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Table of contents

Thematic chapters

Tables

Figures

This Survey *is published on the responsibility of the Economic and Development Review Committee of the OECD, which is charged with the examination of the economic situation of member countries.*

The economic situation and policies of Italy were reviewed by the Committee on 11 January 2017. The draft was revised in the light of the discussions and given final approval as the agreed report of the whole Committee on 24 January 2017.

The Secretariat's draft report was prepared for the Committee by Mauro Pisu and Paula Garda under the direct supervision of Patrick Lenain and Asa Johansson, and the general supervision of Alvaro Pereira and Robert Ford. Statistical research assistance was provided by Damien Azzopardi and Milenko Fadic and administrative support by Brigitte Beyeler and Raquel Paramo.

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The previous Survey *of Italy was issued in February 2015.*

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BASIC STATISTICS OF ITALY, 2015 OR LATEST YEAR AVAILABLE

(Numbers in parentheses refer to the OECD average)[a]

LAND, PEOPLE AND ELECTORAL CYCLE					
Population (million)	61.2		Population density per km^2	206.0	(36.8)
Under 15 (%)	14.0	(18.3)	Life expectancy (years)	83.2	(80.5)
Over 65 (%)	17.9	(13.6)	Men	80.7	(77.8)
Foreign-born (%)	9.5		Women	85.6	(83.1)
Latest 5-year average growth (%)	0.4	(0.6)	Latest general election	February 2013	
ECONOMY					
Gross domestic product (GDP)			Value added shares (%)		
In current prices (billion USD)	1 821		Primary sector	2.2	(2.5)
In current prices (billion EUR)	1 642		Industry including construction	23.5	(26.4)
Latest 5-year average real growth (%)	-0.6	(1.8)	Services	74.2	(71.1)
Per capita (000 USD PPP)	36.1	(40.1)			
GENERAL GOVERNMENT Per cent of GDP					
Expenditure	50.4	(41.9)	Gross financial debt	159.6	(115.2)
Revenue	47.8	(39.0)	Net financial debt	132.6	(75.7)
EXTERNAL ACCOUNTS					
Exchange rate EUR per USD	0.90		Main exports (% of total merchandise exports)		
PPP exchange rate (USA = 1)	0.75		Machinery and transport equipment	35.2	
In per cent of GDP			Manufactured goods	18.5	
Exports of goods and services	30.0	(28.8)	Miscellaneous manufactured articles	17.9	
Imports of goods and services	27.0	(28.5)	Main imports (% of total merchandise imports)		
Current account balance	2.19	(0.13)	Machinery and transport equipment	24.2	
Net international investment position	-25.4		Mineral fuels, lubricants and related materials	16.3	
			Chemicals and related products, n.e.s;	15.3	
LABOUR MARKET, SKILLS AND INNOVATION					
Employment rate for 15-64 year-olds (%)	56.3	(66.2)	Unemployment rate, Labour Force Survey (age 15 and over) (%)	12.1	(7.0)
Men	65.5	(74.1)	Youth (age 15-24, %)	40.3	(14.0)
Women	47.2	(58.5)	Long-term unemployed (1 year and over, %)	6.9	(2.2)
Participation rate for 15-64 year-olds (%)	65.0	(71.3)	Tertiary educational attainment 25-64 year-olds (%)	17.5	(33.6)
Average hours worked per year	1 725	(1 766)	Gross domestic expenditure on R&D (% of GDP)	1.3	(2.4)
ENVIRONMENT					
Total primary energy supply per capita (toe)	2.5	(4.1)	CO_2 emissions from fuel combustion per capita (tonnes)	5.6	(9.5)
Renewables (%)	17.5	(9.6)	Water abstractions per capita (m^3)	898	(819)
Fine particulate matter concentration ($PM_{2.5}$, µg/m^3)	18.3	(14.0)	Municipal waste per capita (kilogrammes)	483	(516)
SOCIETY					
Income inequality (Gini coefficient)	0.325	(0.308)	Education outcomes (PISA score, 2015)		
Relative poverty rate (%)	13.3	(11.2)	Reading	485	(493)
Ratio of incomes of the top 10% vs. bottom 10%	11.4	(9.6)	Mathematics	490	(490)
Public and private spending (% of GDP)			Science	481	(493)
Health care, current expenditure	9.1	(8.9)	Share of women in parliament (%)	31.0	(28.6)
Pensions	16.8	(9.1)	Net official development assistance (% of GNI)	0.21	(0.39)
Education (primary, secondary, post sec. non tertiary)	3.0	(3.7)			

Better life index: *www.oecdbetterlifeindex.org*

a) Where the OECD aggregate is not provided in the source database, a simple OECD average of latest available data is calculated where data exist for at least 29 member countries.

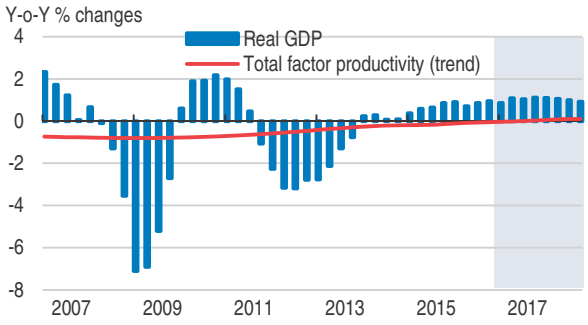
Source: Calculations based on data extracted from the databases of the following organisations: OECD, International Energy Agency, World Bank, International Monetary Fund and Inter-Parliamentary Union.

Executive summary

- *The economy is recovering*
- *Despite ambitious reforms, doing business remains complicated, thus hindering productivity*
- *Reforming education and active labour market policies will improve inclusiveness*

The economy is recovering

Growth has resumed but productivity is still falling



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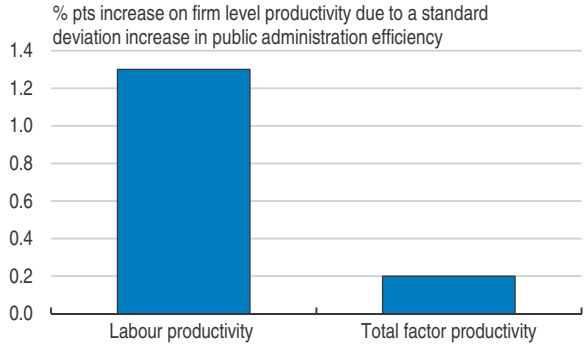
Italy is recovering after a deep and long recession. Structural reforms, accommodative monetary and fiscal conditions, and low commodity prices have helped the economy to turn the corner. The Jobs Act, part of a wide and ambitious structural reform programme, and social security contribution exemptions have improved the labour market and raised employment. Yet, the recovery remains weak and productivity continues to decline. Returning the banking system to health will be crucial to revive growth and private investment. More investment in infrastructure will be essential to raise productivity.

Despite ambitious reforms, doing business remains complicated, thus hindering productivity

Increasing public administration efficiency boosts firms' productivity



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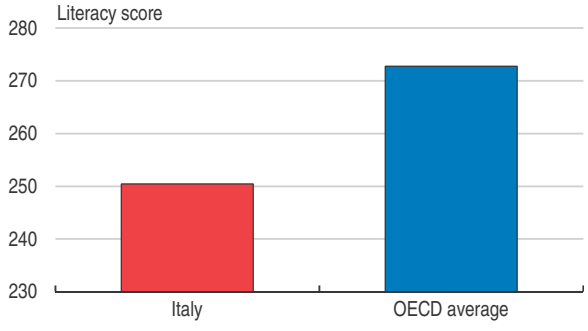
The government has made significant progress on tackling structural impediments to growth and productivity. Yet public-administration inefficiencies, slow judicial processes, poorly designed regulation and weak competition still make it difficult to do business in Italy. Labour and capital resources are trapped in low-productivity firms, which hold down wages and well-being. Innovative start-ups and SMEs continue to suffer from difficult access to bank and equity finance, curbing incomes for many.

Reforming education and active labour market policies will improve inclusiveness

Skills are low



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Literacy scores are low and job-skill mismatch is one of the highest among OECD countries, depressing earnings and well-being. Many workers are under-skilled in the jobs they hold, highlighting mismatches between workers' skills and those required by employers. Improving the education system and labour market policies are crucial to raising real wages, job satisfaction and living standards. The Jobs Act and the Good School reform go in the right direction and need to be fully implemented.

MAIN CHALLENGES	KEY RECOMMENDATIONS
Macroeconomic and financial policies to sustain inclusive growth	
The planned fiscal stance is appropriate. Weak economic growth, low inflation and high tax evasion are contributing to the slow reduction in the budget deficit and high public debt. Public spending restraint has partly relied on infrastructure-spending cuts.	Continue on the path of prudent fiscal policies and prioritise spending on effective infrastructure and innovation programmes. Increase tax revenue by enhancing tax compliance (by investing more in IT systems and human resources, extending the use of e-invoicing and lowering the threshold for cash payments); and introducing real estate taxes based on updated cadastral values. Use additional tax revenues to gradually reduce social security contributions on permanent contracts.
The Italian banking system features low profits and high non-performing loans. These weaknesses may discourage lending and investment. Policy has started to address these issues.	Continue to develop the secondary market for NPLs. As envisaged by the European Supervisory Mechanism, set gradual and bank-specific targets to reduce non-performing loans, backed up by sanctions such as additional provisions, asset sales, suspension of dividend payments and restructuring banks operations. If public funds are needed to recapitalise distressed banks, take full advantage of EU regulations, imposing losses on equity and bondholders, and restructuring banks' operations. Compensate retail bondholders for the losses they will incur.
Small and poorly targeted cash transfers fail to reduce poverty rates among the young and children.	Fully legislate and implement the planned nationwide anti-poverty programme, target it towards the young and children and ensure it is sufficiently funded.
Improving business conditions	
Low public administration efficiency hurts private sector productivity and social welfare.	Continue efforts to enhance the efficiency and transparency of the public administration by: making further progress on e-services; fully implementing the broad public administration reform; amending the parts of public-administration reform blocked by the Constitutional Court and swiftly implementing them.
Insolvency procedures are slow, costly and uncertain.	Use debt-equity swaps more frequently by forcing creditors to share the burden of firm restructuring.
Regulatory bottlenecks curb competition in key professional services holding back performance and reducing incentives to invest.	Approve the competition law under discussion by Parliament.
Innovation and knowledge based capital are low, especially among small and medium enterprises. The venture capital industry is small. The Government has recently introduced a wide array of measures addressing these problems.	Evaluate the effectiveness of recently introduced research and development tax credits and other fiscal incentives in terms of innovation outcomes and forgone tax receipts. Foster the development of the venture capital industry by leveraging private funds and expertise.
Enhancing skills and matching skills with labour market needs	
The unemployment rate is decreasing but remains high, especially among the young and long term unemployed.	Employ more specialised counsellors and profiling tools in the public employment services. Assess the labour market impact of job-search and training programmes and focus funding on those that are performing well.
Workers skills are deficient. The early school leaving rate is decreasing yet remains high.	Build partnerships between schools and businesses to create high quality work-based learning for students as envisaged by the Good School reform.
The share of workers with tertiary education is low. Apprenticeships are underused and the share of students with working experience is low. Post-secondary vocational education and training (VET) is weak.	Scale up post-secondary VET with strong involvement of the business sector, based on the example of Istituti Tecnici Superiori. Establish a national body on VET involving the business sector and all key stakeholders to link the training component of VET with apprenticeships; ensure high-quality workplace training and identify skills needed in the labour market.

Assessment and recommendations

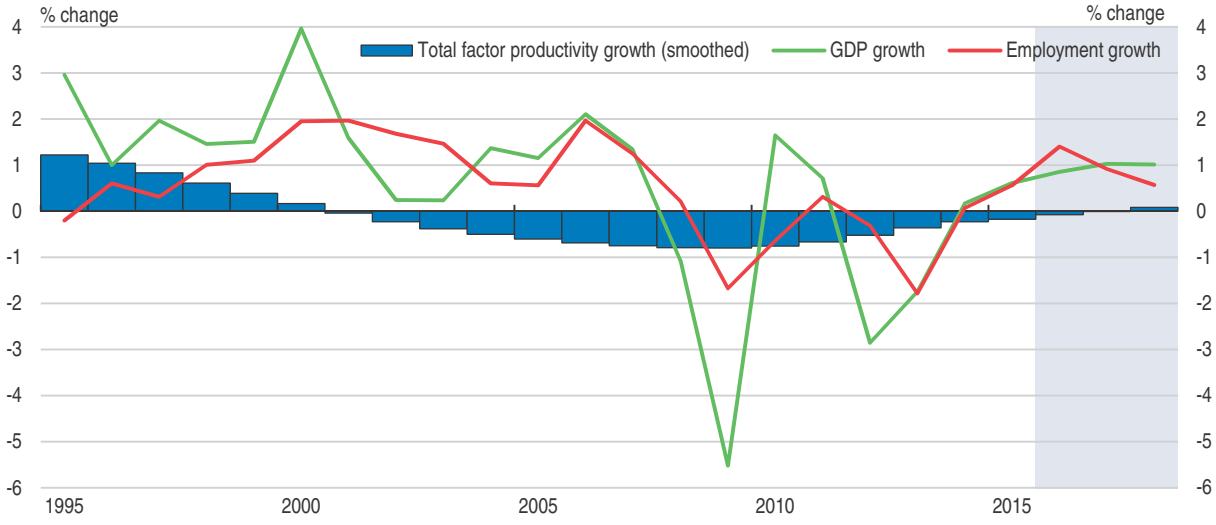
- *The economy is recovering gradually from a deep and long recession*
- *Reforms to improve the business environment and increase productivity*
- *Reforms to boost inclusive and sustainable growth*

The statistical data for Israel are supplied by and under the responsibility of the relevant Israeli authorities. The use of such data by the OECD is without prejudice to the status of the Golan Heights, East Jerusalem and Israeli settlements in the West Bank under the terms of international law.

Italy is emerging from a long and deep recession (Figure 1). Macroeconomic policies initiated by the Italian government and supportive monetary policy have contributed to the turnaround, along with lower commodity prices. The Jobs Act and social security contribution exemptions jolted the labour market, leading to rising employment and higher consumer spending. Mildly expansionary fiscal policy is supporting growth. Impressive progress has been made on the structural reform programme. Reforms in different areas, including the labour market, school system and public administration, have been passed and implemented or are in the course of implementation (Table 1). Greater focus has also been put on past reforms, with a sharp reduction in the backlog of decrees needed to implement them. The rejection of the constitutional reform in a referendum in December 2016 has heightened political uncertainty but the structural reform process must continue if Italy is to build a more inclusive society and improve growth prospects.

Reforms, especially the Jobs Act and lower social security contributions, have started to reverse the damages the crisis inflicted on the economy and the social fabric of the country. Since the start of the crisis, real GDP per capita dropped by about 10% and is now at the same level as in 1997. Absolute poverty nearly doubled from its pre-crisis level, hitting especially hard youths and children. These developments have resulted in mixed well-being outcomes. Italy performs well in some dimensions, such as work-life balance, social connections and health status, while it ranks below the OECD average in others, such as subjective well-being, environmental quality, jobs and earnings, housing, and education and skills (Figure 2). Also, there is considerable heterogeneity across the population with

Figure 1. **Output and productivity growth are recovering**



Source: OECD Economic Outlook 100 Database, projections revised as of 20 January 2017.

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Table 1. **Main elements of the reform programme**

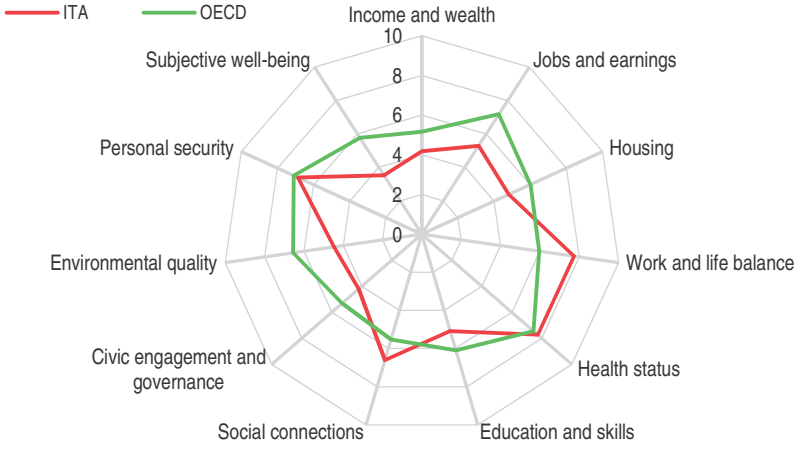
Reforms	Purpose of the reform	Approved	To be approved by
Institutional reforms			
Electoral law	Stronger and more stable parliamentary majority	✓	
Constitutional reform (confirmatory referendum)	End the perfect bicameralism and centralise local government responsibilities		Rejected in December 2016 referendum
Bill on the prevention of conflict of interest	For deputies and government members		March 2017
Labour market and social policies			
Jobs Act	Single open-ended contract, new unemployment benefit system (NASPI)	✓	
ANPAL (National Agency)	New ALMPs and agreements with regions	✓	
Training voucher	Conditionality of unemployment benefits on activation	✓	
Youth Guarantee scheme	Second phase	✓	
Second level contractual bargaining	Lower taxation on firm-level negotiated productivity premium	✓	
Jobs Act for self-employed workers	Strengthen social protection for the self-employed		June 2017
Single family code	Coordination of legislation to support families		June 2017
Fight poverty and reorganise social services	More funds to combat poverty (2016 and 2017 budget laws); introduction of a national anti-poverty programme		2017
Law "Dopo di noi"	Assistance for people with severe disabilities	✓	
Plan for early-childhood educational services	Refinancing the Plan	✓	
Fiscal issues			
Revision of cadastral values	Complete the reform of the cadastral system		2017-18
Combating tax evasion	Monitoring of tax evasion, reorganisation of fiscal agencies	✓	
Fiscal Federalism	Standard requirements and fiscal rules for local governments	✓	
Spending review	Phase II of spending review; rationalisation of e-procurement and thresholds for independent tenders	✓	
Privatisation			
ENAV, Poste Italiane and ENEL		✓	
Other privatisations under consideration			2017-18
Justice			
Rules on corporate crisis and insolvency procedures	Reorganisation of the insolvency law		June 2017
Reform of civil and criminal procedures	Strengthening guarantees for defendants, lowering length of proceedings; reinforcing business and family courts		June 2017
Fighting organised crime	Measures to fight organised crime and illicit wealth		June 2017
Infrastructure			
Reform of public procurement	Strengthen ANAC role; update awarding criteria; qualification system of contracting authorities	✓	
Ultra-Broadband Plan	2020 target: 85% of population covered		2017-20
Competition and competitiveness			
2015 Annual law on competition			2017
2016 Annual law on competition			2017
Public administration			
Enabling Law on reforming the Public Administration	Increase efficiency (through simplification and reorganisation procedures), transparency and anti-corruption	✓	
Education – Good School Reform			
Legislative Decrees	Review and simplification of the Single Code; training and access to secondary school teaching positions; review of vocational education courses and link them with education system; evaluation and certification of students skills; pre-school education; scholarships		2017
National Plan for digital school	Digital education and innovation in education	✓	

Table 1. **Main elements of the reform programme** *(cont.)*

Reforms	Purpose of the reform	Approved	To be approved by
Environment			
Green economy measures	Crimes against the environment; measures for the containment of excessive use of natural resources	✓	
Green Act Bill	Environmental taxation; circular economy, renewables, mobility		2017
Waste management	Regulatory authority and progressive transition from tax (Tarsu) to tariff		2017

Source: MEF (2016), *National reform Programme*.

Figure 2. **Italy's well-being outcomes are mixed**



Source: *OECD Better Life Index 2016.*

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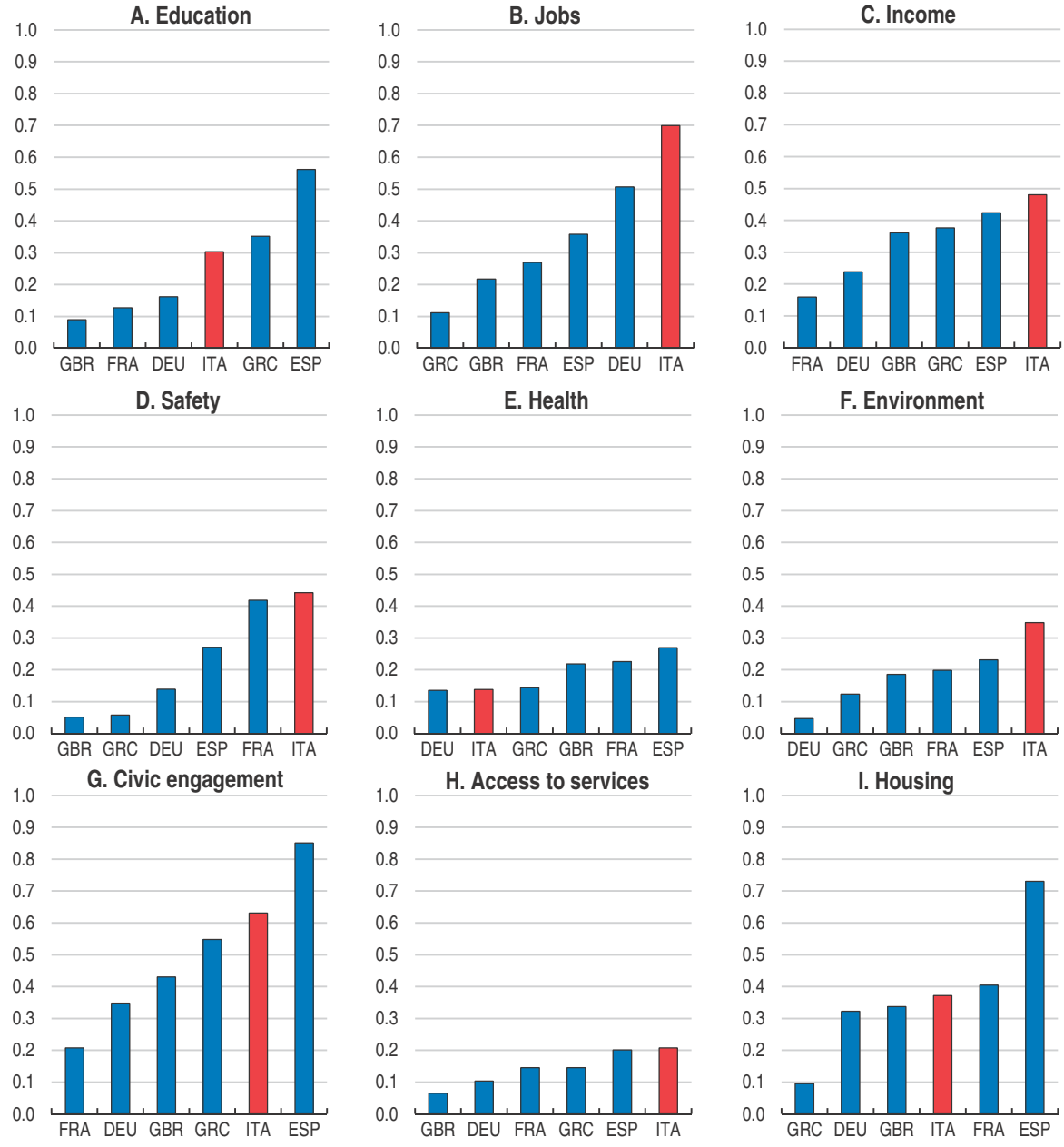
some groups faring considerably better than others, especially with respect to income and wealth, and jobs and earnings. Regional dispersion in well-being is also high compared to other OECD countries (Figure 3).

Addressing Italy's economic and social challenges will require raising the public administration's efficiency, improving the business environment and workers' skills, and reducing poverty to deliver inclusive and sustainable economic growth. Against this background the main messages of this *Survey* are:

- A gradual recovery is underway. Changes in the fiscal-policy mix are required to boost investment and productivity and achieve a higher GDP growth rate.
- Italy has implemented many structural reforms in recent years, but raising chronically low productivity growth – which in the medium term is the only way to raise living standards – will require a more effective public administration, an improved business environment, increased innovation, stronger competition, and a better match between the demand and supply of skills.
- Prolonged weak growth and low productivity have eroded social inclusion, requiring renewed efforts to raise employment, especially of women and youth, reduce poverty, especially among youths and children, and improve skills.

Figure 3. **Regional dispersion in well-being is high**



Note: The indicator measures the dispersion in well-being index across regions within a country; it is standardised between 0 and 1; 1 being maximum dispersion.
Source: OECD Regional Well-Being Database 2016.

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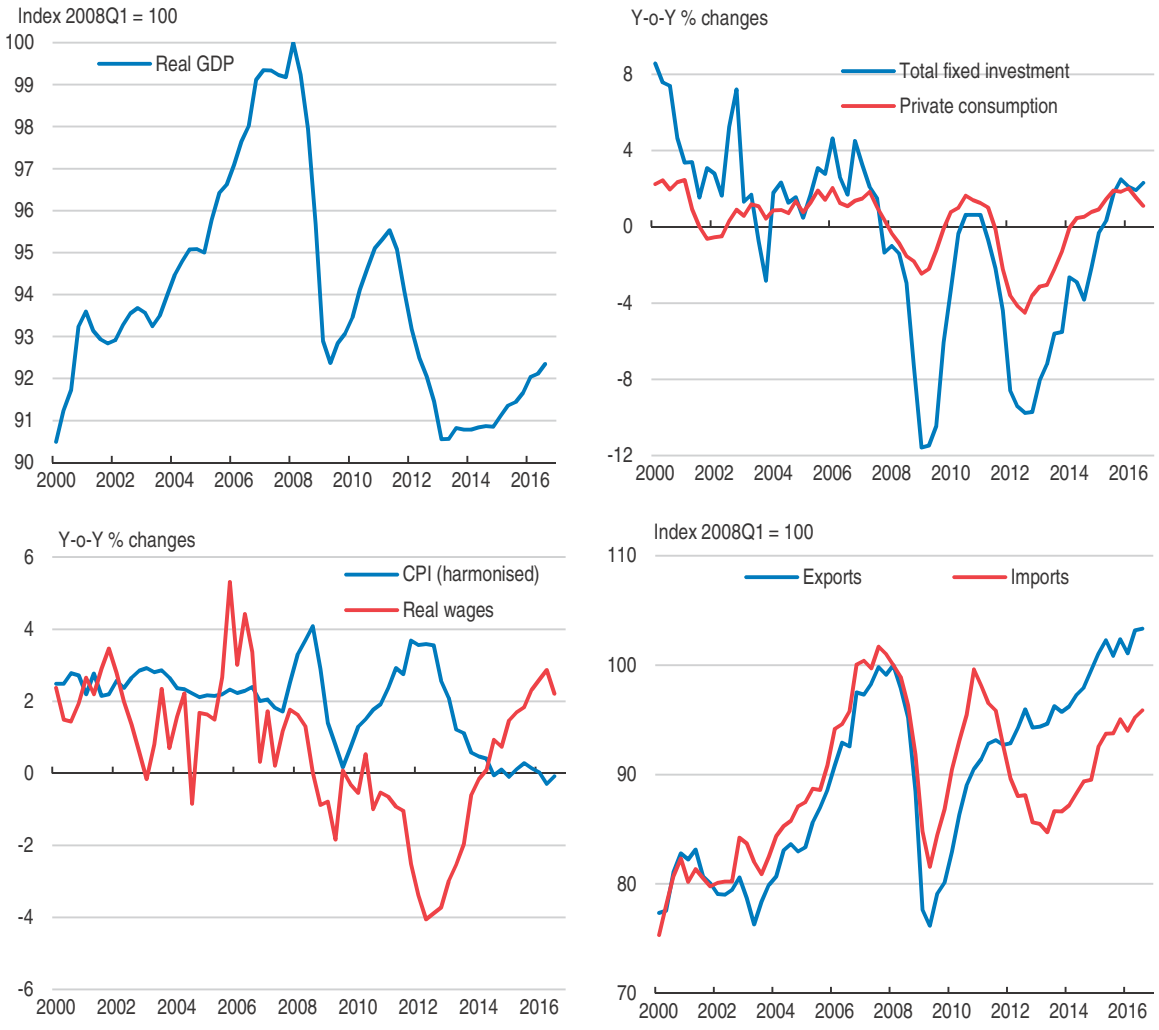
The economy is recovering gradually from a deep and long recession

A self-reinforcing cycle between employment, household income and private consumption supported a modest recovery in 2015 and 2016 (Figure 4). The Jobs Act and the temporary exemptions in social security contributions for new permanent contracts, accompanied by accommodative monetary policy, have raised employment and participation rates (Figure 5). Real wage gains due to moderate nominal wage increases and persistent low consumer price inflation – reflecting the still sizeable output gap and

Figure 4. **Private consumption is driving the recovery**



Source: *OECD Analytical Database*; and *OECD Economic Outlook Database*.

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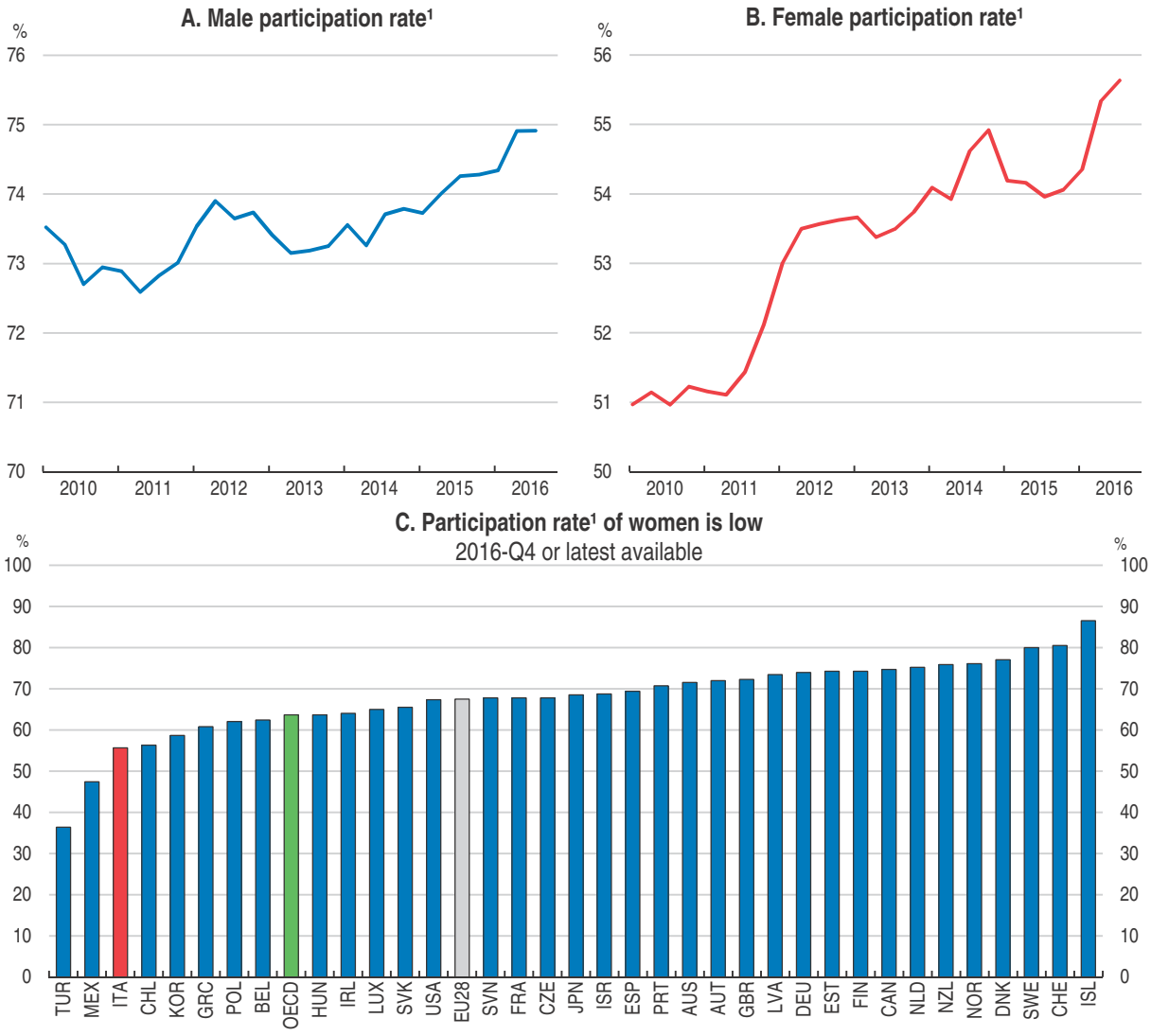
subdued energy prices – have supported household purchasing power. Unemployment has declined and labour market participation has increased – especially among women. The youth unemployment rate has also fallen after having increased for most of the crisis, but remains high (Figure 6). Low growth in Italy's main trade partners and geopolitical tensions in the Mediterranean area have hindered sales abroad, while weak investment has checked import growth. Overall, the pattern of the recovery differs from previous ones, which were usually driven by export growth following exchange rate devaluations (Figure 7, Panels A and B). Italy's export performance has lagged that of other euro area countries, such as Portugal and Spain (Figure 7, Panels C and D), as a consequence of faster growth in unit labour costs, slower integration in global value chains (Figure 7, Panels E and F) and poor productivity growth.

In 2015, the Jobs Act and temporary social security contribution exemptions boosted the creation of jobs with open-ended contracts, which represented 36% of the new jobs, against 26% in 2014 (Figure 8, Panel A). Almost two-thirds of the new open-ended contracts benefited from social security contribution exemptions (Figure 8, Panel B). The reform also

Figure 5. **Labour market participation rates are increasing**



1. The labour force participation rate is defined as the ratio of the labour force to the working age population (15-64 year old), expressed in percentages.

Source: OECD Labour Force Statistics.

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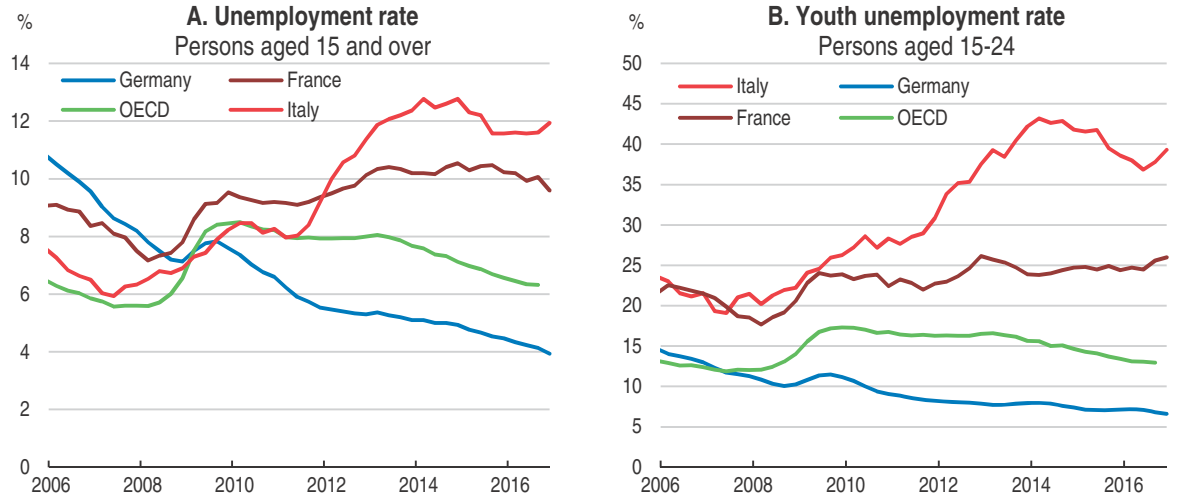
encouraged the transformation of temporary, atypical and apprenticeship contracts into permanent ones, reducing labour market duality. However, as social security contribution exemptions were more than halved in 2016, the number of new open ended contracts dropped markedly (Figure 8, Panel A). Sestito and Viviano (2016) show that the increase in new open-ended contracts is mostly attributable to the introduction of social security contribution exemptions.

