swift implementation of legislation and monitoring the effectiveness of reforms to identify needs for further adjustments.

IV. THE TRANSMISSION CHANNELS OF THE EFFECTS OF REFORMS

When assessing the impact of structural reforms it is usually assumed that the transmission channels of the effects of reforms are fully and smoothly working. Although not necessarily the case, the assumption is typically not tested. This can be problematic given that lack of properly-working transmission channels would necessarily hinder the impact of structural reforms.

How are the effects of product market reforms transmitted?

- Reforms that liberalize or improve the functioning of product markets have an effect on *firm-level productivity*, and thus on growth. The effect, which is typically triggered by pro-competitive ([24])pressure from new firms, or by the threat of it, is transmitted by reallocating production factors within the firm and cutting slack in the use of resources, by capital deepening, and by experimenting and innovating thus creating new products and services. ([25])

- Competitive pressure drives inefficient firms out of business: less productive firms are pushed out of the market while more efficient ones grow and gain market share. ([26]) This *between firms reallocation* leads to further efficiency gains. Continuous reallocation is a key feature of well-functioning market economies as, at any point in time, aggregate productivity will be higher if the most productive firms are also the largest. For this to happen, resources have to be reallocated away from less productive to more productive business and activities over time. The key mechanism behind this reallocation is firm turnover, which allows shifts in resources across incumbent firms and resource reallocation within firms. Clearly, this resource reallocation takes place to the extent that firm turnover is responsive to product market reforms and that this increased competition – also potential- is translated in lower prices and mark ups, which themselves represent consumer gains.

- *Across sectors resources reallocation* will also take place, particularly as sector-specific reforms attract resources towards them.

- *Knock-on effects* as sector-specific reforms spread throughout the rest of the economy. Backward and forward linkages disseminate efficiency gains and savings in a given sector via: i) increases in demand for inputs used in its own production or *pull* effect; ii) its role as intermediate input in the production of other sectors, for example by lowering costs and providing higher quality, better inputs or *push* effect.

Table IV.1 presents stylised reforms targeting the business and institutional environment and sectoral framework conditions. The table provides an attempt to identify the effects of structural reforms in product markets on a number of economic variables, by describing potential transmission channels. Some of the reforms directly affect the competition environment through the impact on entry or exit barriers: entry regulation (e.g. licensing, educational requirements); regulation on form of business and minimum capital requirements; regulation of retail trade (e.g. licensing to engage in commercial activity/ specific regulation for large outlets); unbundling regulation in network industries; reform of bankruptcy/insolvency procedures. Other reforms act more indirectly on business demographics (entry, growth and exit of firms) by improving the business and institutional environment in which firms operate. This is the case of reform aiming at a more efficient judicial system (e.g. reducing civil justice costs and time) and at an effective sectoral regulatory and competition framework (e.g.

([24]) Interest in competition as one of the main driver of efficiency improvements, was revitalized by the so-called neo-Schumpeterian theories of growth. These theories focused on the positive effect of new entry and enhanced rivalry among incumbents on technology adoption and, through it on innovation and growth.

([25]) Productivity gains from innovation (dynamic efficiency) would materialize in the long term. There are other views about the link between competition and innovation: increased competition could also lead to a decrease in innovation activity if reward to successful innovators is reduced beyond the point of decreasing incentives to innovate (inverted U shaped relationship).

([26]) Firms experiencing higher than average productivity growth are likely to gain market shares if the productivity gain goes along with upsizing, whereas they will lose market shares if their gain was driven by a process of restructuring associated, instead, with downsizing.

Table IV.1: **Reforms, transmission channels and expected direction of effects**

	Firm level						
	Short term				Long term		
	Entry	Prices	Margins	Exit	Productivity	Reallocation	Knock-on
Reduction of entry regulation	+ (if profit margins are high)	- (due to entry or threat of entry)	-	+	+	+	+
Streamlining insolvency procedures	+	+/-	+/-	+	+	+	+
							+
Improving efficiency of civil justice	+	-	+/-	+/-	+	+	+
Liberalizing services							
-entry	+ (if profit margins are high)	- (due to entry or threat of entry)	-	+	+	+	+
- deregulation of prices and fees	+ (if regulated prices/fees were below market and prices increase)	+/- (depending on whether regulated prices were below or above market)	- (if regulated prices were above market level)		+	+	+
Telecommunications (broadband)	+	-	-		+	+	+
Late payments				-			+
Public procurement	+	- (savings for the administration)	-		+	+	=
Competition framework	+	-	-		+	+	

(1) + identifies a positive impact; - identifies a negative impact; +/- an ambiguous impact; = no impact.

independence of competition authority and regulators). ([27])

Table IV.1 also distinguishes short term and first round effects or *triggers*, which are typically firm-level effects from long-term effects such as productivity increases at firm level and intersectoral impacts such as reallocation of resources across sectors and knock-on effects. All the reforms are expected to have a positive indirect impact on productivity, although the transmission chains through which they are supposed to affect productivity may differ.

If the functioning of the transmission mechanisms is hampered, the full effect of the reforms won't materialize. Well-functioning transmission mechanisms needs that firms can enter and exit without hurdles; that prices and mark-ups are flexible enough to properly act as a signalling device; that the most productive firms grow without impediments; and that reallocation of resources takes place towards the most productive uses and activities (within firms, between firms and across sectors). Often the bottlenecks originate in other policy domains, mainly financial and labour market conditions. New firms won't enter the market and the most productive ones won't grow if access to finance is constrained, or if a too-rigid labour market makes it difficult for firms to hire and expand or to fire and downsize. Likewise, the effects of labour market reforms could be hindered by the existence of barriers for firms to start and operate a business or to grow. Being aware of these "complementarities and interactions" across policy areas is important when assessing the impact of reforms.

What can be said about the operation of transmission channels in Greece, Spain, Italy and Portugal? In order to assess the extent to which the aforementioned transmission channels work, a deep country-specific analysis is required, something beyond the scope of this report. Just to give a flavour to it, a simple approach based on descriptive indicators that can only be a timid and incomplete way to address this question, is pursued next. For example, employment figures associated with the birth and death of firms can shed some

([27]) This is crucial to ensure that competition enhancing reforms deliver the expected results (e.g., a smooth pass-through of cost reduction to final prices if collusive practices are in place). Weak sectoral regulators and competition authority could translate into uncompetitive practices not being denounced, prosecuted and tackled; and therefore possible solutions not being enforced (particularly in network industries).

light concerning for example easiness to entry and the extent to which the reallocation process responds to entry and exit of firms and to expansion or contraction of existing firms. ([28]) Next section turns quantitative and reports on a number of indicators that signal how countries are adjusting to the crisis and to the reforms undertaken. Some of the indicators can be seen as reflecting the functioning of transmission channels.

Graph IV.1 shows the evolution of an indicator measuring employment created by new firms, destroyed by exiting firms as well as the net employment associated to the expansion or contraction of existing firms. There are some interesting findings emerging:

- New firms exhibit a strong capacity to create new jobs (panel a), and, although this decreases during the crisis, even in the downturn new jobs are created by newly born firms. It is important not to lose sight of the qualitative importance of firm births: new firms break into markets to meet new, as well as old, demand segments often with innovative products and services and are the engine of industrial renovation and the solid foundation for future growth and jobs. Employment creation from new, young firms was however significantly lower in Italy well before the crisis hit Europe. A signal of a static economy?

- Portugal exhibited a strong capacity to create employment from new-born firms before the crisis but also afterwards. ([29]) It also showed a strong capacity to destroy employment via the closing down of inefficient firms

- Surprisingly, the crisis has not significantly changed the contribution of dying firms to employment losses (panel b) in Italy. On the contrary, the rate of destroyed employment over total employment has decrease since the starting of the crisis. This could signal barriers for less efficiency firms to exit the market.

- The net employment effect of entry and exit is modest compared to the employment change driven by the activity of existing (surviving) firms that expand or contract.([30]) Before the crisis, surviving firms expanded and created employment (panel d) in the three countries. The impact of the crisis on the restructuring of surviving firms is dramatic and, notably in Spain since 2008. In Italy and Portugal the surviving firms employment creation is hit by the crisis only in 2009.

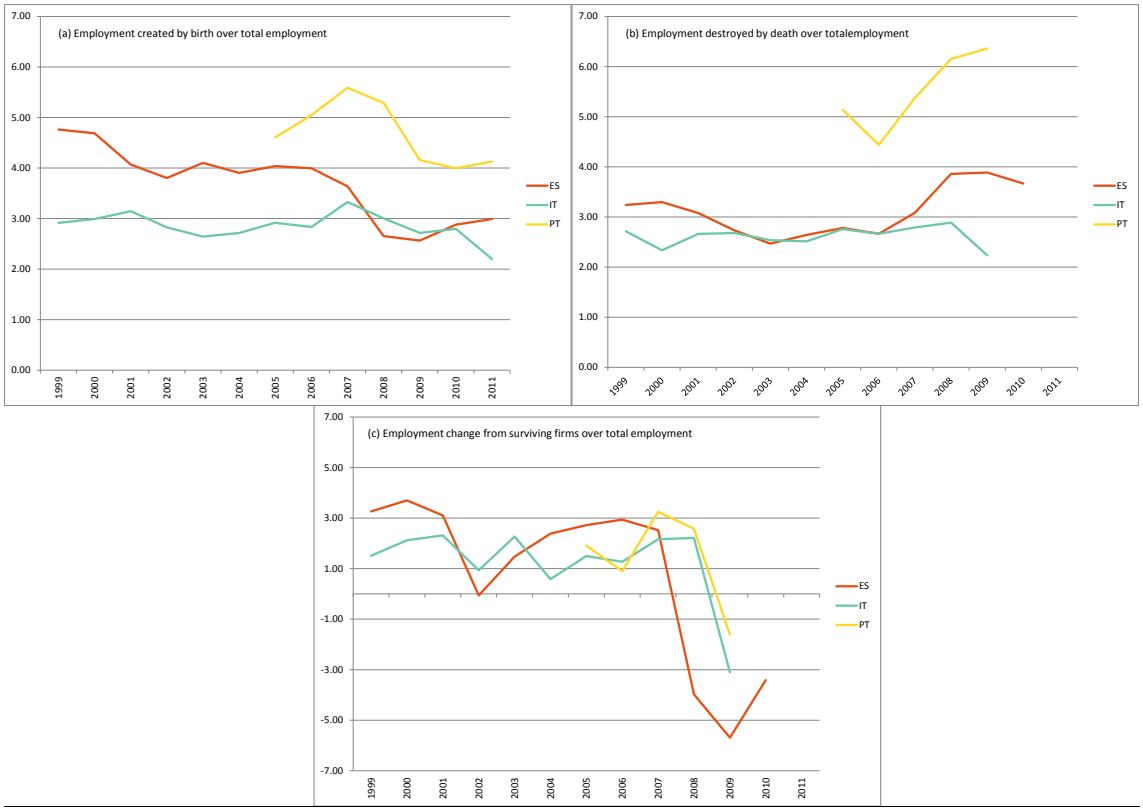
Both the Spanish and the Portuguese economies show a larger capacity than Italy to create employment from new firms as well as from surviving firms that adjust by expanding. The two economies also show a larger capacity to destroy employment via firms that exit the market or that downsize employment. This was clear already before the crisis in Italy that showed subdued employment changes from entry, exit and growth of firms.

([28]) Employment changes are driven, in fact, by firms' churning (entry and exit of firms) and/or by expanding or contracting firms.

([29]) As seen in Table II.2 (heatmap) regulation related to entrepreneurship and starting a business was relatively low in Portugal.

([30]) Note that employment considered is related to the activity of firms born during the year in question and during the first year of life the number of employments created is expected to be relatively low.

Graph IV.1: **Business dynamics and employment**



Source: Eurostat

V. THE ECONOMIC IMPACT OF SELECTED REFORMS

This section assesses the economic effect of the selected reforms. The econometric work carried out is a significant step towards a culture of more rigorous assessment of structural reforms in an area as broad and heterogeneous as product markets. Reform areas analysed are associated to the general business environment, have a sectoral nature or directly affect the functioning of transmission mechanisms. The full effect of the reforms may not yet be visible but an assessment of their potential effect suggests that the gains are expected to be significant. The cut-off dates for the different reform areas vary depending upon data availability.

The previous section proposed a number of indicators to monitor efforts based on available data at national level of *first signs* of the actual take up of reforms. Using descriptive statistics illustrated that indeed countries seem to be reacting to the measures implemented. However useful they might be to monitor efforts and reform progress, descriptive indicators cannot establish a causal relationship between the measures and the observed economic outcome. In this section the empirical approach is taken one step further by econometrically estimating the potential effect of reforms in a number of relevant policy areas.

Reflecting the complexity of the task, a pragmatic approach is followed and the estimation of the reforms' impact uses different methodologies, different datasets and different dependent or outcome variables. There are however common elements such as the emphasis on the transmission channels of the effect of the reforms, which from a methodologically viewpoint implies using a two-step approach to capture them.

Given the micro-flavour and emphasis on transmission mechanisms, regression analysis is used to estimate the potential, expected effects of reforms on key microeconomic variables such as firms' entry or exit rates and productivity. Eventually, the results can be transformed into policy shocks feeding general equilibrium models. So far, this is done only for the case of reforms in the telecommunications sector for which overall GDP effects are also reported. Table V.1 gives an overview.

Due to the lack of sufficient country-specific information over time, the econometric analysis carried out takes advantage of all available information across EU countries. This has some advantages (economies of scale by pooling data) but also disadvantages, as estimated coefficients measuring sensitivity to reforms are not country-specific. Country specific impacts are then obtained by combining estimated elasticities with country-specific indicators of reforms. Note however that often the reforms assessed translate into sizable changes in their reform indicator which in turns leads to large economic impacts. The estimated effect in such cases should be considered as an approximation as elasticities are consistently estimated for small changes.

An important caveat to bear in mind is that the predicted values of the economic variables may not coincide with the observed values. This is due to the fact that the elasticities used to estimate them are obtained on the base of an “other things being equal” assumption, i.e. if all the other (observed and unobserved) determinants are assumed to be constant. It is also important to bear in mind that the effect of reforms should not be compared across different policy areas for a single country: i) the exercises are done *ceteris paribus* and thus synergies across reforms are not captured; ii) the econometric specifications are different across reforms, often reflecting the pragmatic approach imposed by data limitations as updated and reliable information on the intermediate, microeconomic and sectoral variables needed was not always available.