Uncertainty and recently declining consumer confidence induced households to curtail consumption and increase savings (Figure 9, Panel A). Despite positive signs in early 2016, investment is 70% of its pre-crisis peak, and public investment has fallen to just above 2% of GDP (Figure 10). Lending to firms has been shrinking for some time (Figure 9, Panel B), especially in the construction sector whereas lending to manufacturing and

Figure 6. **The unemployment rate is declining**



Source: OECD Labour Force Statistics.

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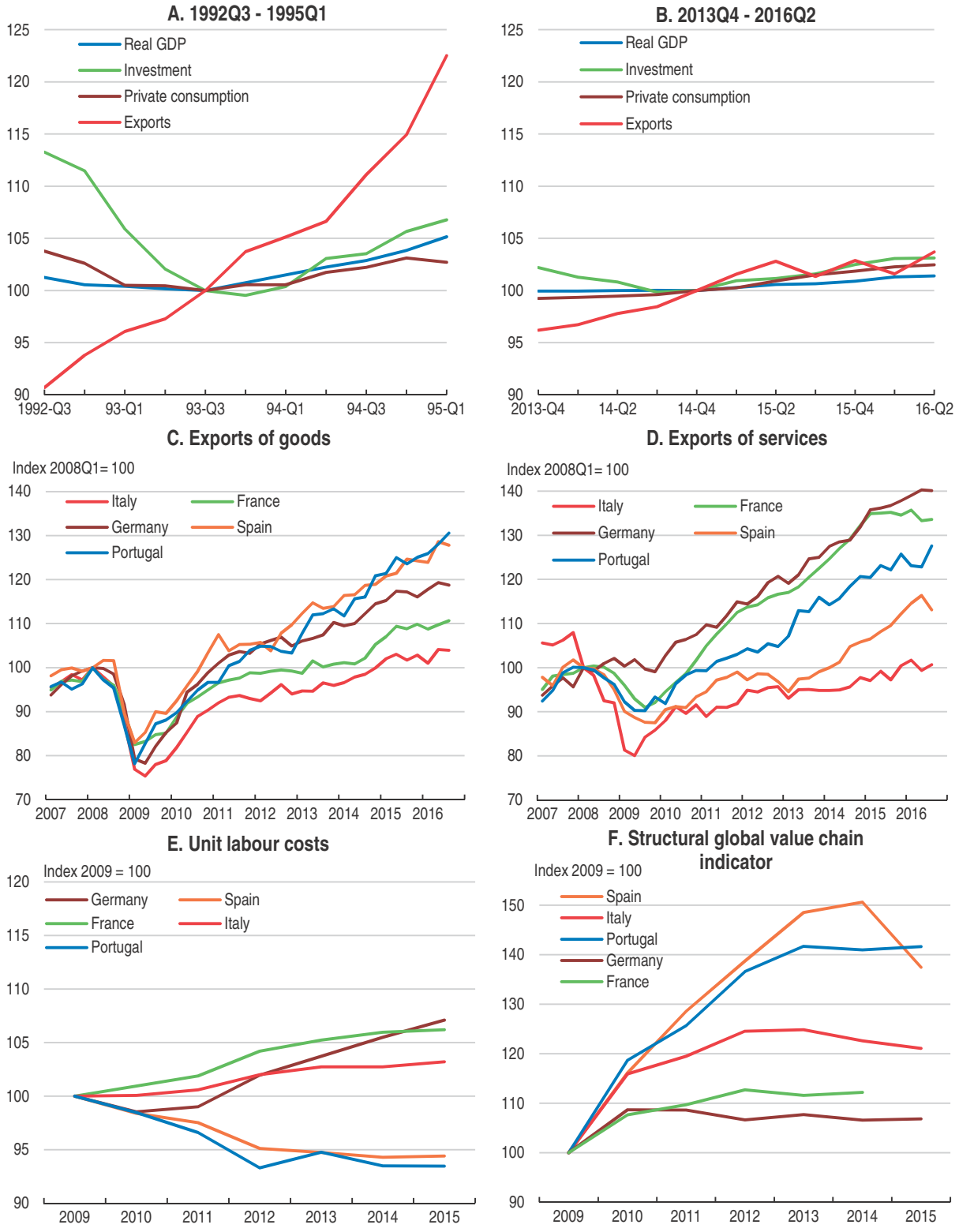
services have levelled off and show some sign of improvement (Figure 9, Panel C). The latest Purchase Managers' Index indicators for the service and manufacturing sectors indicate the perpetuation of modest output growth in the months ahead.

The economy will continue to expand moderately

GDP is projected to grow by 0.9% in 2016 and edge up to 1% in 2017 and 2018. Uncertainties concerning the banking sector and Brexit could moderate private consumption growth in 2017. In 2018, the expiration of social security contribution exemptions for open-ended contracts will mitigate employment growth. The moderate economic expansion and credit supply constraints linked to bad loans will curb private investment. Expected low growth in the euro area and Italy's main trading partners will keep restraining sales abroad (Table 2).

The resolution of uncertainties surrounding the banking sector and Brexit could help restore consumer confidence, leading to faster private consumption growth than expected. Decisive progress on reducing bad loans could further improve credit-supply developments. The planned increase in public investment could also be faster and more effective than anticipated, while implementation delays would have the opposite effect. On the other hand, renewed financial market turmoil in the euro area or an aggravation of banks' balance sheet problems could drive risk spreads higher, raise debt financing costs and require a fiscal retrenchment. Lower world trade growth would hinder exports. The refugee crisis could again intensify, straining government finance and capacity to deal with a larger influx of immigrants. Higher oil and energy prices would diminish household purchasing power, lowering private consumption. The rejection of the constitutional reform in the referendum risks slowing down the structural reform process, lowering growth prospects and making fiscal consolidation more of a challenge.

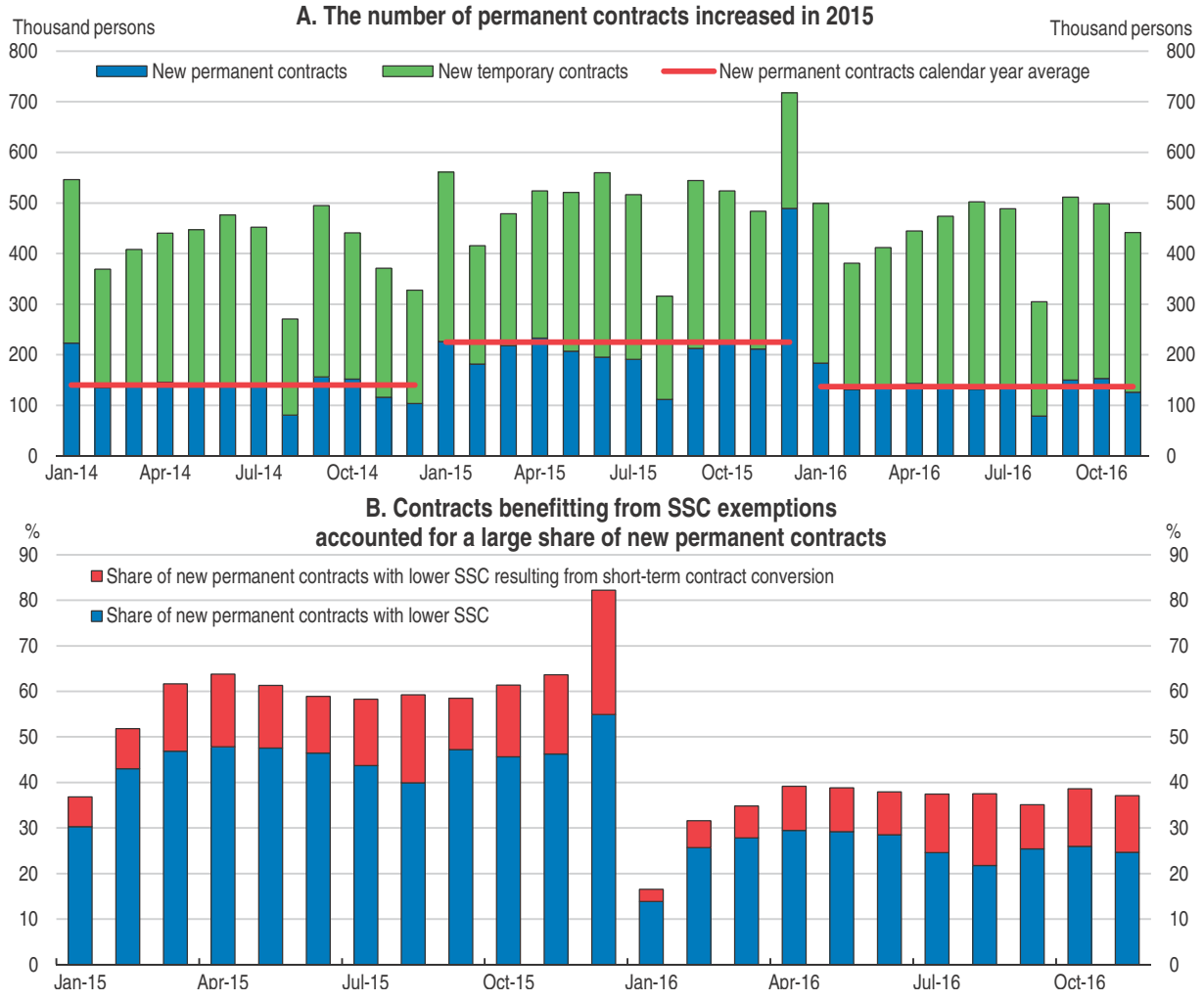
Figure 7. **Export is not adding to the recovery as in past recoveries**



Source: OECD Analytical Database; *OECD Productivity Database*; and Haugh, D. et al. (2016), "Cardiac Arrest or Dizzy Spell: Why is World Trade So Weak and What can Policy Do About It?", *OECD Economic Policy Papers*, No. 18, OECD Publishing, Paris.

StatLink http://dx.doi.org/10.1787/888933453879

Figure 8. **The Jobs Act and social security contribution (SSC) exemptions have jolted the labour market**



Source: Istituto nazionale della previdenza sociale (INPS), *Osservatorio sul Precariato*.

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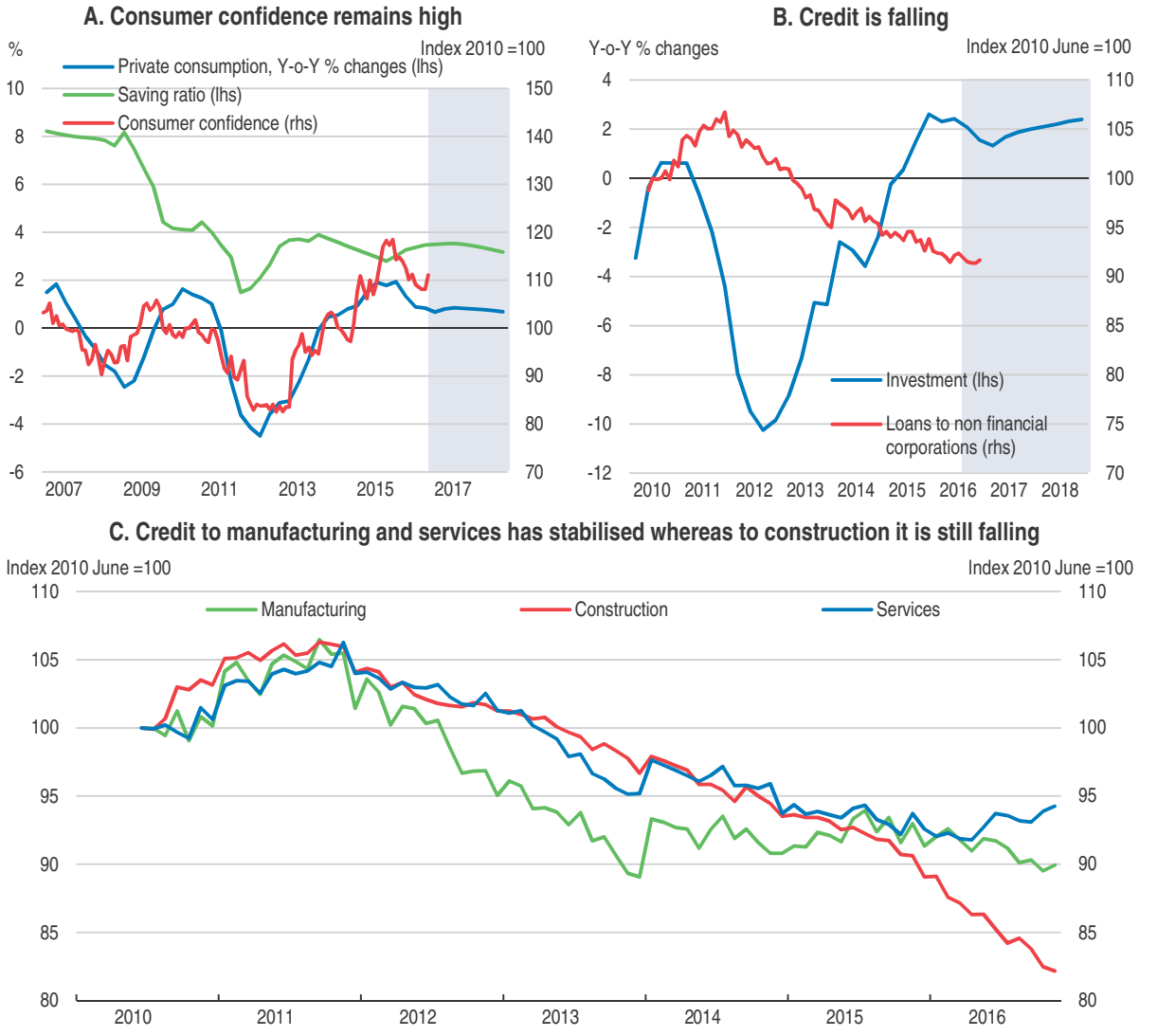
Stronger growth would help reduce public debt

The government is committed to fiscal sustainability and continues to reduce the deficit gradually. The 2017 budget provides diverse incentives to boost investment and innovation – especially through the Industry 4.0 Plan (Box 1) – and repeals a VAT hike that was previously scheduled for January 2017. It also lowers the corporate income tax rate from 27.5 to 24% and extends for two years social security contribution exemptions for new permanent contracts, but limits them to southern regions and to newly-hired students who have completed internships at the firm. Spending on low pensions and, to a much lesser extent, family benefits are increased. The government has asked the EU for additional fiscal leeway amounting to about 0.4% of GDP, reflecting exceptional economic circumstances linked to the recent earthquakes and the refugee crisis, which will result in a more gradual adjustment towards the Medium Term Objective of a balanced budget in 2019. In January 2017, the EU requested additional budget measures delivering a structural adjustment of at least 0.2% of GDP. The government subsequently announced it intends to adopt the necessary measures as part of a comprehensive fiscal strategy to be

Figure 9. **Confidence has declined but remains high while bank loan disbursements keep falling**



Source: *OECD Economic Outlook 100 Database*, projections revised as of 20 January 2017; ISTAT; and Thomson Reuters.

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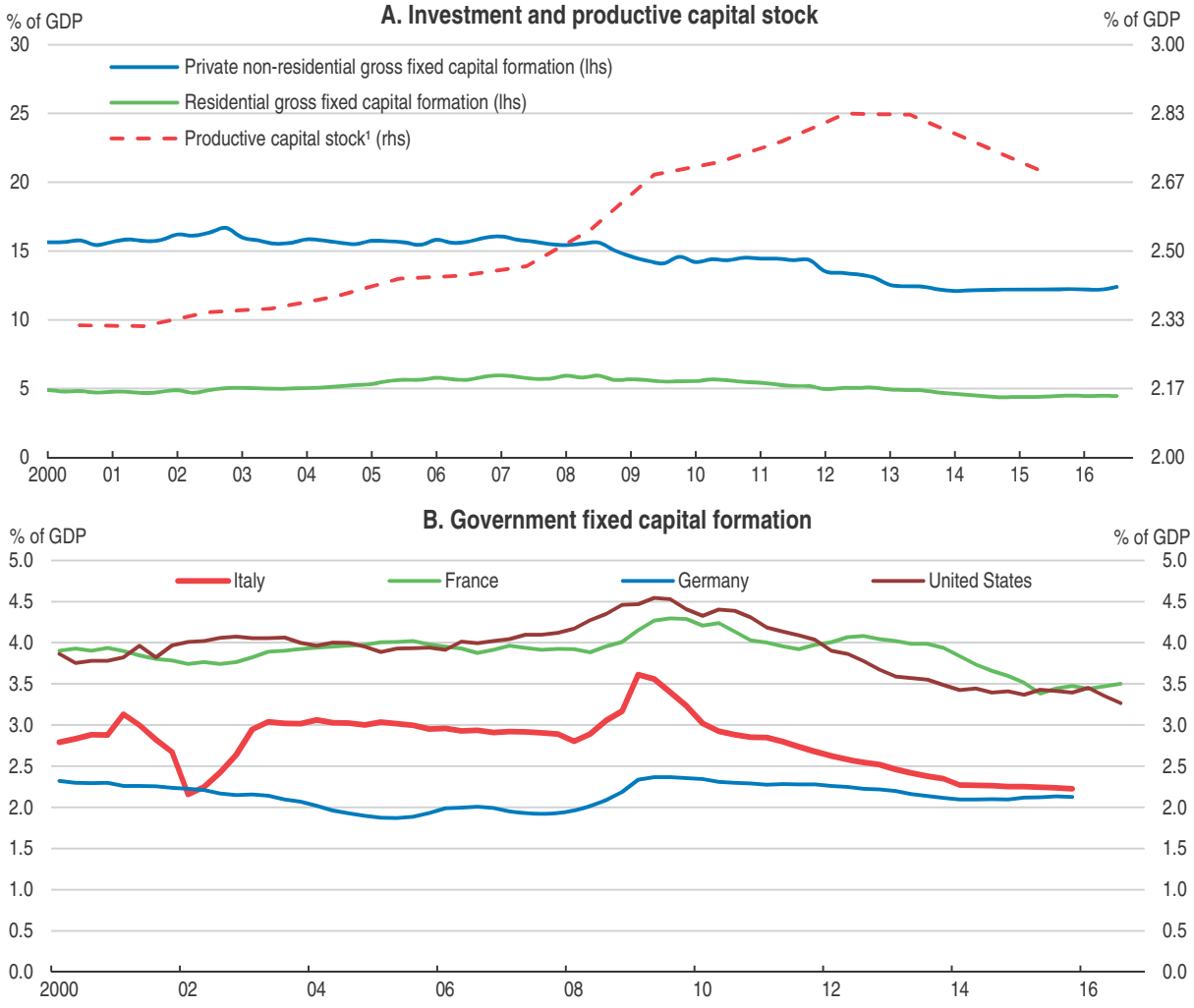
specified in the Economic and Financial Document to be published in early spring. Lower interest payments and the mild economic expansion will keep the headline budget deficit at 2.3% in 2017 and 2.2% in 2018, without considering the 0.2% structural adjustment requested by the European Commission.

Italy's fiscal stance is broadly appropriate provided that the available fiscal space is used to finance policies leading to faster and more sustainable growth. Lower interest payments, have generated fiscal space. Between 2012 and 2016 interest payments on the public debt have declined from 5.2% to an estimated 4.0% of GDP. Restoring public investment is a priority as since the start of the crisis it has dropped by more than 30% in nominal terms, to 2.2% of GDP the lowest level in more than 25 years. Effective public investment will boost growth and help reduce the debt ratio (Mourougane et al., 2016). Priorities could include transport infrastructure in addition to a multi-year programme to make buildings earthquake-proof and promoting decarbonisation of the economy in line

Figure 10. **The crisis hit investment hard and the productive capital stock is falling**



1. Total economy less housing.

Source: OECD Analytical Database and *OECD National Accounts Database*.

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with the COP21 goal. In addition, education spending and family benefits, which are low for an OECD country, should be raised to increase productivity and alleviate poverty (Fournier and Johansson, 2016).

Higher public investment must be accompanied by improved project selection to make sure resources are not wasted. In this respect, the government has started a broad review of existing infrastructure projects – including those of previous spending programmes but not yet started – based on an assessment of current needs, updated demand forecasts and budgetary constraints. To this end, the Ministry of Transport and Infrastructure is using a set of guidelines to evaluate public investment projects based on social and economic considerations. This review, if fully completed, along with the new public procurement code and the work of the anti-corruption commission (Table 8) hold the promise of improving the effectiveness of infrastructure spending. The government should make sure to select infrastructure projects based on objective and transparent criteria, including cost-benefit analyses, and promote their use across regions.

Table 2. **Macroeconomic indicators and projections**

Annual percentage change, volume (2010 prices)

	2013 Current prices (EUR billion)	2014	2015	2016	2017	2018
Gross domestic product (GDP)	**1 604**	**0.2**	**0.6**	**0.9**	**1.0**	**1.0**
Private consumption	981	0.4	1.5	1.2	0.8	0.7
Government consumption	315	-0.9	-0.6	0.5	0.7	0.5
Gross fixed capital formation	277	-2.9	1.1	2.1	1.7	2.3
Housing	78	-6.9	0.3	2.2	0.7	1.4
Final domestic demand	1 573	-0.4	1.0	1.3	0.9	1.0
Stockbuilding[1]	-6	0.7	0.0	-0.3	0.1	0.0
Total domestic demand	1 567	0.3	1.0	1.0	1.0	0.9
Exports of goods and services	464	2.6	4.0	1.7	2.9	2.9
Imports of goods and services	427	3.2	5.8	2.2	3.0	2.9
Net exports[1]	37	-0.1	-0.4	-0.1	0.1	0.1
Other indicators (growth rates, unless specified)						
Potential GDP		-0.2	-0.2	-0.1	0.0	0.1
Output gap[2]		-5.9	-5.1	-4.2	-3.2	-2.3
Employment		0.4	0.8	1.3	0.9	0.6
Unemployment rate		12.6	11.9	11.5	11.1	10.7
GDP deflator		0.9	0.6	0.6	0.8	1.0
Consumer price index (harmonised)		0.2	0.1	-0.1	0.8	1.2
Core consumer prices (harmonised)		0.7	0.7	0.5	0.7	1.2
Household saving ratio, net[3]		3.7	3.0	3.3	3.5	3.3
Trade balance[4]		2.9	3.2			
Current account balance[4]		1.9	1.6	3.0	2.9	3.1
General government fiscal balance[4]		-3.0	-2.6	-2.4	-2.3	-2.2
Underlying general government fiscal balance[2]		0.2	0.4	-0.1	-0.6	-1.0
Underlying government primary fiscal balance[2]		4.4	4.1	3.6	3.0	2.6
General government gross debt (Maastricht)[4]		131.8	132.4	132.8	132.7	132.1
General government net debt[4]		130.5	132.6	133.0	132.9	132.4
Three-month money market rate, average		0.2	0.0	-0.3	-0.3	-0.3
Ten-year government bond yield, average		2.9	1.7	1.5	1.7	1.7

1. Contribution to changes in real GDP.
2. As a percentage of potential GDP.
3. As a percentage of household disposable income.
4. As a percentage of GDP.

Source: OECD Economic Outlook 100 Database, projections revised as of 20 January 2017.

Italy's fiscal policy needs to tread a fine line between fiscal consolidation and supporting the still uncertain economic recovery. Fiscal consolidation accompanied by ultra-low interest rates and modest output growth is stabilising the debt-to-GDP ratio at about 133% of GDP (Figure 11, Panel A). However, if growth-enhancing reforms and higher inflation lead to faster nominal income growth than seen in the past decade, the debt-GDP ratio will fall (Figure 11, Panel B).

Effective growth-oriented policies and medium term fiscal consolidation are the keys to a durable and sustainable debt reduction strategy. In a business as usual scenario considering the projections for the *OECD Economic Outlook* No. 100 until 2018 and thereafter assuming yearly real GDP growth of 1%, a primary surplus of 1.5% of GDP, an effective interest rate of 3.2% and inflation of GDP deflator rising progressively to 1.5% by 2024 and remaining constant after, the debt ratio would decline to 123% in 2030 (Figure 12). Raising yearly GDP growth by 0.5 percentage points (to 1.5%), by for instance cutting employer's social security contribution rate to one-third of their current value (as explained below), would bring the

Table 3. **Low probability events that could lead to major changes in the outlook**

Vulnerability	Possible outcome
Protracted political instability.	A long period of political instability would risk halting the implementation of reforms already approved – such as the Jobs Act, for what concerns job search and training policies, the Good School and public administration reforms – and derailing the structural reform agenda.
Intensification of geo-political tensions in the Mediterranean region and heightening of the refugee crisis.	An increase in the already large influx of refugees would require additional resources to host them and might generate internal political tensions.
Severe financial market and banking system crisis.	The banking sector could require larger public support than what is already provisioned for in the context of limited fiscal space.
Economic stagnation, higher interest rate and debt snowballing.	Slowing down structural reforms in the context of renewed tensions and uncertainties in the euro area and slower growth in main trade partners could lead to economic stagnation and higher interest rate, resulting in a rising debt to GDP ratio.
Further deterioration of the European banking system's financial health.	Aggravation of banks' problems in some European countries could have ripple effects across the EU and beyond, engendering financial market turmoil and higher interest rates besides undermining confidence in Italian banks.
Disorderly exit of the United Kingdom from the EU.	A disorderly exit of the United Kingdom from the EU could erode trust in European institutions and severely hurt consumer and producer confidence, resulting in lower investment.

Box 1. **Main elements of the Industry 4.0 Plan**

In 2016, the government launched the National Industry 4.0 Plan, which provides a range of incentives (for about EUR 13 billion) to boost innovation and skills in new technologies over 2017-20. This is the first national industry plan explicitly aiming at modernising the productive structure of the economy, following similar initiatives in other countries, such as France (Industrie du Futur), Germany (Industrie 4.0) and the United States (Manufacturing USA).

Its key elements to boost investment include:

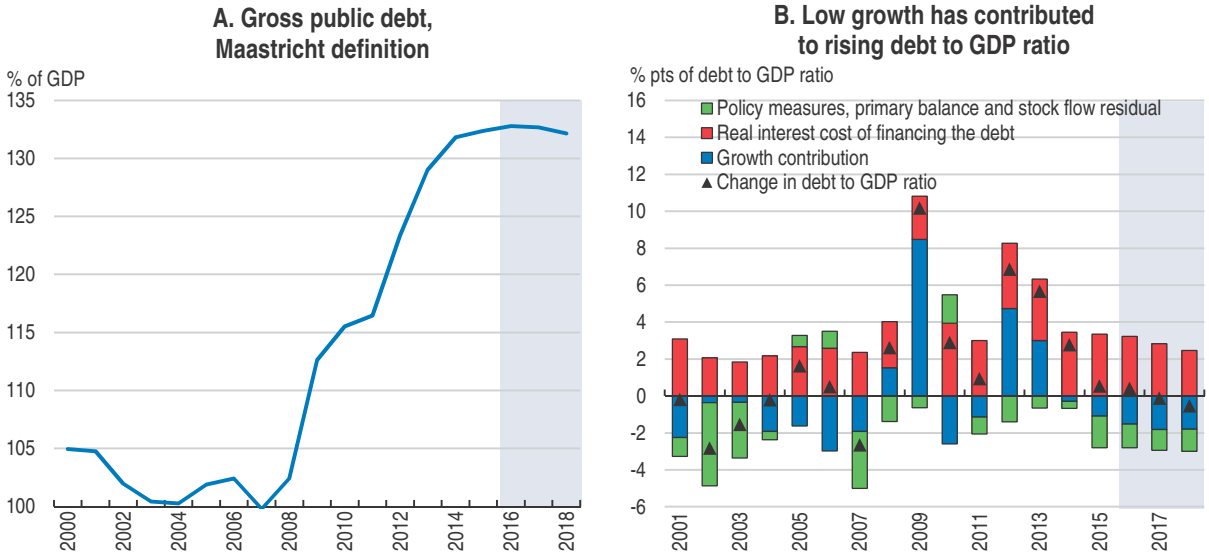
- Hyper-depreciation scheme (introduced with the budget law of 2017): companies will be allowed to deduct 250% of the value of investments in industry 4.0 technologies which are instrumental to the digitalisation and innovation of their industrial processes.
- Super-depreciation (introduced in 2016 and enhanced in 2017): companies will be allowed to deduct from their taxable income a sum equal to 140% of the original cost of eligible equipment, machineries, software (if connected to investments in industry 4.0 technologies) and other eligible equipment.
- Strengthened R&D tax credits for 2017 by raising the share of internal R&D spending that is deductible from companies' taxable income to 50% (from 25%) – the same as for external R&D spending – and raising the annual tax-credit celling to EUR 20 million (from EUR 5 million).
- Stronger incentives for investing in start-ups and innovative SMEs by: raising the tax credit to 30% (from 19%) of the invested capital in start-ups and innovative SMEs and raising the maximum eligible investment to EUR 1 million (from EUR 0.5 million); allowing companies to claim a tax credit equivalent to losses of controlled start-ups for the first four years of activity; boosting venture capital dedicated to selected industry 4.0 technologies through co-investment schemes with private sector funds.

The Industry 4.0 Plan also aims at enhancing the supply of skills relating to new technology by:

- Implementing the Digital School National Plan.
- Increasing the number of students (at university and post-secondary vocational and education training courses) and doctoral researchers in technical and scientific subjects.
- Creating competence centres and digital innovation hubs to promote cooperation and exchanges among universities, large companies and SMEs, start-ups, business associations and public sector, aiming at supporting the technological transfer and enhancing technical and managerial skills on new technologies.

The Industry 4.0 Plan is flanked by a planned increase in public investments to significantly extend the ultra-broad band network, especially in areas where private operators are unwilling to invest to extend the network.

Figure 11. **The public debt to GDP ratio has stabilised**



Note: Panel B employs the methodology of Mauro, P. and J. Zilinsky (2016), "Reducing Government Debt Ratios in an Era of Low Growth", *PIIE Policy Brief*, No. 16-10, Peterson Institute for International Economics.
Source: *OECD Economic Outlook 100 Database* and OECD calculations.

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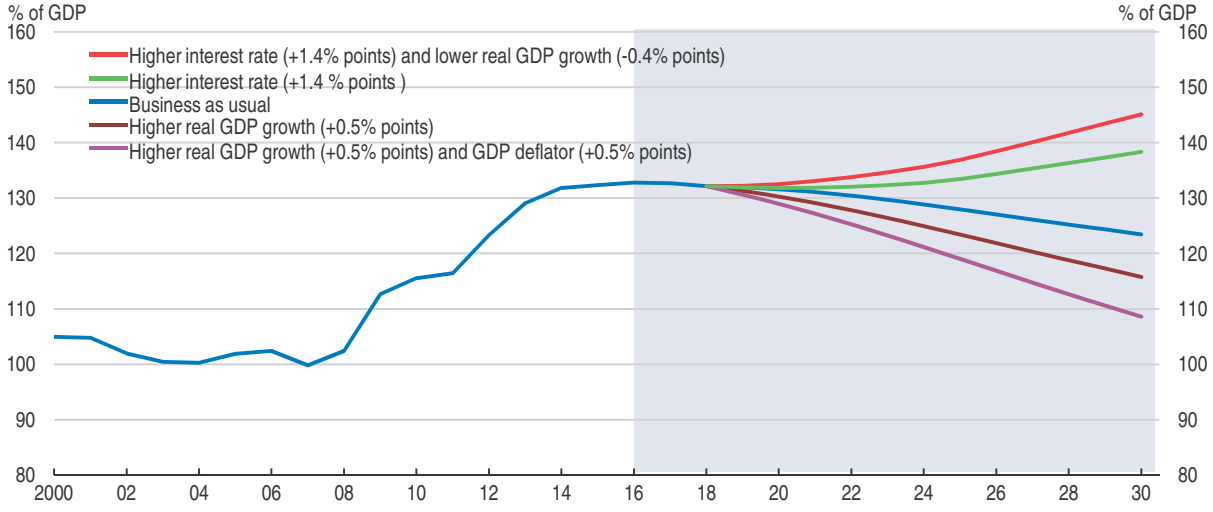
Figure 12. **The public debt path is uncertain**



Note: The business as usual scenario considers the projections for the *Economic Outlook* No. 100 until 2018 and thereafter assuming yearly real GDP growth of 1%, primary surplus of 1.5% of GDP, effective interest rate of 3.2% and inflation of GDP deflator rising progressively to 1.5% by 2024 and remaining constant after.
Source: Calculations based on *OECD Economic Outlook 100 Database*.

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debt ratio further down to 115% in 2030. On the other hand, if interest payments were to rise to levels comparable to the pre-crisis period (with effective interest rising progressively to 4.4%) the debt ratio would reach nearly 140% of GDP by 2030. In this case, to stabilise debt at its current level, the primary surplus would have to increase to 2% of GDP (from 1.5%) or real GDP growth would have to rise to nearly 1.4% (from 1%). The recent downgrade by the rating agency DBRS is a reminder that the high public debt continues to pose fiscal vulnerabilities. The government should fulfil its pledge to gradually increase the primary surplus.

The government's privatisation plan could contribute to a faster debt decline. In 2016, the government divested a 46.6% equity stake in the air traffic controller (ENAV). Other planned transactions were postponed due to market volatility. The government remains committed to continuing the privatisation process and forecasts privatisation proceeds to reach 0.5% of GDP in 2017. Given the need to adopt a durable and sustainable debt reduction strategy, privatisations should be undertaken with the aim of improving the efficiency and the value of state assets and not just of reducing the public debt.