Table V.1: **Reforms which impact is estimated**

Policy field	Reform	Reform variable	Effects estimated	Model estimated /data
Business environment	**Red tape reduction to start a business and to export**	- Change in cost and number of procedures to start a business (WB Doing Business) - Change in days to start exporting (WB Doing Business)	Impact on sectoral entry rates of cost and number of procedures to start a business and of time to export	Fixed effects linear model (with AR(1) disturbance term) Data from 12 industries across 17 European countries over the period 2004-2010.
Business environment	**Improving efficiency of civil justice**	- Changes in civil justice "supply-side" factors: e.g. average number of judges per court, ICT investment in court - Changes in factors affecting the demand for civil justice, as measured by litigation rate	First step: impact of judicial reforms on efficiency variables (disposition time and backlog ratio) Second step: impact of efficiency variables on economic performance (firm entry/churn rates, net FDI inflows)	Panel regressions. Dimensions: time (2006, 2008, 2010), and country (46)
Business environment	**Late payments**	Change in payment duration	Impact on exit rates	Panel regressions. Dimensions: sectors (9), time (2005-2010), and country (17MS)
Services sector liberalization	**Reduction of regulatory level in professional services**	Changes in PMR entry and conduct regulation (legal, accounting, engineering, architectural services)	Impact of changes in entry regulation and conduct regulation on business dynamics and through it on profit rates and on the share of productive factors allocated to most productive firms	Two-step approach that allow testing for the role of transmission channels. In both stages fixed and random effect models are estimated. Data for 4 professional activities, 15 to 19 European countries over 2008-2011
Services sector liberalization	**Implementation Services Directive**	Changes in sector specific barriers (for 15 services sectors covered by the Directive)	Impact of total or partial abolition of restrictions on productivity	Panel regressions. Dimensions: services sectors (15), time (pre-SD), country (27MS)
Digital	**Radio spectrum frequency assignment**	Progress in spectrum assignment across 5 harmonized frequency bands	Impact of increased assignment of radio spectrum frequencies on sectoral retail prices, both direct (through innovation) and indirect (through reduced market concentration). Also overall GDP effects	Panel regressions. Dimensions: time (2006-2013) and country (27MS). General equilibrium GDP effects using QUEST model
Digital	**Enhancing professional e-skills**	Employment share of ICT-skilled workers	Impact on allocative efficiency. Also overall GDP effects	Panel regressions. Dimensions: sectors (4), time (2000-2010) and country (27MS). General equilibrium GDP effects using QUEST model
Digital	**Incentivizing fixed broadband deployment**	Increased use of broadband technologies	Impact of use of broadband technologies in a professional setting on firm-level productivity and thereby on TFP. Also overall GDP effects	Elasticities from existing estimates in the literature. General equilibrium GDP effects using QUEST model
Digital	**Digital Single Market and e-business models**	Increased recourse to e-sales	Impact of increased recourse to e-sales among firms on productivity and impact on consumer surplus of higher recourse to e-sales (through a competition effect). Also overall GDP effects	Elasticities from existing estimates in the literature. General equilibrium GDP effects using QUEST model

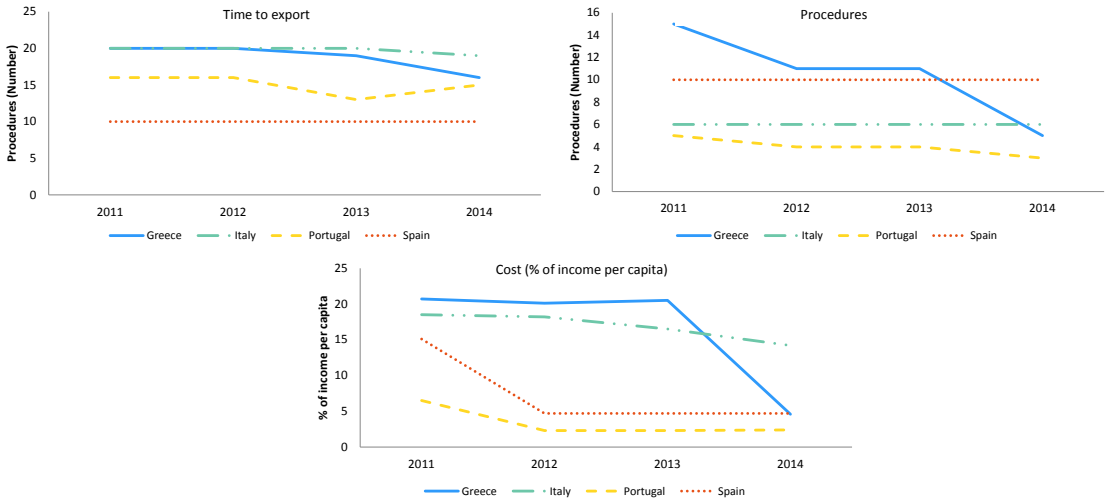
V.1. THE IMPACT OF COSTS OF DOING BUSINESS ON BUSINESS DYNAMICS ([31])

The results show that red tape reduction has a significant impact on entrepreneurship, stimulating the creation of new firms with Portugal showing the larger gains since 2011. Leaving aside some progress in reducing entry costs, Italy is the country showing the lower reform effort in this area. This despite the fact that entry costs and time to export are still high and that entry rates in Italy are low (6.7% compared to 13.4% in Portugal in 2011 as seen in Graph IV.1). It is therefore the country that has potentially benefited the least from reforms in this area. The reform effort refers to changes in World Bank Cost of Doing Business indicator between 2011 and 2014.

This section focuses on "red tape" entry barriers, a specific kind of reforms that, affecting directly the cost of entry, is supposed to "quickly" influence business dynamics. These are reforms affecting the administrative regulations and bureaucratic

([31]) Section based on Ciriaci (2014).

Graph V.1: **Cost of doing business**



Source: World Bank Doing Business Dataset

procedures to start a new business and export as reflected in the World Bank Doing Business dataset. ([32])

Although being the most common used source of data on the cost of doing business, due to the high level of homogeneity and annual availability, a shortcoming of using these indicators is that they are not directly linked to reforms, but are rather the outcome on the business environment of reforms streamlining and simplifying the cost of doing business. Graph V.1 shows the evolution of the three indicators over time. Greece is the country showing the largest decline in the three "red tape" entry costs indicators. Some improvement is observed in Spain and in Italy for the cost to start a business indicator, though a very mild one in Italy. ([33])

The estimation of the relation between sectoral entry rates and “red tape” costs confirms that, over the period 2004-2010, entry rates significantly reacted to changes in entry costs, in the number of procedures needed to start a business and in the easiness to export (see Box V.1). The average elasticities estimated can be used to predict how much entry rates may change if a certain decrease in red tape costs occurred after 2011, that is the last year for which data on entry rates were available. Therefore, as between 2011 and 2014 Italy, Portugal and Spain, have introduced reforms affecting the easiness of doing business, it is possible to estimate “out of the sample” the impact of these changes on entry rates for each of these four countries, i.e. to predict their potential impact on entry rates. Table V.2 reports the observed entry rate in 2011 (column 1) and the predicted entry rate in 2014 if the observed changes in the "cost of starting a business", in the "number of procedures needed to start a business", and in the "number of days needed to start exporting" are considered. The effects are the combined effects of changes in the indicators. ([34])

Therefore, *other things being equal*, the combined effect of the observed reduction in the cost of starting a business and in the number of days

([32]) This source records all procedures officially required, or commonly done in practice, for an entrepreneur to start up and formally operate a business, as well as the time and cost to complete them and the paid-in minimum capital requirement. It also looks at the time, cost and documents necessary to export and import a standardized cargo of goods.

([33]) The observed decrease in the cost of starting a business is likely the result of the reform effort of the Spanish Government in recent years. This effort is still on going as the entry into force of the Entrepreneurship law (14/2013) shows. The law has reduced barriers for start-ups and created a limited liability company "in formation" (with lower capital requirements).

([34]) It is not possible to calculate the combined effect of a change in the cost of starting a business, in the number of procedures needed to start a business and in the number of days needed to start exporting because the elasticities of entry rates to the cost and number of procedures needed to start a business are obtained from two different equations due multicollinearity problems.

needed to start exporting is a potential increase in entry rates that ranges from a 1 pp in Spain to 0.5pp in Italy. The increase is 0.7pp in Portugal. Concerning the effect of the observed reduction in the number of procedures needed to start a business and in the number of days needed to start exporting, the potential increase in entry rates is again the largest in Portugal (1.2pp). The predicted impact on entry rates is a slight reduction in Spain (-0.2pp) and it is null in Italy that has not experienced any improvement in these two indicators over the last years.

Table V.2: **The impact of reforms of the easiness of doing business on entry rates**

Country	Entry rate in 2011 (%)	Potential entry rate in 2014 (%), cost to start a business & time to export change	Potential entry rate in 2014, if number of procedures to start a business and time to export change
Portugal	12.4	13.1	13.6
Spain	7.9	8.9	7.7
Italy	6.7	7.2	-

Source: EC calculations. "- ": no change in the doing business indexes have been reported

The general conclusion is that entry rates in Europe have positively and robustly reacted to changes in red tape entry cost which have been introduced during the period 2004-2011. This key channel of business dynamics has shown to *work*, even in crisis time, suggesting that further steps in this direction will significantly increase entry rates further leading, *ceteris paribus*, to a more efficient allocation of resources. Given the established positive link between, on the one side, business dynamics and, on the other side, allocative efficiency and productivity, these results confirm that the former channel is able to transmit the effect of reforms easing entry and exporting on the whole economy. The extent to which this effect is translated into productivity increases will be the object of further analysis but a back of the envelope calculation illustrates the potential effect that increasing entry rates may have on productivity: according to Cincera and Galgau (2005) a 1% increase in entry rate leads to a rise in labour productivity by 0.60%.

Box V.1: The impact of costs of doing business on business dynamics

The analysis explores the relation between sectoral entry rates and changes in "red tape" costs (proxied by the cost of starting a business, the number of procedures needed to start a business and the days needed to start exporting at time t-1). The sample comprises 17 European member countries during the period 2004-2011 and 12 industries. A fixed effect model has been estimated:

$$Entry_{s,c,t} = \beta_0 + \beta_1 sb\cos t_{s,c,t-1} + \beta_2 time\exp_{s,c,t-1} + \beta_3 govdelay_{c,t} + \beta_4 size_{s,c,t} + \beta_5 vagrowth_{s,c,t} + w_{c,t} + \varepsilon_t \qquad EQ(1)$$

$$Entry_{s,c,t} = \beta_0 + \beta_1 sbproc_{s,c,t-1} + \beta_2 time\exp_{s,c,t-1} + \beta_3 govdelay_{c,t} + \beta_4 size_{s,c,t} + \beta_5 vagrowth_{s,c,t} + w_{c,t} + \varepsilon_t \qquad EQ(2)$$

where *Entry* is the ratio between the number of new firms and the total number of firms in sector *s*, in country *c*, at time *t*; *sbcost* is the cost of starting and formally operate a business expressed as % of income per capita; *sbproc* is the number of procedures needed to start and formally operate an industrial or commercial business; *time exp* is the time needed to export expressed in calendar days. Control variables include *govdelay* that measures the average Public Authorities' payment delay in days; *size* is the average sectoral firms' size; *vagrowth* is the growth rate of industry value added used to control for expanding and contracting industries and as a proxy for market profitability; $w_{c,t}$ is the country/sector fixed effect. Among the regressors a lag for entry rate is also included. The choice of estimating two separate fixed effect models equations instead of only one was due to the problems of multicollinearity emerged during the analysis if sbcost and sbproc were included at the same time. Results, reported below, were robust to different specifications.

The empirical evidence suggests that for any additional one percentage point decrease in the cost of starting a business, which is expressed as a % of per capita income, the entry rates increase will be 0.00157 on average. Concurrently, it is expected that, for any one unit decrease in the number of procedures needed, the average increase in entry rates will be 0.00285. Finally, a decrease of one day in the average time needed to conclude the procedures to export will increase entry rates by between 0.00282 and 0.00295. Although, at first sight, these average elasticities of entry rates to changes in "red tape" barriers may seem negligible, once used in conjunction with the real changes occurred in the four countries in the cost and number of procedures needed to start a business and in the time needed to export, they are not.

	Model 1	Model 2
Lagged birth rate	0.239***	0.245***
	(0.0392)	(0.0391)
sbcost	-0.00157**	
	(0.000627)	
tabtimeexp	-0.00295**	-0.00282**
	(0.00123)	(0.00126)
sbproced		-0.00285*
		(0.00148)
govadjdelay	-0.0249***	-0.0224**
	(0.00945)	(0.00936)
Observations	805	805
R-squared	0.098	0.094
Number of id3	184	184

Standard errors in parentheses *** p<0.01, ** p<0.05, * p<0.1

V.2. THE ECONOMIC IMPACT OF SELECTED JUSTICE REFORMS ([35])

Improving the efficiency of civil justice, for instance by improving courts' case management and by enhancing the use of alternative disputes resolution methods, might affect the economy through different channels, among which entry rates and FDI attraction. The observed reduction in disposition time –an indicator of civil justice efficiency– between 2010 and 2012 might be related to an increase of firms' entry rates by around 1 percentage point in Spain and in Portugal. Although some indicators have worsened in Italy, recent reforms in 2012 entail a significant potential for improving judicial efficiency, namely by reducing average disposition time and backlog ratio, which in Italy are significantly higher than the European average. Judicial efficiency indicators have drastically worsened in Greece and have only started to improve in 2013, ([36]) a result which may be associated to the wide-ranging reform of the judicial system underway in the context of the adjustment programme.

The national justice systems play a key role in restoring confidence and the return to growth. An efficient and independent justice system contributes to trust and stability. Predictable, timely and enforceable justice decisions are conducive to an attractive business environment. Access to an effective justice system is crucial for the effectiveness of all EU legislations, in particular those that contribute to growth. For example, national courts play an essential role in enforcing EU competition rules and other EU legislation crucial for the Single Market, for instance in the areas of electronic communications, intellectual property, public procurement, environment or consumer protection. Indeed, effective contract enforcement, protection of (intellectual and other) property rights, well-functioning insolvency procedures, the availability of alternative dispute resolution methods, etc. all contribute to smooth business operations. For example, we would expect firm entry and growth rates to be higher, and exit of companies smoother in countries with more effective justice systems.

In recent years, the relationship between the functioning of the justice systems and economic performance has been widely investigated. The focus of most empirical literature is usually on *efficiency* indicators (such as disposition time or clearance rates) as dependent variables. However, most studies are country-specific, exploiting regional/provincial variation in those indicators: this means that their results cannot be generalised beyond the country level, unless under strong *caveats*. ([37])

In order to assess the impact of justice reforms in the EU, one should take into account that they generally target, on the "supply" side, the *organisation* and *quality* of courts functioning (e.g. their number and size, the number of judges and their degree of specialisation, the in-court ICT intensity, the efficiency of the case-management system, etc.) or, on the "demand" side, the *incentives* to bring a case to court (e.g. court fees, criteria for appeals, availability of alternative dispute methods, etc.), rather than *efficiency* per se. In view of that, it is hereby proposed a two-step econometric analysis to estimate the impact of judicial impact of judicial reforms (see Box V.2 for details). In the first step, the impact of selected judicial reform variables on the performance of the civil justice system is estimated (e.g. in terms of average disposition time ([38]) and backlog ratio ([39]), both referred to first instance civil and commercial litigious cases).

([35]) Based on Lorenzani and Lucidi (2014).
([36]) According to data from Greek Ministry of Justice Quarterly Data; see Greece Compliance Report April 2014.
([37]) For instance, many studies focussed on IT and ES, as in García Posada and Mora-Sanguinetti (2013); and Giacomelli and Menon (2013). An exception is represented by OECD (2013) providing pioneering cross-country evidence on this issue.
([38]) The disposition time is an estimated indicator of average trial length, comparing the number of resolved cases during the observed period and the number of unresolved cases at its end. It is computed as the ratio of pending by resolved cases, multiplied by 365.
([39]) The backlog ratio measures the number of unresolved (pending) cases at the end of the period as a ratio to population (100,000 inhabitants). It gives an idea of the stock of unresolved cases, whose magnitude is inversely correlated to the capacity of a judicial system to efficiently enforce obligations and rights.