Fighting tax evasion

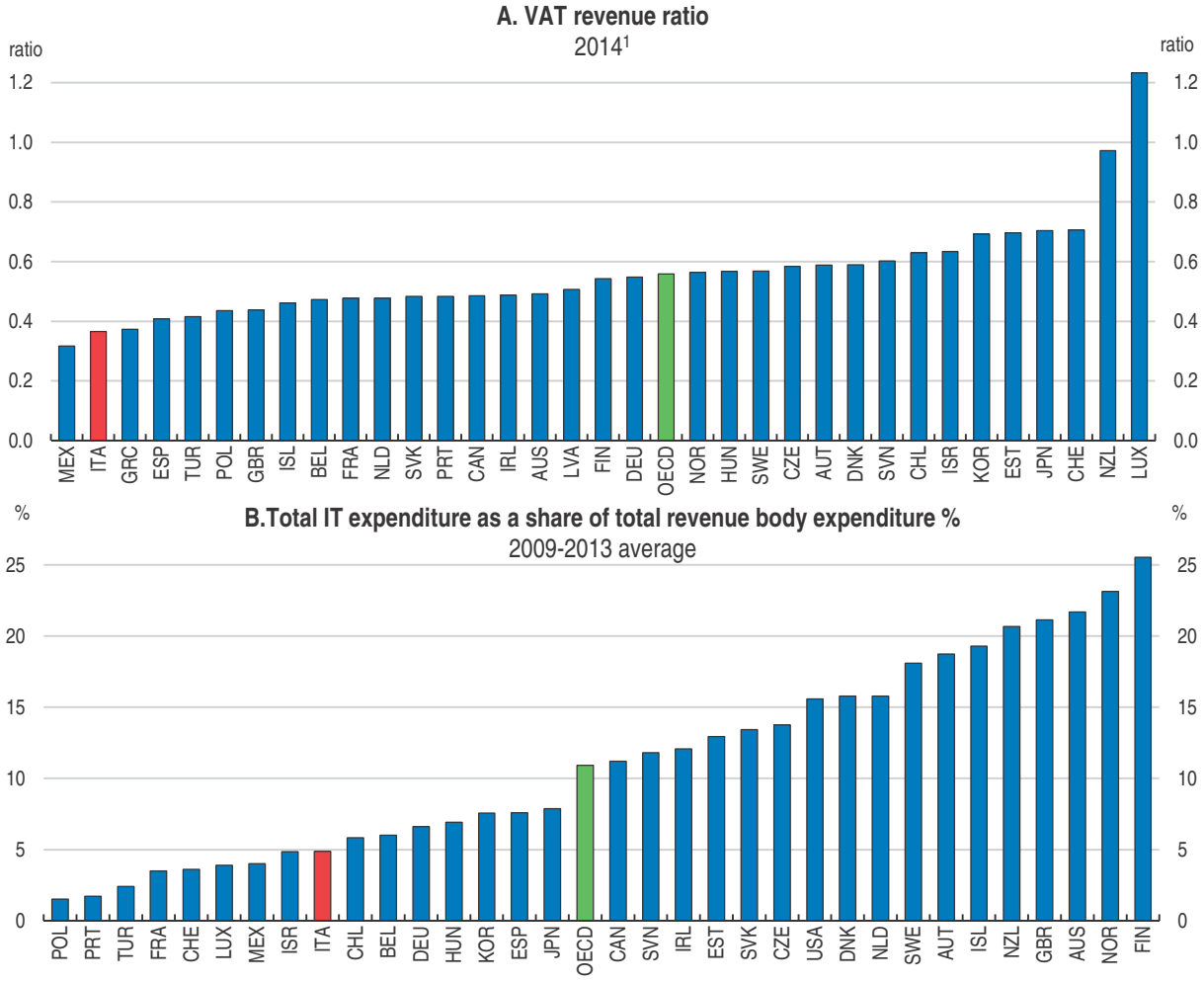
Italy's taxation system suffers from high tax evasion, numerous exemptions that reduce revenue, and excessive complexity. Indeed, according to the World Bank's "Paying Taxes" indicator (which measures the time or cost to pay taxes), Italy ranks 126 of 190 countries, one of the lowest among OECD countries. The tax-reform enabling law, which was intended to introduce broad changes, has been only partially implemented (Table 5). In 2016, the maximum limit for cash payments was increased from EUR 1 000 to EUR 3 000. On the positive side, the government has introduced measures to review the various tax breaks and exemptions in the yearly budget and to accelerate the resolution of tax litigation. Tax breaks will also be subject every five years to a thorough evaluation assessment of their effectiveness and cost in terms of lost revenue. In 2015, measures to fight tax evasion delivered about EUR 15 billion in additional tax receipts (MEF, 2016).

The amount of outstanding tax arrears is exceptionally large: as of September 2015, total tax arrears exceeded EUR 750 billion, broadly equivalent to the annual general government tax revenue, far higher than all other OECD and G20 economies (OECD, 2016c; OECD, 2015b). Ineffective tax-arrear recovery procedures exacerbate the problem of low tax compliance. For instance, VAT revenues fall well short of what they could be (Figure 13, Panel A). Tax compliance has traditionally relied on audits and control, resulting often in uncollectable assessments. Also, the recovery of tax arrears is undermined by the lack of a systematic process to write off tax arrears that are no longer due for payment, estimated at about 20% of the total tax debt (OECD, 2015d; OECD, 2016c).

Italy tax administration has ample scope to improve human resources management and use more extensively information and technology (IT) tools:

- According to the OECD (2015b) cross-country study *Tax Administration 2015*, Italy is one of the few OECD countries where the tax administration agency does not have a staff development plan and does not regularly evaluate staff. At the same time, it has flexible ways to reward good performance. This system is confusing and results in important delays; for example, in early 2016 the Revenue Agency's employees had yet to receive the reward in relation to their 2013 performance (OECD, 2016d). A large share of managing positions at the Revenue Agency is also vacant, following the annulment of previous recruiting procedures by the Constitutional Court in 2015.
- Between 2009 and 2013, IT expenditure of Italy's tax agency averaged about 5% of its total expenditure, less than half of the OECD average (Figure 13, Panel B). The OECD (2015b) cross-country study *Tax Administration 2015* underlines how higher spending on IT is associated with better performance-related indicators, such as e-filing, e-payment, lower tax collection costs and tax arrears. Information and technology is also crucial to

Figure 13. **Value-added tax (VAT) collection is low**



1. The VAT revenue ratio (VRR) is defined as the ratio between the actual value-added tax (VAT) revenue collected and the revenue that would theoretically be raised if VAT was applied at the standard rate to all final consumption. This ratio gives an indication of the efficiency and the broadness of the tax base of the VAT regime in a country compared to a standard norm. It is estimated by the following formula: VRR = VAT revenue/([consumption – VAT revenue] × standard VAT rate). VAT rates used are standard rates applicable as at 1 January. The fact that public consumption is VAT-exempt under EU rules places an upper bound on the attainable VRR, especially in countries with a large public sector. The OECD aggregate is an unweighted average of data shown. Data for Canada cover federal VAT only.

Source: OECD (2016), *Consumption Tax Trends 2016: VAT/GST and Excise Rates, Trends and Policy Issues*, OECD Publishing, Paris; OECD (2015), *Tax Administration 2015 Comparative Information on OECD and Other Advanced and Emerging Economies*, OECD Publishing, Paris.

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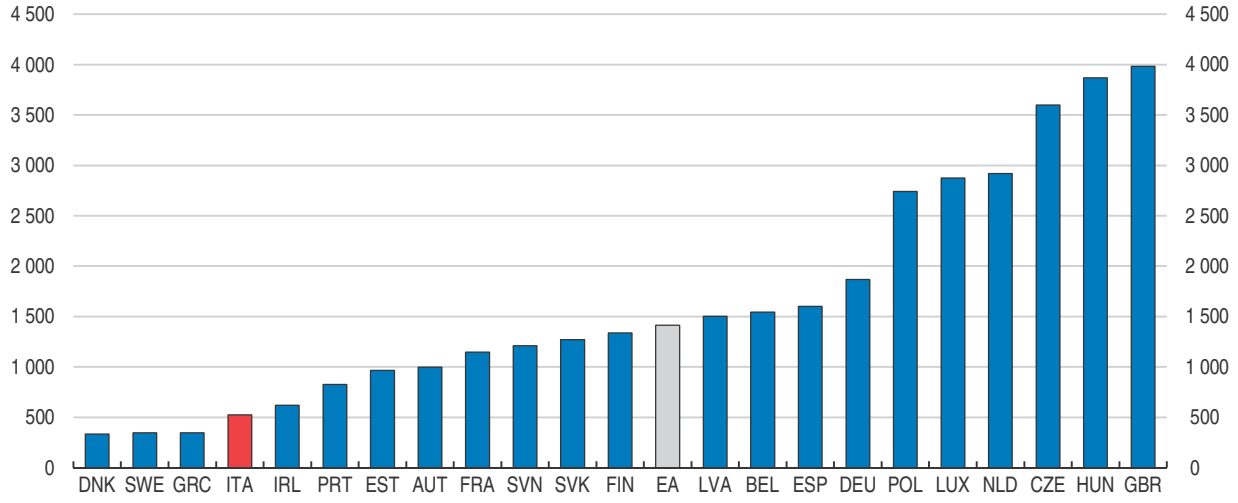
extend the use of electronic invoicing (e-invoicing) and improve VAT compliance. Italy already requires e-invoicing for sales to the public administration. E-invoices are now being extended to business-to-business transactions, but only on a voluntary basis. Moreover, in Italy non-cash means of payments are used little compared to other OECD countries, facilitating tax evasion (Figure 14). Lowering the threshold on cash payments from EUR 3 000 back to EUR 1 000 (the same level as in France) would help lowering tax evasion.

Figure 14. **Non-cash payments are low in Italy**

% of GDP, 2015



Note: Electronic payments include credit transfers, direct debits, card payments with cards issued by resident payment service e-providers, e-money payment transactions, cheques and other payment services. Data for Sweden and Denmark is incomplete.
Source: European Central Bank Payment Statistics.

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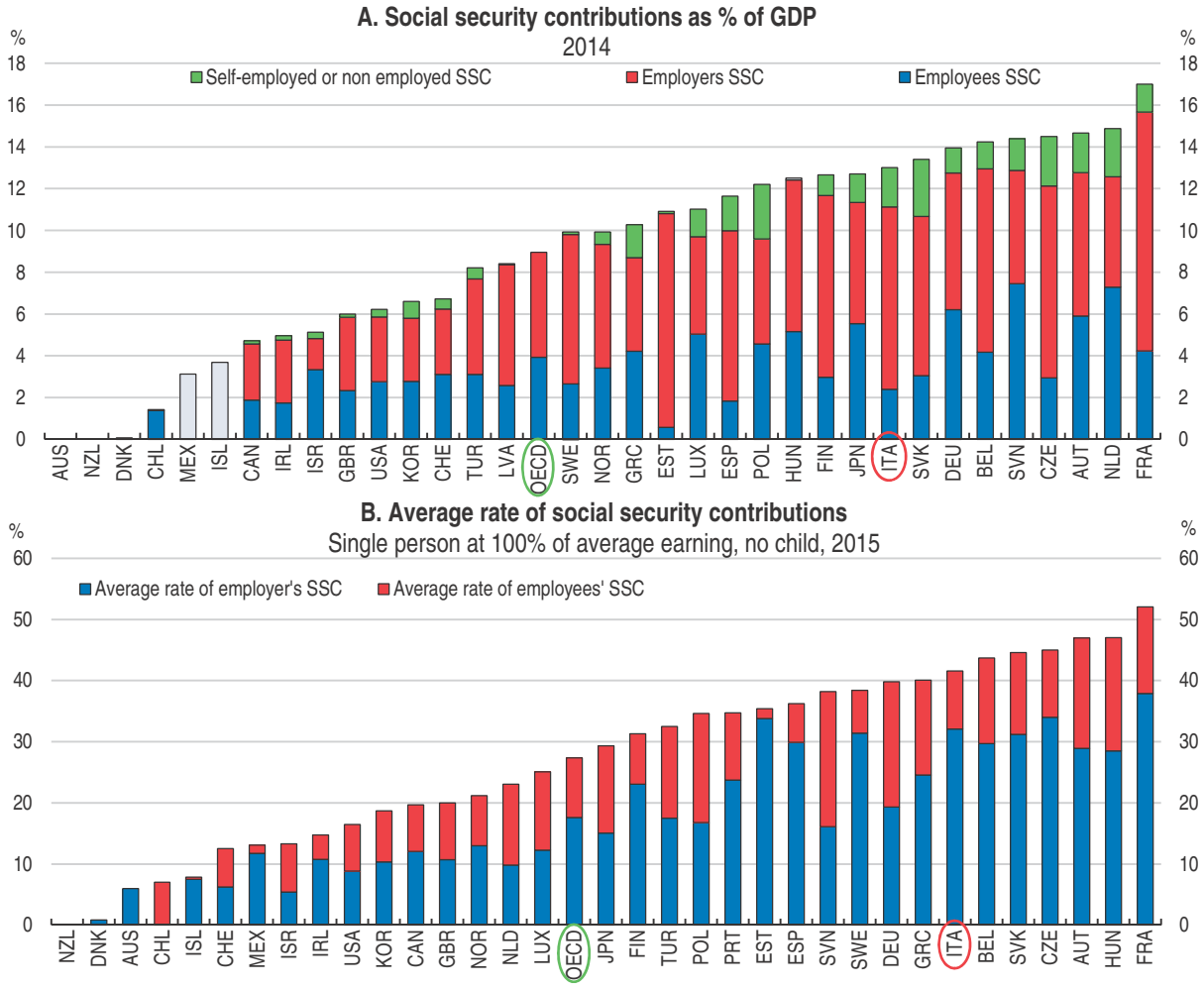
Enhancing tax collection would generate large additional revenues that would allow for a permanent reduction in social security contributions in a revenue-neutral way. Italy's social security contributions are high, accounting for about 13% of GDP and the employers' social security contributions rate is among the highest among OECD countries (Figure 15). Permanently lowering social security contributions would raise growth and employment over the medium and long term, thus accelerating the reduction in the debt ratio. Cutting employers' social security contributions by 10 percentage points would increase GDP per capita by 1.6% after five years (0.3% per year) and 2% (0.2% per year) after 10 years (Table 4). The employment rate would also increase noticeably by 1 and 1.3 percentage points after 5 and 10 years. In the absence of changes to pension payments, revenue from a more growth-friendly tax base need be used to finance pension obligations. For example, raising VAT revenues by improving collection and broadening its base – that is, raising the VAT revenue ratio (the ratio of actual collection to revenue that would be collected if VAT was applied at the standard rate to the entire potential tax base and all revenue was collected) – to the OECD average (about 56%) would increase VAT receipts by about 50% (or EUR 45 billion), assuming no change in consumption. These additional tax revenues would amount to more than 30% of employers' social security contributions in 2014. Also, they would be far above the 2015 social security contribution exemptions for new permanent contracts (only EUR 2.2 billion) (INPS, 2016). Assuming lower consumption following the increase in the VAT revenue ratio would still generate large additional revenues that could fund a large reduction in employer's social security contributions. A recent study on the VAT gap on European countries reports similar large increase in VAT revenues by raising Italy's VAT compliance to the EU average (Case, 2016).

Recurrent taxes on residential property are another growth-friendly tax and, if applied in a progressive way, can also improve the equity of the tax system (OECD, 2010; Cournède et al., 2013). Such taxes are underused in Italy and in this regard, the recent abolition of the property tax on first residences was a step backward. The government should update the

Figure 15. **Social security contributions are high**



Source: *OECD Revenue Statistics 2016*; and OECD (2016), *Taxing Wages 2016*, OECD Publishing, Paris.

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Table 4. **Impact of permanently lowering employers' social security contributions**

	Impact after five years		Impact after ten years	
	GDP per capita (in per cent)	Employment rate (percentage points)	GDP per capita (in per cent)	Employment rate (percentage points)
	A. Employers' social security contribution rate is reduced to the OECD average (assumed change in tax wedge: 10 percentage points)			
Total	**1.58**	**1.06**	**1.98**	**1.32**
Average annual growth	*0.31*		*0.20*	
	B. Employers' social security contribution rate is reduced to one third of its existing value (assumed change in tax wedge: 16.2 percentage points)			
Total	**2.56**	**1.70**	**3.20**	**2.13**
Average annual growth	*0.51*		*0.32*	

Note: Based on estimates in Egert and Gal (2017), "The Quantification of Structural Reforms: A New Framework", *OECD Economics Department Working Papers*, forthcoming.
Source: OECD calculations.

Table 5. **Past OECD recommendations on fiscal issues**

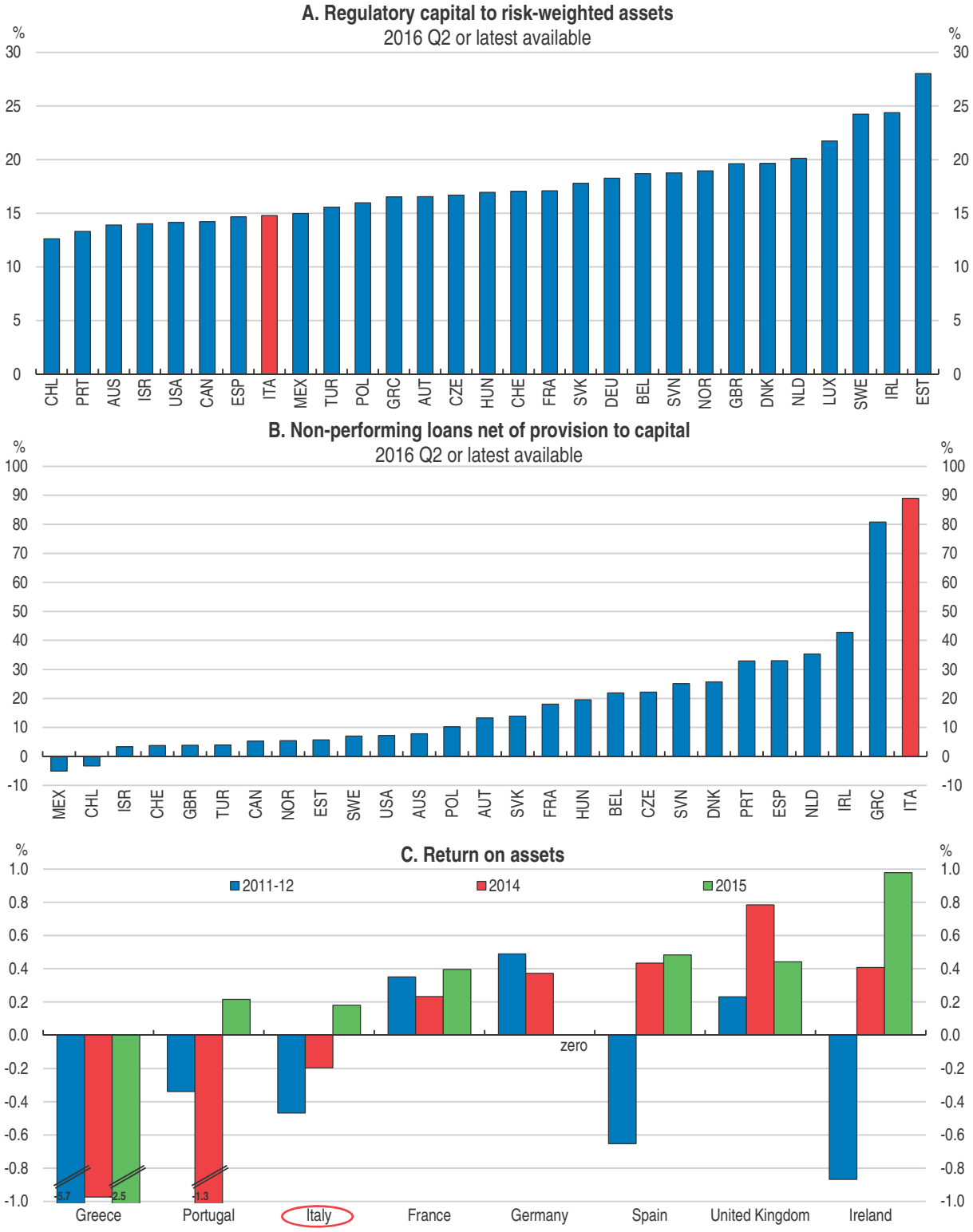
Recommendations in previous *Surveys*	Actions taken since the 2015 *Survey*
Continue efforts to reduce tax evasion through more effective enforcement and increase tax compliance through simplified collection procedures. Broaden tax bases, in particular by cutting the number of tax expenditures, and simplify the tax system.	Some progress. Implemented measures: VAT electronic invoicing; VAT split payment and reverse charge; implementation of BEPS counter-measures; bilateral agreements to allow tax information exchange; simplification of tax collection; improved monitoring of tax evasion. Since 2013, the government has presented a yearly report to the Parliament on tax evasion, which describes results and strategies of the implemented activities, including an estimate of the tax gap (the receipts lost because of tax evasion) of main tax items. Moreover, the Government will have to present a yearly report for the monitoring and review of tax expenditures. The first report has been presented with the Budget Law for 2017. The EU Anti-Tax Avoidance Directive ("ATAD") was approved in June 2016 to prevent cross-border tax avoidance by businesses.
Stick to the planned fiscal strategy so as to bring the debt-to-GDP ratio onto a declining path.	The debt ratio has stabilised trough prudent fiscal policy, lower interest payment and modest economic growth.
Promote greater use of centralised procurement, cost information systems and benchmarking.	The share of centrally managed purchases is gradually increasing; 33 central purchasing bodies have been established; and the government has issued a list of goods and services that will have to be purchased centrally.
Continue to assess the magnitude of budgetary contingent liabilities, including the vulnerability of public finances to risks associated with the financial sector.	Ongoing.
Make taxation more environmentally-friendly by reducing the gap between duties on diesel and petrol.	No progress.
Shift the tax burden from electricity to the energy products used to generate it, with the respective rates set to reflect the carbon emissions and other pollutants associated with each fuel.	No progress.
Implement the planned reform of the Internal Stability Pact to regulate only overall borrowing of sub-national government, with consolidation targets for indebted administrations. Replace its detailed provisions with a fiscal federalism structure that reflects the desired degree of decentralisation.	Implemented the reform that envisages the entry into force in 2016 of the balanced budget rule for all sub-national governments requiring each entity to balance the overall balance or achieve nominal surplus.

taxable value of properties on a regular basis, to ensure that relative property price changes do not induce inequities. The property tax on primary residences should be re-introduced so as to generate the fiscal space to reduce taxes on productive activity. The government has postponed comprehensive reform of cadastral value until 2017-18 to study its revenue and distributional effects.

Returning the banking sector to health

The capital ratios of Italy's banks exceed regulatory standards (Figure 16, Panel A), but banks in many respects remain weak relative to those in other jurisdictions. Banks have poor returns on assets, which have recently started to improve, and large stocks of non-performing loans (NPLs) (Figure 16, Panels B and C). NPLs net of provisions amounted to about 90% of banks' capital at end-2015, the most severe situation among European countries. The gross value of non-performing loans was about EUR 350 billion at end-2015, representing 18% of all outstanding loans (Figure 17, Panel D). Bad loans ("sofferenze"), the most problematic type of NPLs, accounted for about 60% of NPLs. The rise in bad loans during the post-crisis period is mostly attributable to the non-financial corporation sector (Figure 17). In recent years, banks increased their loan-loss provisions substantially, reaching 100% of operating profits in 2013-14; as a result, the net realisable value of bad loans (i.e. the gross value of bad loans minus provisions) dropped from more than 50% to just above 40% (about EUR 80 billion) of book value (Figure 17).

Figure 16. **Capital ratios exceed thresholds whereas return on assets is low**



Source: IMF Financial Soundness Indicators.

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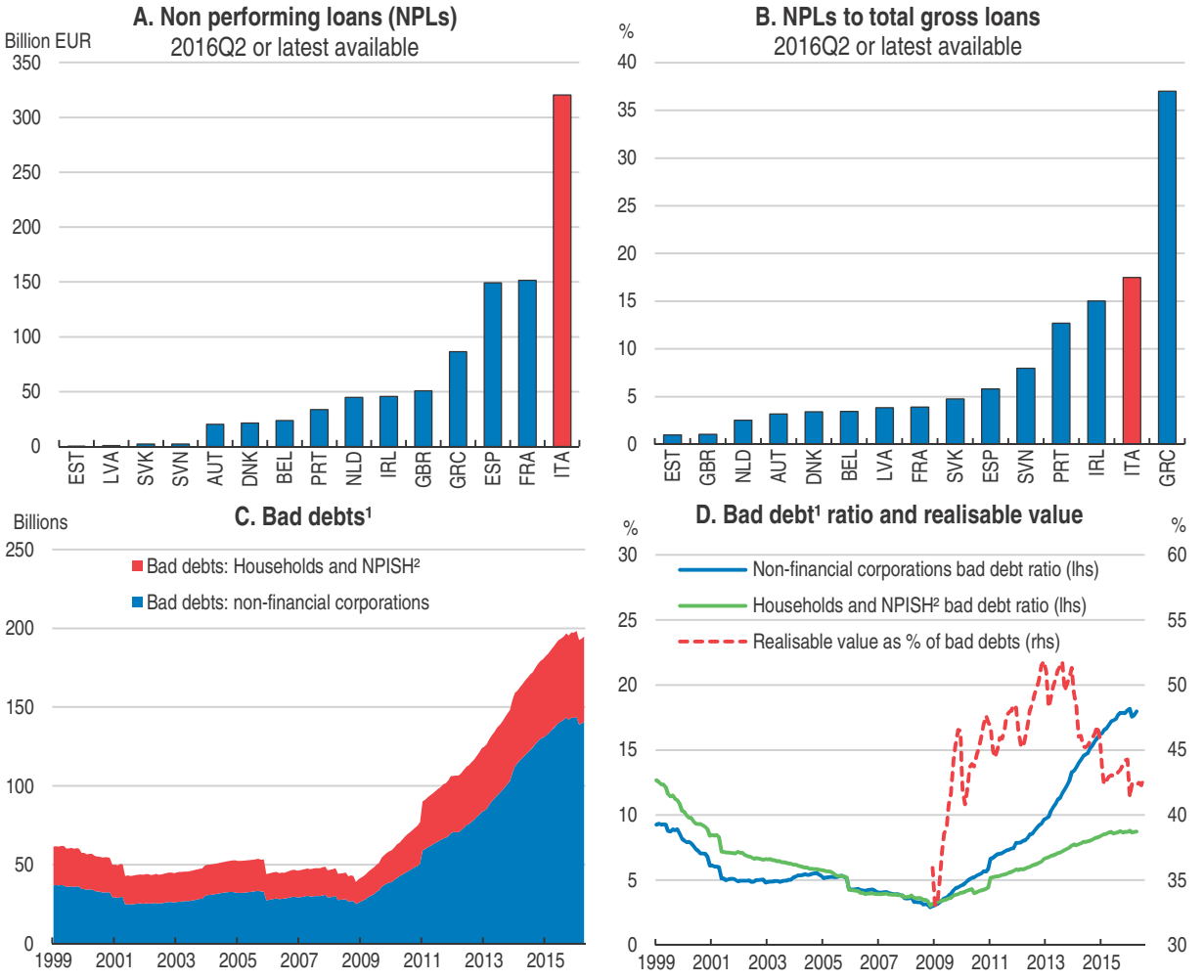
Figure 17. **The stock of non-performing loans is large**



1. Bad debts ("sofferenze") comprise the most risky non-performing loans. The realisable value of bad debt is the gross value of bad debts less provisions already made.
2. Non-Profit Institutions Serving Households.

Source: Thomson Reuters; IMF Financial Soundness Indicators; and Bank of Italy.

StatLink http://dx.doi.org/10.1787/888933453978

The unfavourable macroeconomic developments explain much of the rise of NPLs in recent years. However, Italy's NPL ratios have been historically higher than in other European countries as the banking sector has long faced structural challenges due to poor governance, especially among many cooperative banks, high fragmentation and operating costs. In Italy, the number of banking sector's employees per 1 000 people is close to the EU average. However, Italy has the fourth largest number of bank branches per 1 000 people, 65% above the EU average. Moreover, bank branches are small, employing less than 10 people on average – 63% below the EU average. This suggests there is ample scope to increase efficiency by reducing the number of bank branches. The cooperative form of many banks has limited their capacity to access capital markets. Subordinated bonds sold to retail clients play a larger role in Italy than in other EU countries as a source of funds in addition to bank deposits. In Italy, households hold about 20% of bank bonds, far above other EU countries (Caribboni et al., 2016).

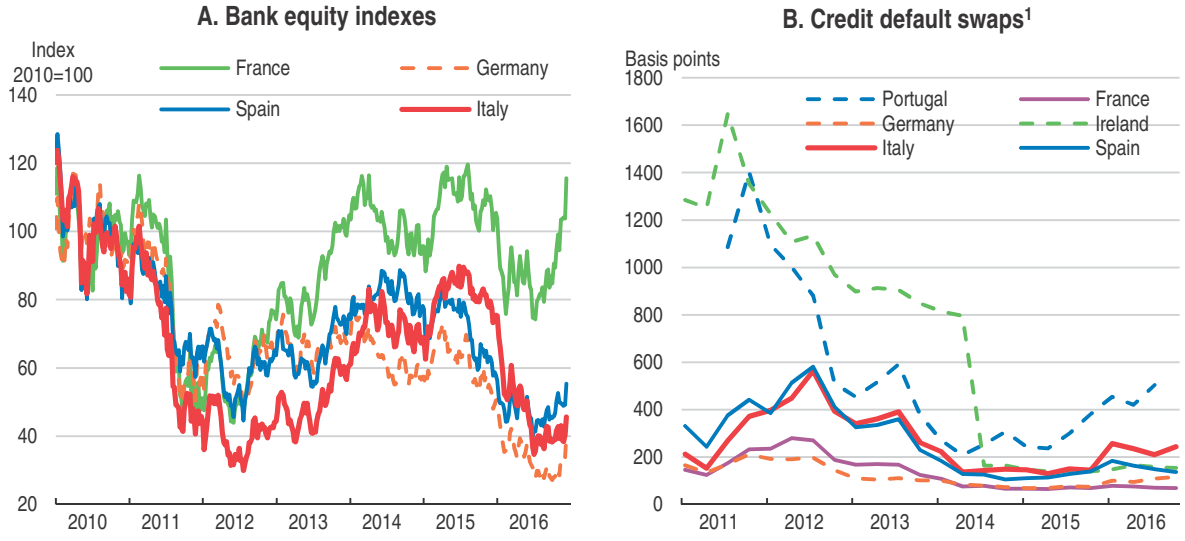
Italian and European bank equity valuations have come under pressure since late 2015 (Figure 18). Italy's banks credit default swaps have also increased, though they remained well below the 2012 peak and have been gradually falling. The introduction of the new EU Bank Recovery and Resolution Directive (BRRD) in January 2016 may have contributed to modifying the risk profile of European and Italian banks as it introduced bail-in rules. The risk posed by individual banks to the stability of the Italian banking system has also increased over time (Figure 19), as banks, like in other countries, have become more interconnected.

Bank consolidation and better governance would enhance efficiency and lay the foundation for higher profitability. The government has taken important steps in this area by promoting a new voluntary code of conduct for banking foundations and mandating for mutual banks to consolidate or become joint-stock companies while for large cooperative banks to turn into joint-stock companies. Improving the conduct of banking foundations and lowering their influence over single banks, by diversifying their portfolios, is key to improving bank performance: foundations often provide a link between banks and local governments, distorting lending and bank management's decisions (e.g. Boeri, 2013).

Recapitalisation of some banks, when needed, could prove difficult in current market conditions. Following the failure of the private-sector recapitalisation of Monte dei Paschi di Siena (MPS) in December 2016, the government, in consultation with EU authorities, has raised the public debt target for 2017 by EUR 20 billion (1.2% GDP). These resources will be used to recapitalise banks and fund other measures to protect savers. In addition, it has approved a decree ("Urgent measures to protect savings and the credit system") outlining how such recapitalisation and support measures will take place.

The government considers that the budgetary funds are more than sufficient to confront the current problems of Italy's banking sector. MPS' failed recapitalisation plan amounted to about EUR 5 billion (including a voluntary bond-equity swap), although recent

Figure 18. **Italian banks' share price has suffered**

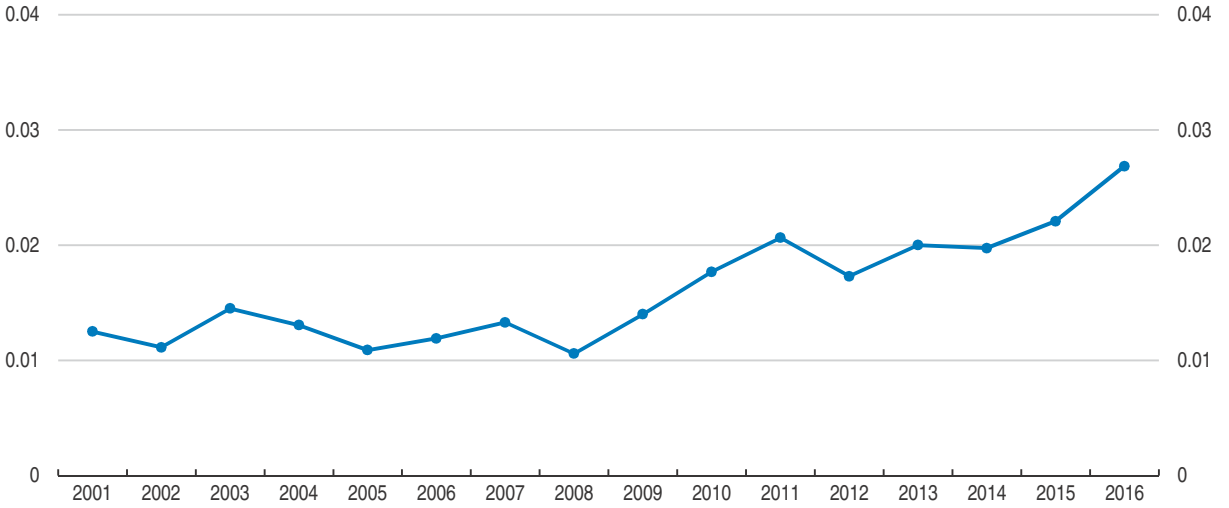


1. Five-year senior debt, mid-rate spreads between the entity and the relevant benchmark curve; end of quarter data. For Italy the series shown is an average of four banks – Monte dei Paschi di Siena, Intesa Sanpaolo, Mediobanca and Unicredit; for other countries the number of banks used in the calculation depend on data available.

Source: Thomson Reuters.

StatLink http://dx.doi.org/10.1787/888933453986

Figure 19. **Financial system risk has increased over time**



Note: The graph shows the median of the distribution of the systemic financial risk posed by banks. The systemic risk is computed through the conditional value at risk (CoVaR) approach developed by Adrian and Brunnermeier (2016). It is based on the difference between the value at risk of the whole financial system conditional on an institution being in distress and the value at risk of the whole financial system conditional on the institution not being in distress. The measure is applied to a sample of the 18 largest financial institutions in Italy on weekly data from 1990 to May 2016.
Source: OECD calculations based on *Thomson Reuters* database.

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estimates by the ECB have raised MPS' total capital need to EUR 8.8 billion. Meanwhile, the largest Italian bank (Unicredit) has recently announced a large private-sector recapitalisation for about EUR 13 billion, accompanied by a comprehensive restructuring plan. Markets have reacted positively to the plan with rising equity valuations following the announcement. Recapitalisation may be needed for other smaller banks but for significantly lower amounts. Given the limited (or no) systemic risks these banks pose, it is doubtful state intervention will be needed.

The decree, "Urgent measures to protect savings and the credit system", provides the legal tools for the state to participate in recapitalisation plans and implement other measures to protect savers. They include a state liquidity guarantee and capital strengthening measures. The state liquidity guarantee is fully consistent with EU state-aid rules as the bank requesting it will have to pay a market fee. The capital strengthening measures are in compliance with Bank Recovery and Resolution Directive (BRRD) and follow precautionary state recapitalisation rules. Precautionary recapitalisation is an exception to the bail-in process, which can be used to remedy a serious disturbance in a EU member's economy and preserve financial stability. The precautionary recapitalisation plan will involve burden sharing by equity and subordinated bondholders (sparing senior bondholders and depositors) and will have to be approved by European authorities.

These actions indicate that the government is ready to take full advantage of the degree of flexibility allowed by the BRRD to safeguard the banking system's stability, participate in bank recapitalisation and allow for adequate burden sharing of equity and subordinated bond holders. In case of mis-selling of banks' bonds to retail clients, these could be fully compensated for the losses they will incur.

The government has also taken initiatives to deal with the problems of non-performing loans and to create a liquid market for them (Table 6). Nonetheless, there remains a large gap between the realisable value of bad loans in banks' accounting books and market-based valuations. This gap stems from the high discount rate investors use for valuing non-performing loans compared to banks and the costly, long and uncertain loan-foreclosure and collateral-recovery procedures. A survey by the Bank of Italy covering the 2011-14 period (Carpinelli et al., 2016) reveals that the average length of loan recoveries was 3.5 years with an average recovery rate of about 40% and this rate is declining. Some of the reforms the government has undertaken directly tackle some of these issues, such as introducing faster loan foreclosing procedures (Table 6).

Table 6. **Past OECD recommendations on financial issues**

Recommendations in previous *Surveys*	Actions taken since the 2015 *Survey*
Urgently take action to achieve a lower level of non-performing loans in the banking sector, including through enhancing the insolvency regime applied to distressed borrowers.	Shortening the period for tax deductibility of loan losses from 5 years to 1 year, in line with other EU countries. Establishing a government guarantee scheme to encourage banks to securitise non-performing loans and issue asset-backed securities. The scheme is compliant with EU state-aid rule as it will be offered at market price (based on the average price of a basket of credit default swap covering investment grade Italian companies and with the same duration of the asset-backed security) and will apply only to the senior tranches (i.e. high quality) of asset-backed securities. Before the government guarantee becomes effective, at least half of the junior tranches will have to be sold in the market. Coordinating the creation of the private-sector fund (Atlante) by a large set of Italian financial institutions to support banks' recapitalisation and invest in securitised non-performing loans. Reforming loan foreclosing procedures, which according to the government should cut the length of foreclosing procedures from 3 and half years to about 7-8 months; new procedures apply only to new loans but borrowers and lenders can renegotiate existing loans to apply new procedures to them also.
If progress in reducing nonperforming loans remains slow, consider setting up a public specialised asset management company ("bad bank") to accelerate the process, with due regard for state aid rules.	Banks are allowed to set up bad banks on a voluntary basis and to use a government guarantee on senior tranches of securitised bad debts.

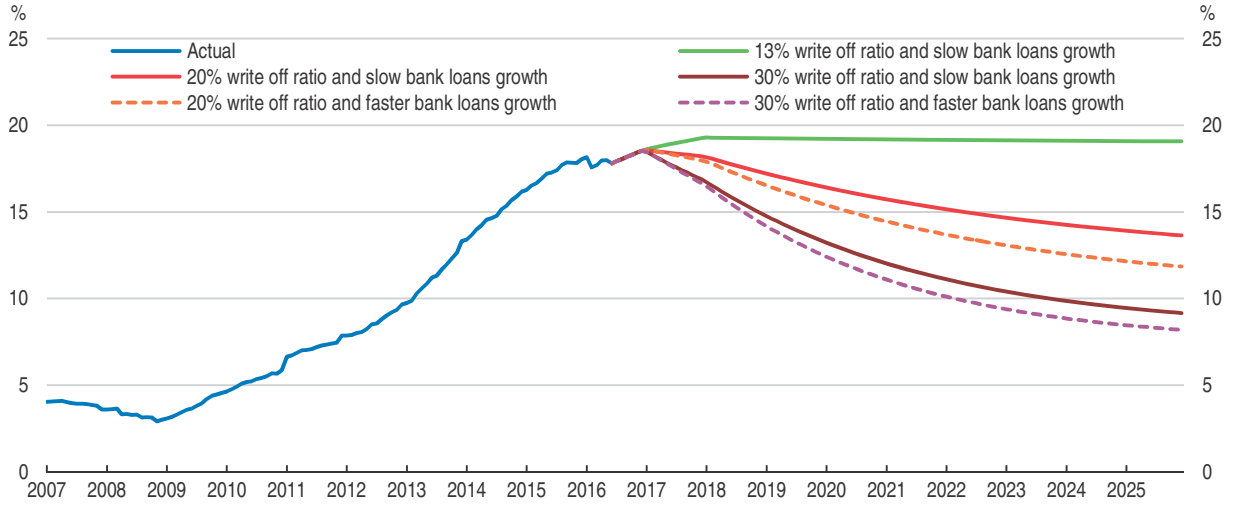
Disposing all bad loans based on recent market valuations of only 20% of their gross values would generate bank losses amounting to about EUR 40 billion, nearly 3% of GDP. This is likely an upper-bound estimates as it would require all banks (including those that are profitable and have a sound capital position) to dispose all their NPLs at the current low market prices. Market based valuation of 30% would reduce bank losses to EUR 25 billion. These figures are non-negligible but lower than the average net fiscal costs of other advanced countries' banking crisis, which have been estimated at about 4.2% of GDP (Laeven and Valencia, 2013).

To accelerate the reduction of banks' NPLs and promote the development of a liquid and deep market, the supervisors – could set gradual and bank-specific, credible and time-bound quantitative targets to write off legacy NPLs. This is consistent with the recently published Draft Guidance to Banks on Non-Performing Loans (ECB, 2016), for which banks, especially those with a large stock of NPLs, should develop a NPLs' reduction strategy, including short-term (1 year) and medium-term (3 years) quantitative targets.

Setting targets was the approach followed in Ireland, after the crisis, and Japan in the late 1990s and early 2000s, which proved successful in reducing the stock of NPLs and creating a distressed debt market. Targets to dispose of NPLs should be bank specific to tailor them to their characteristics. Banks with high NPLs should report their strategy and operational plan to the supervisor on a quarterly basis and explain any deviations from them. Non-compliance should trigger supervisory measures such as imposing sales of assets, suspending dividend payments and reducing operating costs. Incentives to accelerate the reduction of NPLs could consist of tax incentives linked to NPLs workout rates. It is urgent to act sooner rather than later as the decline in bad debts to levels comparable to the pre-crisis will be gradual and take several years even if banks markedly increase the write-off ratio of bad-debts and loan growth accelerates (Figure 20).

Figure 20. **The decline in bad debts will be gradual**

Bad debts as % of total loan outstanding



Note: The figure depicts bad debts ("sofferenze") as share of outstanding loans of the non-financial corporation sector for different write-off ratios of bad debts. The write-off ratio of bad debts is computed as the ratio between the value of bad debts written off in a given year and the average stock of bad debts in the same year. The value of bad debts written off is calculated as the value of new write-offs (sourced from ABI-Cerved (2016) for 2015) minus the net change in bad debts. The write-off ratio of bad-debts was 12.6% in 2015. The scenario of slow bank loan growth assumes 1% loans growth in 2016, 2% in 2017 and 3% in 2018 and thereafter. The scenario of faster bank loan growth assumes 1% loan growth in 2016, rising progressively to 4% in 2017 and 6% in 2018 and thereafter. All scenarios assume a yearly default rate of 3.5% in 2016, 3% in 2017 and 2.5% in 2018 and thereafter.
Source: Bank of Italy and OECD calculations.

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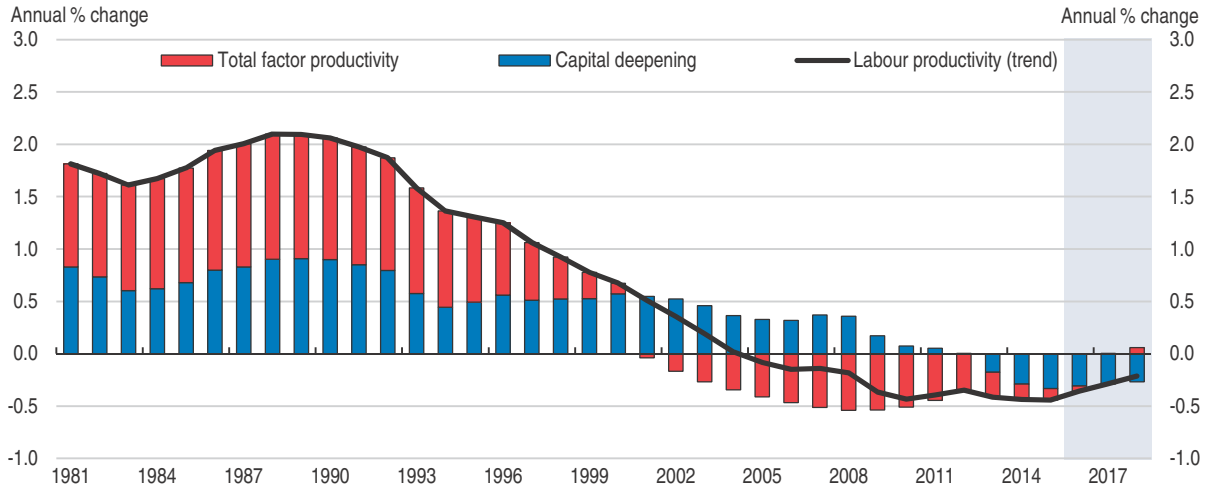
Reforms to improve the business environment and increase productivity

Italy's long-term economic stagnation reflects its low labour productivity growth. Faltering total factor productivity growth (i.e. technical progress) dates back to the mid-1990s and, along with the more recent slow-down in investment, is at the root of disappointing labour productivity growth (Figure 21).

Low productivity is mostly attributable to sluggish productivity growth within industry rather than to a shift towards industries with low productivity growth (Table 7). Italy's economic activity has been progressively shifting towards low productivity-growth industries, but no more than in other euro area countries, while within-industry

Figure 21. **Labour productivity growth is declining**



Source: *OECD Economic Outlook 100 Database*, projections revised as of 20 January 2017.

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Table 7. **Within industry productivity growth is low**

2000-13 (yearly averages contributions, %)

Sector or industry	Italy			Euro area 19		
	Within	Shift	Total	Within	Shift	Total
Total economy	***0.09***	***0.10***	***0.14***	***0.97***	***0.10***	***1.04***
Agriculture, forestry and fishing	0.02	-0.06	-0.04	0.05	-0.07	-0.03
Mining and quarrying	0.00	-0.01	-0.01	0.01	0.00	0.01
Manufacturing	0.17	-0.48	-0.30	0.42	-0.48	-0.07
Electricity, gas, steam and air conditioning supply	0.03	0.00	0.02	0.03	0.02	0.04
Water supply, sewerage, waste management and remediation activities	-0.01	0.03	0.02	-0.01	0.02	0.02
Construction	-0.07	0.11	0.03	0.00	0.01	0.01
Wholesale and retail trade, repair of motor vehicles and motorcycles	0.01	-0.13	-0.13	0.12	-0.05	0.06
Transportation and storage	0.01	0.00	0.02	0.07	0.00	0.06
Accommodation and food service activities	-0.06	0.07	0.01	-0.03	0.06	0.03
Information and communication	0.11	-0.12	-0.02	0.15	-0.09	0.05
Financial and insurance activities	0.10	-0.04	0.06	0.06	0.01	0.06
Real estate activities	-0.07	0.38	0.30	0.10	0.14	0.24
Professional, scientific and technical activities	-0.17	0.13	-0.04	-0.06	0.14	0.08
Administrative and support service activities	-0.05	0.11	0.05	-0.05	0.12	0.08
Public administration and defence, compulsory social security	0.09	-0.02	0.06	0.09	0.00	0.08
Education	0.04	-0.05	-0.01	-0.01	0.08	0.07
Human health and social work activities	-0.03	0.12	0.08	0.03	0.15	0.18
Arts, entertainment and recreation	0.00	0.02	0.01	0.00	0.03	0.03
Other service activities	-0.02	0.02	0.00	-0.01	0.02	0.01

Note: This table shows the decomposition of the total economy productivity growth (computed as value added per hour) by sector into within and shift components. The within component denotes average contributions from productivity growth within the sector; the shift component denotes average contributions from labour reallocation and relative price changes across sectors. For some sectors, the within and shift components may not sum to the total contribution because of changes in productivity that cannot directly be attributed to one of the two components (covariance effect) and rounding. The industry-level contributions may not sum to the total economy because of rounding. The decomposition is based on the methodology by Diewert (2014) and cannot be used to analyse the underlying causes of productivity changes at aggregate or industry level.

Source: ISTAT, *OECD National Accounts Database* and OECD calculations.

productivity growth has been substantially lower. The largest differences in within-industry productivity growth with respect to the euro area are in manufacturing, real estate activities and professional, scientific and technical services.

Factors explaining Italy's low within-industry and firm-level productivity growth include resource misallocation across firms, low innovation, scant use of information and communications technologies, inadequate management practices (especially among family-run firms), public-administration inefficiency and tax evasion (Calligaris et al., 2016; Giordano et al., 2015; Hassan and Ottaviano, 2013; Bloom et al., 2008; Cucculelli et al., 2014; Bobbio, 2016).

In manufacturing, contrary to the experience of most OECD countries, productivity among the most efficient firms is declining even faster than among the least productive ones (Figure 22). Labour productivity in Italy's manufacturing sector would be around 20% higher if national frontier firms were as productive and large as global frontier benchmark (Andrews et al., forthcoming). Approximately three-quarters of the productivity gap between global and national frontier firms is attributable to the small size of the latter (Andrews and Cingano, 2014). Recent evidence suggests that perhaps one-quarter of the collapse in aggregate business investment in Italy is attributable to the survival of firms having persistent problems meeting interest payments. This reduces aggregate labour productivity as such firms crowd out investment opportunities for more productive firms and discourages the entry of innovative firms (Adalet McGowan et al., 2017).

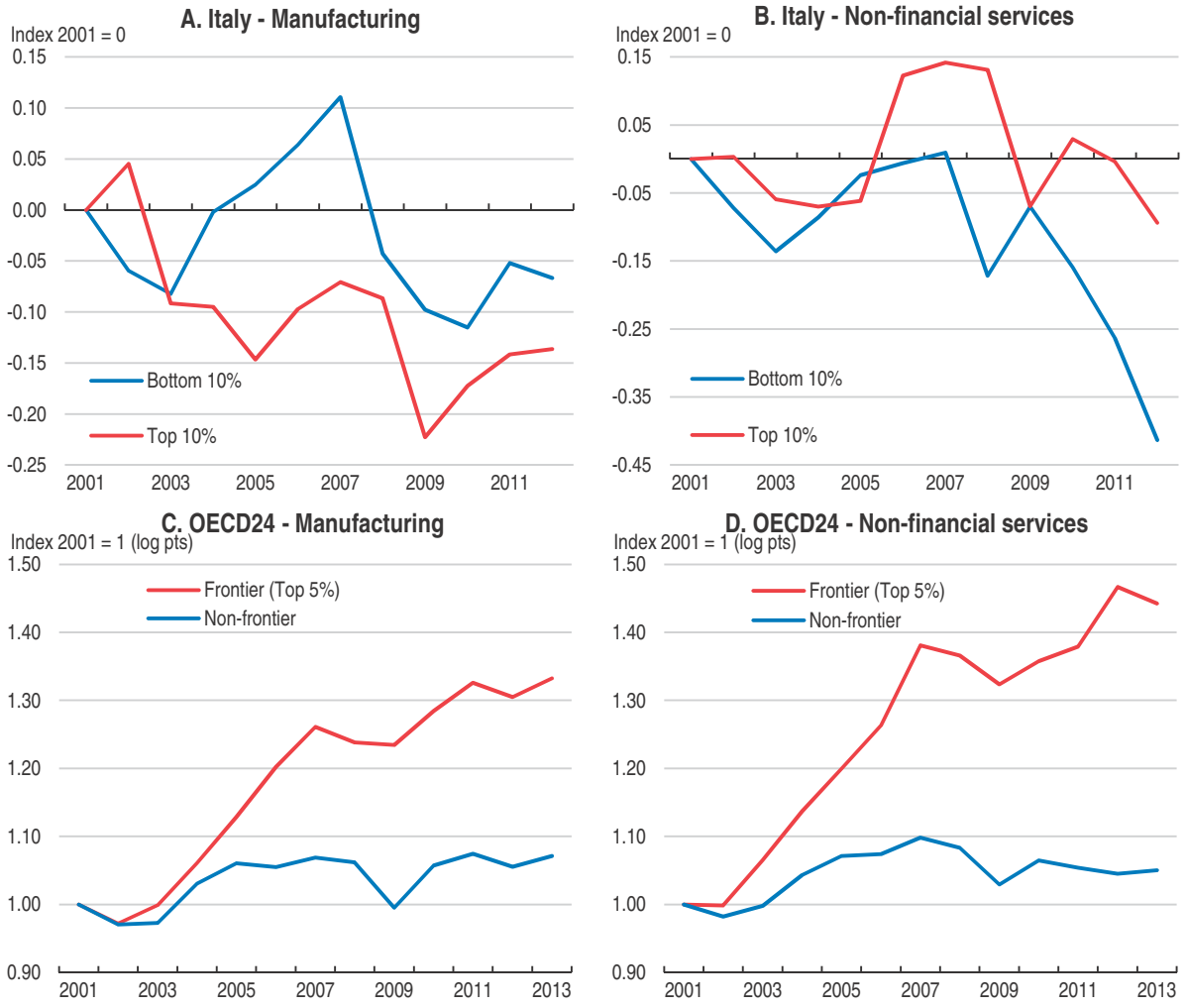
The degree of Italy's resource misallocation is reflected in the weak association between firms' market share and productivity. The aggregate labour productivity of Italy's manufacturing sector is only 15% higher than what it would be if market shares were allocated randomly; this is smaller than in Spain and France (25%) and Germany (more than 50%). However, there is evidence that the degree of misallocation is declining especially in industries more exposed to import competition from developing countries (Calligaris et al., 2016; Linarello and Petrella, 2016).

Different factors can explain the large share of small firms in Italy, even if highly productive. For instance, firms' controlling stakes are exempt from inheritance taxes, discouraging equity-share sales to outside investors and entrenching family ownership (which is often averse to hiring professional managers or adopting modern management practices). Other factors concern difficult access to finance and size-based thresholds of the tax regime and other regulations giving businesses incentives to remain small (Bobbio, 2016; OECD, 2015c). The fact that many highly productive SMEs do not grow is at the root of resource misallocation, hindering aggregate productivity growth.

Improving public administration efficiency is crucial to boost productivity

The previous government initiated far reaching constitutional and institutional reforms. The constitutional reform was rejected in a referendum in December 2016. This calls for renewed efforts to deal with the fundamental issues that the proposed constitutional reform intended to address. These issues concern an overly complex and lengthy legislative process – which leads to an excessive use of decrees as pointed out in previous *Surveys* (OECD, 2015d) – and overlapping responsibilities between central and local governments, especially over areas of national importance such as infrastructure and the labour market. Progress on these issues will lead to better laws and policies.

Figure 22. **The productivity of firms at the technological frontier has been declining, contrary to other OECD countries**



Note: Panels A and B report the unweighted average of real labour productivity (defined as real value added per employee) expressed in 2005 US dollars for firms in the bottom decile and in the top decile of the labour productivity distribution in any given year. The values are normalised at their initial values in 2001 for Italy. Panels C and D notes: 2001 = 1 (log points), average across 24 OECD countries and 22 manufacturing and 27 market services industries. Frontier is defined as the 5% most productive firms within each industry, by each year.
Source: Panels A and B, data from the OECD Multiprod Project 2016. See: *www.oecd.org/sti/ind/multiprod.htm*; and Berlingieri, Blanchenay and Criscuolo (2017), "The Great Divergence(s)", *OECD Science, Technology and Industry Policy Paper*, OECD Publishing, Paris, forthcoming. Panels C and D: OECD preliminary results based on Andrews, D., C. Criscuolo and P. Gal (2017), "Mind the Gap: Productivity Divergence between the Global Frontier and Laggard Firms", *OECD Productivity Working Papers*, OECD Publishing, Paris, forthcoming; *ORBIS Database* of Bureau van Dijk.

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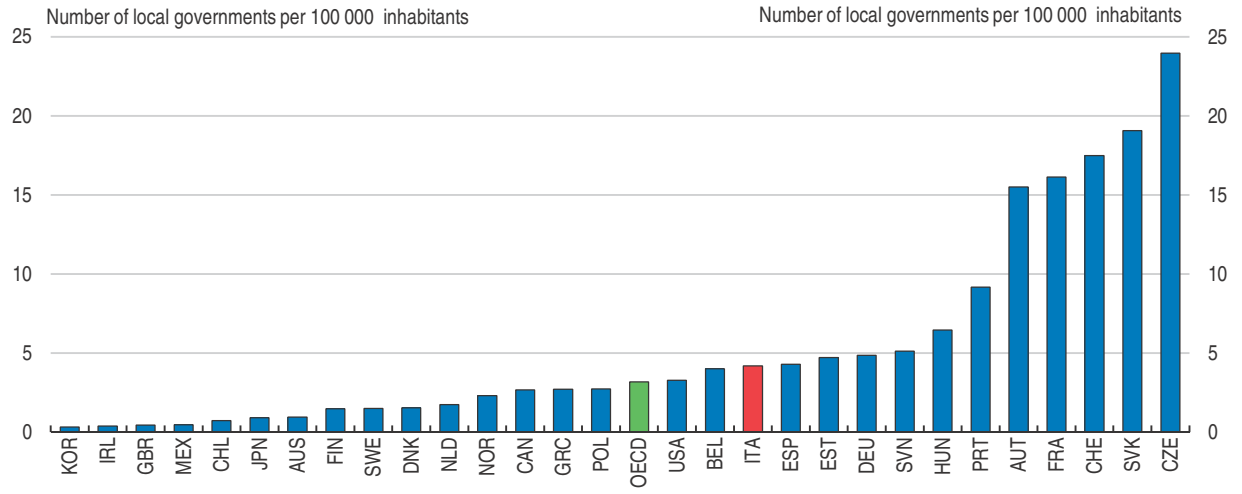
The government also started a broad public administration reform through an enabling law approved in 2015. This covers a wide range of issues including: the introduction of a Freedom of Information Act, human resource management, rationalisation of local utilities, the delivery of public services through digital platforms (e-services), the governance of ports, accounting litigations and the complex decision-making process involving different agencies and levels of government. The government has already approved several legislative decrees to implement the reform. However, some parts of the enabling law, involving the role of local governments in the reform process, have been struck down by the Constitutional Court. As a consequence the implementing

decrees covering human resources management in the public administration and the rationalisation of local utilities are ineffective. Efforts to improve the functioning of the public administration need to continue as they are key to raising productivity, providing better services to the population and increasing trust in the public administration. Also, as underscored in the previous *Survey* (OECD, 2015d), an inefficient public administration, slow judicial procedures and unclear legislation affect negatively the effective and uniform implementation of reforms and regulations. To make progress on these issues, the government should fully implement the public administration reform, amend those parts declared unconstitutional and implement them swiftly.

The constitutional reform would have abolished provinces, complementing the creation of metropolitan governing bodies in 2015. The creation of metropolitan areas is long overdue and consistent with the experience of most OECD countries (Ahrend et al., 2014). A recent OECD study (OECD, 2015e) highlights that a fragmented governance structure is associated with lower productivity as municipalities' boundaries often reflect old patterns of economic activity that are no longer relevant. Also, insufficient cooperation can lead to an undersupply of public goods such as transport infrastructure. In 2014, Italy's fragmentation of metropolitan areas was slightly higher than the OECD average (Figure 23).

Figure 23. **There is scope to reduce fragmentation in metropolitan areas**



Note: The OECD-EU definition of functional urban areas (FUA) has not been applied to Iceland, Israel, New Zealand and Turkey. The FUA of Luxembourg does not appear in the figures since it has a population below 500 000. The number of local governments refers to around 2011. Metropolitan population figures are estimates based on municipal figures for the last two censuses available for each country.
Source: OECD, *OECD Metropolitan Areas Database 2015*.

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Extending and enhancing the use of regulatory impact assessment (RIA) could result in better laws and regulations. As underlined in the *OECD Regulatory Policy Outlook* (OECD, 2015f), RIA is already a requirement for all legislation initiated by the executive. *Ex ante* and *ex post* assessment are linked through an evaluation of *ex ante* progress indicators two years after the entry into force of laws or regulations. An extensive measurement of administrative regulations to repeal those redundant was undertaken between 2008 and 2012, and in 2014 a

Table 8. **Past OECD recommendations on public administration reforms**

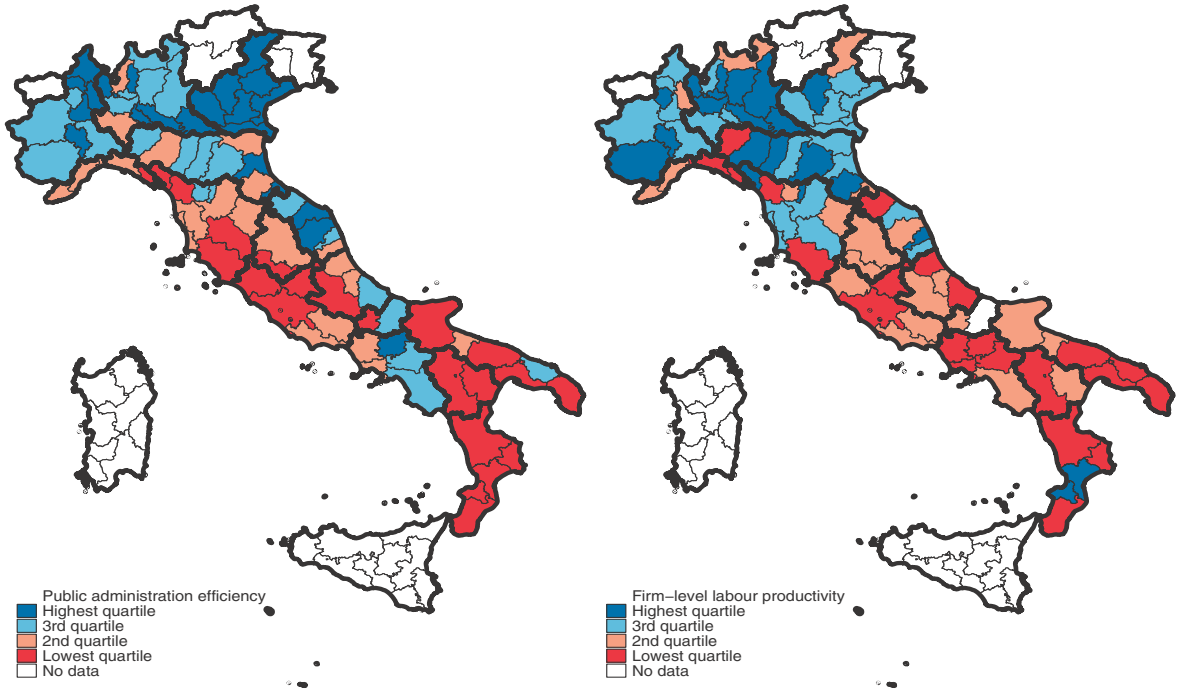
Recommendations in previous *Surveys*	Actions taken since the 2015 *Survey*
Follow through the reform of parliament and the re-assignment and clarification of competences between the central and sub-national governments. Ensure that legislation is clear, unambiguous and supported by improved public administration, including through reduced use of emergency decrees.	Far-reaching constitutional reforms were approved by Parliament in early 2016 but rejected in a referendum in December 2016. The ongoing reform of the Public Administration aims to simplify the system. Among the decrees adopted until November 2016, there is the repealing of obsolete and out of date secondary legislation and implementing decrees. A key aspect of the reform has been declared unconstitutional.
Further streamline the court system, with more specialisation where appropriate; increase the use of mediation; enhance monitoring of court performance.	The reform of the civil and justice system is ongoing; it also includes the collection of data about court performance and their dissemination.
Consider establishing a Productivity Commission with the mandate to provide advice to the government on matters related to productivity, promote public understanding of reforms, and engage in a dialogue with stakeholders.	No progress.
Reducing corruption and improving trust must remain a priority. For this, the new anti-corruption agency ANAC needs stability and continuity as well as support at all political levels.	ANAC has gained prestige and powers and is well-funded. In January 2016, the Chamber of Deputies approved a law protecting whistle-blowers for public and private-sector employees reporting suspicions of corruption and other illegal cases in their place of work. The new Public Procurement Code went into effect in April 2016, aiming at enhancing efficiency and promoting transparency.

new burden reduction programme was adopted. The government should pursue these initiatives. Making RIA and *ex post* evaluations public as well as improving *ex ante* consultation could strengthen the quality of the legislation and enhance transparency.

Public administration inefficiency makes it more difficult to do business, hindering investment and productivity growth. Italy's public sector employs about one in seven workers, and its effectiveness is key for private-sector efficiency. Across Italian provinces there are large variations in public sector efficiency. Provinces that have higher public sector efficiency tend to have higher firm-level labour productivity (Figure 24). Firm-level evidence (Pisu et al., forthcoming) also suggests that raising public sector efficiency from the level of Catanzaro in Calabria (which is the 25th percentile of the province-level distribution of public administration efficiency) to the level of Monza in Lombardia (which is the 75th percentile) would increase firm-level labour productivity growth by 2.4 percentage points (Figure 25). The impact is larger for small than large firms, suggesting that public sector inefficiencies may be particularly costly for smaller firms (Figure 26). This evidence is consistent with Giacomelli and Menon (2013) and Amici et al. (2015), showing that shortening civil proceedings and streamlining local regulation have a positive effect on firms' performance.

The firm-level analysis also reveals that tax collection and transport are the local public administration services with the largest impact on firm-level labour productivity growth. Improving the effectiveness and efficiency of the tax administration through better use of IT system, as highlighted above, would therefore generate not only additional revenue but also contribute to raise firm-level productivity. Opening up local transport services to competition – as the public administration reform envisages – will enhance their efficiency but also help increase productivity in the business sector. Overall, setting the size of transfers to local governments based on their needs rather than historical costs (what the government is doing with standard costs) will provide strong incentives to improve the efficiency of local administrations, with positive effect on firm-level productivity. Other important areas of public administration likely to have large effects on firm-level productivity include insolvency procedures and business regulation.

Figure 24. **Average firm level labour productivity is higher in areas with more efficient public administration**



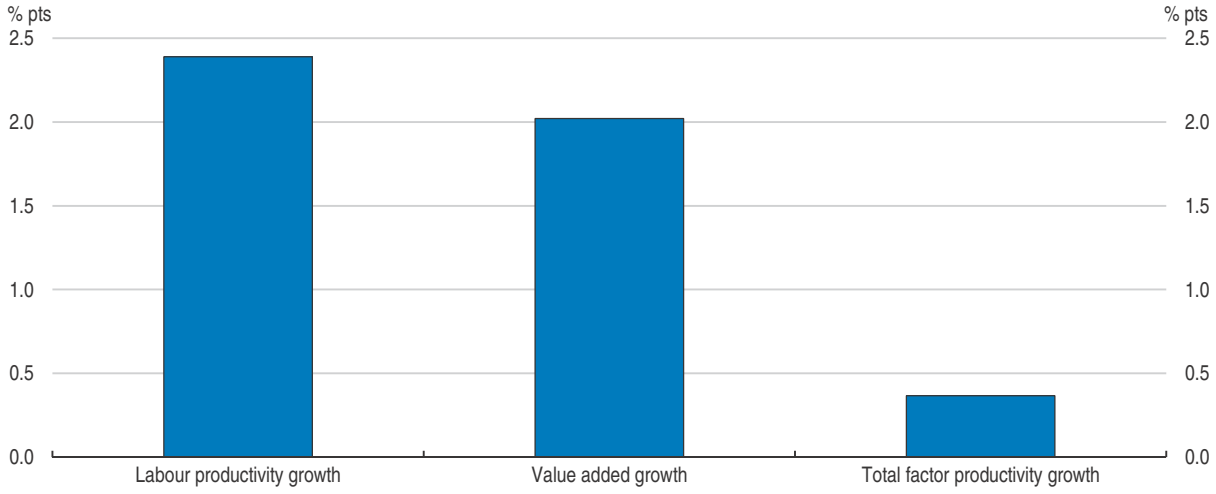
Note: The analysis uses firm-level data for the years 2005-13 from the ORBIS dataset and public administration efficiency indicators at the provincial level obtained from Open Civitas. The public administration efficiency indicator varies from 1 to 10 and reflects the ability of the municipality to meet the need of its residents. It compares spending and standard of services offered. The indicator is available at municipal level but it is then aggregated at provincial level for the year 2013. Productivity is measured as the logarithm of the value added per worker at firm level and averaged within provinces. Colours in the maps represent quartiles of the public administration efficiency and productivity-level distributions, red being the lowest quartile and dark being blue the highest quartile.
Source: OECD calculations using *ORBIS Database* of Bureau van Dijk and Open Civitas data.

Italy is amongst the largest recipient of EU Structural and Cohesion Funds. However, it has faced problems and delays in spending the fund. At the end of the previous funding period (2009-13), Italy ranked only after Poland, in terms of the highest amount of unused funds (Figure 27). Outstanding commitments declined to nearly zero only in 2016, as the new Territorial Cohesion Agency became fully operational.

The government should effectively coordinate local administrative agencies involved in applying and managing EU structural funds, identify and disseminate best practices and generally put in place the right conditions to improve management of EU funds. The government is moving in the right direction. To accelerate the absorbtion of EU funds for the 2014-20 funding programme, the Territorial Cohesion Agency has signed more than 15 agreements with southern regions and metropolitan cities granting it a stronger coordinating role. The government has also recently created Invitalia – an agency within the Ministry of Finance – with responsibility, among other things, to support the public administration for the effective management of EU structural funds. The government should ensure that Invitalia has the necessary power, instruments and resources to fulfil its role effectively and that the EU funds are not used to cut back public investment and other growth-enhancing policies.

Figure 25. **Public administration efficiency raises firm's performance**

Effect of raising the local public administration efficiency from the 25th percentile of the province-level distribution to the 75th percentile



Note: The bar shows the estimated effect on firm's performance of an increase in public administration efficiency from the 25th percentile of the province-level distribution – as in Catanzaro (Calabria) – to the 75th percentile – as in Monza (Lombardia). Estimates are obtained through a regression discontinuity design approach exploiting provincial boundaries within the same region. Regressions control for firm size, firm age, provincial GDP per capita (2-digit), industry and regional effects.

Source: OECD calculations based on *ORBIS Database* of Bureau van Dijk and OPEN CIVITAS data.