Box V.2: Estimating the impact of civil justice reforms

The dataset used for the analysis has been constructed starting from the biannual CEPEJ (European Commission for the Efficiency of Justice) reports, covering the years 2006, 2008, 2010. The CEPEJ sample is not limited to the European Union, as it also includes non-EU members of the Council of Europe (46 countries in total). The full dataset has been used in the econometric analysis, in order to gather a sufficient number of observations and achieve robust inference.

In the first step, two civil justice efficiency indicators have been considered as dependent variables: the disposition time (a measure of average trial length) and the number of pending cases per 100,000 inhabitants (a measure of caseload backlog, which we label as *backlog ratio*), both referred to first instance civil and commercial litigious cases. Explanatory variables include the average number of judges per court (i.e. a "supply-side" variable) and the average litigation rate (i.e. a "demand-side" variable), as well as control variables for structural factors, such as the legal origin of each national judicial system, as in Djankov et al. (2003). Time dummies have been included in order to control for common cyclical shocks, as well as individual effects (in panel specifications) to take into account country-specific time-invariant factors. Some estimates also include further supply-side explanatory variables, for instance related to ICT intensity in courts. As for the estimation method, both pooled OLS and panel regressions (RE and FE models) have been run. In order to account for possible endogeneity issues, estimates have also been run in an instrumental variable (IV) setting. Indeed, reforms cannot be considered exogenous, as far as their implementation might depend on the evolution of outcome variables, such as a worsening of the disposition time (this hints at a reverse causality issue). For instance, when explaining disposition time with the average court size, population density and the proportion of population living in rural areas (which can safely be considered exogenous) have been used as instruments: the assumption, confirmed by the data, is that courts tend to be more diffused, and thus smaller, in the presence of sparse population.

In the second step the impact of the above-mentioned judicial efficiency indicators on relevant economic outcomes, including business dynamics and foreign direct investments, has been estimated. Dependent variables include sectoral entry and churn rates ([1]), as well as national net inflows of foreign direct investments ([2]). Among control variables, the following are included: i) in equations explaining business dynamics, the average firm size and value added growth at sectoral level; ii) in equations explaining FDI net inflows, the openness of the economy (measured by the sum of import and export as a ratio to GDP) and GDP growth. Both pooled OLS and panel regressions (FE and RE models, with AR(1) disturbances in the case of business dynamics variables) have been estimated.

([1]) The entry rate is defined as the ratio of new firms to the total number of firms in a sector. The churn rate is defined as the sum of the entry rate and the exit rate (ratio of firms' deaths to total firms in a sector). The latter can be considered as a proxy of businesses' turnover.

([2]) Net FDI inflows measure new investment inflows from foreign investors (less disinvestment) in the reporting economy in a certain year.

As a second step, the impact of reforms in economic terms is quantified, based on the estimated effect of changes of judicial efficiency indicators on selected economic variables (firm entry and churn rates, FDI net inflows). The rationale is that the combined reading of the two steps could shed light on the impact of changes in structural features of the judiciaries on economic outcomes, mediated by the transmission channel of increased efficiency (lower disposition time and backlog ratio).

Table V.3 summarizes the elasticities estimated in the first step, i.e. the average percentage impact on disposition time and backlog ratio of a 1% change in selected explanatory variables (average court size, courts to population ratio, litigation rate and share of public budget for courts ICT). As evident in the table, there is a positive effect on judicial efficiency (e.g. reducing disposition time and backlog ratio) of reforms increasing court size or alternatively, reducing the courts while maintaining the number of judges constant, decreasing the litigation rate or increasing investment in courts ICT.

Table V.3: **Summary of first step results: the effect of reforms on judicial efficiency**

Reform indicator/explanatory variable	Elasticities	
	Disposition time	Backlog ratio
Average number of judges per court	-0.5	-0.5
Courts to population ratio	0.6	0.5
Litigation rate (incoming cases per 1000 inhabitants)	0.4	1.2
Share of public budget for courts ICT	-0.1	-0.1

(1) The number of judges per court includes both non-criminal and criminal ones due to data limitations. If one assumes that the structure of the two is not significantly different, the approximation can be deemed reasonable.
Source: Own calculations

Table V.4 summarises second step findings by reporting the average impact of disposition time and backlog ratio on sectoral business dynamics (entry and churn rates) and on FDI net inflows as a percentage of GDP. Results point at an overall positive relationship between judicial efficiency and the above mentioned indicators, although not all the transmission channels seem to work equally: firms' entry rate is not significantly explained by backlog ratio, while net FDI inflows are not significantly explained by disposition time.

Table V.4: **Summary of second step results: from judicial efficiency to economics**

Explanatory variable	Effect on dependent variable		
	Entry rate[(1)] (t+1)	Churn rate[(1)] (t+1)	Net FDI inflows as a ratio to GDP[(2)]
Disposition time	+0.93 p.p.	+1.05 p.p.	Not significant
Backlog ratio	Not significant	+0.4 p.p.	+0.03 p.p.

(1) Simulated shock: 10% decrease in disposition time/backlog ratio
(2) Simulated shock: decrease in backlog ratio by 100 cases per 100,000 inhabitants.
Source: Own calculations

The results presented so far allow to carry out a simulation analysis in the four countries under investigation. Out-of-sample simulations based on observed changes in judicial efficiency variables between 2010 and 2012 are presented in Table V.5. Disposition time and backlog ratio in first instance civil and commercial litigious cases have improved in Spain and Portugal, while they worsened in Greece. Italy shows mixed patterns, entailing an increase in disposition time and a decrease in backlog ratio. According to the estimates presented above, this could have exerted a positive impact on both entry rates and FDI net inflows in Spain and Portugal, a negative impact on entry rate (but a positive one on FDI net inflows) in Italy, and a negative one on FDI net inflows in Greece (estimation for entry rates not available in the latter case).

Table V.5: **Out-of-sample predictions for EL, ES, IT and PT**

	Disposition time			Impact on entry rate	Backlog ratio			Impact on FDI
	2010	2012	% change		2010	2012	change	
Greece	190	469	146.80%	n.a	1656.6	4323.1	2666.5	-0.80 p.p.
Italy	493	599	20.00%	-2.13 p.p.	6315.1	5543.6	-771.5	+0.23 p.p.
Portugal	417	369	-10.70%	+1.14 p.p.	3442.1	3473.8	31.7	-0.01 p.p.
Spain	289	264	-8.10%	+0.86 p.p.	3128.4	2720.1	-408.3	+0.12 p.p.

(1) The entry rate simulation is not performed for EL, as the country is not included in the business dynamics sample.
Source: Own computation based on second step estimation results (Table V.4).

These predictions however are only about the economic impact of changes in civil justice efficiency indicators. An example of the effect of specific reforms is presented in Box V.3 for Italy. Italy has undertaken ambitious reforms in the field of civil justice and the effects of two of the main aspects of such reform, the reform of judicial geography of 2012 and the reintroduction of compulsory mediation in 2013 are analysed. Results show that these reforms entail a significant potential for improving judicial efficiency, namely by reducing average disposition time and backlog ratio, which in Italy are significantly higher than the European average (see *heatmap* in Table II.2). Higher efficiency would translate into gains in terms of firms' entry rates and FDI net inflows. The effect on final economic outcome variables has been computed using the same two-step methodology but the model has been estimated in an integrated simultaneous equation framework.

Another strand of work addresses how business rescue frameworks could contribute to entrepreneurship (self-employment) and business dynamics (birth and death rates). Box V.4 summarizes the main results.

Box V.3: Simulation of the impact of judicial reforms for the case of Italy

Some quantifiable aspects of the Italian reforms, based on available data, concern: i) on the supply side, the re-organisation of judicial geography (i.e. the merge or suppression of a number of courts, based on efficiency criteria); ii) on the demand side, initiatives to reduce excessive litigation, e.g. by fostering out-of-court dispute settlement (not least through the introduction of compulsory mediation for specific types of lawsuits).

The model used to estimate the economic effects of the reforms on final economic variables (firms' entry rates and FDI net inflows as a share of GDP) consists in two simultaneous regression models (one for business dynamics, one for FDI) linking first and second step equations in a single framework. The 3-Stage Least Squares methodology takes into account the endogeneity of some variables in the second stage (i.e. the judicial efficiency indicators) while correcting for the correlation of disturbances across equations (through SURE modelling). The two reform variables considered are courts to population ratio and litigation rates. The table below presents the results for their final impact on firms' entry rate and on net FDI inflows as a share of GDP using simultaneous equations modelling.

Summary of results from simultaneous equations models (3SLS)

Reform variable	Final impact on selected outcome variables	
	Entry rate	Net FDI inflows (% GDP)
Courts to population ratio	0.51 p.p.	0.05 p.p.
Litigation rate	0.58 p.p.	0.13 p.p.

Note: Simulated shock: 10% decrease in reform variable.

The results for the reforms in Italy are summarised in the table below. In the first place, the impact of the reduction in courts to population ratio, as a result of the 2012 judicial geography reform and subsequent amendments, is considered. The total number of first instance courts has been reduced from 1318 to 686, i.e. by 48%. Based on the estimated coefficients, the impact of this reform is summarised below. Note that, given the large magnitude of the shocks, these estimates should be considered as an approximation (elasticities are consistently estimated for small changes). In the second place, the impact of the reintroduction of compulsory mediation by the Italian government is considered. Compulsory mediation has been in place from March 2011 to December 2012, but was then ruled out by the Constitutional Court due to legislative irregularities in its adoption. It was then reintroduced since 2013Q4, after the necessary modifications. Comparing the number of successful mediation cases in the two periods, this reform could be translated into a reduction in litigation rate by 2.9%, based on 2012 figures. The table below reports the potential effects of the estimated shock to the litigation rate on judicial efficiency and on economic outcomes.

(Continued on the next page)

Box (continued)

Summary of simulation results for Italy

Reform shock	Affected variable	Estimated impact
Reduction in the total number of first instance courts by 48% (effect of geographical reorganisation of courts)	Disposition time	-28.01%
	Backlog ratio	-25.60%
	Entry rate	+2.45 p.p.
	FDI net inflows as a share of GDP	+0.24 p.p.
Reduction in litigation rate by 2.9% (effect of reform in mediation)	Disposition time	-1.27%
	Backlog ratio	-3.45%
	Entry rate	+0.17 p.p.
	FDI net inflows as a share of GDP	+0.04 p.p.

Note: own computation based on first step results (disposition time and backlog ratio, see Table V.3) and on simultaneous equations models (entry rate and FDI net inflows as a share of GDP, see above).

Box V.4: Impact of pre-insolvency regimes

This box presents part of the main results of a forthcoming ECFIN Economic Paper ([1]) which investigates the extent to which cross-country differences in pre-insolvency efficiency explain, among other outputs, different entrepreneurship levels and sectoral business dynamics. The adopted methodology consists in constructing quantitative indicators of efficiency of preventive restructuring frameworks for EU Member States based on the comparison of legal provisions of 28 EU Member States' pre-insolvency frameworks. ([2]) The used original dataset comprises twelve indicators derived from international best practices, lessons drawn from the comparative study of Member States systems, analysis of reforms of the restructuring laws in the Member States, as well as results of the Public Consultation on A New Approach to Business Failure and Insolvency (July-October 2013). These twelve dimensions have been reduced by means of a principal component analysis identifying four common factors (i) ease of access to preventive restructuring proceedings; (ii) existence of direct and indirect costs (such as reputational costs or red tape related to courts involvement); (iii) facilitation of continuation of operations for the debtor; and (iv) chances of an effective debt restructuring. These four dimensions have also been summarized in a composite indicator of efficiency of national pre-insolvency frameworks.

Econometric analysis has been undertaken using these indicators to analyse the aggregate economic impact of reforms increasing the efficiency of national pre-insolvency frameworks on the proportion of self-employed population and firms' birth and death rates. The analysis suggests that efficient preventive restructuring frameworks tend to favour the survival of firms and are positively related with the level of entrepreneurship and business dynamics. For instance, the estimates indicate that a 1 percentage point increase in the efficiency of rescue and recovery systems (measured by the aggregate index), increases self-employment by some 0.66% on average.

([1]) Carpus Carcea, Ciriaci, Cuerpo C, Lorenzani and Pontuch (2014). This research has been part of the preparatory analytical work for the Recommendation C(2014) 1500 final.
([2]) The assessment is based on the legal situation in place as of 1 October 2013.

V.3. THE ECONOMIC IMPACT OF PROFESSIONAL SERVICES LIBERALISATION ([40])

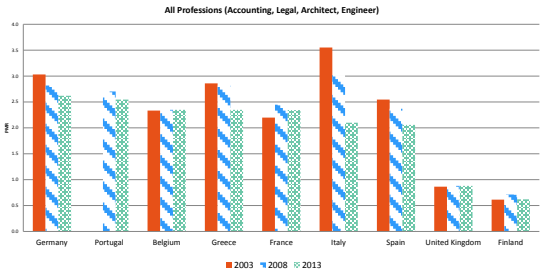
Professional services are often the focus of the discussion on reform priorities. They play a crucial qualitative role as drivers of knowledge, new technologies and innovation. Nevertheless an excessive regulatory environment has been sheltering the sector from competition and holding back its growth and innovation potential. Reducing regulatory barriers in the sector has the potential to increase labour productivity by improving the allocation of resources. For example, in the case of accountants, labour productivity in Portugal is 40% lower than if market shares of firms were uniformly distributed. Reducing barriers in professional services also have a moderating effect on the observed larger-than-average profits caused by lack of competition. The potential impact of the reform is higher in Italy as it is the country showing the largest change in the regulatory indicator used between 2011 and 2013 (OECD Product Market Regulation for professional services). But despite the effort undertaken so far by the four countries, there is ample room for further reduction when compared with the regulatory level in countries such as UK and Finland. This holds however not only for the four countries under analysis, but also for non-vulnerable countries such as Germany.

Currently, large scale reforms of regulated professions are taking place in a number of Member States but empirical evidence on their potential impact is very limited. To try and fill this gap, this section analyses the effect of changes in regulation in four professions (legal, accounting, architectural and engineering services) on each profession's allocative efficiency ([41]) and on profit rates. The underlying idea is that intensified competition related with less strict regulation would translate into higher allocative efficiency and lower profitability (or better: a return to "normal" profit rates) ([42]).

Instead of estimating the direct effect of regulation on allocative efficiency and profits, a "two-step" approach is used: The first step investigates the impact of reforms in regulated professions, proxied by changes in the OECD's Product Market Regulation indicator for professional services, on business churn (i.e. the sum of entry and exit rates). An indication of the possible link is suggested by the significant and negative statistical correlation between churn rates and the OECD regulatory indicator. The second step quantifies the relationship between business churn and performance indicators, namely allocative efficiency and profitability. By doing so, it is possible to test the extent to which the business dynamics transmission channel works. See Box V.5 for details.

Graph V.2 shows the change over time of the PMR indicator for professional services for the four countries under analysis as well as other countries. Regulatory barriers have decreased over time in most countries in the sample and in particular in the four vulnerable countries. But despite the effort undertaken so far, it is clear that there is ample room for further reduction when compared with the regulatory level in countries such as UK and Finland. This holds not only for the four countries under analysis, but also for non-vulnerable countries such as Germany.

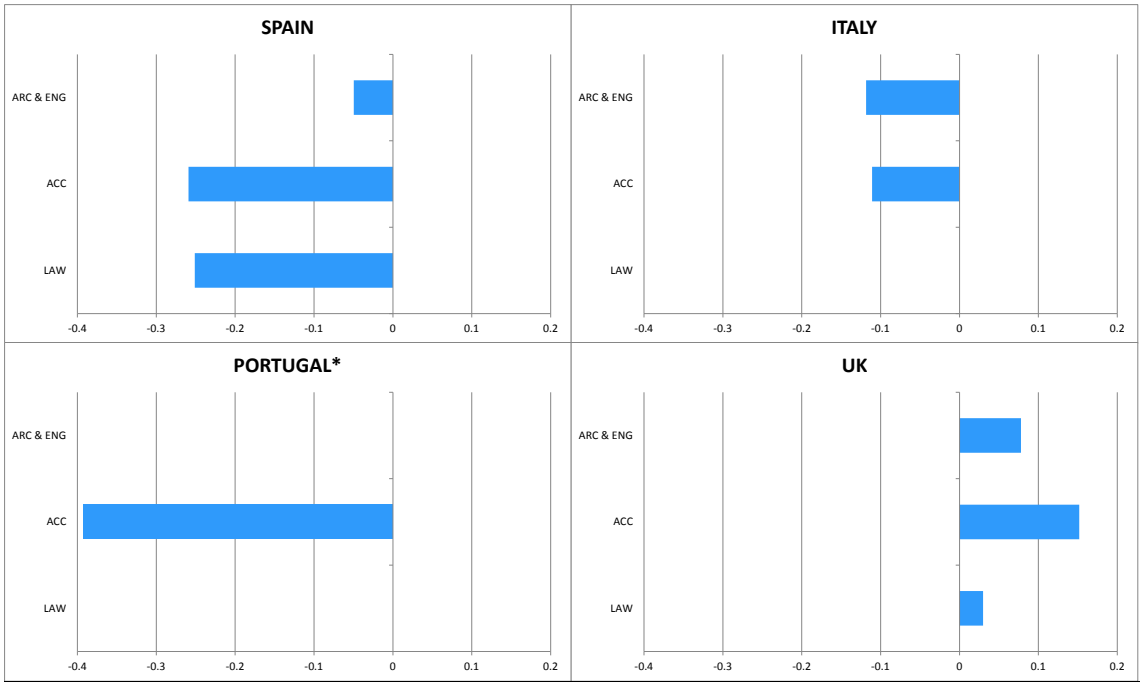
Graph V.2: **Evolution of regulation in professional services, selected countries**



(1) The value of the indicator spans from 0 to 6 with a low value corresponding to a light regulation.
Source: OECD PMR for professional services

([40]) Section based on Canton, Ciriaci, and Solera (2014).
([41]) Which measures the extent to which productive factors are allocated towards their most efficient use.
([42]) It is not obvious how to measure "normal profit rates" which is a variable that depends among other things on the capital intensity of the sector, the cycle, etc.

Graph V.3: **Allocative efficiency in professional services, 2010**



(1) M691, M692 corresponds to legal activities, accountants respectively. M711 include Architects and Engineers.
(*) Data for Portugal are only available for 2010. Data for Greece not available.
Source: Own calculation based on Eurostat

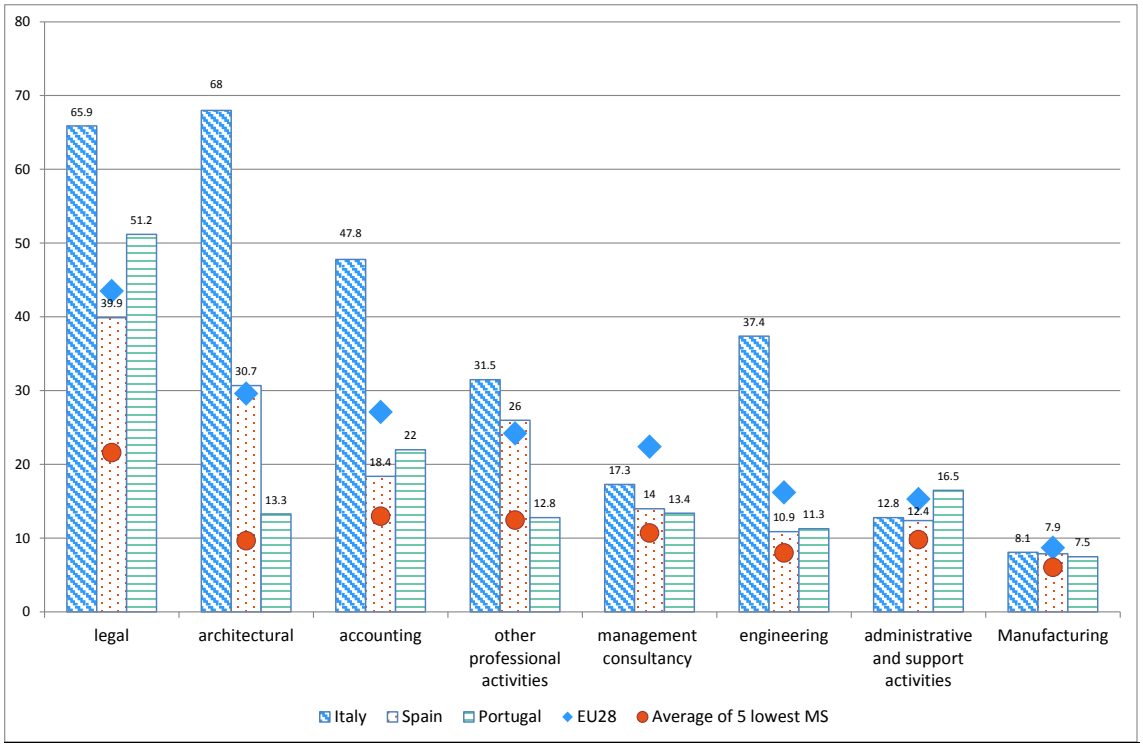
Restrictive product market regulations can bear an economic cost in terms of misallocation of productive resources. A way to capture the between firms within sector resource reallocation is computing the productivity decomposition proposed by Olley and Pakes (1996), which measures the extent to which productive factors are allocated towards their most efficient use. This is the definition used here for allocative efficiency (AE). The productivity decomposition is implemented for legal services, accounting services, architectural and engineering services using sectoral data from Eurostat on labour productivity and employment by size class. An index of AE is calculated from labour productivity and market shares of firms in different size classes, capturing the extent to which more productive firms have higher market share. ([43]) A positive (negative) number for AE means that resources are allocated in a more (less) efficient way relative to the baseline. Relatively low allocative efficiency points at forces in the economy preventing competition to work properly, such as excessive regulation, rent-seeking, ineffective procurement, clientelism.

Graph V.3 shows the measurement of AE in legal, accounting, architectural and engineering services in Spain, Italy, Portugal, and the UK in 2010. The UK has been included as a benchmark as it is the best performing EU country in terms of AE in professional services. As clearly shown by the graph, the level of allocative efficiency is negative for all the three countries but the UK, suggesting that the room for improvement may be significant. For example, in the Portuguese sector accounting activities the AE-index is almost -40%, indicating that average labour productivity is 40% lower than in the situation where the market shares of the firms are uniformly distributed. In such a situation of uniform distribution the market shares of the firms by size class would all be equal and independent of their productivity level.

The gross operating rate is defined as the ratio of gross operating surplus to turnover and is a proxy for profitability. As limited competition can result in "above-normal" profitability rates, it is generally thought of as providing a static measure for

([43]) See European Commission (2013) for a more detailed explanation of the calculation of the AE-index.

Graph V.4: **Gross operating rates in professional services, 2011**



(1) Data are not available for Greece.
Source: Eurostat

competition. Graph V.4 illustrates the gross operating rate in selected professional activities and the manufacturing sector in 2011 for Italy, Spain and Portugal together with EU28 and the average of the 5 countries with the lowest profit rates (data for Greece not available). Across professions there are significant differences, for instance legal services display the highest profits within the EU, followed by architects and accountants. Though there is not a precise definition of excessive profits, it seems that gross operating rates in three of the four regulated professions under analysis are considerably above other professional services that are less heavily regulated and the manufacturing sector. ([44]) These large rates might be indicative of higher rents accruing to the sector.

The econometric results (summarised in Box V.5) linking regulation with business dynamics and then with allocative efficiency and with profit rates show that a reduction of the professional services regulation indicator by 1 point increases the churn rate by 1.75p.p., which in turn correspond to an increase of the AE index by 5.7p.p (namely 1.75 times 3.26) and to a decrease of the profit rates by 5.3p.p. (1.75 times 3.063). Regulation in professional services can acquire many different forms. The PMR indicator itself is composed of *entry* and *conduct* regulation. ([45])

The same econometric analysis has also been carried out for the different regulatory components of the PMR and the results show that a decrease in the PMR conduct regulation indicator has a similar impact than the overall professional services regulatory indicator. However, PMR entry regulation was found not significant at conventional significance levels. A possible reason

([44]) Comparison across sectors should be done with caution. In the graph manufacturing, subjected to strong international competition, can be seen as a reference.

([45]) Entry regulations are qualification requirements, such as formal certificates of qualifications, registration or membership in a professional body, rules on areas of reserved activity. Conduct regulations are regulation of prices and fees, regulation of advertising and marketing, regulation of location, restrictions on inter-professional co-operation or restrictions on forms of business.

Table V.6: **Effect of changes in PMR in professional services on AE and profits**

	Potential impact of a change in PMR for professional services on AE			Potential impact of a change in PMR for professional services on profits		
	Italy	**Spain**	**Portugal**	**Italy**	**Spain**	**Portugal**
Legal	+3 p.p	+2 p.p	-	-2.5 p.p.	-1.8 p.p.	-0.1 p.p.
Accounting	+2 p.p.	-	-	-1.7 p.p.	-	-
Architects	+2 p.p.	+ 1 p.p.	-	-1.9 p.p.	-1 p.p.	-
Engineers	+2 p.p.	-	+ 1 p.p.	-1.9 p.p.	+ 0.09 p.p.	-1.2p.p.

(1) "-" means no change in the regulatory indicator. Greece is not included because 2011 data on profits and AE are not available. A positive effect on profits is found for engineers in Spain as the regulatory burden increased over the period 2011-2013.
Source: Own calculation

why entry regulation shows up with an insignificant regression coefficient is that entry barriers affect the firm's decision to entry while conduct barriers have an effect throughout the firm's life cycle, and are thus likely to be more relevant for business churn. Another reason could be that most of the observed policy action has been in the domain of conduct regulation (in most cases taking the form of liberalisation, i.e. reducing the PMR conduct regulation indicator). Entry regulation has shown less variation in the period under consideration, but is still relatively strict. An insignificant effect in the regression for business churn therefore does not imply that future action in the field of entry regulation would not yield benefits. For example, the results from the analysis on firm entry (see section on *The impact of costs of doing business on business dynamics*), show that number of procedures to start a business have a significant impact on birth rates (and it is likely that a large number of procedures corresponds with stricter regulation). Therefore, to conclude, the regression results show that reduction in conduct regulation have had positive impacts on business churn. Entry regulation has shown up with an insignificant regression coefficient. This could be due to more limited variation of the PMR indicator for entry regulation, and should not discourage further reform efforts.

Over the last years the four countries have introduced reforms affecting the professional services regulatory framework as indicated by PMR in 2013 (see Graph V.2). Therefore it is possible to estimate the impact of changes in regulation over the period 2011-2013 ([46]) on allocative efficiency and profit rates using the elasticities reported above. Table V.6 reports the results of this out of sample prediction on the effect the AE index and profits considering a change in the PMR indicator for professional services. For example, Italy reported the largest change in the PMR for professional services over the period 2011-2013 (from 2.86 to 2.4) which is predicted to have led to a noteworthy increase of AE index between 2p.p. and 3p.p. (depending on the profession) and a decrease in profitability between 2.5p.p. and 1.7p.p

In order to quantify the relationship between labour productivity and allocative efficiency, results from a regression analysis of (the logarithm of) labour productivity at sectoral level on the allocative efficiency indicator, controlling for country and sector dummies as presented in European Commission (2013) can be used. The reported quasi-elasticity implies that an increase in AE by 1p.p is associated with an increase in labour productivity by 0.73%. This means that the results for AE reported above also imply substantial gains in labour productivity. The profitability rate can be interpreted as a price cost mark up, and a reduction in profitability is thus likely to be reflected in a decrease in the price of services for its users (consumers and firms), generating direct gains in consumer surplus.

([46]) The change in PMR over the period 2008-2013 is annualized, using a linear intrapolation technique.

Box V.5: Estimating the effect of professional services liberalization

The regression analysis covers a large number of Member States over the period 2008-2011 and is based on two main data sources, the OECD PMR for professional services and Eurostat Structural Business statistics (SBS) databases. To estimate the effect of regulation on AE and profitability, a system of two equations is used, which are estimated sequentially using a random effect model with country&sector-specific time-invariant factors. The first equation estimates the impact of regulation on business churn (CHURN) defined as follows:

$$CHURN_{s,c,t} = \beta_0 + \beta_1 PMR_{s,c,t} + \omega_{s,c} + \varepsilon_t \qquad EQ1$$

The level of regulation in the four professions analysed is proxied either by the PMR indicator for professional services – labelled as PMR_overall – or by its two more detailed sub-components covering entry and conduct regulation and labelled PMR_entry and PMR_conduct, respectively. ωsc is the country/sector fixed effect; and εt is the error term.