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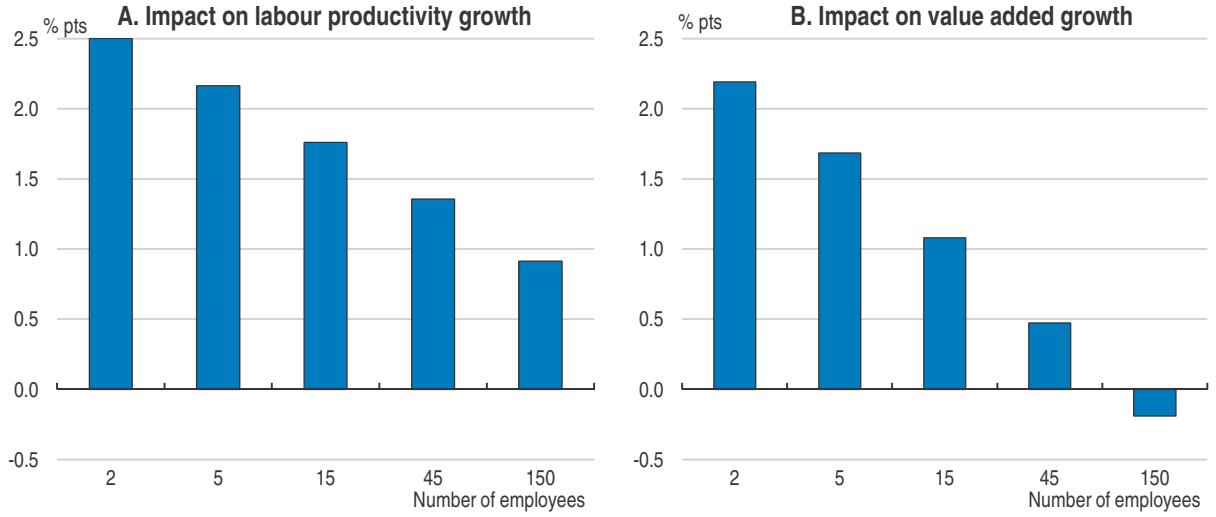
Figure 26. **The impact of increasing public administration efficiency is larger for small firms**

Effect of raising the local public administration efficiency from the 25th percentile of the province-level distribution to the 75th percentile



Note: The bar shows the estimated effect of an increase in public administration efficiency from 25th percentile of the province-level distribution – as in Catanzaro (Calabria) – to the 75th percentile – as in Monza (Lombardia) – by the size of the firm; see also note of Figures 24 and 25.

Source: OECD calculations based on *ORBIS Database* of Bureau van Dijk and OPEN CIVITAS data.

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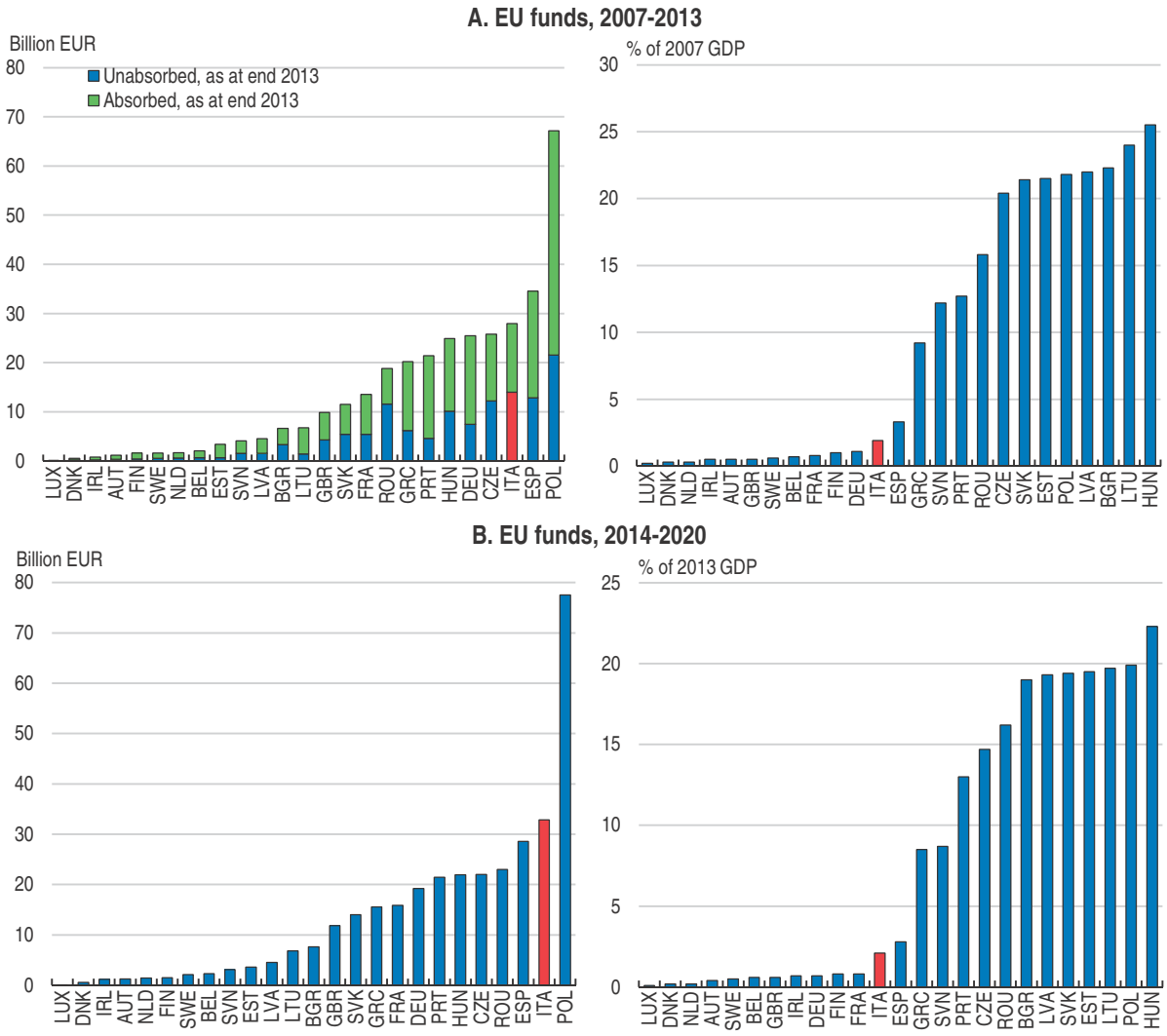
Figure 27. **EU structural and cohesion funds**



Source: European Commission (2014), "Summary of the Partnership Agreement for Italy, 2014-2020"; European Commission (2013), "Analysis of the Budgetary Implementation of the Structural and Cohesion Funds in 2012".

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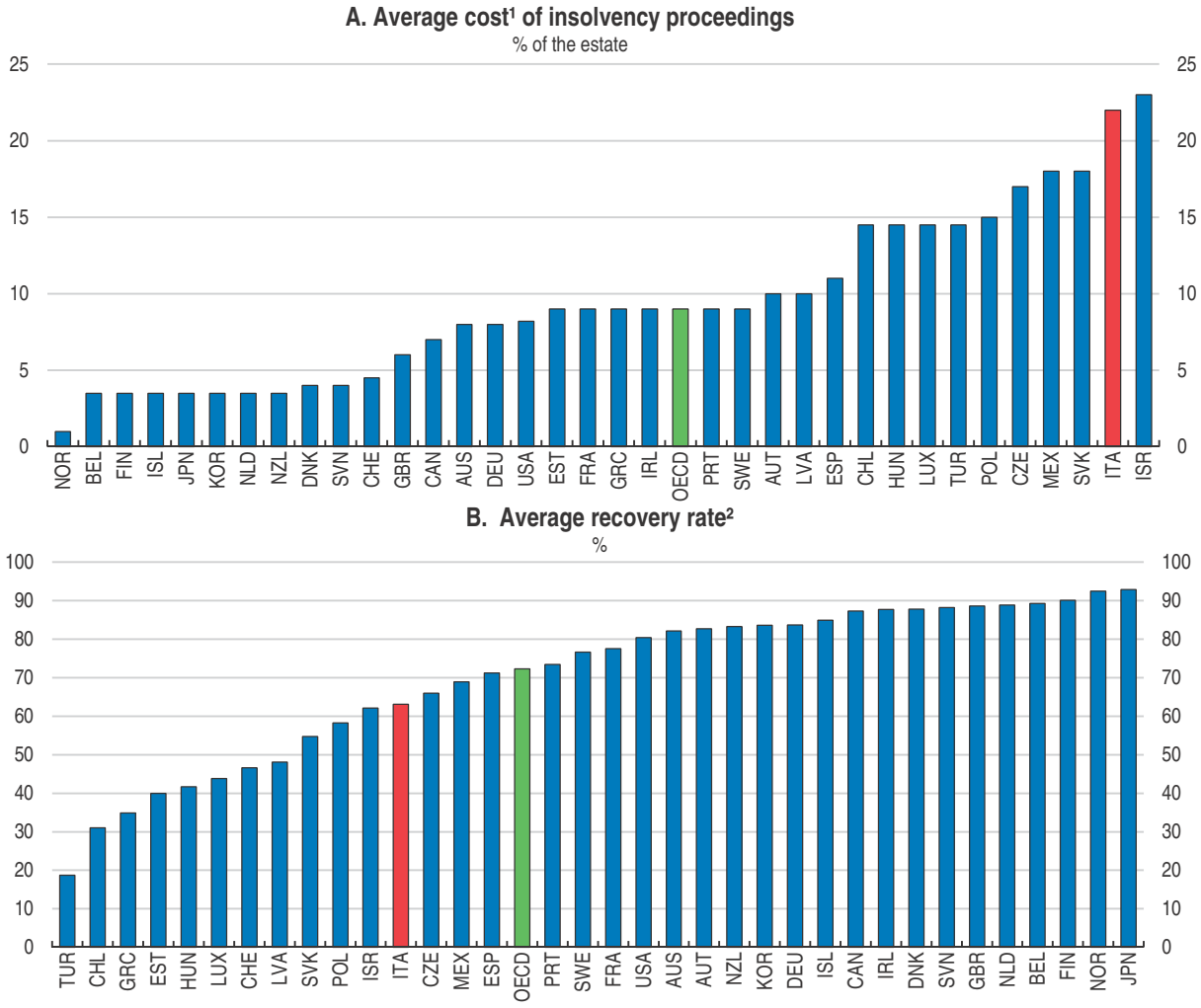
Speeding up insolvency procedures

Accelerating insolvency procedures would speed up company restructuring, help reduce the problem of NPLs, increase investment and diminish resource misallocation. Since the mid-2000s, the insolvency law has been undergoing a reform process to accelerate and streamline reorganisation procedures. However, the transaction costs of insolvency procedures remain high (Figure 28). In 2015, a reform introduced a new out-of-court restructuring agreement for firms whose debts with financial intermediaries exceed 50% of total liabilities. The reform also simplified and shortened court proceedings for forced collateral sales. These measures are expected to shorten insolvency proceedings to 3-5 years and judicial foreclosures from 4 to 3 years.

Procedures to allow a firm to emerge from insolvency are underutilised. There is ample room to make more extensive use of debt-equity swaps. Those are an important instrument in corporate restructuring (Hart, 2006); however, in the Italian legal insolvency

Figure 28. **Efficiency of insolvency procedures is low**



1. The cost of the proceedings is recorded as % of the value of the debtor's estate. The cost is calculated on the basis of questionnaire responses and includes court fees and government levies; fees of insolvency administrators, auctioneers, assessors and lawyers; and all other fees and costs.
2. The recovery rate is calculated based on the time, cost and outcome of insolvency proceedings involving domestic legal entities and is recorded as % of the amount recovered by secured creditors. The calculation takes into account the outcome: whether the business emerges from the proceedings as a going concern or the assets are sold piecemeal. Then the costs of the proceedings are deducted. Finally, the value lost as a result of the time the money remains tied up in insolvency proceedings is taken into account. The recovery rate is the present value of the remaining proceeds, based on end-2015 lending rates.

Source: World Bank, *Doing Business 2017 Database*.

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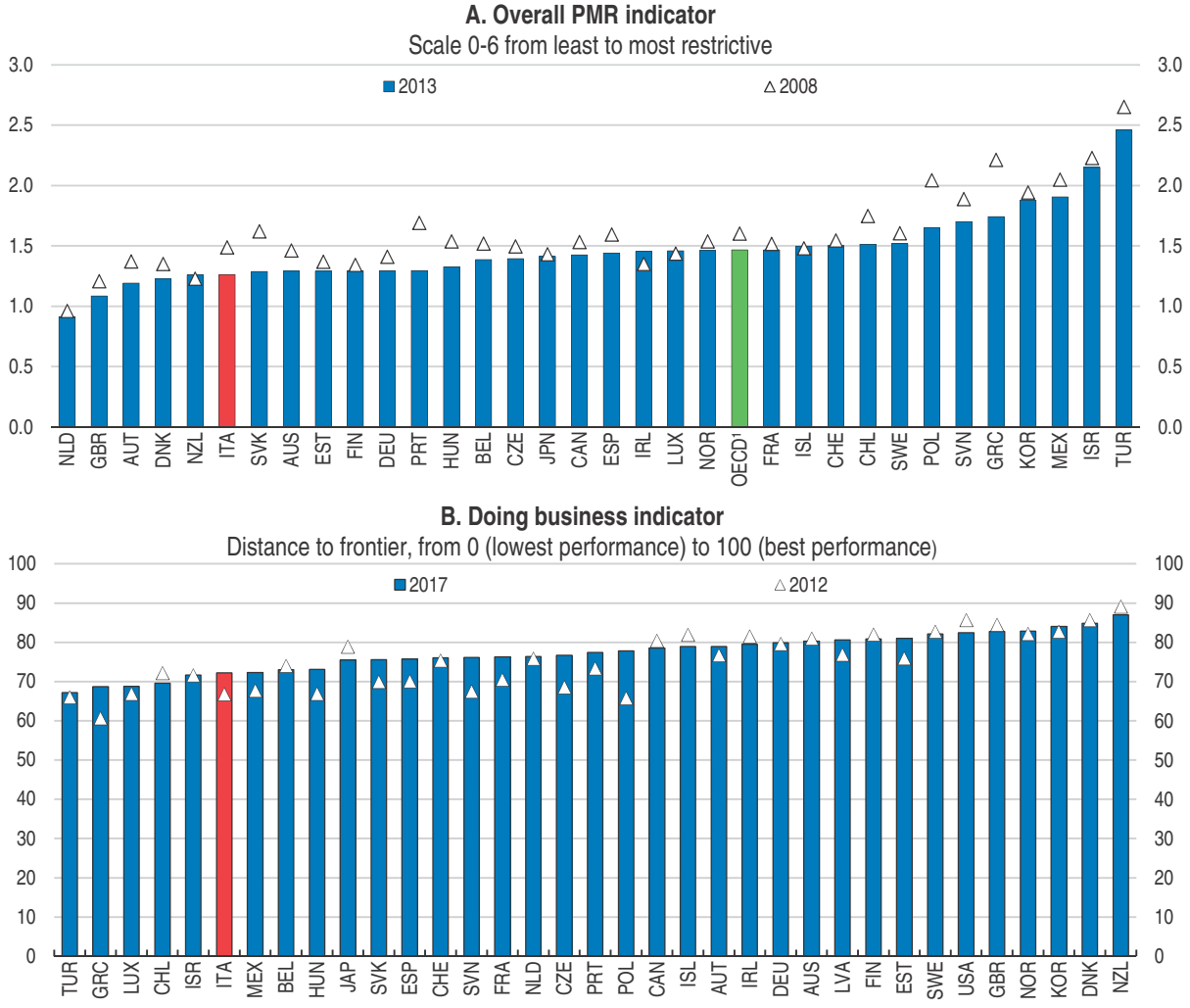
framework debt-equity swaps are limited to the case of composition with creditors, which allows for forcing dissenting creditors to share the burden of the restructuring process. Yet, most of compositions with creditors end up into liquidation, suggesting debt-equity swaps are hardly useful to make firms emerge as going concerns. In out-of-court procedures debt-equity swaps are possible but creditors can dissent and so are rarely used. Applying debt-equity swaps in out-of-court debt restructuring procedures to dissenting creditors (similarly to what the 2015 introduced for financial creditors only) would facilitate the use of debt equity swaps and increase the likelihood at which insolvent firms emerge quickly as ongoing concerns.

Competition and regulation

Over the last years, Italy has made progress on opening up markets to competition as evidenced by the improvement in OECD Product Market Regulation (PMR) (Figure 29). There is still room to lower barriers relating to state controls and public ownership, which is still close to the OECD average. The recent privatisation programme – involving sales of minority stakes in the airport traffic controller (ENAV) in 2016 and the post in 2015 – are not yet captured by the index. Also, barriers to entrepreneurship can be lowered further by easing barriers to start up, especially in the service sector.

Figure 29. **Restrictions to product market competition have eased**



1. Average of all OECD countries excluding the United States and Latvia.

Source: *OECD Product Market Regulation Database*; and World Bank, *Doing Business 2017 Database*.

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Easing product market regulation has not had any visible effect on productivity or investment. Problems with implementation and enforcement attributable to inefficiencies in the public administration and judiciary have created a wedge between *de jure* and *de facto* standards (OECD, 2015; Allio and Rangone, 2016). The World Bank's Doing Business Indicator captures more closely *de facto* standards and it is based on the actual obstacles

businesses face. In this respect, Italy scores poorly compared with the PMR indicator. The Competition Authority (AGCM, 2015) has highlighted that the proliferation of regulations, administrative complexity and a widespread distrust towards competition have abetted incumbents and hampered competitive pressures by fostering legal uncertainty. In many cases, sub-national governments have also resisted efforts to increase competition in sectors dominated by municipal enterprises, such as transport and other locally provided services. The part of the public administration reform dealing with the rationalisation of local utilities and opening up to competition could contribute to address these issues.

Approving the annual competition law currently being discussed by Parliament would be a step forward to enhance competition in the services sector and professions. Also, as highlighted above, making more extensive use of regulatory impact assessment would help improve the quality of regulation and close the gap between *de jure* and *de facto* standards.

Table 9. **Past OECD recommendations on product markets**

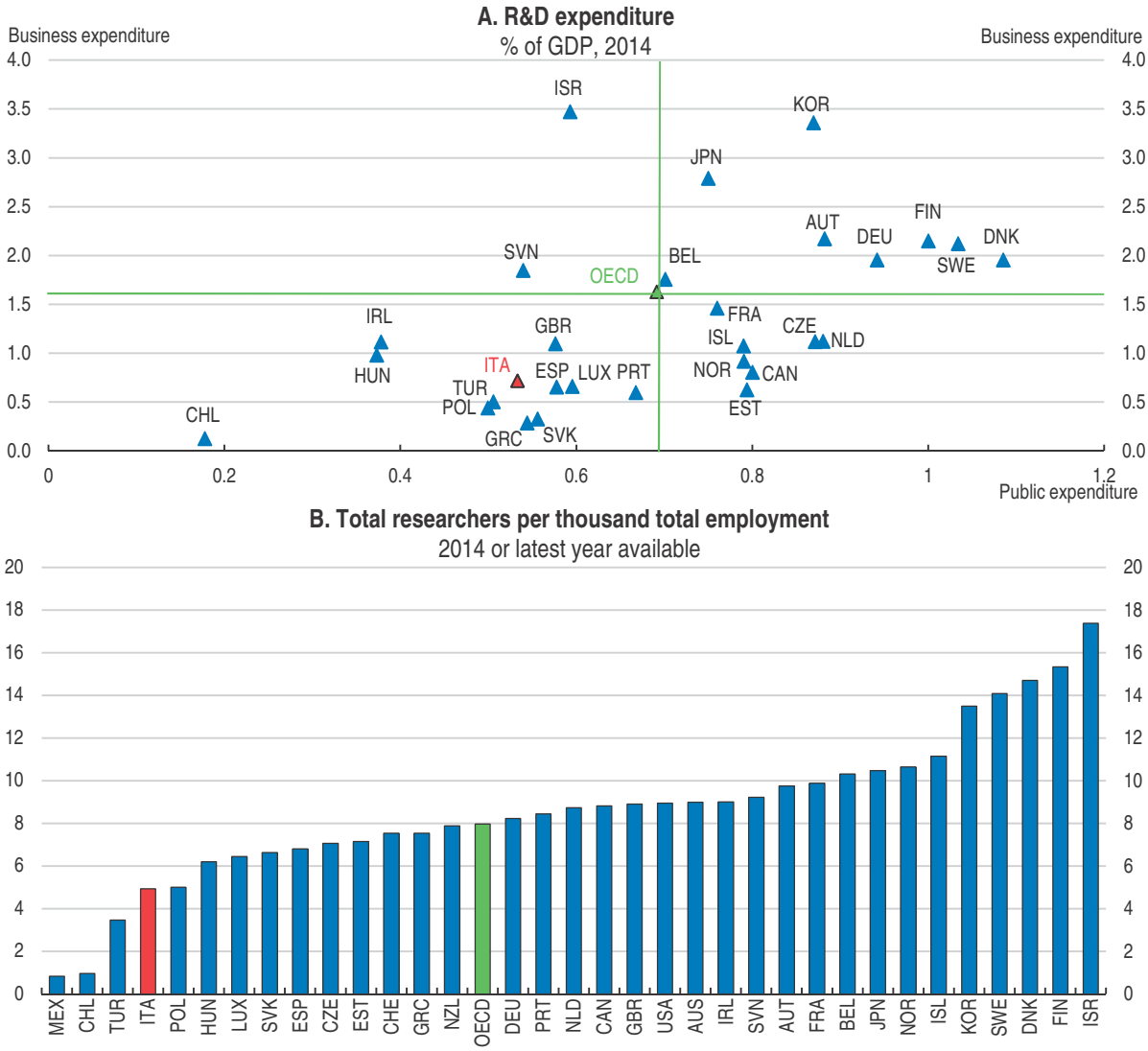
Recommendations in previous *Surveys*	Actions taken since the 2015 *Survey*
Ensure Competition Authority uses increased power effectively.	In 2015, the government for the first time submitted to Parliament a law to enhance competition following the recommendations of the Competition Authority as prescribed by Law 99/2009, Article 47.
Remove unnecessary licensing in professional services. Remove quantitative restrictions on supply in services.	Some of these issues are dealt by competition laws under Parliamentary discussion. The National Professional Services Reform Programme was submitted to the European Commission in March 2016. In compliance with Directive 2005/36, the Programme contains the screening of national regulations regarding professional services, to ensure that they are non-discriminatory, objectively justified and proportionate.
Reduce public ownership, especially in TV media, transport and energy utilities, and local public services.	Public administration reforms include the rationalisation of local public utilities
Privatise and liberalise in energy and transport sectors. Get transport regulator into effective operation quickly; complete framework for regulation of water and other local public services, ensuring regulatory independence Introduce national oversight of regional regulatory competences (e.g. retailing, land-use planning).	The transport sector regulator is operational.

Encouraging innovation and investment in knowledge-based assets

Italy's research and innovation policy has historically been fragmented. This was due to a plethora of agencies and bodies at national and sub-national levels with responsibilities in policy development and execution and by an equally fragmented financing system. Italy has at least 5 national research funds. Attempts to simplify the financing system have yielded no results (MIUR, 2015; Filocamo, n.d.). Frequent and unclear changes in the legislation have also resulted in programmes and initiatives disconnected from national priorities and lacking unity. This has hindered the development of an efficient national innovation system by limiting knowledge spillovers among innovation actors. It also hampers monitoring and evaluation.

Italy is a moderate innovator by EU standards (EU, 2016). Public and private R&D spending and the number of researchers are low by OECD standards (Figure 30). Business investment in fixed and knowledge-based capital (KBC) is below par (Figure 31). Weak research and innovation activities have resulted in a low number of patents per million of inhabitants (Figure 32). However, Italy performs considerably better when considering the number of patents per number of researchers, suggesting that research productivity is high (Figure 33) and that low innovation is mostly due to low levels of research spending.

Figure 30. **R&D spending and the number of researchers are low**



Note: Panel A, for Mexico and Switzerland the split is not available.
Source: *OECD Main Science and Technology Indicators Database 2016.*

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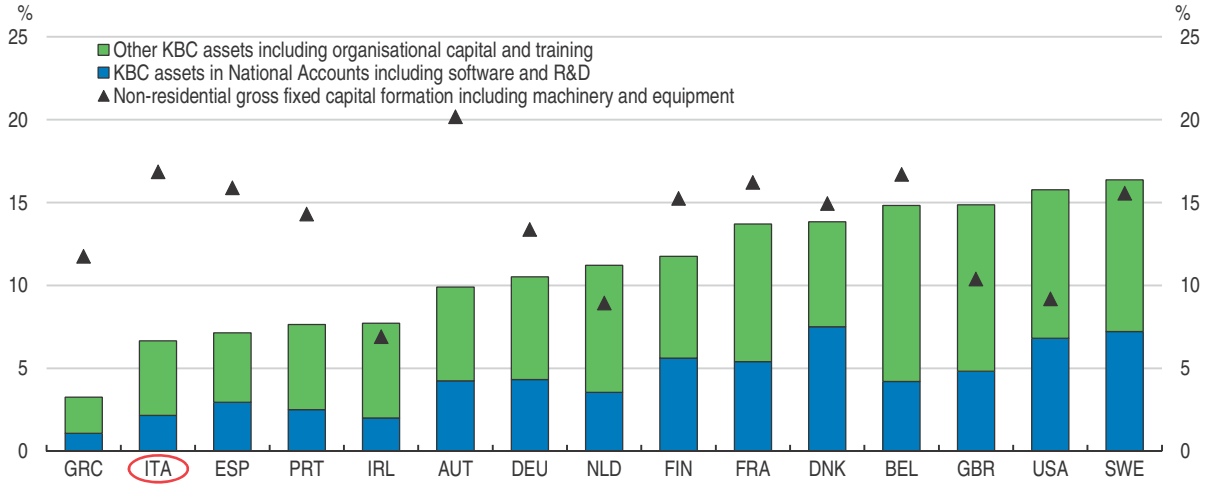
In 2016, the Ministry of Education, University and Research published the National Research Programme (*Programma Nazionale per la Ricerca*, PNR). The overarching goal of the Programme is to establish a national governance system to guide research and innovation policies so as to improve policy coherence and reduce fragmentation. This is welcome as it will provide a needed framework to develop and execute a coherent long-term national research and innovation strategy. The Ministry's commitment to allocate a larger share of funds for public research institutes on meritocratic principles and go beyond the historical cost principle is also commendable (MIUR, 2015). The role of the National Agency for the Assessment of Universities and Research (ANVUR), which assesses the quality of teaching and research of universities and public research institutes, will be key in this respect.

Figure 31. **Business investment in fixed and knowledge-based capital (KBC) is low**

As % of business sectors' gross value added, 2013



Source: OECD Science, Technology and Industry Scoreboard 2015; OECD calculations based on INTAN-Invest data, *www.intan-invest.net*; and OECD, *Structural Analysis (STAN) Database*, *http://oe.cd/stan*, June 2015.

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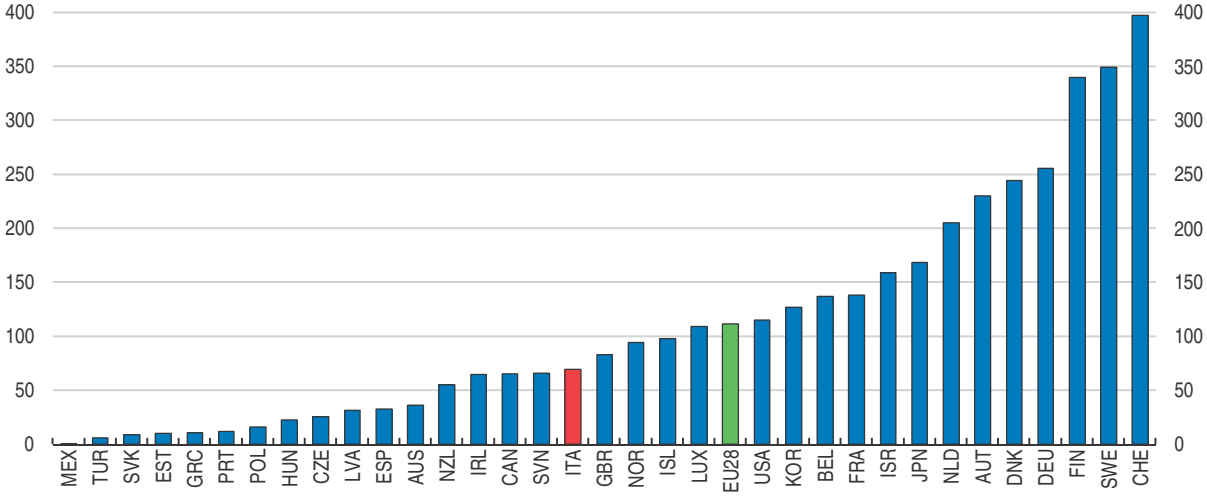
Figure 32. **The number of patents is low**[1]



1. Applications to the European Patent Office (EPO).

Source: Eurostat.

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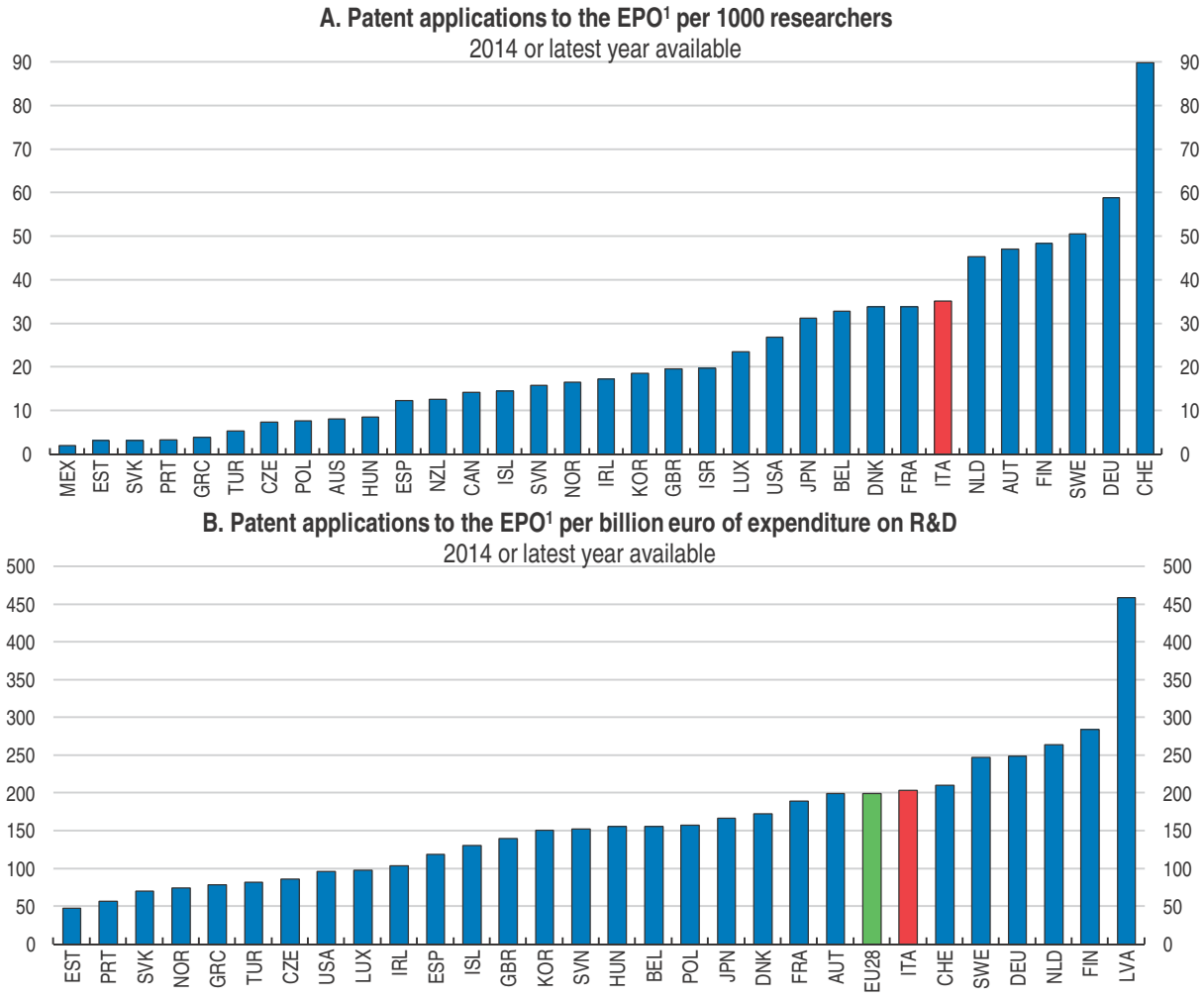
Italy has also recently introduced a wide range of incentives to boost innovation under the Industry 4.0 Plan over 2017-20 (Box 1). Unlike other European countries, Italy has lacked for a long time a comprehensive innovation strategy. The initiatives recently undertaken contribute to align Italy's innovation policies to those of other European countries. These include:

- R&D tax credits introduced in 2015 were reinforced in the 2017 budget law (Table 10). The R&D tax credit can be used to offset corporate income, regional taxes and social security contributions. This is an important step to boost Italy's innovative capacity. However, tax advantages for R&D spending in Italy are still modest compared to most OECD countries

Figure 33. **Research productivity is high**



1. European Patent Office (EPO)

Source: OECD Main Science and Technology Indicators Database 2016; and Eurostat.

StatLink http://dx.doi.org/10.1787/888933454124

(Figure 34). Countries with the most generous R&D tax credit have volumetric or hybrid systems whereas Italy has introduced an incremental system (meaning that tax credit applies only to the increase in the eligible R&D spending compared to the base period). Also, the size of the tax incentive is the same for large and SMEs, in contrast with other countries, such as France, the United Kingdom and Canada (Figure 34).

- Hyper- and super-depreciation scheme to promote the digitalisation and innovation of economic activities (Table 10).
- A patent box introduced in 2015, a lower tax regime applying to income generated by intellectual property (IP) rights (such as patents, but also trademarks) developed in Italy. There are various reasons why patent boxes might not be the most effective tool to stimulate innovation, especially among innovative start-ups and SMEs. For instance, there is a long time lag between the R&D expenditure and the tax relief. Also, by design, only successful innovation will benefit from the tax relief. Evidence on the effectiveness of patent boxes is indeed mixed (IMF, 2016). Patent box regimes have come under

Table 10. **Past OECD recommendations on innovation**

Recommendations in previous *Surveys*	Actions taken since the 2015 *Survey*
Make science, technology and innovation policy more business-oriented and receptive to the varied needs across the whole spectrum of firms, including SMEs.	The new national research plan addresses some of these issues. R&D tax credits have been introduced along with the patent box, although their impacts on SMEs have yet to be estimated. Linkages between firms and research centres will benefit from tax incentives.
Simplify and rationalise public support for business R&D and innovation, by achieving an appropriate mix of direct and indirect measures.	R&D tax incentives are equivalent to 55% of the yearly increment in R&D spending taking the 2012-14 average as a base. The same rate is applied to R&D spending relating to highly qualified personnel, contracts with university or public research institutes or with innovative start-ups. Although the tax credit is incremental, the fixed base (2012-14 average) implies that for start-ups or any other firm with no R&D spending during the reference period the tax incentive is volumetric. Tax incentives on the repatriation of researchers have been made permanent.
Improve linkages between the business sector, universities and the public research system, including through mobility of researchers, and appropriate intellectual property rights.	Hyper-depreciation scheme (introduced with the budget law of 2017) equivalent to 250% of the value of investments in industry 4.0 technologies which are instrumental to the digitalisation and innovation of their industrial processes.
Foster the creation and growth of start-up firms, by lowering regulatory barriers, simplifying bureaucracy, and supporting the collateralisation and securitisation of innovation-related assets (e.g. through adhesion to the European Unitary Patent).	Super-depreciation (introduced in 2016 and enhanced in 2017) equivalent to 140% of the original cost of eligible equipment, machineries, software (if connected to investments in industry 4.0 technologies) and other eligible equipment.
	Incentives for innovative start-ups and SMEs. Investors in innovative start-ups and SMEs are granted tax and regulatory incentives. The 2017 budget law increased the tax credit/deduction from 19% to 30% and the maximum credit limit from EUR 0.5 to EUR 1 million.
	Tax losses of start-ups companies can be transferred to listed companies having a participation of at least 20% in the capital of the start-up.
	To reduce the gap between North and South, incentives for research and innovation for SMEs and professionals in the South are operational. Promotion of innovative PhDs with strong industrial vocation, for the attraction of researchers of excellence and to support measures for Italians researchers who intend to participate in European tenders for the European Research Council (ERC).

scrutiny as they can be a way for companies to engage in profit shifting. Italy's patent box regime largely complies with the OECD recommendations to prevent base erosion and profit shifting (BEPS). However, Italy's patent box regime applies the reduced tax rate also to income from marketing intangibles, which is against OECD recommendations included in the BEPS Action 5. Countries have until June 2021 to make their regime fully compliant with OECD recommendations.