The second stage equation uses the predicted values of the churn rate (CHURN*), obtained from the first stage equation, to explain, respectively, the level of allocative efficiency (EQ 2a) and profit rates (EQ 2b) in the four sectors of interest, as follows:

$$AE_{s,c,t} = \beta_0 + \beta_1 CHURN^*_{s,c,t} + \beta_2 Y_{s,c,t} + \varphi_{sc} + \varepsilon_t \qquad EQ(2a)$$

$$PROFITS_{s,c,t} = \beta_0 + \beta_1 CHURN^*_{s,c,t} + \beta_2 Y_{s,c,t} + \vartheta_{sc} + \varepsilon_t \qquad EQ(2b)$$

Where $Y_{s,c,t}$ is a vector of control variables, φ_{sc} and ϑ_{sc} are the country/sector fixed effects and εt is the error term. The extent to which lifting regulatory barriers improves allocative efficiency and reduces profitability through intensified business dynamics measured by the churn rates can then be analysed:

Impact of regulation in professional services on allocative efficiency and profits

	AE		Profits	
	Step 1: dependent variable churn rate	**Step 2: dependent variable AE**	**Step 1: dependent variable churn rate**	**Step 2: dependent variable profits**
PMR_ overall	-1.748***		-1.749***	
	(0.590)		(0.514)	
Churn*		0.0326***		-3.063***
		(0.00789)		(0.396)
Obs/Groups	170/52	95/31	206/69	251/67

Note: Standard errors in parentheses; *** p<0.01, ** p<0.05, * p<0.1

Impact of the sub-components entry & conduct regulation on allocative efficiency and profits

	AE		Profits	
	Step 1: dependent variable churn rate	**Step 2: dependent variable AE**	**Step 1: dependent variable churn rate**	**Step 2: dependent variable Profits**
PMR_entry	-0.0866		-0.261	
	(0.488)		(0.426)	
PMR_conduct	-1.856***		-1.770***	
	(0.569)		(0.562)	
Churn*		0.0298**		-2.352***
		(0.014)		(0.507)
Obs/Groups	170/52	95/31	206/69	251/67

Note: Standard errors in parentheses; *** p<0.01, ** p<0.05, * p<0.1

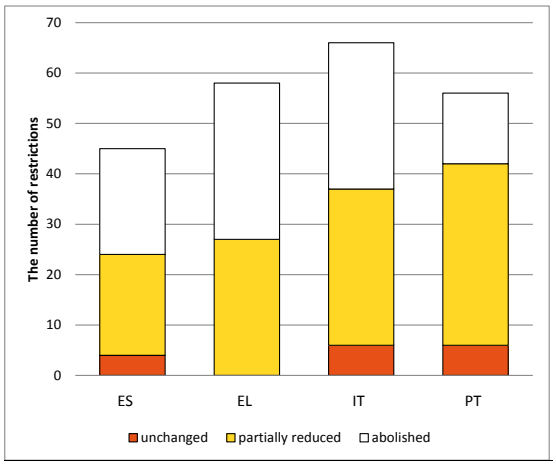
V.4. THE ECONOMIC IMPACT OF THE IMPLEMENTATION OF THE SERVICES DIRECTIVE

Reforms aiming at liberalizing the services sector are particularly relevant given the direct and indirect role (through interlinkages with other sectors) played by services sectors in modern economies. Reforms till mid-2013 implementing the Services Directive, the major recent liberalization effort, have brought significant potential gains in terms of sectoral labour productivity for the four countries, ranging from above 4% for Portugal to almost 9% for Greece. Given the broad sectoral scope of the sectors covered by the liberalization effort, that covers a large number for services sectors amounting to an average of more than 40% of GDP, the economy-wide effects will be considerable. The four countries show margin for further liberalization as some barriers have been kept and many others have been only partly reduced. Portugal and Italy in particular seem to show a larger margin for further reforms.

By further liberalising cross-border provision of services and the free establishment within the EU, the Services Directive (SD) has become the largest *recent* reform effort in an area relatively protected and sheltered from international competition. ([47]) The Directive was adopted in 2006 and its implementation deadline was December 2009. IT, ES, PT and EL have all transposed the SD, though with different degree of ambition. ([48])

This section follows work by the European Commission ([49]) which estimated the economic impact of the effort made till end of 2011 in liberalizing the sectors affected by the SD. The Commission Services have updated the barriers dataset for Spain, Portugal, Italy and Greece. ([50]) Graph V.5 presents the before-SD and the 2013 data on barriers per country; Graph V.6 adds the sector perspective. ([51]) The two figures show whether requirements have been kept, simplified or totally abolished. As seen, the four countries have done a considerable reform effort since the adoption of the Directive. Although additional liberalization efforts have been made since the last time data was collected (in 2011), the biggest reform effort was made until then. An interesting finding is that countries show margin for further liberalization as some barriers have been kept and many others have been only partly reduced. It is important however to keep in mind that certain requirements could be kept if properly justified.

Graph V.5: **Services Directive-Restrictions: before and after implementation**

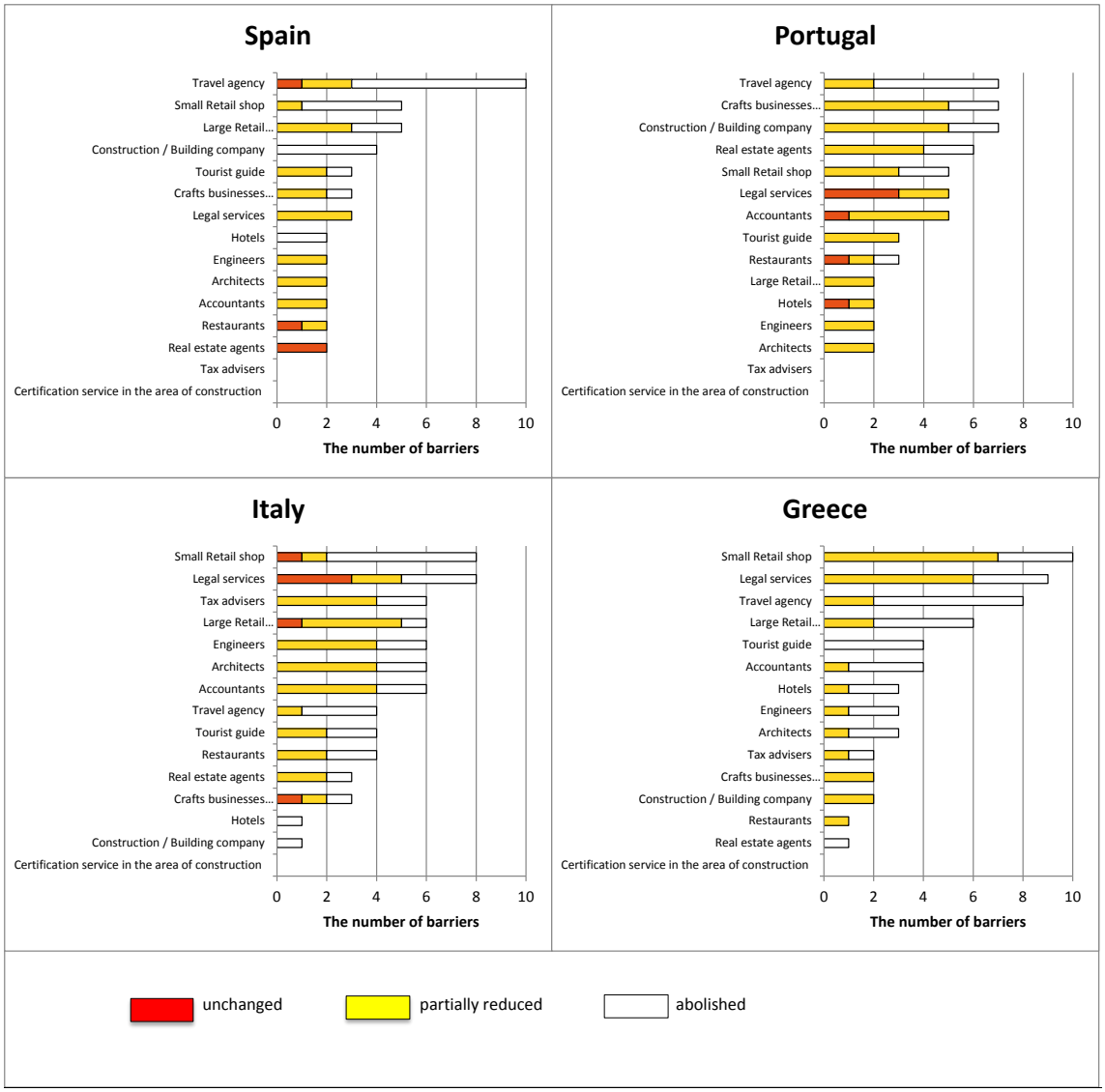


(1) Restrictions refer to before implementation of the Directive (2009) and to mid-2013. See Box V.6 for details.
Source: European Commission Services

([47]) The SD is broad in terms of sectors (representing more than 40% of EU GDP) and requirements covered.
([48]) Its legal transposition does not ensure the materialization of the full potential of the SD as the SD left room to countries when deciding which existing regulation was incompatible with its provisions.
([49]) Monteagudo, J., A. Rutkowski and D. Lorenzani (2012)
([50]) The dataset on barriers has been prepared by the Commission Services on the basis of information collected during the process of mutual evaluation of the Directive, of further reporting by Member States since then, and other sources that include experts' knowledge.

([51]) The assessment includes 20 requirements (the most relevant) for 15 selected services sectors (accounting for 20% of EU GDP) in the 27 MS. In the figure, requirements per sector are averaged (equal weights).

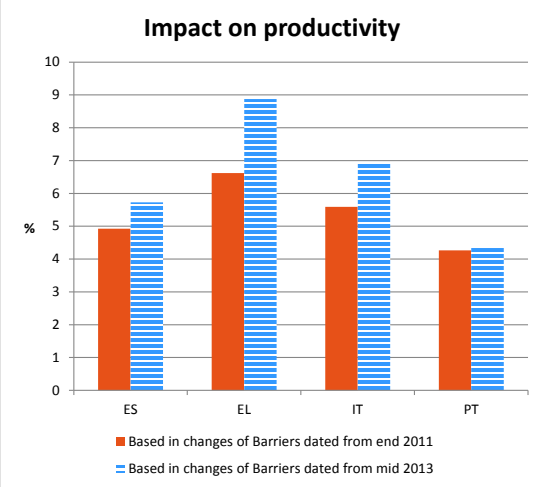
Graph V.6: **Services Directive-Sectoral restrictions before and after implementation**



(1) Restrictions refer to before implementation of the Directive (2009) and to mid-2013. See Box 11
Source: European Commission Services

Using the estimates from Monteagudo et al (2012) on the productivity impact of barrier reduction (see Box V.6), Graph V.7 depicts the estimated impact of the actual level of implementation of the Services Directive (mid-2013) as well as of the effort till 2011 (the results of the original study). Since a 10% reduction of barriers to establishment brings a 1.6% increase in labour productivity in services, the impact from the effort till mid-2013 ranges from above 4% (Portugal) to almost 9% (Greece). Note that the effort over the last two years has added additional productivity increases ranging from 0.2pp in Portugal to 2.3pp in Greece (about 1pp in Italy and Spain). This is not a negligible additional impact if one takes into account several considerations: it doesn't include the effects on trade and on FDI; and it doesn't properly consider further simplification efforts. ([52]) For all these reasons, the impact is likely to be an underestimation.

Graph V.7: **Effects of the Services Directive (direct impact on productivity)**



(1) Only the direct impact from simplification on domestic services sectors is captured.
Source: Own computation

The results show the large gains in terms of productivity of the liberation of services. The different impact across countries mainly reflects: own barrier reduction as countries with larger barrier reduction have a larger potential boost on productivity; and the sectoral composition (weights of different sectors).

([52]) The treatment of partly abolished or simplified requirements implies that once a requirement is simplified, further simplifications are not properly captured by the dataset.

Box V.6: **Estimating the effect of the Services Directive implementation**

Data on barriers before implementation refers to the period before the implementation of the Directive (2009). The picture of barriers after implementation dates from mid-2013. The data covers 20 specific authorizations or requirements for 15 selected services sectors in the 27 EU Member States. Existing barriers before the Directive where either kept, partly abolished or eliminated. Monteagudo et al (2012) identified different effects of the reform: i) impact on services sectors trade and on FDI; ii) impact on (labour) productivity, which included a direct impact on firms of reduction of barriers affecting (domestic) establishment as well as the indirect impact on productivity from the increased trade and FDI flows. Due to the fact that the revised dataset presented in this section only covers Spain, Portugal, Italy and Greece, updating the effects on trade and FDI is not possible (exports and outward FDI will be affected by other countries' liberalization effort). Thus only the direct impact of barrier reduction on labour productivity is revised. This implies that the numbers reported are an underestimation of the positive effects on productivity of this reform (although the estimations showed that most of the effect on GDP comes through this direct impact on domestic firms' productivity).

The dynamic relationship for productivity with path-dependency estimated was:

$$\ln P_{c,s,t} = \beta_1 \ln P_{c,s,t-1} + \beta_2 \ln B_{c,s} + \beta_3 \ln F_{c,s,t-1} + \beta_4 \ln F^*_{c,s,t-1} + \beta_5 \ln T_{c,s,t-1} \beta_6 \ln T^*_{c,s,t-1}$$
$$+ \beta_7 ICT + \beta_8 HR + \beta_9 I_{c,s,t-1} + \Lambda_t + \Theta_{c,s} + \varepsilon_{c,s,t}$$

where P_{cst} is productivity in country *c*, services sector *s* at time *t*; B is barriers to establishment; the impact of the international channel on productivity is captured by outward and inward FDI (F and F*) and by exports and imports (T and T*); control variables include information and communication technology (ICT) and human resources (HR); sectoral investment other than FDI is also included (I) as a determinant of productivity; Λ are year effects; the error term is composed of unobserved effects for each country and sector combination (Θ) and of ε. The possible endogeneity of the investment and trade variables was addressed by using lag variables and the appropriate estimator (Arellano-Bover-Blundell-Bond GMM system).

Estimation results for the productivity model

L.ln(GVA/employee)	0.844***
	(0.000)
L.ln(Exports/Output)	-0.001
	(0.742)
L.ln(Intangible Investment)	-0.007
	(0.917)
L.ln(Inward FDI/Value Added)	-0.006
	(0.234)
L.ln(Outward FDI/Value Added)	0.007**
	(0.086)
ln(Barriers,domestic channel))	-0.160
	(0.046)
L.Share of enterp. employing ICT/IT exports in 2007	0.010***
	(0.017)
L.Internet access of households, %	-0.001
	(0.769)
Observations	683
Hansen test (*p*-value)	0.105
AR (1) test (*p*-value)	0.003
AR (2) test (*p*-value)	0.568

p-value in brackets; L. indicates a one-year lag (t-1)

The dependent variable is ln (GV/employee); Year dummies included but not reported.

* $p<0.2$, ** $p<0.1$, *** $p<0.05$

V.5. THE ECONOMIC IMPACT OF REDUCING LATE PAYMENTS IN COMMERCIAL TRANSACTIONS ([53])

Late payments in commercial transactions by the public administration can have potentially detrimental effects on the business environment, in particular by exacerbating the burden of already financially constrained firms which can ultimately pushing them out of business. The financial cost in terms of GDP imposed by government late payments is high and led across the EU by Greece, Portugal, Italy and Spain. While the observed reduction in the ratio between delay and contractual terms in Portugal and Italy over the last years (2010 to 2013) might lead to a decrease in exit rates, the situation in Spain has not improved, suggesting that the effects of the recent initiatives to contrast late payment are not yet observable in data. The results suggest the gains to be reaped if late payments were to be eliminated.

This section assesses the cost that late payments – both G2B and B2B– have on firms by presenting estimates of the implicit financial cost it imposes as well as the effect on firms' death by pushing them out of business. ([54]) Reducing late payments is not a 'structural reform' per se, but when paying late becomes the norm in commercial transactions and puts firms' operations at a risk, reducing such delays addresses a significant bottleneck and improves the business environment. It is from that perspective that efforts to reduce late payments by public administration are considered here.

The importance of trade credits, i.e. sellers accepting payment after the delivery of goods and services, has increased during the financial crisis. Following needs of restoring balance sheets due to the financial crisis, the problem of late payments has become more urgent. Late payments can have economic repercussions through various channels. The most obvious one is the death rate of firms. Late payments can be seen as an implicit and involuntary loan from the firm to its client. A firm already in a difficult situation with regard to its liquidity may then face acute financing problems when it is confronted with late payments. In an extreme case late payments can thus force firms to leave the market. The prospect of late payments could also discourage the entry rate of new firms in the market, in the sense that it deteriorates the circumstances under which firms are operating their business. When late payments by public administration becomes the norm, firms may feel discourage and decide not to do business with public bodies; thus reducing the average time of payment can increase the number of participants in tenders and competition among participants which can in turn translate into savings for the administration. Late payments can also hold back the growth of the company, and firms may find it more difficult to receive a bank loan or other forms of external capital when their clients are paying late.

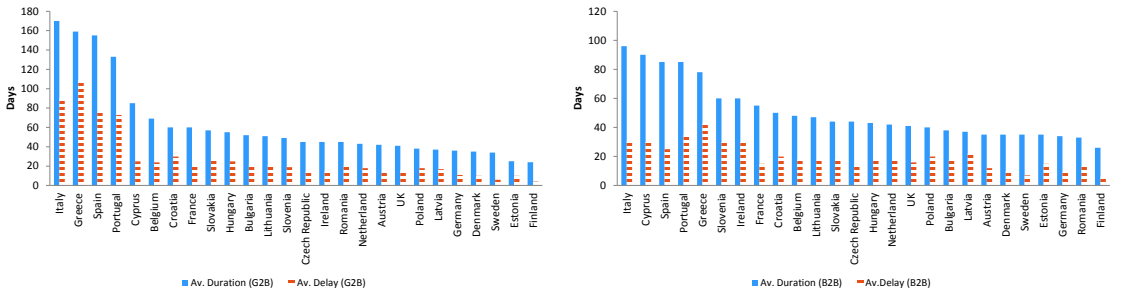
States are aware of the harmful consequences that late payments can have on business dynamics. Measures have been recently undertaken both at Community and country-level. A new Directive has been adopted ([55]) which aims at harmonising the period for payment transactions by public authorities to businesses as well as Business-to-Business to 30 and 60 days respectively. The four Member States under analysis have already transposed the Directive, although with different degrees of ambition and completeness. In addition, ES and IT have created a special funding mechanism to deal with the no-retroactivity of the reforms. Comparison of late payments across countries in Graph V.8 shows the severity of the situation in some vulnerable countries.

([53]) Section based on Connell (2014).

([54]) The direction of the expected effect of late payments by public administration on firms' death rates is clear; the net effect of late payments business-to business is, a priori, less obvious given that it has a negative effect on creditors but a positive on debtors.

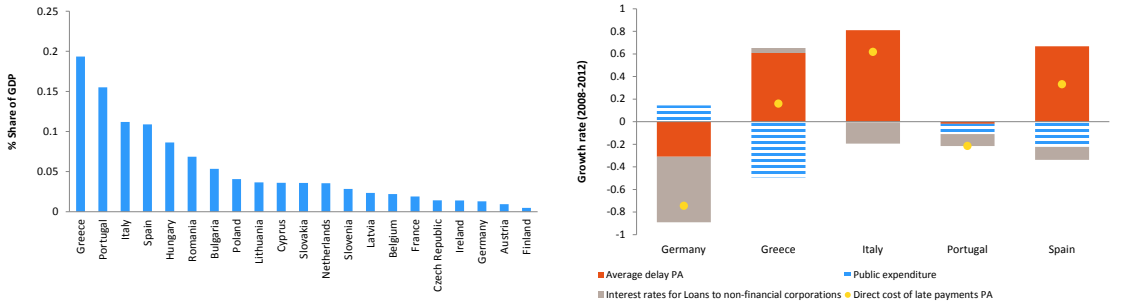
([55]) Adopted on the 16th February 2011 with a transposition deadline by 16th of March 2013.

Graph V.8: **Average payment duration and delay in G2B (left) and B2B (right) transactions (2013)**



Source: Intrum Justitia

Graph V.9: **Financial cost from government late payments as a share of GDP in 2012 (left) and decomposition (right)**



(1) (*)Calculated as the volume of claims against the public administration times the average payment delay times interest rate for loans to non-financial corporations.
Source: Own calculations based on Intrum Justitia and Eurostat

To get an approximation of how much late payments represent, Graph V.9 depicts the estimated cost in 2012 of late payments by public authorities expressed as a percentage of GDP, ([56]) which ranges from 0.19% in Greece to 0.005% in Finland. Differences across countries are driven by delays in payments, interest rates applied by banks and the total expenditure on works, goods and services incurred by public authorities. The right panel in the figure shows the growth rate between 2008 and 2012 of the different components for selected countries. In Spain, Italy and Greece, the increase in the estimated cost is due to the increase in the average delay of payments made by public administrations that more than offset the positive contribution of the decreasing interest rates in Italy and Spain (slightly increasing in Greece) and the contraction of public expenditure.

The impact that late payments may have on firms by putting them out of business was estimated by looking at the effect on exit rates of delay of payments both by the public and private sector after controlling for other determinants (see Box V.7). The results show that delay is significant and have a detrimental effect by increasing exit rates: a 1 point reduction in the B2B payment delay ratio ([57])reduces exit rates by about 2.7 or 3.4 percentage points and the same decrease in the G2B delay by about 1.7 to 2 percentage. ([58])

([56]) Calculated as the volume of claims against the public administration times the average interest rate for loans to non-financial corporations and government average delay expressed as a fraction of a year. This estimated cost is expressed in nominal terms.

([57]) Payment delay ratio is expressed as the absolute duration of delay in days in relation to the agreed payment terms. This definition allows controlling for the different contractual terms observed across countries and time and it is considered as a proxy of the severity of the unexpected delay.

([58]) The range depends on different control variables.

Table V.7: **Effect on exit rates of developments in late payments over 2010-2013**

Country	Type of transaction	Payment Information (2010)		Payment Information (2013)		Scenario 1	Scenario 2
		Delay	Contract	Delay	Contract	Impact on exit rates (in pp)	Impact on exit rates (in pp)
Italy	B2B	30	66	31	65	0.076	-1.55
	G2B	100	86	90	80	-0.077	-2.36
Spain	B2B	28	70	25	60	0.057	-1.37
	G2B	65	88	75	80	0.404	-1.5
Portugal	B2B	37	51	35	50	-0.0872	-2.48
	G2B	84	57	73	60	-0.522	-2.99

(1) Late payments is measured by the delay ratio (delay/contract). Scenario 1: effect of actual change in the late payments ratio between 2010 and 2013. Scenario 2: effect under zero delay scenario. "B2B" stands for Business-to-Business; "G2B" to Government-to-Business.
Source: Own calculations (effects) and Intrum Justitia (payment information)

Using the estimated coefficients it is possible to look at progress since 2010, where progress is captured by the observed change between 2010 and 2013 in the payment delay ratio per country (see Scenario 1 in Table V.7). The observed evolution in delay and contractual terms in Portugal translates into a decrease in the delay-to-contractual terms ratio, which in turn decreases exit rates by around 0.087 percentage points (pp) in B2B transactions and 0.52 pp in G2B transactions. Applying these changes to the latest exit rates (2010) yields for the case of G2B a change from 19.26% to 18.74% in Portugal for the sectors considered in this analysis.

A more hypothetical scenario would predict the impact of total reduction of late payments bringing to zero delays from the average delay on transactions observed in each country in 2010 (see Scenario 2 in Table V.7). Under this scenario, exit rates in Portugal would decrease from 19.26% to around 16.27% for G2B transactions. ([59])

([59]) Indeed the sample does not have any country with zero delay. Accuracy of these results is affected by the fact that these are "out-of-sample simulations.

Box V.7: **Economic assessment of reducing late payments - Methodology**

To estimate the effect of late payments on firm exit rates a panel of annual data for 2005-2010 for 17 EU MS and 9 sectors is used. The estimated elasticities refer thus to average EU effects. Regressions are run to estimate the effect on firms' exit rates of payments delay. In order to control for the magnitude of the unexpected delay, absolute duration of delay is expressed in relation to the contractual terms in both G2B and B2B transactions.

Data on late payment come from Intrum Justitia, and control variables (at sectoral level) include: change in value added (controlling for cycle and tight credit conditions), investment per person employed and average size of firms (controlling for structure of barriers to exit). Specifications including sectoral dummies are also estimated. On the other hand, country fixed effects are included to control for national time invariant characteristics, which are expected to affect exit rates. The economic cycle is captured by changes in value added, which also allows to indirectly control for changes in financial conditions. Note that since information on the late payment indicators is collected during the first three months of each year, a lag is entered to the analysis.

$$Q1.\ ExitRate_{s,c,t} = \beta_0 + \beta_1 PDR_{c,t} + \sum X_{s,c,t} + \lambda_c + \varepsilon_t$$

$$Q2.\ ExitRate_{s,c,t} = \beta_0 + \beta_1 PDR_{c,t} + \Delta VA_{s,c,t} + \lambda_c + \Omega_s + \varepsilon_t$$

Exit rates is obtained by country c, sector s and year t; X is a vector of control variables, including, change in value added (ΔVA), investment per person employed and average size of firms; λ is a vector of country dummies controlling for country specificities that could affect exit rates and Ω is a vector of sectoral dummies controlling for sectoral specificities. This later vector of dummies is introduced as an alternative to investment per person employed and average size of firms as these variables are sectoral specific.

V.6. THE ECONOMIC IMPACT OF DIGITAL STRUCTURAL REFORMS ([60])

This section makes a contribution to the policy debate on how to spur "digital growth" in Europe by assessing the economic impact of different types of digital structural reforms: i) reforms aimed to foster the development of high-speed wireless broadband through efficient assignments of right of use on radio spectrum frequencies; ii) reforms aimed to strengthen professional e-skills in the EU; iii) reforms aimed to deepen the EU internal market for e-Commerce, including by incentivising the take-up of online sales among firms; iv) reforms aimed to enhance the take-up of fixed broadband, particularly among firms. Each policy area is analysed separately, in the first place by hypothesizing and testing through micro-econometric analysis specific "transmission channels", i.e. the direct impact of specific reform variables on intermediate economic outcomes, such as prices and productivity. In the second place, the price and productivity shocks estimated on the basis of the actually observed change in the reform variable (as a proxy for the reform effort) are fed into QUEST III to simulate macroeconomic impacts on GDP. The cut-off date for the reform effort is 2013 for spectrum allocation and 2012 for the other reform variables. The importance of analysing these heterogeneous reforms together lies in the possibility to shed some light on the economic impact of furthering specific aspects of the Digital Single Market: indeed, the simulated long-run GDP impacts for different policy areas can be de facto summed up, showing significant long-term GDP impacts of the reform efforts observed so far, around 1.1% of GDP at the EU average (0.9% in Spain and 1.5% in Italy).

The economic relevance of electronic communications and, more broadly, of all digital networks and services, goes well beyond their mere sectoral size and, in light of their role as general purpose technology, encompasses a series of positive spill-overs upon the whole productive system. For instance, insofar as they provide the infrastructure for the progress towards a genuine knowledge-based economy, digital networks and services are critical to ensure that technological developments and capital deepening stimulate innovation in SMEs and large industries alike, and eventually translate into productivity gains also in more traditional sectors.

This section aims to assess the economic impact of digital structural reforms. This is rather challenging, particularly in a unitary framework, due to a variety of reasons ranging from the marked heterogeneity of these reforms, their mostly "soft" nature, as well as the general lack of data on different aspects of the European digital markets. For this reason, only four specific types of digital structural reforms are considered, namely: i) assigning rights of use of radio spectrum frequencies to mobile operators; ii) enhancing digital skills in a professional setting; iii) fostering the take-up of e-Commerce EU-wide; iv) increasing availability and take-up of high-speed fixed broadband.

Since these policy areas are profoundly different, each of them is analysed separately, yet following a common twofold methodological approach. As a first step, namely, partial equilibrium econometric analysis –mostly at sectoral level– is carried out, or drawn from existing literature, to estimate a direct impact of a relevant "reform variable" on either prices or productivity: these economic outcomes directly affected by the reform effort are in fact assumed to be the "transmission channel" through which the scrutinised reforms can finally exert their overall economic impact. In particular:

- spectrum reforms are found to decrease the retail prices of mobile services, including indirectly through decreased sectoral market concentration;
- enhancing digital skills in a professional setting is found to increase the intra-sectoral allocative efficiency of resources in the economy, likely due to the better capacity of firms to react to changes in the competitive environment;
- increased take up of e-Commerce EU-wide is found to affect total factor productivity (TFP), through higher efficiency of the production process entailed by firms' recourse to online sales, and have a price effect due to specificities of online trade;

([60]) Based on Lorenzani and Varga (2014).

Table V.8: **Effect of spectrum auctioning on mobile communications retail prices**

Dependent variable	Reform indicator/ explanatory variable	Simulated change in reform indicator/ explanatory variable	(Preliminary) effect on dependent variable	Comments
Changes in sectoral concentration (measured by a quasi-Herfindahl index for the mobile sector)	Progress in spectrum compliance across 5 harmonised bands	Increase by 10 percentage points	Decrease by 1.4% - 1.6%	There is some evidence that this relationship is stronger in less recent years of the sample
Changes in sectoral retail price (measured as average revenue per minute of mobile voice communications)	Progress in spectrum compliance across 5 harmonised bands	Increase by 10 percentage points	Decrease by some 5.7% (direct impact and indirect one through changes in sectoral market concentration)	This impact takes place with a lag

- increased take-up of high-speed fixed broadband is found to affect TFP by increased efficiency in the production process due to actual firms' use of these technologies.

As a second step, the estimated elasticity from the first step and the observed variation of the reform variable, proxying the actual reform effort undertaken by the MS over the observed time period, can be used to compute a price/productivity shock related to the considered digital reform effort. A further step includes feeding the estimated shocks into the European Commission's dynamic stochastic general equilibrium model QUEST III in order to obtain macroeconomic impacts on GDP growth: while the analysis is conducted separately for each policy area, the advantage of considering them together lies in the possibility to add up the long-run GDP impacts and thereby provide a unitary indication of the overall effect of achieving specific aspects of the Digital Single Market.

V.6.1. The economic impact of spectrum reforms

Both the recently amended Regulatory Framework and the Digital Agenda for Europe define a clear policy framework for a wide and efficient allocation of radio spectrum frequencies to mobile providers, which is a major reform effort already undertaken by most Member States in the very recent past and still ongoing.

There are several reasons why making spectrum frequencies available to mobile operators should affect the final prices of mobile services. On the one hand, spectrum auctioning could reduce these prices by affecting market concentration in the sector: indeed, the experience of EU spectrum auctioning indicates that national regulators often foresee "reserved" spectrum blocks, explicitly meant to allow the entry of new providers, or attach "competition-enhancing conditions" to the granted rights of use. On the other hand, as new spectrum bands are typically auctioned to allow the roll-out of new technologies, their diffusion and uptake might well reduce the equilibrium price of services still provided over older technologies, also through demand-side effects. The (scarce) previous literature on this topic either focuses on the efficiency of different auction designs or is country-specific. ([61]) The estimations (see Box V.8) suggest that progress in spectrum auctioning is associated with lower sectoral retail prices, through two simultaneous effects: i) an *indirect effect* mediated by lower market concentration; ii) a *direct effect* on top of the previous one and in a longer time-frame, which could be potentially explained by the impact of technological innovation undertaken over newly available frequencies. Namely, an increase by 10 p.p. in the constructed index of spectrum progress is associated with a decrease in mobile prices by some 5.7% (see Table V.8).

([61]) See, e.g., Hazlett, Ibarguen and Leighton (2007); Tiedemann (2009); Prasad and Sridhar (2009).