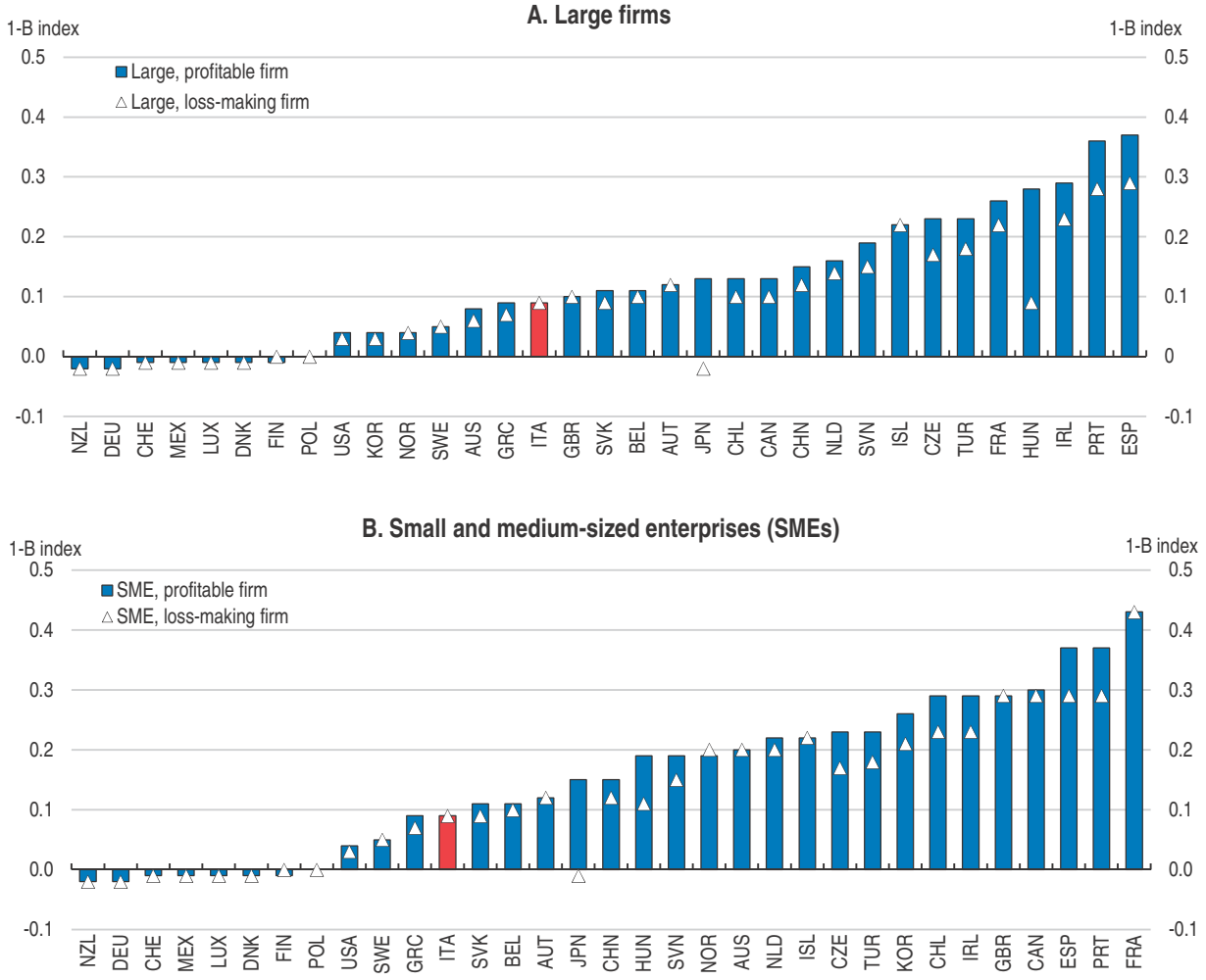
Overall, there is scope to make R&D and innovation incentives more efficient by targeting them to start-ups and innovative SMEs. These firms are likely to suffer from severe financial constraints hampering their R&D efforts. OECD's broad policy recommendations stress the need to design R&D incentives taking into account differences between large and small firms (OECD, 2015a). A recent study on the United Kingdom system indicates that, if well targeted, R&D tax credits increase R&D and patenting among financially constrained young and SMEs (Dechezlepretre et al., 2016). Guceri and Liu (2015) also report positive effects of R&D-tax credits on innovation activities by SMEs in the United Kingdom. Going forward, the government should carefully evaluate the effect of the new R&D tax credit system and patent box regime on foregone tax receipts and innovation rates and fully align the design of its patent box with OECD recommendations.

Scaling up additional sources of finance

In Italy, bank loans account for about 62% of firms' financial debt. Non-bank sources of finance are still underdeveloped and this is a challenge for SMEs as they face more difficulties in accessing bank credit than large companies. Italy also offers few opportunities for equity investment as the stock exchange is underdeveloped compared to the size of the economy, and the private equity and venture capital industries are small. Because of these factors, the debt-to-equity ratio of Italian non-financial corporations has

Figure 34. **Tax subsidy rates on R&D expenditures**

2015



Note: The tax advantage is calculated as 1 minus the B index, which is a measure of the before-tax income needed to break even on an additional unit of R&D outlay. The index is calculated for a representative firm according to whether it can claim tax benefits against their tax liability in the reporting period. This is an experimental indicator and international comparability may be limited. See also OECD (2015a), *OECD Science, Technology and Industry Scoreboard 2015*. Data for Italy refers to 2017 to take into account the most recent legislative changes.

Source: OECD Science, Technology and Industry Scoreboard 2015.

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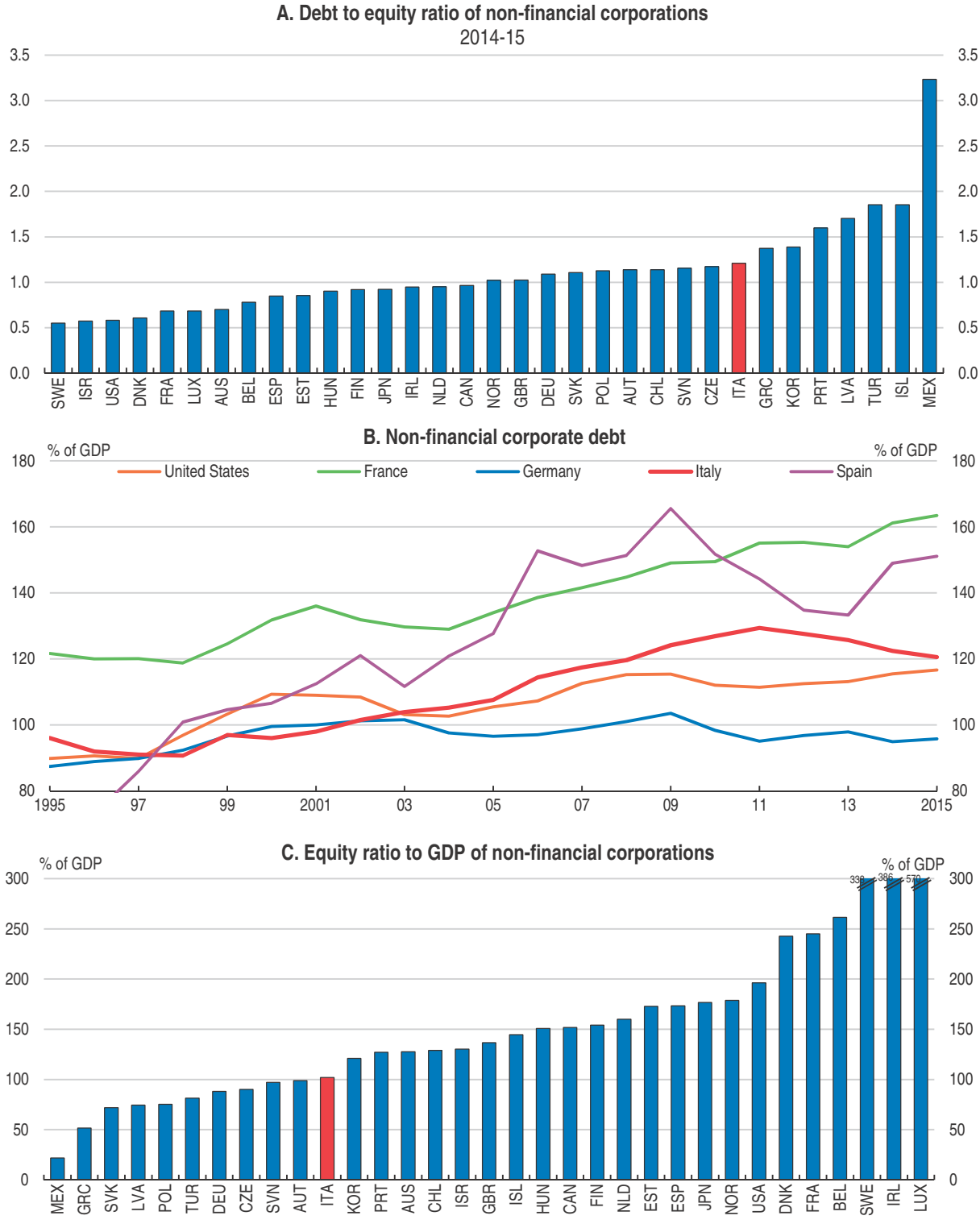
historically been higher than in most OECD countries – and increased during the post-crisis period – suggesting Italian companies are undercapitalised (Figure 35). Relying excessively on debt can blunt management's incentives to invest and innovate as a larger share of the return on investment will accrue to creditors through interest payments. Evidence across OECD suggests that during the post-crisis period companies with rising debt-to-equity ratio had lower productivity growth (OECD, 2016a).

In the past years, the government has taken actions to diversify the source of corporate finance (Table 11). For instance, a stock market for SMEs has been established (Alternative Investment Market) with simplified rules. As of March 2016, it consisted of 73 listed companies worth EUR 2.8 billion. Also, the ELITE programme has been created to make easier for SMEs to raise capital before stock market listing.

Figure 35. **Debt equity ratio of non-financial corporations is high because of low equity**



Note: The debt to equity ratio measures the extent to which firms finance their activities out of their own funds. The higher (lower) the ratio, the higher (lower) the leverage and the greater is the risk for firms' creditors.
Source: *OECD Financial Statistics Database*; and *OECD National Accounts Database*.

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Table 11. **Government measures to promote alternative sources of finance**

Most important policy measures	Objective of the measure	Years of intervention
Allowance for Corporate Equity (ACE)	The process for SMEs' listing in the stock exchange (Alternative Investment Market) has been simplified and the ELITE programme launched to introduce SMEs to capital markets. The notional interest rate applied to the injections of new equity (allowance for corporate equity, ACE) was increased progressively from 3% to 4.75% in 2016. Italy's ACE has reduced the debt-to-equity ratio of Italian firms (Panteghini et al., 2012). The 2017 Draft Budgetary Plan lowers this rate to 2.3% (2.7 from 2018) in line with market interest rates.	2011-14
Tax advantages and streamlined procedures to issue bonds by unlisted SMEs (minibonds)	The tax advantage and streamlined procedures introduced for bonds issued by non-listed companies (minibonds) is working. Thus far 190 minibonds have been issued for a face value close to EUR 8 billion and a number of specialised investment funds have started to trade them.	2012-14
Developing a venture capital industry	To develop a venture capital industry, the government has recently established a fund (Invitalia Venture) to co-invest with national and international private investors in highly innovative start-ups and SMEs. As at May 2015 the fund had a capital of EUR 65 million (EUR 50 million provided by state). Tax exemption for revenue deriving from venture capital funds which respect some requisite (at least 75% of fund's capital must be invested in not-listed SMEs respecting some requisites). This is a positive development as the literature has underlined the important role that direct public investment in innovative start-ups and SMEs, if managed on strict selection investment criteria and in partnerships with private investors, can play in the development of a private-sector venture capital industry (Jeng and Wells, 2000; Lerner, 1999; Cumming 2007) as the experience of Israel with the Yozma fund shows (OECD, 2016, SME and Entrepreneurship Policy in Israel).	2015
Sponsoring of start-ups	Listed firms have the opportunity to sponsor start-ups (up to 5 year-old firms) by buying their fiscal losses. This requires the listed firm to own at least 20% of the start-up. The measure aims at both helping young firms in finding external founds and in boosting the development of equity and capital markets.	2017
Individual Saving Plan (Piani Individuali di Risparmio)	Similar to Individual Savings Accounts (ISAs), they involve tax exemption for retail investors on capital gains of funds investing 70% of their funds in instruments issued by EU companies having a stable organisation in Italy.	2017
Other policy measures		
Sabatini Ter		2015
Simplification of procedures for SMEs' listing in the stock exchange		2014
Direct lending by credit funds, insurance companies and securitisation companies		2014
Government's venture capital fund (with private investors)		2016
Strengthening equity crowdfunding		2016

Source: Ministry of Finance (2016), National Reform Programme.

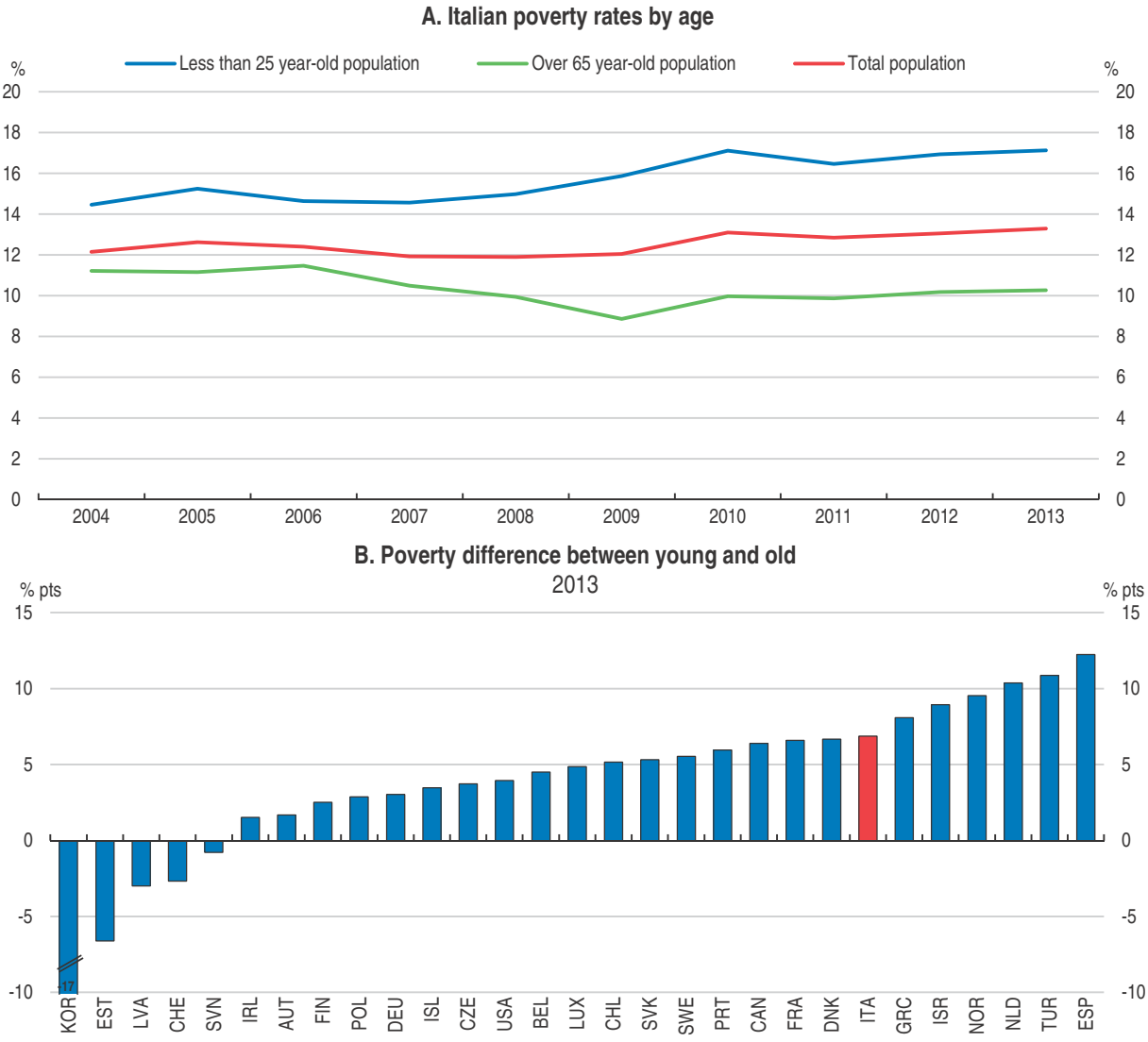
Results have been encouraging, although insufficient to revive investment and innovation. To produce long-lasting results and contribute to change the financial structure of the Italian economy, the government should ensure the continuity of these measures over the medium to long term. Also, the government should avoid targeting measures to specific geographic areas; these policies need to address specific market failures and therefore should specifically target start-ups and innovative SMEs irrespective of their location.

Reforms to boost inclusive and sustainable growth

Fighting poverty

Slow economic growth and high unemployment rates have led to rising poverty. The poverty rate, measured by the share of those living on less than 50% of the median household disposable income (adjusted for family size), appears, to have stabilised but remains high (Figure 36, Panel A). Between 2007 and 2013 the poverty rate among the young (below 25 years) increased by more than 3 percentage points while it decreased for the old (Figure 36, Panel B). In addition, the absolute poverty rate of families with 1 or 2 children rose from 1.1 and 2.3% in 2006 to 4.9 and 8.6% in 2015. Over the same period, the absolute poverty rate among old people remained broadly stable. The sharp increase in

Figure 36. **The poverty rate has increased and remains high, especially for the young**



Note: Income poverty measured using relative poverty rate based on 50% of the median equivalised disposable income. Young people: less than 25 year-old, old people: over 65 year-old.
Source: OECD Income Distribution Database 2016.

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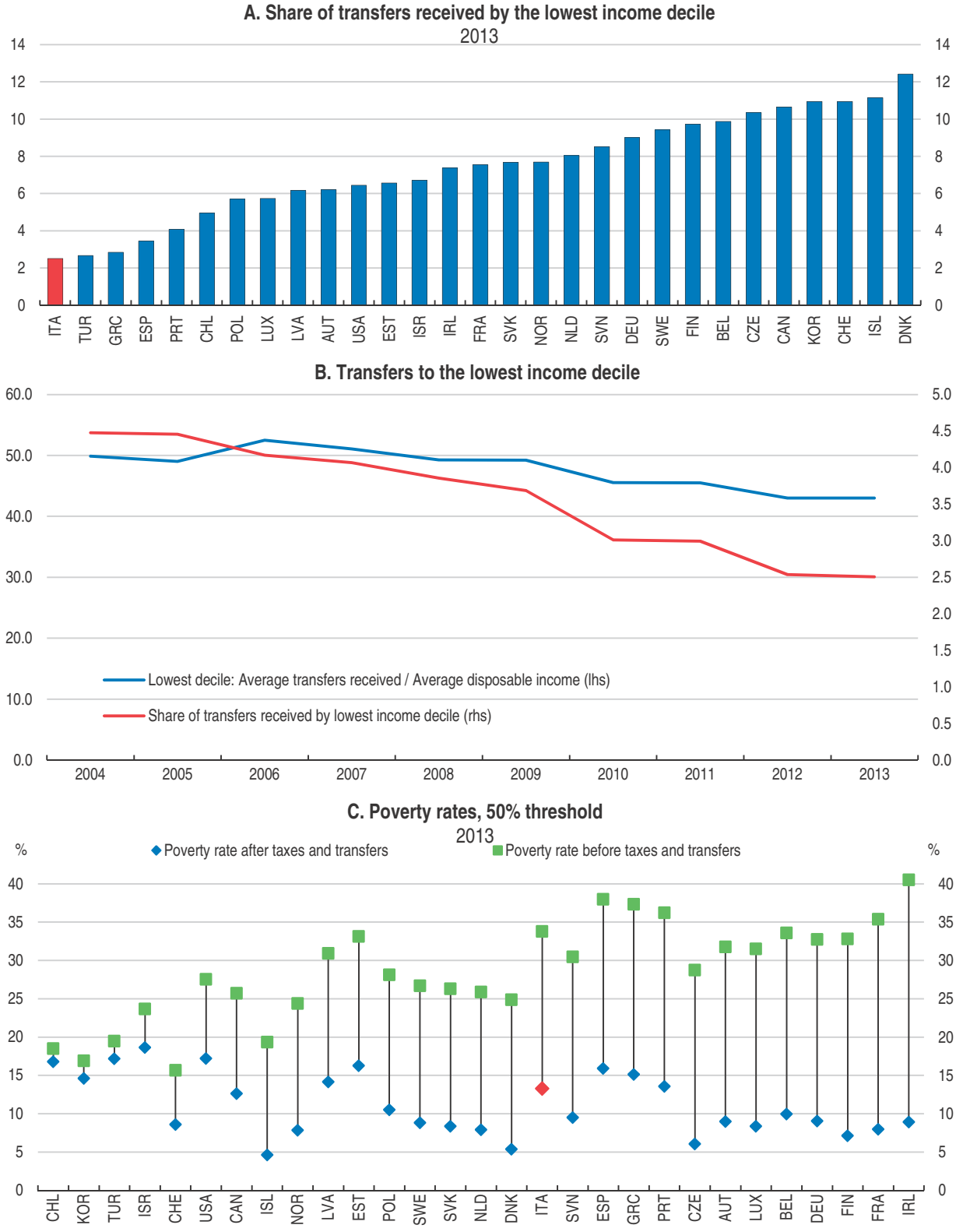
poverty rates among the young is attributable to the fragmentation and ineffectiveness of many locally-managed antipoverty programmes and a social safety system relying excessively on pensions.

Cash transfers are poorly targeted and low by international standards (Figure 37, Panel A). In addition, they have become less generous over time and even less well targeted (Figure 37, Panel B). Targeting transfers more effectively could yield a larger reduction in poverty (Figure 37, Panel C). Italy has recently introduced a national antipoverty programme (Box 2). Past programmes were highly fragmented and poorly coordinated with the resulting level of services varying greatly among cities. Means tests often do not consider individual wealth and total family income, and they are based on highly and sometimes arbitrary access criteria (such as the previous occupation). The nation-wide

Figure 37. **The transfer system is poorly targeted and can do more to reduce poverty**



Source: OECD Income Distribution Database 2016.

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Box 2. **Fighting poverty**

Local government has been responsible for policies to reduce poverty. Nationwide programmes have focused only on old and people with disabilities, leaving a large share of the population, especially young and children unprotected. In 2008 the government introduced a social card to fight poverty. This card was an emergency measure to provide limited economic support to a narrow segment of low income families – less than 1.2% of Italian families (Madama et al., 2014). In 2011, the Government re-designed the social card (the New Social Card 2.0) making it universal in scope, providing a mix of cash transfers and social services.

In 2013, the government launched the Support for Active Inclusion Programme (Sostegno per l'Inclusione Attiva, SIA) targeting families with children and in cities with more than 250 000 people. In 2016 the SIA has been extended to the whole country.

With the 2016 Stability Law, Italy introduced a triennial National Plan against Poverty by setting up the Fund for Combating Poverty and Social Exclusion. It will have an initial endowment of EUR 600 million, with the allocation rising to 1 billion annually in 2017 and 1.5 billion in 2018. These new resources are in addition to those already available and equivalent to EUR 1.4 billion for 2016, which are being used to extend SIA to the whole country (as from September 2016) and pilot the ASDI (extended unemployment benefits for low income workers near retirement). SIA is configured as a "bridge measure" that anticipates the single minimum income scheme (Reddito di Inclusione) that will be implemented in 2017 after parliamentary approval and merge also ASDI and SIA.

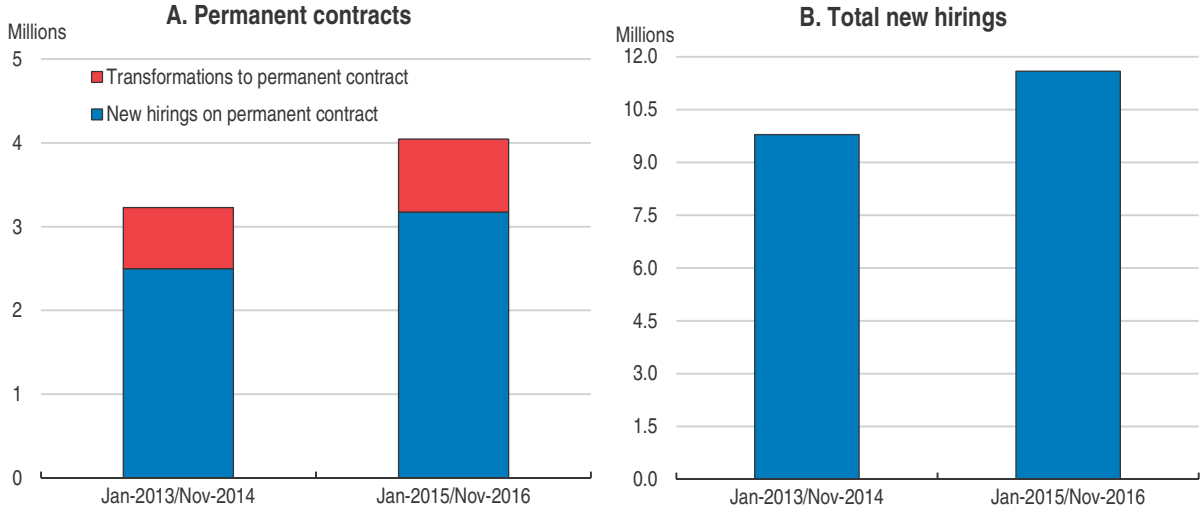
benchmark envisaged by the Constitution to ensure homogeneous minimum levels of social services across the country – *Livelli Essenziali nelle Prestazioni* – has never been set (Sestito, 2016).

The government has started to rationalise anti-poverty programmes. In 2016, it launched the National Plan against Poverty (Box 2) with the aim of establishing a nation-wide antipoverty programme (Reddito di Inclusione, REI). The government plans to allocate EUR 1 billion annually to REI, which will initially target families with children. This is welcome as ample evidence has shown the large negative effects poverty experienced at young age has on adult lives (Evans and Schamberg, 2009; Heckman and Masterov, 2007; Heckman, 2006). The allocated funds are still limited but are an improvement compared with the currently available resources. The government should ensure that the new programme is sufficiently funded to substantially reduce poverty, especially among children. The cost of a programme reaching all people in absolute poverty has been estimated to EUR 7-8 billions (MLPS, 2013).

Towards an inclusive job market

Improving the functioning of the labour market and the education system is required to make growth more inclusive and raise well-being. The Jobs Act has been a milestone in reforming Italy's labour market. It has implemented a new single open-ended contract with increasing levels of protection with job tenure, aiming principally at tackling labour market duality. At the same time, new permanent contracts have been temporarily exempted from social security contributions. Illustrative evidence shows that the reduction in social security contributions and dismissals' costs has contributed to boost employment and reduce labour market duality, by increasing new permanent contracts (Figure 38).

Figure 38. **The Jobs Act together with the reduction is social security contributions have tackled labour market duality**



Source: Istituto nazionale della previdenza sociale (INPS), Osservatorio sul Precariato.

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The employment gender gap in Italy is among the highest in the OECD (18%, compared to 12% in the OECD), although it has been nearly halved since the 1990s. The lack of childcare and services for the elderly combined with rigid work arrangements make it hard to reconcile work and family life. Only 24% of Italian children up to three years old are enrolled in formal childcare, against the OECD average of 33%. The government has recently taken steps to boost employment among women (Table 12). These measures are useful but small in scope. Increasing services for the elderly and making the tax system more second-earner friendly are necessary to meaningfully raise female employment rates in the short term.

Table 12. **Past OECD recommendations on increasing female participation in the labour market**

Recommendations in previous *Surveys*	Actions taken since the 2015 *Survey*	
Encourage female labour force participation with more flexible working-hours arrangements, and promote wider provision of good quality care of children and the elderly.	March 2015 Decree	Ensures adequate support to local authorities that, starting from a particular disadvantage in offering kindergartens, realise new structures or increase places or hours of service.
	September 2015 Decree	Measures to foster female entrepreneurship.
	2015 Stability Law	Sets up a fund for interventions in favour of the family and – to the launch of a plan for developing the territorial system of social and educational services for early childhood. Maternity-support tax measures (the "baby bonus") targeted to low income families.
	Jobs Act	Measures to support paternal care and maternity protection. Incentives for employers are foreseen if telework is used to meet parental needs of workers.
	2016 Stability Law	A EUR 600 monthly subsidy available to female workers at the end of maternity leave that can be used for baby-sitting service or for paying the cost of infant day-care. Extension of the baby bonus (2015-17).
	2017 Budget Law	Extension of the baby bonus; refinancing the nursery voucher; fund to promote credit access for families with one or more children (Fondo di sostegno alla natalità); extension and increase of compulsory leave for working fathers.

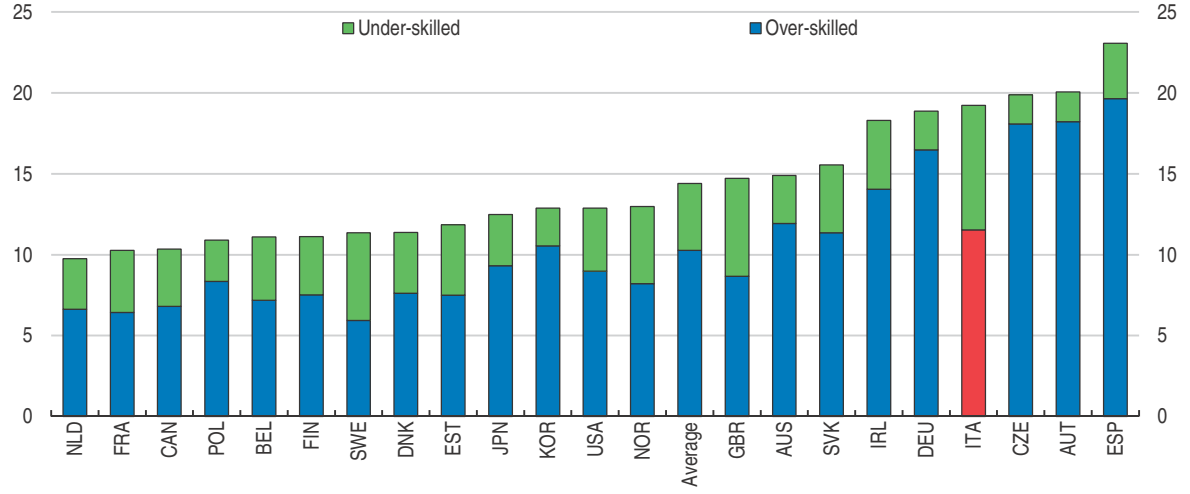
Better matching the supply and demand of skills

Workers' skills in Italy often do not match employers' needs. The Survey of Adult Skills (PIAAC) shows that 12% of Italian workers are over-skilled in literacy as they are not able to fully utilise their skills and abilities in the job; while 8% are under-skilled as they lack the skills normally needed for their job (Figure 39). Both measures are above OECD averages which are 10% and 4%, respectively. Under-skilling is especially high in Italy, reflecting the low levels of skills (Figure 40). Reducing skill mismatches is crucial to raising productivity, job satisfaction and well-being. Illustrative evidence suggests that Italy could boost its level of labour productivity by 10% if it were to reduce its level of mismatch within each industry to that corresponding to OECD best practices (Adalet McGowan and Andrews, 2015).

Overcoming skill mismatches, under or over-skilling, requires policies to foster labour mobility and make the education and training system more responsive to labour market needs. Policies to tackle under-skilling require educational reforms aiming at raising skills levels that match employer's demands. Tackling over-skilling calls for demand-side policies to encourage businesses move into higher value added products, such as innovation incentives and knowledge-based economic development strategies, to increase the demand for high-skilled jobs. Enhancing the working environment and making wages more flexible would also allow a better match of supply and demand of skills by better rewarding highly skilled workers. All these policies could help reduce the high share of highly educated young Italians who choose to emigrate (EC, 2016).

Figure 39. **The level of skill mismatch is high**

% of over- and under-skilled workers in literacy, 2012



Note: Data for United Kingdom corresponds to England and Northern Ireland. Data for Belgium corresponds to Flemish Community. Over-skilled workers are those whose proficiency score is higher than that corresponding to the defined maximum threshold of self-reported well-matched workers – i.e. workers who neither feel they have the skills to perform a more demanding job nor feel the need of further training in order to be able to perform their current jobs satisfactorily – in their occupation. Under-skilled workers are those whose proficiency score is lower than that corresponding to the defined minimum threshold of self-reported well-matched workers in their country and occupation. Ten different thresholds are used to define the maximum and minimum thresholds. The maximum thresholds are defined from the 90th to the 99th percentile. The minimum thresholds are defined from the 1st to the 10th percentile. The share of mismatched workers is then the average of the share of mismatched workers across the 10 different thresholds. Countries are ranked in ascending order of the percentage of workers over-skilled in literacy.
Source: OECD calculations using Survey of Adults Skills (PIAAC) 2012.