Box V.8: Methodology for the economic assessment of spectrum policies

Lorenzani and Varga (2014) carried out econometric analysis on a panel dataset, built by the Commission Services on the basis of the Digital Agenda Scoreboard and European Communications Office data, covering the EU27 and the period 2006-2013 (or less, depending on availability). The explanatory variable, "measuring" MS' reform effort in making frequencies available to mobile operators, is an innovative index of "cumulative progress in spectrum assignment". This index is computed, at Member State level, as the weighted average of band-specific indices of cumulative progress in the assignment of spectrum in five harmonised bands relevant for mobile communications (800MHz, 900MHz, 1.8GHz, 2GHz, and 2.6 GHz), relative to the total amount available in that band. Weights are proportional to the observed average unit price of each spectrum band, assumed to reflect its quality, scarcity, and thus relevance for competition. The estimated model comprises the two following equations, all in first differences (L indicates a first lag):

$$HHI_{it} = a_1 + a_2 I(spectrum)_{it} + a_4 X_{it} + a_5 D_t + \varepsilon_{it} + \omega_i$$

$$P_{it} = b_1 + b_2 L.I(spectrum)_{it} + b_3 L.HHI_{it}^{*} + b_4 Y_{it} + b_5 D_t + \varepsilon_{it} + \omega_i$$

Where HHI is a quasi-Herfindahl index of sectoral market concentration, ranging from 0 to 1 (highest concentration); I(spectrum) is the mentioned index of spectrum compliance; P is the sectoral retail price, approximated by the annual ratio of total mobile voice revenues to total outgoing retail minutes of voice communication; X and Y are vectors of control variables, including, e.g., mobile penetration and rural population in line with previous literature; D is a vector of time dummies controlling for common cyclical or regulatory shocks; ω are fixed-effects in panel specifications for country-specific time-invariant factors.

The method employed to estimate these equations simultaneously is a two-step IV approach: in a first step, the impact of spectrum progress over market concentration is estimated; a second step then estimates the impact on retail prices of both spectrum progress and the expected concentration, conditional on the actual spectrum progress, as predicted from the first step (indicated by the asterisk).

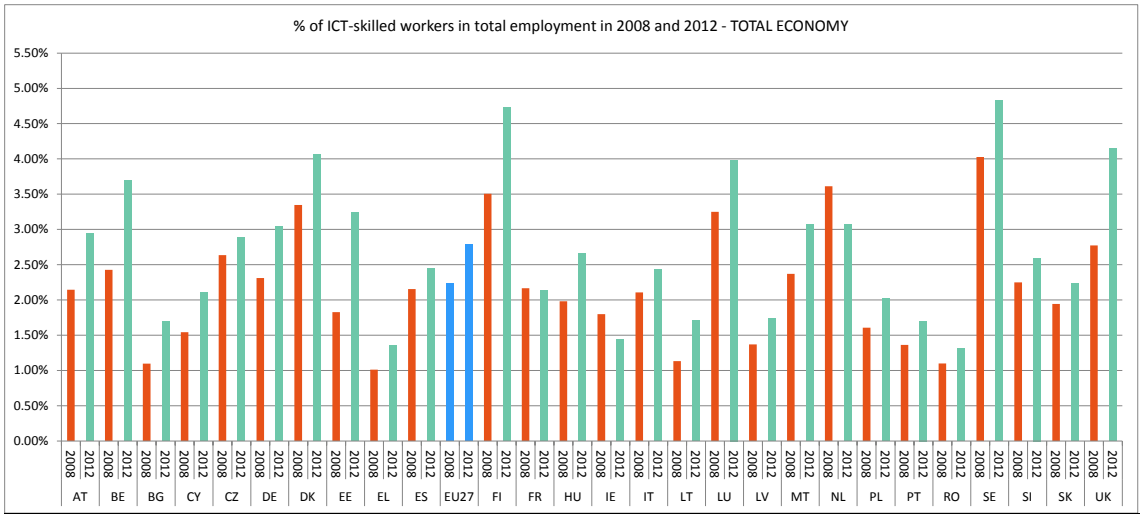
Table V.9: **Effect of spectrum auctioning on mobile communications retail prices**

	Spectrum compliance index (2007)	Spectrum progress 2007-2013 (p.p.)	Impact on mobile prices	Impact on GDP (long run, % over the baseline)
EU27	44%	+0.43	-22.3%	0.17%
Greece	30%	+0.24	-12.8%	0.20%
Italy	41%	+0.54	-26.9%	0.26%
Portugal	33%	+0.55	-27.4%	0.29%
Spain	55%	+0.44	-22.7%	0.32%

Source: Own Computations

Table V.9 reports: i) the actually observed spectrum progress in the four countries under scrutiny between 2007 and 2013; ii) based on the estimated elasticity, the corresponding decrease in mobile prices (due to both the direct and indirect effect); iii) the simulated economy-wide long-run GDP impact corresponding to this price shock, as obtained through *QUEST III*. The estimated price shocks range between 12% in Greece and 27% in Portugal, and the simulated long-run macroeconomic impacts range between 0.20% of GDP in Greece and 0.32% of GDP in Spain over the baseline. It is also worth noting that, on average, the actually observed spectrum progress in the EU between 2007 and 2011 (around 18 p.p.) is estimated to be associated to a decrease in mobile prices between 9% and 10%: given that the actually observed mobile price reduction was close to 39% EU-wide over the same period, this indicates that spectrum assignment could have contributed to about one fourth of it.

Graph V.10: **Evolution of share of ICT-skilled workers in total economy**



Source: Eurostat LFS

V.7. THE ECONOMIC IMPACT OF E-SKILLS REFORMS

In light of its importance for innovation and growth, the enhancement of digital skills, particularly in a professional setting, is high in the EU policy agenda. The 2010 *Digital Agenda for Europe*, for instance, sets an ambitious programme of reforms to be pursued at the EU level and by the Member States to enhance digital literacy, also targeting the supply of ICT practitioners. On this basis, different MS are in the process of undertaking reforms aimed to strengthen the e-skills both of their population and of their workers.

However, since this reform effort mostly includes "soft" measures -providing diverse indirect incentives to professional e-skills, such as public support to ICT training in SMEs and ICT teaching in schools-, it is difficult to precisely measure it. In what follows, it is thus assumed that the current share of e-skilled workers reflects also the outcome of reforms gradually undertaken by each country to enhance digital skills. Graph V.10 shows the evolution between 2008 and 2012 of the percentage of workers with specialized ICT-skills in the total economy workforce. It is worth noting that IT, ES, PT, and EL have all been characterised by upward shares, but their average improvement (around 0.33p.p.) has been lower than that EU-wide (around 0.55p.p.), despite lower starting points (around 1.66% on average, compared to a EU average of 2.24%).

In a rapidly technologically developing competitive and economic environment, one could expect ICT skills to play a crucial role in improving the capability of economic agents (e.g. firms) to efficiently respond to changes in economic conditions. This requires perceiving that a change has occurred by retrieving and analysing information, drawing valid conclusions from such information, and acting quickly, not least by being able to communicate with other relevant actors. Therefore, adequate use of ICT could enhance the process of reallocation of resources from less to more productive firms. To assess the role of professional e-skills as a pre-condition to allow sufficient take-up of ICT which could in turn unleash their productivity-enhancing impact, the effect of professional ICT skills in each sector on the efficiency of the intra-sectoral resources reallocation is estimated (see Box V.9). The econometric analysis indicates that the share of ICT-skilled workers in total employment has a statistically significant effect on allocative efficiency (AE): namely, an increase in this share by 1 p.p. in sector i is associated to an increase in AE in that sector by 1.2 to 1.3 p.p. Since an increase in an AE can be interpreted in terms of higher sectoral productivity relative to a baseline scenario in which employment is allocated randomly across the different firm size categories,

these findings point to a role of adequate availability of e-skills among the labour force in favouring the process of reallocation of resources from less to more productive firms.

Table V.10 below reports, for the EU27 and the four MS under scrutiny, the average share of e-skilled employees across the scrutinised sectors in 2008, its change between 2008 and 2012, and the correspondent estimated impact on AE: this increase is similar across the four countries and around 0.4p.p., below the 0.65p.p. for the EU average. The last column reports the long-run GDP impacts related to the estimated changes in AE, fed into the QUEST III model as labour productivity shocks ([62]) (assuming that no costs were associated to the increased employment share of ICT professionals): the impacts, referring to the period 2008-2012, range from 0.37% in Spain to 0.4% in Greece.

Table V.10: **Effect of e-skills reforms on allocative efficiency**

	Share of ICT skilled employees (2008)	Progress in the share of ICT-skilled employees 2008-2012	Impact on intra-sectoral allocative efficiency (total economy)	Impact on GDP (long-run, % over the baseline)
EU27	**2.24%**	**+0.54 p.p.**	**+0.65 p.p.**	**+0.59%**
Greece	1.01%	+0.35 p.p.	+0.41 p.p.	+0.40%
Italy	2.11%	+0.32 p.p.	+0.38 p.p.	+0.38%
Portugal	1.36%	+0.34 p.p.	+0.41 p.p.	+0.38%
Spain	2.15%	+0.30 p.p.	+0.36 p.p.	+0.37%

Source: Own calculation

V.7.1. The economic impact of e-commerce policies

Over the recent years, also in light of the commitments set by the Digital Agenda for Europe in order to foster a vibrant Digital Single Market in the EU, some efforts have been undertaken by the Member States both to spur online cross-border transactions and build digital confidence. Still, recent Digital Agenda Scoreboard data suggest that only 15% of enterprises made electronic sales in the EU27 during 2010 and that the share of turnover from trading of goods or services over computer networks was stable at 14% between 2009 and 2010: all this indicates that e-commerce is still a small part of the enterprises' business models, complementing their conventional commercial activities for selling and buying, and that there still exists a considerable potential to exploit from further ambition in this policy area.

This section exploits previous estimates in the literature in order to investigate the potential impact of MS' observed reform efforts fostering e-Commerce take-up: the main caveat of this analysis lies in the difficulty to quantify the MS' actually undertaken reform effort other than on the basis of observable outcomes. ([63]) The hypothesised transmission channel is an *efficiency channel*, capturing the impact on economy-wide total factor productivity of increased e-sales among firms, in turn fostering their productivity. There are, indeed, several reasons to assume that firms' recourse to e-trade could improve their productivity (growth), including the effect of organisational learning, flexibility, and adoption of innovative practices. Eurostat (2008) and Eurostat (2013), in particular, investigated the extent to which ICT use has an impact on productivity over and above the physical availability of ICT infrastructure: namely, the analysis, both at firm and at sectoral level, showed a significantly positive correlation between TFP and e-Commerce intensity, measured by the proportion of firms' total trade undertaken through electronic mediums, such as the Internet.

([62]) Based, as an approximation, on the elasticities reported in European Commission (2013): "PMR – Financing the real economy".

([63]) This is related to the scarce reforms in this policy area and anyhow to their rather "soft nature", typically aimed to enhance broad framework conditions for the uptake of e-sales rather than to intervene on a well-identified policy leverage.

Box V.9: **Economic assessment of E-skills policies**

In order to test whether adequate presence of e-skills in the labour force can affect intra-sectoral resources reallocation, Lorenzani and Varga (2014) carried out econometric analysis based on a panel for: i) sectoral employment shares of ICT-skilled workers; ([1]) ii) an index of allocative efficiency (AE), empirically implemented in European Commission (2013), as a sector-level variant of the labour productivity decomposition by Olley and Pakes (1996). The panel covers four broad sectors ("Manufacturing", "Construction", "Trade, Tourism, and Transport", and "Business Services"), the time period 2000-2010, and all EU27 Member States. The estimated model has the following form:

$$AE_{ijt} = a_1 + a_2 Skills_{ijt} + a_4 X_{ijt} + a_5 D_t + a_5 D_j + \varepsilon_{ijt} + \omega_i$$

Where *AE* and *Skills* are, respectively, the allocative efficiency index and the employment share of ICT-skilled workers in country *i*, sector *j* and year *t*; *X* is a vector of control variables, including, e.g., firms' entry rates and size at birth in line with European Commission (2013); *D* is a vector of year and sector dummies, controlling, respectively, for time-specific shocks and for sectoral specificities (for instance, a different technological intensity across sectors).

([1]) ICT-skilled workers are defined as employees using specialised ICT skills to various degrees across all industries (as opposed to employment in the ICT sectors only), based on the thematic review of ICT occupations proposed by ILO (2012), and on reference to actual skills taxonomies when non-ICT professions are taken into account, as in Sabadash (2014).

Table V.11: **Effect of e-Commerce reforms on TFP**

	Share of firms selling online (2010)	Progress in the e-Commerce intensity among firms 2010-2012	Impact on TFP	Impact on GDP (long-run, % over the baseline)
EU27	14.85%	+1.25 p.p.	+0.07 %	0.07%
Greece	9.22%	+0.02 p.p.	+0.00 %	0.00%
Italy	5.03%	+1.21 p.p.	+0.07 %	0.08%
Portugal	19.42%	-4.48 p.p.	-0.24 %	n.a.
Spain	12.96%	+1.24 p.p.	+0.07 %	0.08%

Source: Own calculation

Based on a conservative estimate in the mentioned sources, whereby an increase in the share of firms resorting to e-sales by 10 p.p. is associated, on average, to an increase in TFP by 0.54% ([64]),Table V.11 reports, for each of the four scrutinised MS as well as for the EU27, the share of firms resorting to electronic means for their sales in 2010, the change in this share over 2010-2012, the corresponding impact on TFP and the long-run GDP impact simulated through QUEST III on the basis of this policy shock.

Overall, one can observe a progress in e-Commerce intensity in the order of 1.2 p.p., in line with the EU average, only in IT and ES, but the long-run GDP impacts channelled through the *efficiency* gains are rather small, in the order of 0.08%. However, the analysis in Lorenzani and Varga (2014) shows that higher potential lies in a further *competition channel*, mostly working through the downward pressure exerted over average retail prices due to increased shares of online sales, characterised in turn by lower and less dispersed prices. For instance, preliminary estimates, based on Duch Brown and Martens (2014) of the impact on consumer surplus related to the observed increase in firms' turnover shares of e-Commerce in total retailing show a significant potential for this channel in some of the scrutinised MS: the estimated annual increase in consumer surplus over 2009-2012 due to the increase in the e-Commerce turnover share is 1.21% in PT, 1.13% in IT, and 0.85% in ES (close to the EU average of 1.13%), but only 0.02% in EL.

([64]) This approach should be considered as a prima facie approximation: the reported elasticity is the most conservative among those estimated in Eurostat (2008) for the case of NL and UK, the only Member States where data on both ICT and non-ICT capital were available. The focus of the analysis on a limited number of MS supports this conservative approach. The chosen estimate refers to the impact of e-sales intensity on TFP for the case of Dutch "differentiated services": this choice is supported by theoretical reasons, including that, EU-wide and for the latest available year, e-sales intensity in the manufacturing sector was in line with the total economy (16%), while in distribution services it was slightly higher (23%). This suggests a lower-than-average intensity in differentiated services, where most improvement would thus concentrate.