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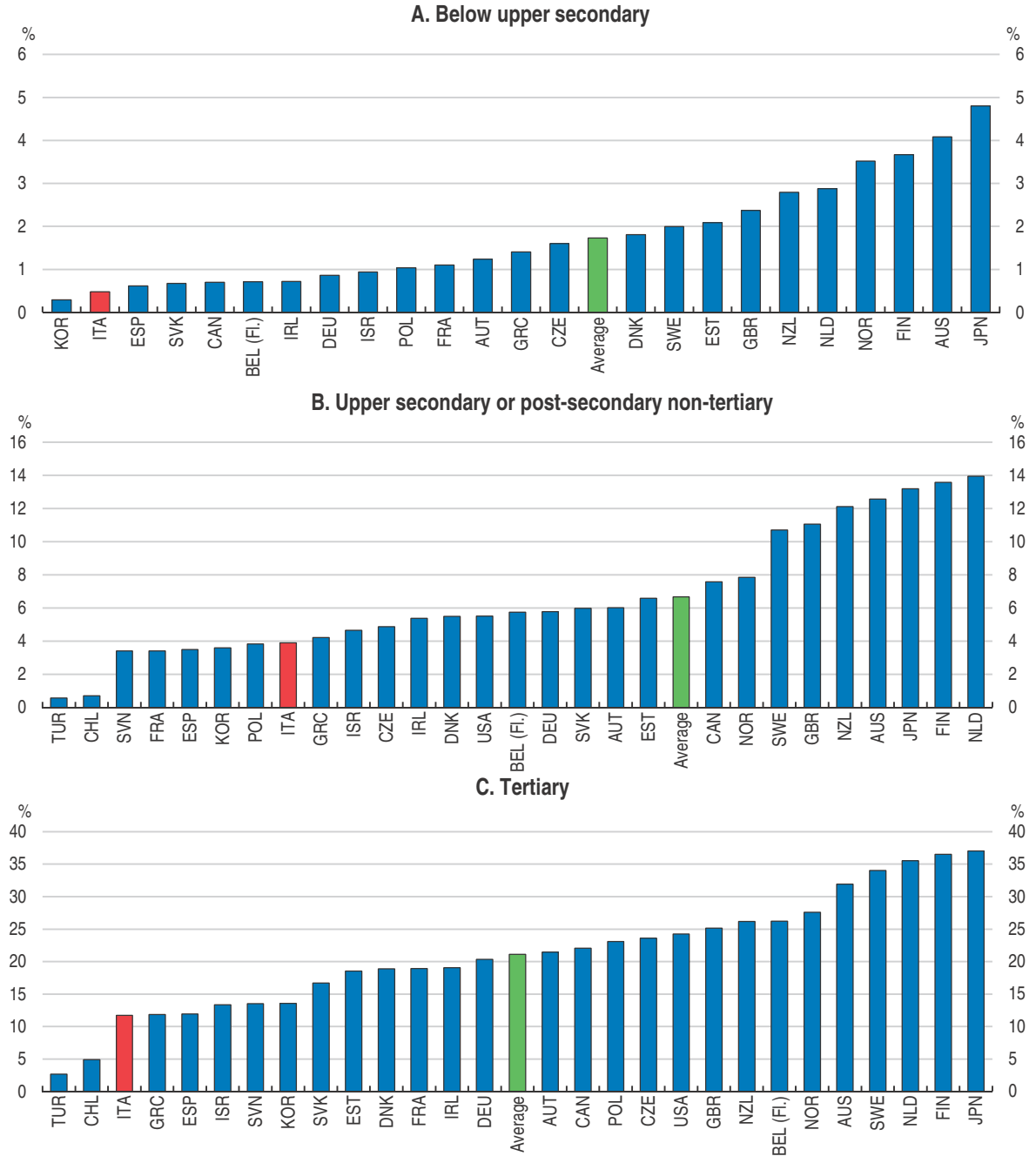
Figure 40. **Skills of Italians are low across all levels of education**

% of adults scoring at the highest literacy proficiency by educational attainment, 2012



Note: The highest proficiency level refers to level 4 and 5 on PIAAC's literacy proficiency score.
Source: OECD (2016), *Education at a Glance 2016*, OECD Publishing, Paris.

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Job search and training policies can play an important role in reducing skill mismatches and enhancing skills. The Jobs Act mandates the creation of the National Agency for Active Labour Market Policies (ANPAL) with responsibilities over job-search and training policies and a new system of unemployment benefits conditional on participating in activation measures.

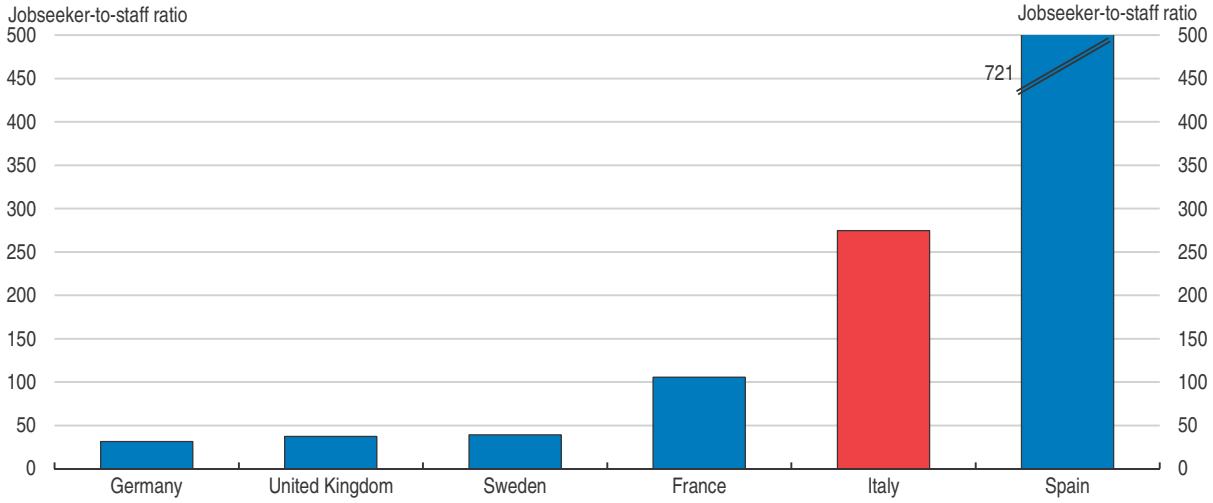
ANPAL has been created and since December 2016 is fully operational (Table 13). ANPAL could be key to improving the effectiveness of job search and training policies by enhancing coordination and setting standards for regional offices responsible for executing policies. Moreover, decreasing the high jobseeker-to-staff ratio (Figure 41), to manage effectively the large numbers of jobseekers together with well-trained operators will be key to increasing effectiveness of Public Employment Services (PES). Given limited fiscal space, a reduction in the jobseeker-to-staff ratio can be achieved by a reallocation of staff within the public administration making sure they receive the necessary training to become qualified counsellors.

Implementation of unemployment benefits conditional on activation measures, as foreseen by the Jobs Act, will require strong coordination among PES' local offices and other public and private agencies. Such coordinating efforts have already started with the implementation of the Youth Guarantee and the use of profiling methods. These methods should be extended to all unemployed or registered within PES to re-skill the unemployed and help them find a good match. This should be based on a nationwide information system to facilitate data exchange among regions, which ANPAL is establishing, to ensure compliance with the eligibility conditions and monitor the services provided.

Table 13. **Past OECD recommendations on the labour market**

Recommendations in previous *Surveys*	Actions taken since the 2015 *Survey*
Fully roll-out the new standard contract for new hires, with employment protection rising with job tenure, while grandfathering existing contracts.	The Jobs Acts has introduced a permanent contract with increasing employment protection with job tenure to new hires, while grandfathering existing contracts. For unfair dismissals the monetary compensation is 2 gross monthly salaries per year of tenure (a minimum of 4 months and a maximum of 24 monthly wages). Reinstatement only remains for discriminatory dismissals and for non-existing breaches of conduct. Additionally, a fast-track settlement has been introduced by-passing courts upon agreement between the two parties where the monetary compensation is 1 monthly salary per year of work (minimum 2 and maximum 18). At the same time, new permanent contracts were exempted from social security contributions (capped at EUR 8 060 annually) for the first 3 years; exemptions were reduced in 2016 to EUR 3 250 for 2 years only. In 2017 social security exemptions were restricted to employers who hire students who completed an apprenticeship or traineeship with the same employer (up to EUR 3 250). Furthermore, social security exemptions for firms located in southern regions were introduced to hire unemployed young workers with permanent or apprenticeship contracts (up to EUR 8 060).
Change the composition of spending on active labour-market policy: limit training programmes to those who need them most; tailor assistance to job seekers according to their specific situation.	In implementation process. The Jobs Act has streamlined and re-organised Active Labour Market Policies. The National Agency for Active Labour Market Policies (ANPAL) is fully operational: ALMPs instruments can be activated through its website. ANPAL coordinates activation measures, although the regional governments continue to have jurisdiction in this sphere, the essential service levels will be set by ANPAL. ANPAL is in charge of establishing programmes for active policies and supervising the national network. It is also establishing a new and unique information system of employment services to collect the personal files of the unemployed and help them to get re-employed and keep a register of private employment agencies. The Youth Guarantee programme has been refinanced. A Young Bonus has been introduced; it gives incentives for employers to who hire – in 2017 – young NEET (Not in Education, Employment or Training).
Fully implement the unified unemployment benefit system. Require recipients to actively seek work, and to accept employment or training when offered.	The Jobs Act fully implemented a universal unemployment insurance system (NASPI). It is based on employees' social contributions accrued in at least 13 weeks of contributions over the last 4 years of employment and at least 30 effective days of work in the previous 12 months. It has a maximum duration of 24 months and the benefit's amount decreases progressively (3% per month) starting from the fifth month of payment. Furthermore, the link between active and passive labour market policies has been strengthened by conditionality on activation measures to receive income support allowances. Those who receive the unemployment benefit after the fourth month will be entitled to a voucher – "assegno di ricollocazione", the amount of which depends on the employability profile and can be spent at public or private employment services.
Encourage social partners to allow modification of national wage agreements at the firm level, through agreement with representatives of a majority of the firm's employees.	Comprehensive reforms on collective wage bargaining have been delayed. Confindustria and the unions recently established a negotiating table for a broad set of topics, including labour contracts. The 2016 Budget Law has introduced incentives for second-level bargaining through lower taxation on firm-level negotiated productivity premium. The 2017 budget law strengthened these incentives. The reduced tax rate of 10% is applicable to workers with a salary salary up to EUR 80 000 and a maximum of EUR 3 000.

Figure 41. **Reducing the jobseeker-to-staff ratio[1] would increase the effectiveness of PES**



1. Year 2012.

Source: Mandrone (2014), "Youth Guarantee and the Italian PES: insights from ISFOL PLUS Survey data", *CIMR Research Working Paper Series, Working Paper*, No. 21.

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Furthermore, a systematic and regular assessment of the effectiveness and the labour market impact of activation programmes should be implemented. The Youth Guarantee has developed evaluation practices that need to be extended to all active labour market programmes.

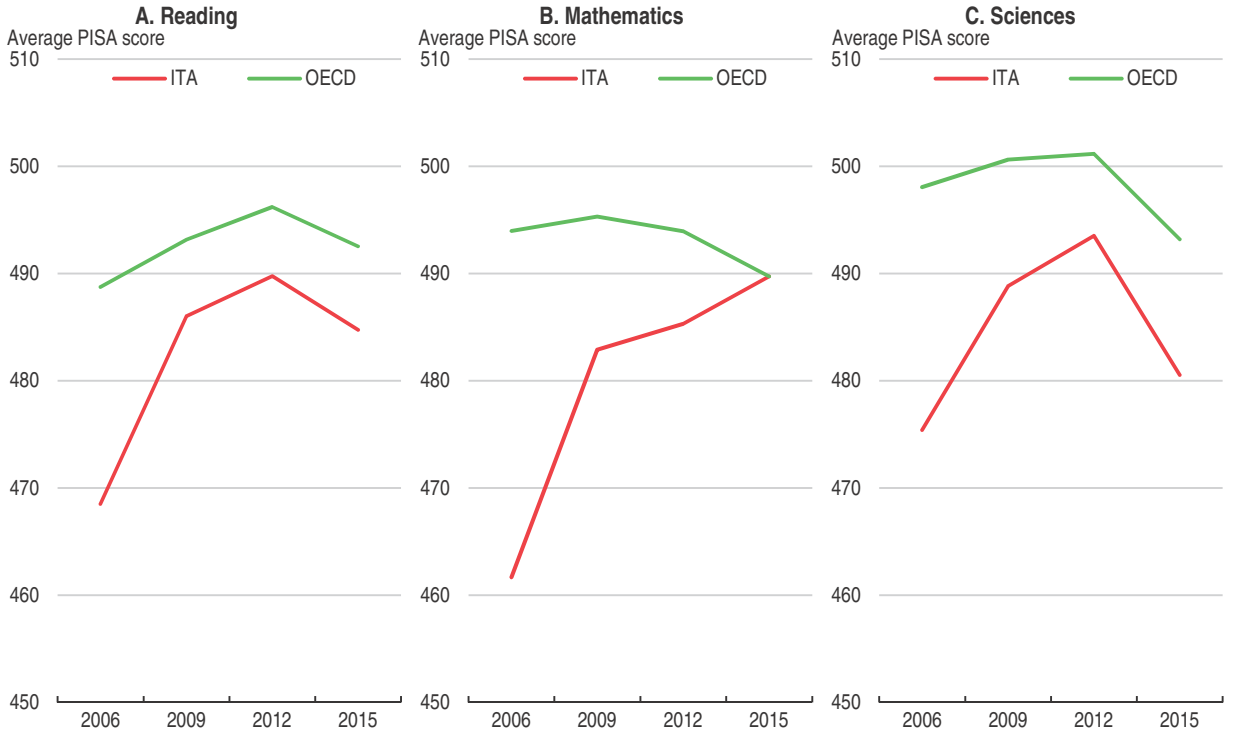
Flexibility in the wage setting mechanism needs to increase to better reflect firm-specific conditions, such as productivity. Wage-setting in Italy takes places in a centralised collective bargaining at sectoral level; sectoral wage agreements are then applied across the country. The Government is making efforts to make the wage setting mechanism more flexible by enhancing firm-level bargaining (Table 13). Social partners have recently started negotiations to review the wage-setting mechanism. A higher degree of flexibility in the wage-setting mechanism would result in a reduction of skill mismatch in the workplace (Adalet McGowan and Andrews, 2015). More flexible wage-setting would also help firms find good matches by letting wages increase in those occupations and sectors with skill shortages. Evidence shows that the Italian centralised system of collective bargaining hinders the adjustment of salaries and working conditions to attract more and better candidates (Monti and Pellizzarini, 2016).

Enhancing skills

The Good School ("Buona Scuola") reform can drastically improve Italy's education system

There have been consistent signs of improvement in the quality of education. Scores in reading, math and sciences among 15-year olds have increased substantially and faster than the OECD average. However, average levels of proficiency are still low (Figure 42). The early school leaving rate remains high (14.7% in 2015 compared with the EU average of 11%), although it is falling, and has already fulfilled the Agenda 2020 target of 16%. Nevertheless, the rate varies wildly across the country (exceeding 20% in southern regions). There is also a big gender gap, as the difference between drop-out rates for boys and girls is 5.7 percentage points.

Figure 42. **There are clear improvements in school results but they are still below the OECD average**



Source: OECD, *PISA 2006, 2009, 2012, 2015 Databases*.

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The government passed a comprehensive school reform, Good School ("Buona Scuola"), in 2015, which is being implemented. The reform gives more autonomy to schools and introduces merit-based bonuses for teachers while introducing stronger accountability of school principals and teacher evaluations. Measures related to teachers contracts and career development will potentially provide incentives to improve teaching methods with positive effects on educational outcomes. However, a teacher career system needs to be introduced to attract the best-qualified graduates into the teaching profession.

The Good School reform also aims at strengthening links between school and the labour market by mandating school-to-work experiences for all students in the last three years of secondary school (Table 14). Intensive involvement of the business sector and other stakeholders will be key to ensuring the creation of quality school-to-work schemes that will help the development of relevant skills for the labour market. An assessment system aimed at verifying the quality of training carried out in the work placement will need to be implemented.

The Good School reform also includes a plan to strengthen digital competences among teachers and students and a modern learning environment relying on the Internet and digital platforms. These are positive steps as they contribute to close Italian schools' deficit in digital infrastructure and digital skills. If fully implemented, it could improve the quality and effectiveness of the Italian school system and significantly contribute to enhance digital skills of the future workforce.

Table 14. **Past OECD recommendations on education**

Recommendations in previous *Surveys*	Actions taken since the 2015 *Survey*
Avoid job mismatch taking into account occupational demands and orienting students accordingly. Strengthen VET to provide more professional experience and to be coordinated with industry needs (*Survey 2015*).	The main elements of the Buona Scuola reform (approved in 2015) include: • Introduction of performance-based bonus for teacher salaries: The reform also introduced mandatory on-the-training for teachers. • Teacher recruitment: In two years, the government has added almost 120 000 teachers to the official school register. From 2016 onwards, access to the profession is made only via open competitions. • School autonomy: School principals will have greater autonomy in managing human, technological and financial resources and will be subject to external evaluation every three years. • Curriculum: Some subjects may be introduced or strengthened. Upper secondary schools will have some flexibility to set their own curriculum by introducing optional subjects. • Digital and language skills: the reform includes: i) a national three-year plan ("Piano Nazionale Scuola Digitale") to strengthen digital competences among teachers and students, improve Internet connections and innovative learning environments in schools; and ii) opportunities for introducing the "content and language integrated learning" (CLIL) methodology from primary level onwards. • Work-based learning: Compulsory for students in the last three years of secondary education (at least 400 hours for students in vocational education and 200 hours for students in general education). They can take place either in the private sector or in the public administration.
Ensure the development of a comprehensive evaluation and assessment framework.	
Strengthen teacher quality.	
Promote early access to care of good quality.	
Prevent school failure and reduce dropouts.	
Improve the performance of vocational education and training system and provision of post-secondary vocational education.	
Improve business-academic research links, designing intellectual property rights in line with the incentives of researchers and business.	A three-year plan was implemented in 2016 for the development of the university system to give more flexibility and independence in defining the training offer, to better respond to student needs.
Increase student contribution to the cost of tertiary education; provide income-contingent-repayment loans. Reduce dropout rates with more widespread selection at entry.	The 2017 Budget law introduced several measures to increase the quality of the research system: additional funding of EUR 1.5 million yearly for 5 year for the best departments; the best 60% of researchers (with temporary or open-ended contracts) as well as the best 20% of associated professors receive EUR 3 000 yearly to manage autonomously; the annual endowment for ANVUR (the National Agency for Evaluation of the University and Research) is raised to EUR 7 million yearly; the tax break to repatriate brains has been extended. A fund to support university students has been created (right to study) financing tax exemptions and grants for students in need, defined according to their family income. To the best 400 students of secondary schools who enrol in a state university, a grant of EUR 15 000 net a year is given, together with the tax exemption.
Ensure merit-based recruitment to universities and accountability of recruitment panels.	
Give universities autonomy on strategic direction, recruitment and performance incentives. Build capacity and legitimacy in ANVUR, whose quality assurance reports should focus on student and research outcomes and be widely disseminated.	
Support innovation in education.	

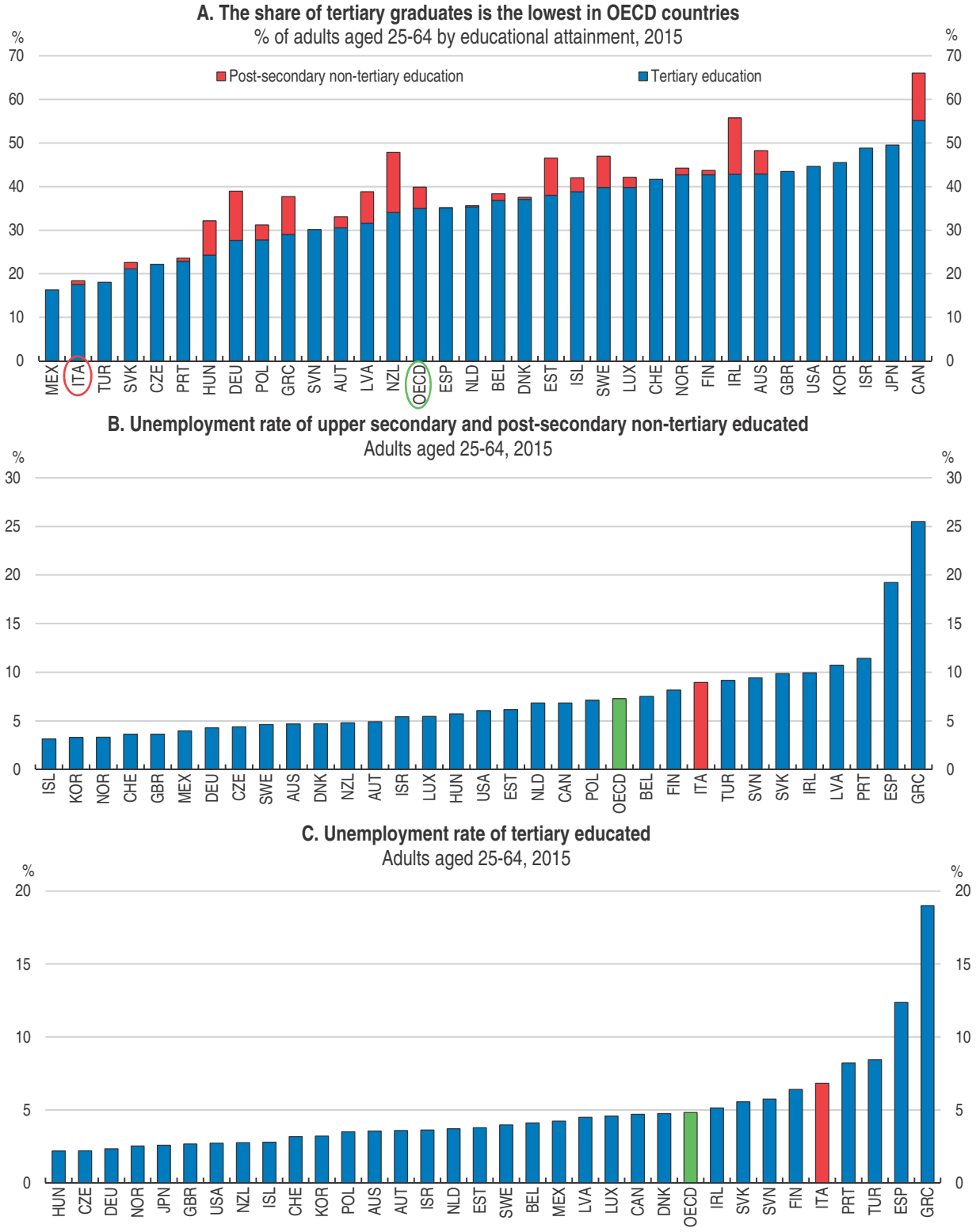
Tertiary education and apprenticeships should meet labour market needs

Italy has a small share of students in higher education. At the same time, the difference between the earnings of tertiary-educated graduates relative to those of adults with only upper secondary education is low in Italy (143%) compared to the OECD average (160%). Furthermore, the unemployment rate among tertiary educated adults is among the highest in OECD countries (Figure 43). Hence, labour market outcomes of tertiary educated make the investment in tertiary education unattractive.

The government has taken measures to increase the quality of higher education. Under the 2010 reform, an increasing proportion of public funding for universities should be allocated on the basis of research and teaching performance. However, these reforms were not implemented until 2013, because of major cuts to overall public funding for higher education between 2009 and 2013. In 2015, the share of performance-related funding rose to 20% of total funding, from 13.5% in 2013, and the National Reform Programme confirmed the government's intention to gradually increase this to 30% (MEF, 2015). Additionally, the 2017 Budget Law introduced new measures to increase quality related funding to the best university departments and researchers (Table 14).

Education expenditure is low, particularly in tertiary education, both relative to GDP (1.0% of GDP, compared to the OECD average of 1.6%) and to the number of students (expenditure per student was 71% of the OECD average). More funding will be key to improving the quality of education. Given limited fiscal room, one alternative could be to increase tuition fees, which are low compared to other OECD countries (OECD, 2016b)

Figure 43. **Tertiary education participation and incentives to invest in high education are low**



Source: OECD (2016), *Education at a Glance* (database), *http://stats.oecd.org/Index.aspx?datasetcode=EAG_NEAC*. See Annex 3 for notes (*www.oecd.org/education/education-at-a-glance-19991487.htm*).

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provided that scholarships for poor students are strengthened and a system of income-contingent loans is introduced to ensure fair access to universities for all. Very recently, a system of grants for students in need was introduced to help increase the enrolment in tertiary education (Table 14).

Apprenticeships are a key instrument to help young people to gain useful work-relevant skills. However, they are underutilised. The main challenge for apprenticeships in Italy is the weak link between work and education. The most common apprenticeship, used in more than 90% of hirings, is only weakly connected to formal education and under this type of contract less than one third of apprentices were enrolled in formal education in 2013. In other type of contracts, access to training – as required by law – depends on the initiative of enterprises. Furthermore, there is no national system to control and monitor the training provided by firms. Specific quality criteria need to be set and enforced for companies offering apprenticeships.

Participation in vocationally-oriented tertiary programmes is low in Italy. Less than 1% of those entering tertiary education choose such programmes compared with 18% in OECD countries on average. In recent years, Italy has taken several steps to create tertiary education programmes preparing students for a rapid entry into the labour market with the creation of high technical institutes (Istituti Tecnici Superiori – ITS). The experience of ITS has been positive as graduating students have high level of employability, 73% of the graduates are employed in a job that matches their studies 12 months after graduation (INDIRE, 2016). The success of ITS is attributable to its responsiveness to labour market needs, as they benefit from strong involvement of the business sector, universities and higher secondary education. The full potential of ITS remains untapped as they are concentrated in the most industrialised regions of Italy and female participation is low.

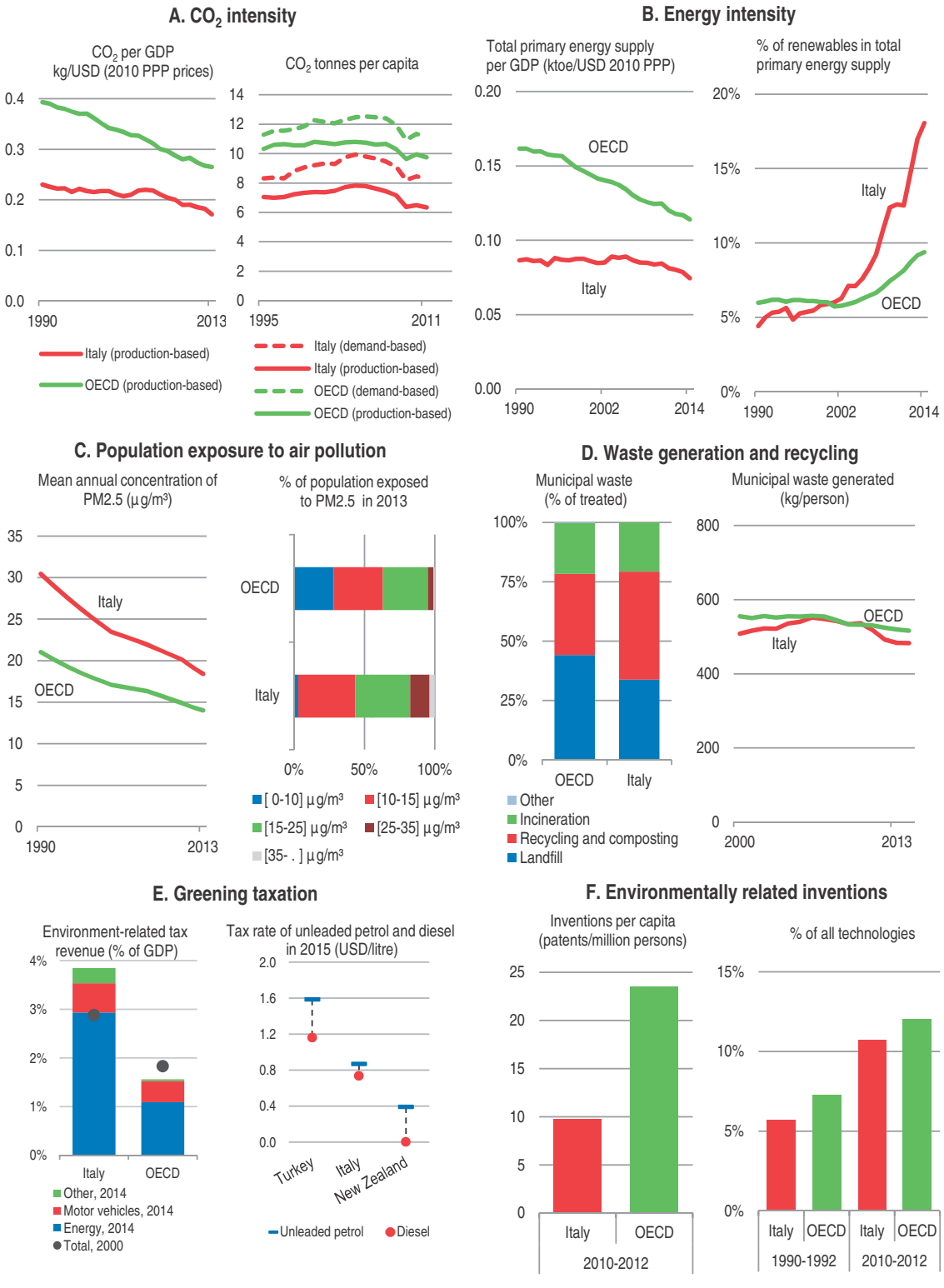
Italy must build on the positive experience of ITS and establish a VET system at tertiary level based on apprenticeships. This would help match the trend of rising demand for medium- and higher-level qualifications, which are projected to reach 82.5% of the labour force in 2025, against less than 80% today (CEDEFOP, 2015). Establishing a national body involving the business sector and other key stakeholders would improve strategic planning and coordination, and ensure the education-working experience mix reflects not only student preferences but also local labour market needs.

Greening Italy

Italy's economy has long been significantly less energy intensive than the OECD average. It also has lower greenhouse gas (GHG) emissions (Figure 44). Italy's net imports embody more GHG emissions than domestic production so its contribution to climate change measure through demand is greater than domestic emissions. The share of renewables in total energy supply has increased rapidly in the last years, with total renewables reaching around 18% of total primary energy in 2014. Hydroelectric power was for a long time the major supplier of carbon neutral energy but recently wind and solar power has increased, supported by very large subsidies.

Air quality is quite poor in a number of Italian cities, although national per capita emissions of key pollutants such as nitrogen and sulphur oxides are relatively low. People's average exposure to particle pollution is also well above the OECD average. In 2015 the estimated cost based on mortalities of outdoor air pollution was about 5.7% of GDP, 2 percentage points above the OECD average (Roy and Braathen, forthcoming). As

Figure 44. **Green growth indicators for Italy**



Source: OECD (2016), *OECD Environment Statistics Database* (Green Growth Indicators, Patents: Technology Development, Municipal Waste); *OECD National Accounts Database*; IEA (2016), *IEA World Energy Statistics and Balances Database*; *IEA Energy Prices and Taxes Database*; OECD calculations based on data from M. Brauer et al. (2016), "Ambient Air Pollution Exposure Estimation for the Global Burden of Disease 2013", *Environmental Science & Technology*, Vol. 50(1), pp. 79-88.

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highlighted in previous *Surveys* (e.g. OECD, 2015d) reducing the gap between diesel and petrol taxes will make the tax system more environmental friendly and contribute to lower pollution generated by diesel vehicles. Also, shifting the tax burden from electricity to the energy products used to generate it – with the respective rates based on the pollution of each electricity source – will accelerate the deployment of renewable energy sources.

Household waste generation in Italy is similar to the OECD average. A higher than average proportion of household waste is sent to landfill, and illegal dumping of toxic and other waste has been a problem in some regions. Waste charges/taxes have been introduced but their structure has changed, and it has not been easy to pass these taxes on to households, limiting their incentive effect.

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ANNEX

Progress in structural reforms

The objective of this Annex is to review action taken since the previous Survey *(February 2015) on the main recommendations from previous* Surveys.

Fiscal issues

Recommendations in previous *Surveys*	Actions taken since the 2015 *Survey*
Continue efforts to reduce tax evasion through more effective enforcement and increase tax compliance through simplified collection procedures. Broaden tax bases, in particular by cutting the number of tax expenditures, and simplify the tax system.	Some progress. Implemented measures: VAT electronic invoicing; VAT split payment and reverse charge; implementation of BEPS counter-measures; bilateral agreements to allow tax information exchange; simplification of tax collection; improved monitoring of tax evasion. Since 2013, the government has presented a yearly report to the Parliament on tax evasion, which describes results and strategies of the implemented activities, including an estimate of the tax gap (the receipts lost because of tax evasion) of main tax items. Moreover, the Government will have to present a yearly report for the monitoring and review of tax expenditures. The first report has been presented with the Budget Law for 2017. The EU Anti-Tax Avoidance Directive ("ATAD") was approved in June 2016 to prevent cross-border tax avoidance by businesses.
Stick to the planned fiscal strategy so as to bring the debt-to-GDP ratio onto a declining path.	The debt ratio has stabilised trough prudent fiscal policy, lower interest payment and modest economic growth.
Promote greater use of centralised procurement, cost information systems and benchmarking.	The share of centrally managed purchases is gradually increasing; 33 central purchasing bodies have been established; and the government has issued a list goods and services that will have to be purchased centrally.
Continue to assess the magnitude of budgetary contingent liabilities, including the vulnerability of public finances to risks associated with the financial sector.	Ongoing.
Make taxation more environmentally-friendly by reducing the gap between duties on diesel and petrol.	No progress.
Shift the tax burden from electricity to the energy products used to generate it, with the respective rates set to reflect the carbon emissions and other pollutants associated with each fuel.	No progress.
Implement the planned reform of the Internal Stability Pact to regulate only overall borrowing of sub-national government, with consolidation targets for indebted administrations. Replace its detailed provisions with a fiscal federalism structure that reflects the desired degree of decentralisation.	Implemented the reform that envisages the entry into force in 2016 of the balanced budget rule for all sub-national governments requiring each entity to balance the overall balance or achieve nominal surplus.

Financial issues

Recommendations in previous *Surveys*	Actions taken since the 2015 *Survey*
Urgently take action to achieve a lower level of non-performing loans in the banking sector, including through enhancing the insolvency regime applied to distressed borrowers.	Shortening the period for tax deductibility of loan losses from 5 years to 1 year, in line with other EU countries. Establishing a government guarantee scheme to encourage banks to securitise non-performing loans and issue asset-backed securities. The scheme is compliant with EU state-aid rule as it will be offered at market price (based on the average price of a basket of credit default swap covering investment grade Italian companies and with the same duration of the asset-backed security) and will apply only to the senior tranches of (i.e. high quality) of asset-backed securities. Before the government guarantee becomes effective, at least half of the junior tranches will have to be sold in the market. Coordinating the creation of the private-sector fund (Atlante) by a large set of Italian financial institutions to support banks' recapitalisation and invest in securitised non-performing loans. Reforming loan foreclosing procedures, which according to the government should cut the length of foreclosing procedures from 3 and half years to about 7-8 months; new procedures apply only to new loans but borrowers and lenders can renegotiate existing loans to apply new procedures to them also.
If progress in reducing nonperforming loans remains slow, consider setting up a public specialised asset management company ("bad bank") to accelerate the process, with due regard for state aid rules.	Banks are allowed to set up bad banks on a voluntary basis and to use a government guarantee on senior tranches of securitised bad debts.

Public sector efficiency

Recommendations in previous *Surveys*	Actions taken since the 2015 *Survey*
Follow through the reform of parliament and the re-assignment and clarification of competences between the central and sub-national governments. Ensure that legislation is clear, unambiguous and supported by improved public administration, including through reduced use of emergency decrees.	Far-reaching constitutional reforms were approved by Parliament in early 2016 but rejected in a referendum in December 2016. The ongoing reform of the Public Administration aims to simplify the system. Among the decrees adopted until November 2016, there is the repealing of obsolete and out of date secondary legislation and implementing decrees. A key aspect of the reform has been declared unconstitutional.
Further streamline the court system, with more specialisation where appropriate; increase the use of mediation; enhance monitoring of court performance.	The reform of the civil and justice system is ongoing; it also includes the collection of data about court performance and their dissemination.
Consider establishing a Productivity Commission with the mandate to provide advice to the government on matters related to productivity, promote public understanding of reforms, and engage in a dialogue with stakeholders.	No progress.
Reducing corruption and improving trust must remain a priority. For this, the new anti-corruption agency ANAC needs stability and continuity as well as support at all political levels.	ANAC has gained prestige and powers and is well-funded. In January 2016, the Chamber of Deputies approved a law protecting whistle-blowers for public and private-sector employees reporting suspicions of corruption and other illegal cases in their place of work. The new Public Procurement Code went into effect in April 2016, aiming at enhancing efficiency and promoting transparency.