Table V.13: **Reform areas, tested transmission channels and economic impact**

Structural Reform area	Economic outcome variable directly affected	Transmission channels tested through econometric analysis	Partial equilibrium estimation for EU27
Assigning Radio Spectrum Frequencies	Final retail price of mobile voice services	Impact of increased assignment of radio spectrum frequencies on mobile retail prices, both direct and indirect (through reduced market concentration)	Average decrease in sectoral prices by some 22% EU-wide over 2007-2013
Enhancing professional e-skills	Intra-sectoral allocative efficiency	Impact of increased sectoral share of ICT skilled employment on intra-sectoral allocative efficiency	0.65 p.p. average increase in intra-sectoral sectoral allocative efficiency EU-wide over 2008-2012
Incentivising fixed broadband take-up	Total factor productivity	Impact of increased use of fixed broadband among employees on firm-level productivity and TFP	Average increase in TFP by 0.17% over 2010-2012
Incentivising e-Commerce take up	Total factor productivity (and consumer surplus through retail prices)	Impact of increased recourse to e-sales among firms on productivity and impact on consumer surplus of higher recourse to e-sales (through a competition effect).	Average increase in TFP by 0.07% over 2010-2012 and average increase in consumer surplus by 1.3% GDP p.a. over 2009-2012

V.7.2. The economic impact of fixed broadband policies

Over the recent years, ambitious reforms have been undertaken by the Member States in the field of fixed broadband, both supporting infrastructural development through actual public funding and enhancing framework conditions to foster deployment and take-up (including broadband mapping, infrastructure registration and sharing, co-investment measures, administrative streamlining, and standard development). In fact, the *Digital Agenda for Europe* sets ambitious commitments to enhance fast and ultra-fast fixed Internet access, above all by guaranteeing universal broadband coverage and increasing speeds, also through the deployment of Next Generation Access networks.

This section exploits previous estimates in the literature in order to investigate the potential impact of MS' observed reform efforts fostering fixed broadband take-up: the main caveat of this analysis lies in the difficulty to quantify the MS' actually undertaken reform effort other than on the basis of observable outcomes. The hypothesised transmission channel is again an *efficiency channel*, capturing the impact on economy-wide total factor productivity of increased broadband use among firms, in turn fostering their productivity. The econometric analysis undertaken at firm-level in Eurostat (2008) and Eurostat (2013) indicates indeed a positive impact on productivity, over and above the mere availability of ICT infrastructure, of higher shares of employees connected to the Internet via fixed broadband. In fact, the use of fast Internet may capture unmeasured software and knowledge management by employees, more open and flexible working methods, or anyhow broader knowledge-capital deepening, playing an integral role as an innovation input, which is economically expected to have a mediated impact on overall TFP. Also, this impact should capture, well beyond "within-firm" productivity effects, the reallocation of resources taking place within industries due to differential growth, and to firms' entry and exit. In other words, this responds to the intuition that ICT adoption is somehow positively associated with the dynamism of the market, i.e. the ability of ICT users to grow within their markets (and contribute to market expansion) and to take market shares off less successful firms. (Table V.12)

Table V.12: **Effect of fixed broadband reforms**

	Share of employees connected to the Internet via fixed broadband (2010)	Progress in connected employees 2010-2012	Impact on TFP	Impact on GDP (long-run, % over the baseline)
EU27	93%	+2.0 p.p.	+0.17 %	0.17%
Greece	92%	-15.0 p.p.	-1.25 %	n.a.
Italy	91%	+5.0 p.p.	+0.42 %	0.78%
Portugal	91%	+3.0 p.p.	+0.25 %	0.33%
Spain	97%	+1.0 p.p.	+0.08 %	0.11%

Source: Own calculation

To conclude, in light of his role as general purpose technology, providing inputs/enablers for other economic and social activities, the price and quality characterizing digital markets are crucial to growth, the competitiveness of industries, the well-functioning of the internal market, and the consumers' standard of living. Even more so in the wake of the economic crisis, the policy debate on how to spur "digital growth" in Europe has thus become increasingly topical. Table V.13 summarizes the main findings.

VI. CONCLUSIONS

This report assesses selected structural reforms in product markets in Italy, Spain, Portugal and Greece, although the econometric estimates presented can easily be applied to other countries.

- In terms of the actual reform efforts, the four countries have undertaken significant reforms in product markets. Aggregate regulatory indicators indicate however that the countries are still far from "best practices" identified in terms of low regulatory environment.

- Probably the most difficult question refers to whether countries are reacting to the measures undertaken. The answer seems to be yes, though to different degrees. Different degrees that probably depend on i) the intensity of reforms; ii) the deepness of the crisis and/or accumulated imbalances; iii) implementation problems; iv) transmission channels of reforms are not properly working (e.g. barriers affecting business dynamics); v) bottlenecks from other policy areas such as lack of access to finance.

- To what extent the adjustment to the crisis is driven by natural adjustment forces (e.g. declining of oversized construction sector) and to what extent is the outcome of reform efforts is hard to establish. But structural reforms in product markets can only facilitate and speed up reallocation of resources and the adjustment process while also creating better conditions for business to enter the market and to growth thus creating the much needed jobs.

- Measuring effects of the reforms is not easy and finding evidence of their impact is challenging, among other things due to the short time-span since the adoption of many reforms and to the difficulties in isolating from the effect of the current crisis. The report has presented indicators of the on-going reaction of countries to the crisis and to the reforms undertaken. Available monitoring indicators suggest that most of these efforts are starting to deliver first effects on the economy. This is very encouraging.

- From a conceptual view point, the report has stressed the importance of the proper functioning of the microeconomic transmission channels through which structural reforms could exert their overall macroeconomic impact. A test on whether some of the channels are indeed active is carried out. This is done however for the EU on average. The actual elasticities at national level may differ and in particular could be lower if for example measures targeting the functioning of the transmission channels are not adopted or if reforms are not fully implemented. Indeed, descriptive statistics on business dynamics show significant differences across countries.

- The report has shown that reforms undertaken have a potential significant impact. The full effect of the reforms may not yet be visible but an assessment of their potential effect, for a selected number of reforms, suggests that the gains are expected to be significant. Table VI.1 shows a summary of the direction of the main simulation results across selected reforms areas. It emerges that most countries have implemented reforms whose expected outcome is a favourable one – e.g. fostering business dynamics and allocative efficiency, attracting FDI, reducing excessive profits and increasing productivity. Nonetheless, while most reform areas are common across countries, some discrepancies emerge in terms of reform effort and consequent predicted effect on relevant economic outcomes. In some cases, observed trends in policy/monitoring variables even go in another direction than the desirable one. In other cases, the unavailability of data does not allow to estimate the impact of reforms – even if they have been implemented.

- The latter case is particularly relevant for Greece. The reform effort of this country in terms of product market reforms has been significant during the last five years. The main areas of reform have been start-up and licensing procedures, as well as the reduction of barriers to competition in services (although the impact of reform in professional services cannot be estimated, as data on allocative efficiency and profit rates are not available). Greece has also strongly suffered from the effects of the crisis, which negatively affected payment delays (whose impact, again, cannot be measured due to lack of data) and the capacity of the civil justice system to timely deliver its decisions. In the latter case, although

the deterioration of economic conditions might have contributed to the sharp increase in trial length and backlog of unresolved case, it should be noted that implemented reforms until 2012 have probably lacked ambition. A wide-ranging reform of the judicial system is currently underway in the context of the adjustment programme which has the potential to improve the performance of the system over time. In terms of digital reforms, the assessment is mixed: a progress is recorded in terms of radio spectrum assignment, e-skills and diffusion of e-commerce, but a backward trend emerges in terms of broadband penetration – with a likely negative potential impact on TFP.

- The reform pattern has been similar in Italy, although the largest efforts have been devoted to liberalise professional services and to make civil justice more efficient. The effects of the latter reform are not yet observable in data, but a pattern of reduction in the backlog of pending cases had already initiated in 2012 – with a potentially attracting impact on FDI. Less relevant appears, in terms of impact, the simplification of administrative burden for business start-ups. Interestingly, first signs of a reduction in payment delay emerges from data about government to business transactions – reducing insolvency risk for concerned enterprises, and therefore with a potential to reduce excessive exit rates. However, an opposite trend is recorded in the case of B2B transactions. Finally, Italy, together with Spain, appears to have improved in all four areas of digital reforms under investigation, entailing a favourable impact on telecom prices, allocative efficiency and productivity.

- On top of digital reforms, Spain has also implemented significant measures in the areas of start-up costs and of civil justice. In the latter case, the improvement of judicial efficiency indicators, notwithstanding the crisis, suggests that first effects of reforms are already visible (with potential beneficial effects on entrepreneurship and FDI inflows). Liberalising measures have also been started in the area of professional services, but the reform is still on-going. Accordingly, positive effects are predicted only for selected professions – notably, for those in the legal domain. In contrast, in spite of significant measures to reduce the payment of trade arrears by the public administration, the recorded average payment delay has increased, with detrimental effects on exit rates. However, it might just be a matter of time before the implemented measures start affecting actual payment terms.

- Finally, the situation in Portugal appears mixed. A sharp decrease in the administrative burden to start a new business is accompanied by less homogeneous measures in the area of professional services, where benefits from liberalisation (in terms of increased allocative efficiency and reduced profits) are limited to some professions. Similarly to Italy, a diversified pattern is visible in judicial efficiency indicators, with a decrease in trial length but an increase in average backlog – leading, according to the estimations presented in the report, to higher firms' entry rates, and reduced FDI inflows. Instead, a significant gain is observable in terms of payment delays, whose sharp improvement over the last few years could lead to a sizeable decrease in undesired exit among firms. The observed improvement in the digital front, for example spectrum allocation and e-skills, has the potential to deliver significant long-run GDP effects.

- Has the reform effort been enough? Many structural reforms have been already implemented. Many more have been adopted and are now waiting for a proper implementation. And there are also reforms waiting in the pipeline or just only announced. But certainly there is not room for complacency. Now that market pressure is easing countries need to stay fully committed to pursuing a decisive structural reform agenda. The report highlights the potential additional gains if further reforms efforts are undertaken in all areas considered.

Table VI.1: **The direction of the effects of reforms**

Reform Area	Explanatory variable	Objective variable		Greece	Italy	Portugal	Spain	Change observed in the reform indicator over
				Impact				
Cost of Doing Business	Decrease in cost to start a business & time to export 2011-2014	Entry rate (%)			+	+	+	2011 and the predicted 2014 entry rate
	Decrease in the number of procedures to start a business and time to export change 2011-2014				NR	+	-	
Civil Justice	Observed changes in disposition time between 2010 and 2012	Entry rate (%)			-	+	+	2011 and the predicted 2013 value
	Observed changes in the backlog ratio between 2010 and 2012	FDI net inflows (% of GDP)		-	+	-	+	2010 and the predicted 2012 value
Professional Services	Change in PMR for professional services after 2011	Allocative efficiency	Legal		+	NR	+	2011 and the predicted 2013 value
			Accounting		+	NR	NR	
			Architects		+	NR	+	
			Engineers		+	+	NR	
	Change in PMR for professional services on profits	Profits	Legal		-	-	-	
			Accounting		-	NR	NR	
			Architects		-	NR	NR	
			Engineers		-	-	+	
Late Payments in Commercial Transactions	Change in the late payments ratio between 2010 and 2013	Exit Rates	Business to Business		+	-	+	2010 and the predicted 2013 value
			Government to Business		-	-	+	
Digital Structural Reforms	Increased assignment of radio spectrum frequencies 2007-2013	Retail Prices		-	-	-	-	Depends on the estimation
	Increased sectoral share of ICT skilled employment 2008-2012	Intra-sectoral allovative efficiency		+	+	+	+	
	Change in use of broadband technologies in a professional setting 2010-2012	Impact on TFP		-	+	+	+	
	Change in recourse to e-sales among firms 2010-2012			+	+	-	+	

(1) +/- Refers to the sign of the impact. NR means no impact (no reform). Red is used to indicated that the direction of the impact goes in the wrong direction (thus a "counter reform")

REFERENCES

Canton, E., D. Ciriaci and I. Solera (2014): "The economic impact of professional services liberalisation", in ECFIN Economic Papers series 533 | September 2014

Carpus Carcea M., D. Ciriaci, C. Cuerpo, D. Lorenzani and P. Pontuch: "Economic impact of rescue and recovery frameworks", *forthcoming* in ECFIN Economic Papers series

Cincera, M. and O. Galgau (2005): "Impact of Market Entry and Exit on EU Productivity and Growth Performance", in European Economy Economic Papers, 222.

Ciriaci, D. (2014): "Business dynamics and red tape barriers". European Economy Economic Papers 532 | September 2014

Connell, W. (2014): "The Economic Impact of Late Payments", European Economy Economic Papers 531 | September 2014

Djankov, S. R. La Porta, F. Lopez-de-Silanes and A. Shleifer (2003): "Courts", *Quarterly Journal of Economics*, pp. 453-517.

Duch-Brown, N. and B. Martens (2014): Consumer Benefits from the EU Digital Single Market: Evidence from Household Appliances Markets

European Commission (2013). "Product Market Review 2013. Financing the real economy", European Economy, 8, 2013.

Eurostat (2008), Information Society: "ICT impact assessment by linking data from different sources – Final Report"

Eurostat (2012): "ESSnet on Linking of Microdata on ICT Usage – Final report"

García Posada, M. and J. Mora-Sanguinetti (2013): "Firm size and judicial efficacy: Evidence for the civil procedures in Spain", Banco de España Working Paper N. 1303

Giacomelli, S. and C. Menon (2013): "Firm size and judicial efficiency: evidence from the neighbour's court", Bank of Italy, Tema di Discussione N. 898.

Hazlett T, G. Ibarguen and W. Leighton (2007): "Property Rights to Radio Spectrum in Guatemala and El Salvador: An Experiment in Liberalization", Review of Law & Economics

Huffman, W. A. (1977): "Allocative Efficiency: The Role of Human Capital", The Quarterly Journal of Economics, Vol. 91, No. 1.

KEPE (2013). Impact Evaluation of Deregulation of Professions with Significant Contribution to the Greek Economy. Centre of Planning and Economic Research, Athens.

Lorenzani, D. and F. Lucidi (2014): "The Economic Impact of Civil Justice Reforms", European Economy Economic Papers 530 | September 2014

Lorenzani, D. and J. Varga (2014): "The Economic Impact of Digital Structural Reforms", European Economy Economic Papers 529 | September 2014

Mare, D., O. Ricci, N. Radic. & F. Fiordelisi (2012): "Government late payment: the effect on the Italian economy: I ritardi di pagamento della Pubblica Amministrazione: l'effetto per l'economia italiana" Financial Intermediation Network of European Studies.

Monteagudo, J., A. Rutkowski and D. Lorenzani (2012): "The economic impact of the Services Directive: A first assessment following implementation", in European Economy, Economic Papers 456.

OECD (2013), Product Market Regulation Database, www.oecd.org/economy/pmr.

OECD (2013): "What makes civil justice effective?", OECD Economics Department Policy Notes, No. 18.

Olley, G.S and A.Pakes (1996): "The dynamics of productivity in the telecommunications equipment industry", *Econometrica*, 64(6), pp. 1263-1297

Prasad, R., V. Sridhar (2009): "Allocative efficiency of the mobile industry in India and its implications for spectrum policy", *Telecommunications Policy*, 33, pp. 521-533

Sabadash A. (2014): "The evolution of EU ICT employment 2000-2012", JRC, Institute for Prospective Technological Studies, Digital Economy Working Paper 2014-01 (Forthcoming).

Tiedemann K., (2009):" *Spectrum Auctions In Canada: Policies, Processes, Benefits and Costs*".