Product markets

Recommendations in previous *Surveys*	Actions taken since the 2015 *Survey*
Ensure Competition Authority uses increased power effectively.	In 2015, the government for the first time submitted to Parliament a law to enhance competition following the recommendations of the Competition Authority as prescribed by Law 99/2009, Article 47.
Remove unnecessary licensing in professional services. Remove quantitative restrictions on supply in services.	Some of these issues are dealt by competition laws under Parliamentary discussion. The National Professional Services Reform Programme was submitted to the European Commission in March 2016. In compliance with Directive 2005/36, the Programme contains the screening of national regulations regarding professional services, to ensure that they are non-discriminatory, objectively justified and proportionate.
Reduce public ownership, especially in TV media, transport and energy utilities, and local public services.	Public administration reforms include the rationalisation of local public utilities
Privatise and liberalise in energy and transport sectors. Get transport regulator into effective operation quickly; complete framework for regulation of water and other local public services, ensuring regulatory independence Introduce national oversight of regional regulatory competences (e.g. retailing, land-use planning).	The transport sector regulator is operational.

Boosting innovation

Recommendations in previous *Surveys*	Actions taken since the 2015 *Survey*
Make science, technology and innovation policy more business-oriented and receptive to the varied needs across the whole spectrum of firms, including SMEs. Simplify and rationalise public support for business R&D and innovation, by achieving an appropriate mix of direct and indirect measures. Improve linkages between the business sector, universities and the public research system, including through mobility of researchers, and appropriate intellectual property rights. Foster the creation and growth of start-up firms, by lowering regulatory barriers, simplifying bureaucracy, and supporting the collateralisation and securitisation of innovation-related assets (e.g. through adhesion to the European Unitary Patent).	The new national research plan addresses some of these issues. R&D tax credits have been introduced along with the patent box, although their impacts on SMEs have yet to be estimated. Linkages between firms and research centres will benefit from tax incentives. R&D tax incentives are equivalent to 55% of the yearly increment in R&D spending taking the 2012-14 average as a base. The same rate is applied to R&D spending relating to highly qualified personnel, contracts with university or public research institutes or with innovative start-ups. Although the tax credit is incremental, the fixed base (2012-14 average) implies that for start-ups or any other firm with no R&D spending during the reference period the tax incentive is volumetric. Tax incentives on the repatriation of researchers have been made permanent. Hyper depreciation scheme (introduced with the budget law of 2017) equivalent to 250% of the value of investments in industry 4.0 technologies which are instrumental to the digitalisation and innovation of their industrial processes. Super-depreciation (introduced in 2016 and enhanced in 2017) equivalent to 140% of the original cost of eligible equipment, machineries, software (if connected to investments in industry 4.0 technologies) and other eligible equipment. Incentives for innovative start-ups and SMEs. Investors in innovative startups and SMEs are granted tax and regulatory incentives. The 2017 budget law increased the tax credit/deduction from 19% to 30% and the maximum credit limit from EUR 0.5 to EUR 1 million. Tax losses of start-ups companies can be transferred to listed companies having a participation of at least 20% in the capital of the start-up. To reduce the gap between North and South, incentives for research and innovation for SMEs and professionals in the South are operational. Promotion of innovative PhDs with strong industrial vocation, for the attraction of researchers of excellence and to support measures for Italians researchers who intend to participate in European tenders for the European Research Council (ERC).

Labour market

Recommendations in previous *Surveys*	Actions taken since the 2015 *Survey*
Fully roll-out the new standard contract for new hires, with employment protection rising with job tenure, while grandfathering existing contracts.	The Jobs Acts has introduced a permanent contract with increasing employment protection with job tenure to new hires, while grandfathering existing contracts. For unfair dismissals the monetary compensation is 2 gross monthly salaries per year of tenure (a minimum of 4 months and a maximum of 24 monthly wages). Reinstatement only remains for discriminatory dismissals and for non-existing breaches of conduct. Additionally, a fast-track settlement has been introduced by-passing courts upon agreement between the two parties where the monetary compensation is 1 monthly salary per year of work (minimum 2 and maximum 18). At the same time, new permanent contracts were exempted from social security contributions (capped at EUR 8 060 annually) for the first 3 years; exemptions were reduced in 2016 to EUR 3 250 for 2 years only. In 2017 social security exemptions were restricted to employers who hire students who completed an apprenticeship or traineeship with the same employer (up to EUR 3 250). Furthermore, social security exemptions for firms located in southern regions were introduced to hire unemployed young workers with permanent or apprenticeship contracts (up to EUR 8 060).
Change the composition of spending on active labour-market policy: limit training programmes to those who need them most; tailor assistance to job seekers according to their specific situation.	In implementation process. The Jobs Act has streamlined and re-organised Active Labour Market Policies. The National Agency for Active Labour Market Policies (ANPAL) is fully operational: ALMPs instruments can be activated through its website. ANPAL coordinates activation measures, although the regional governments continue to have jurisdiction in this sphere, the essential service levels will be set by ANPAL. ANPAL is in charge of establishing programmes for active policies and supervising the national network. It is also establishing a new and unique information system of employment services to collect the personal files of the unemployed and help them to get re-employed and keep a register of private employment agencies. The Youth Guarantee programme has been refinanced. A Young Bonus has been introduced; it gives incentives for employers to who hire – in 2017 – young NEET (Not in Education, Employment or Training).
Fully implement the unified unemployment benefit system. Require recipients to actively seek work, and to accept employment or training when offered.	The Jobs Act fully implemented a universal unemployment insurance system (NASPI). It is based on employees' social contributions accrued in at least 13 weeks of contributions over the last 4 years of employment and at least 30 effective days of work in the previous 12 months. It has a maximum duration of 24 months and the benefit's amount decreases progressively (3% per month) starting from the fifth month of payment. Furthermore, the link between active and passive labour market policies has been strengthened by conditionality on activation measures to receive income support allowances. Those who receive the unemployment benefit after the fourth month will be entitled to a voucher – "assegno di ricollocazione", the amount of which depends on the employability profile and can be spent at public or private employment services.
Encourage social partners to allow modification of national wage agreements at the firm level, through agreement with representatives of a majority of the firm's employees	Comprehensive reforms on collective wage bargaining have been delayed. Confindustria and the unions recently established a negotiating table for a broad set of topics, including labour contracts. The 2016 Budget Law has introduced incentives for second-level bargaining through lower taxation on firm-level negotiated productivity premium. The 2017 budget law strengthened these incentives. The reduced tax rate of 10% is applicable to workers with a salary salary up to EUR 80 000 and a maximum of EUR 3 000.

Increasing female employment

Recommendations in previous *Surveys*		Actions taken since the 2015 *Survey*
Encourage female labour force participation with more flexible working-hours arrangements, and promote wider provision of good quality care of children and the elderly.	March 2015 Decree	Ensures adequate support to local authorities that, starting from a particular disadvantage in offering kindergartens, realise new structures or increase places or hours of service.
	September 2015 Decree	Measures to foster female entrepreneurship.
	2015 Stability Law	Sets up a fund for interventions in favour of the family and – to the launch of a plan for developing the territorial system of social and educational services for early childhood. Maternity-support tax measures (the "baby bonus") targeted to low income families.
	Jobs Act	Measures to support paternal care and maternity protection. Incentives for employers are foreseen if telework is used to meet parental needs of workers.
	2016 Stability Law	A EUR 600 monthly subsidy available to female workers at the end of maternity leave that can be used for baby-sitting service or for paying the cost of infant day-care. Extension of the baby bonus (2015-17).
	2017 Budget Law	Extension of the baby bonus; refinancing the nursery voucher; fund to promote credit access for families with one or more children (Fondo di sostegno alla natalità); extension and increase of compulsory leave for working fathers.

Education

Recommendations in previous *Surveys*	Actions taken since the 2015 *Survey*
Avoid job mismatch taking into account occupational demands and orienting students accordingly. Strengthen VET to provide more professional experience and to be coordinated with industry needs (*Survey 2015*). Ensure the development of a comprehensive evaluation and assessment framework. Strengthen teacher quality. Promote early access to care of good quality. Prevent school failure and reduce dropouts. Improve the performance of vocational education and training system and provision of post-secondary vocational education. Improve business-academic research links, designing intellectual property rights in line with the incentives of researchers and business. Increase student contribution to the cost of tertiary education; provide income-contingent-repayment loans. Reduce dropout rates with more widespread selection at entry. Ensure merit-based recruitment to universities and accountability of recruitment panels. Give universities autonomy on strategic direction, recruitment and performance incentives. Build capacity and legitimacy in ANVUR, whose quality assurance reports should focus on student and research outcomes and be widely disseminated. Support innovation in education.	The main elements of the Buona Scuola reform (approved in 2015) include: • Introduction of performance-based bonus for teacher salaries: The reform also introduced mandatory on-the-training for teachers. • Teacher recruitment: In two years, the government has added almost 120 000 teachers to the official school register. From 2016 onwards, access to the profession is made only via open competitions. • School autonomy: School principals will have greater autonomy in managing human, technological and financial resources and will be subject to external evaluation every three years. • Curriculum: Some subjects may be introduced or strengthened. Upper secondary schools will have some flexibility to set their own curriculum by introducing optional subjects. • Digital and language skills: the reform includes: i) a national three-year plan ("Piano Nazionale Scuola Digitale") to strengthen digital competences among teachers and students, improve Internet connections and innovative learning environments in schools; and ii) opportunities for introducing the "content and language integrated learning" (CLIL) methodology from primary level onwards. • Work-based learning: Compulsory for students in the last three years of secondary education (at least 400 hours for students in vocational education and 200 hours for students in general education). They can take place either in the private sector or in the public administration. A three-year plan was implemented in 2016 for the development of the university system to give more flexibility and independence in defining the training offer, to better respond to student needs. The 2017 Budget law introduced several measures to increase the quality of the research system: additional funding of EUR 1.5 million yearly for 5 year for the best departments; the best 60% of researchers (with temporary or open-ended contracts) as well as the best 20% of associated professors receive EUR 3 000 yearly to manage autonomously; the annual endowment for ANVUR (the National Agency for Evaluation of the University and Research) is raised to EUR 7million yearly; the tax break to repatriate brains has been extended. A fund to support university students has been created (right to study) financing tax exemptions and grants for students in need, defined according to their family income. To the best 400 students of secondary schools who enrol in a state university, a grant of EUR 15 000 net a year is given, together with the tax exemption.

Thematic chapters

Chapter 1

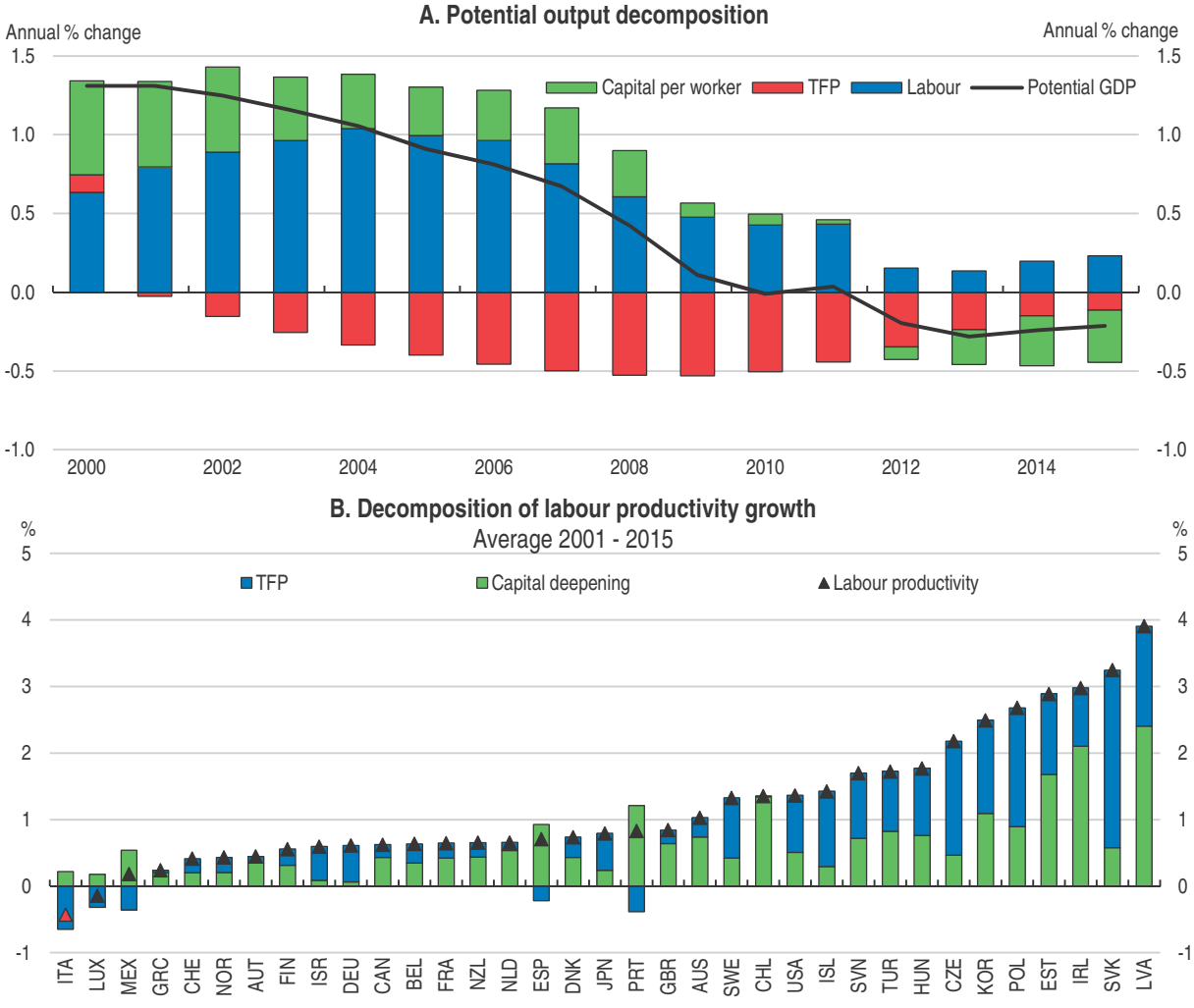
Promoting a private investment renaissance

Boosting investment is key to supporting the nascent recovery and reviving stagnant productivity. Aggregate investment has declined markedly since the start of the global financial crisis, especially in services. Italy's investment is so low that the capital stock is now declining, hurting potential output growth. Raising investment will hinge on improving insolvency procedures, enhancing business dynamism, strengthening the innovation system and targeting incentives towards start-ups and innovative SMEs, overcoming problems in the banking sector and restarting lending to firms in addition to diversifying sources of firms' finance.

The statistical data for Israel are supplied by and under the responsibility of the relevant Israeli authorities. The use of such data by the OECD is without prejudice to the status of the Golan Heights, East Jerusalem and Israeli settlements in the West Bank under the terms of international law.

The decline in the productive capital stock and low total factor productivity (TFP) growth are the two main factors behind the falling potential output growth in Italy. Potential GDP growth rate started declining in the mid-1990s, mainly as result of sluggish TFP growth. The collapse of investment in the wake of the crisis accentuated the downward trend in the potential output growth, which is now estimated to be negative. Weak capital accumulation and slow TFP growth are also holding back labour productivity growth (Figure 1.1).

Figure 1.1. **Low investment is dragging down potential output and labour productivity growth**



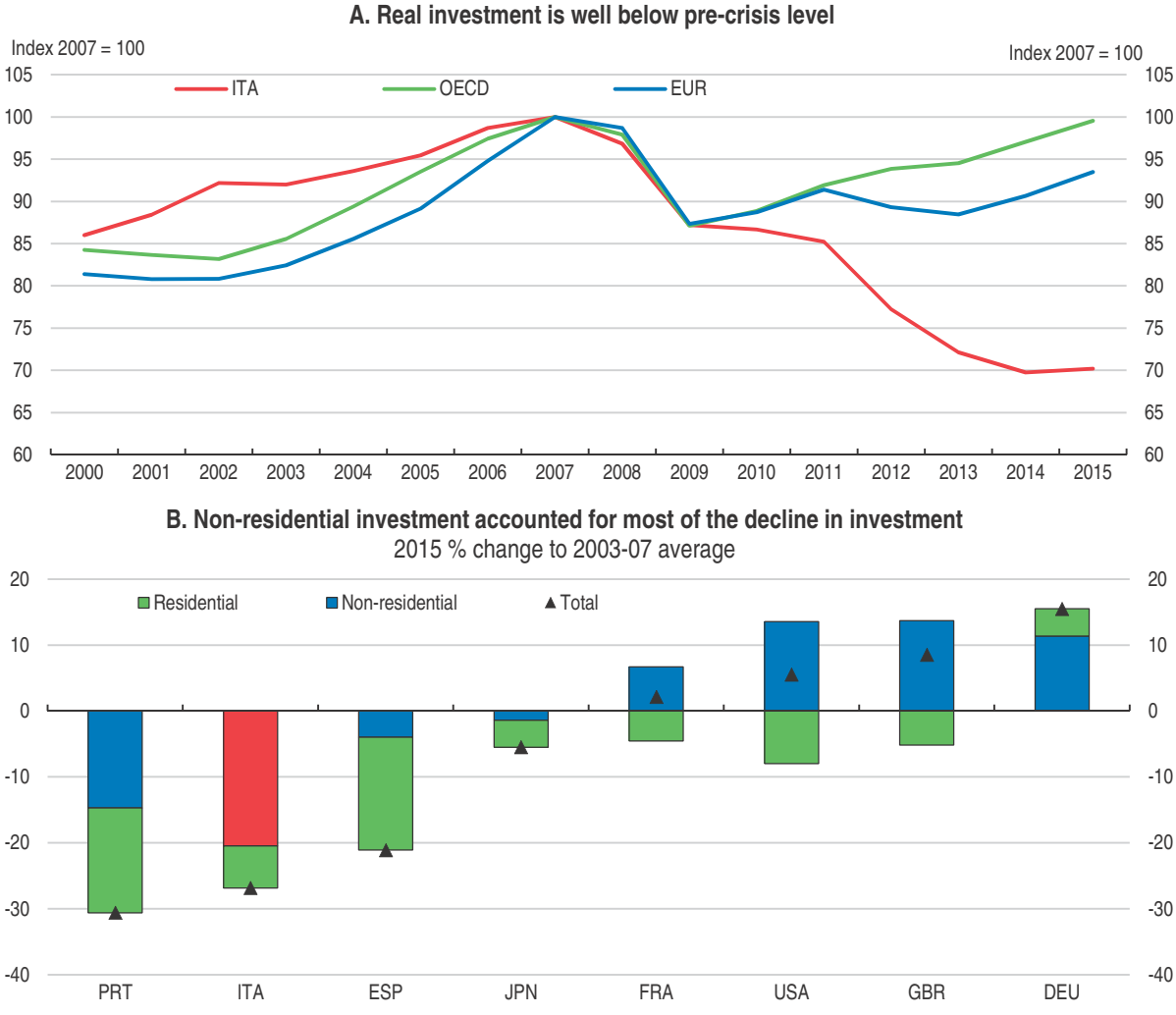
Source: OECD Economic Outlook Database.

StatLink http://dx.doi.org/10.1787/888933454249

The impact of the recession on investment was large and prolonged (Figure 1.2, Panel A). In Italy, the drop in investment was deeper and longer than in most euro area and OECD countries. In 2015, Italy's real investment was 30% below its 2007 level and amounted to just about 17% of GDP, lower than in the mid-1990s (about 19%) and the OECD average (21%). The decline in real investment is mostly attributable to the non-residential component (Figure 1.2, Panel B). The fall in investment was larger in services and industry and geographically widespread, though larger in southern regions (Figure 1.3). Real investment started to grow again only in 2015, though only marginally, after eight consecutive years of decline and its weak growth continued in 2016.

Growth in information, communications and technology (ICT) capital services, especially software and database, was low before the crisis and slowed considerably afterwards (Figure 1.4). Knowledge-based capital (KBC, see Box 1.1) is also low by international standards (Figure 1.5). KBC is an increasingly important driver of productivity and growth. In some OECD countries investment in KBC has outpaced investment in physical capital and may have accounted for up to one-third of labour productivity growth

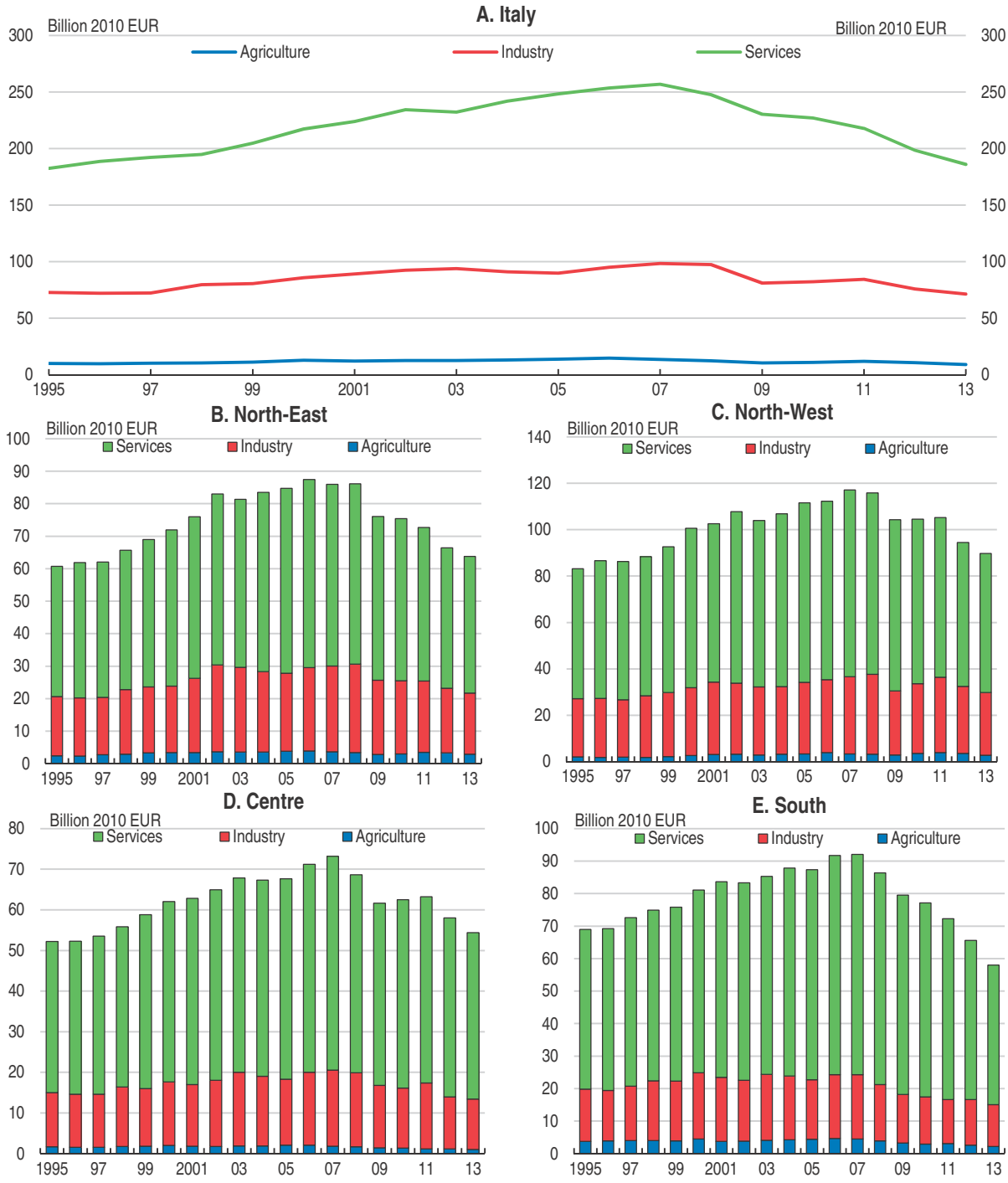
Figure 1.2. **Investment has dropped markedly**



Source: OECD Analytical Database.

StatLink http://dx.doi.org/10.1787/888933454259

Figure 1.3. **The fall in investment was larger in services and widespread across regions**

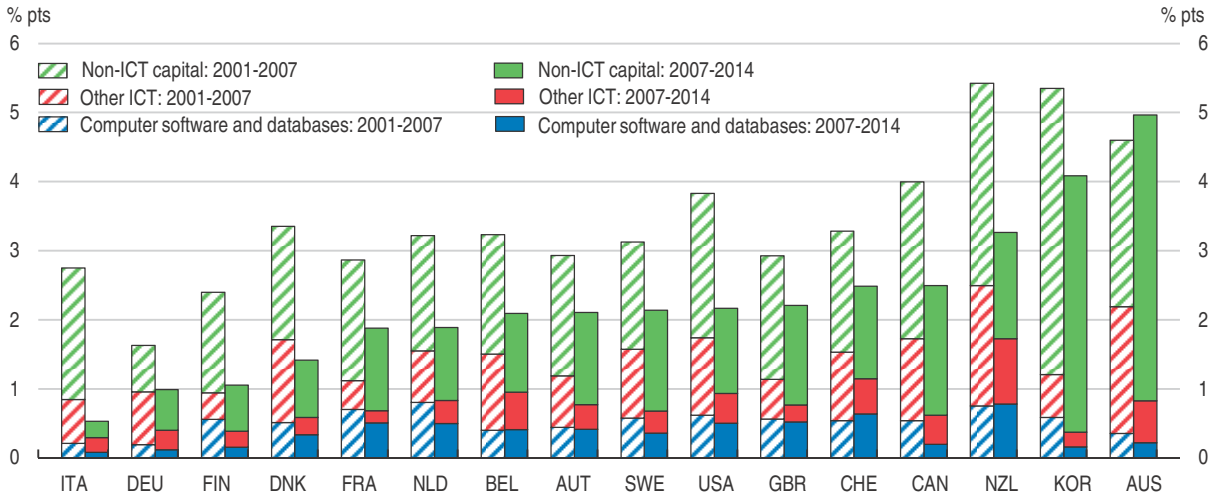


Note: The agriculture sector comprises agriculture, hunting, forestry and fishing (Category A of ISIC 4). The industry sector comprises mining and quarrying, manufacturing, construction and public utilities (electricity, gas and water) (Categories B to F of ISIC 4). The services sector consists of wholesale and retail trade, restaurants and hotels, transport, storage and communications, finance, insurance, real estate and business services, and community, social and personal services (Categories G to U of ISIC 4).
Source: ISTAT.

StatLink http://dx.doi.org/10.1787/888933454269

Figure 1.4. **Growth of non-residential capital services**

Average contribution to total capital growth



Source: OECD Productivity Database.

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Box 1.1. **Knowledge-based capital**

The concept of Knowledge-based capital (KBC) includes immaterial assets that, like physical capital, generates economic benefits that can accrue to firms at least for a period longer than one year (*OECD Science, Technology and Industry Scoreboard 2015*). Three main components constitute KBC (Corrado et al., 2009):

- Computerised information (e.g. like software and databases), usually recorded as part of gross fixed capital formation in national accounts.
- Innovative property, encompassing research and development (R&D), mineral exploration and artistic originals, new architectural and engineering designs and new product development in financial services.
- Economic competencies, including firms' human and structural resources such as firm-specific training, brand equity, and organisational capital.

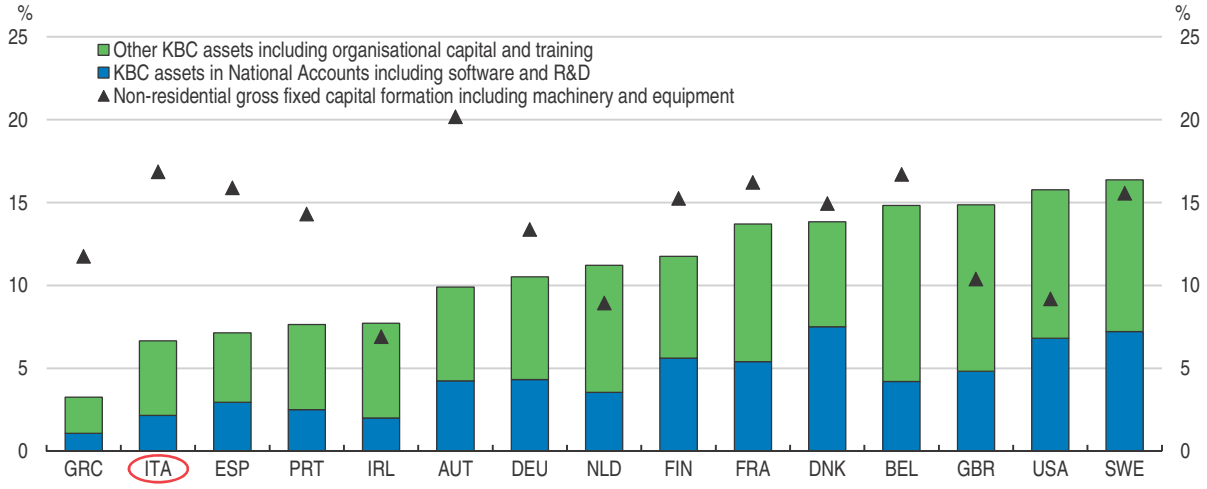
While R&D, software and databases are included in investment as defined in national accounts, other components such as design, new product development in the financial industry, branding, firm-specific training and organisational capital are not.

in the United States and EU countries' market sectors (Andrews and Criscuolo, 2013; Corrado et al., 2012; Roth and Thum, 2013). Investment in KBC components, such as business processes and organisational capital, significantly contribute to productivity growth in many service industries (Dabla-Norris et al., 2015). Also, for a given level of R&D expenditure, manufacturing companies investing heavily in software generate more patents (Branstetter et al., 2015).

Reviving investment will require policy actions straddling different areas. This chapter focuses on improving insolvency procedures – to accelerate the reorganisation of struggling but still viable firms and the liquidation of those that are not viable any longer – enhancing business dynamism by increasing competition and ease market entry – especially in the

Figure 1.5. **Business investment in fixed and knowledge-based capital (KBC) is low**

As % of business sectors' gross value added, 2013



Source: OECD Science, Technology and Industry Scoreboard 2015; OECD calculations based on INTAN-Invest data, *www.intan-invest.net*; and OECD, *Structural Analysis (STAN) Database*, *http://oe.cd/stan*, June 2015.

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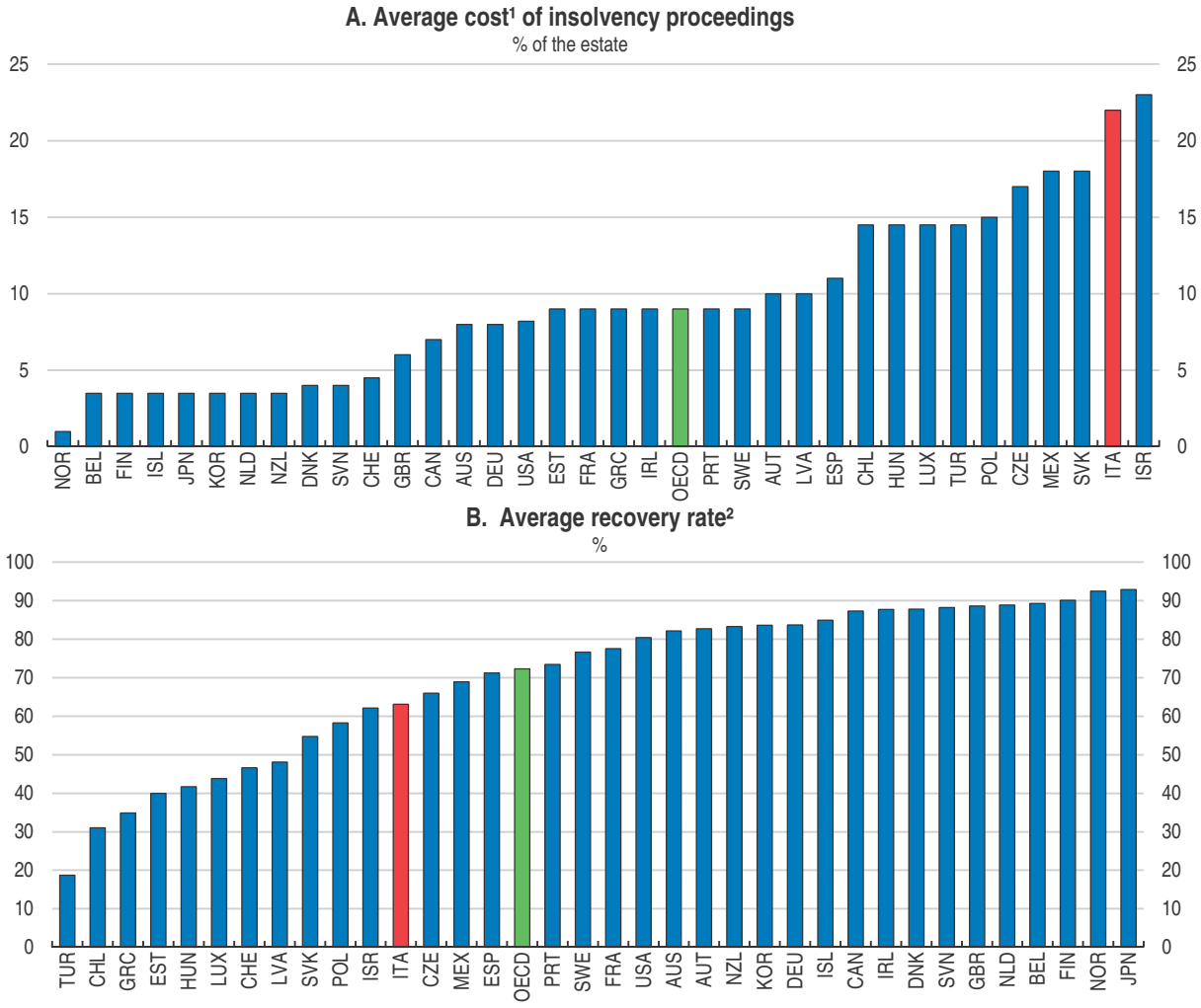
services sector – boosting innovation and investment in KBC, overcoming problems in the banking sector – to increasing lending to firms, especially to start-ups and innovative and SMEs – and developing alternative sources of finance, such as venture capital and the corporate bond market.

Speeding up insolvency procedures

An efficient insolvency framework is key to restructuring companies that are still viable and liquidating those that are not. Long and costly insolvency procedures trap capital and other resources in low productive firms, reducing allocative efficiency and depressing investment. Evidence suggests that a nontrivial share of the collapse in aggregate business investment in Italy is attributable to the survival of firms having persistent problems meeting interest payments (Adalet McGowan et al., 2017). The effects on aggregate labour productivity could be even higher as such firms crowd out investment opportunities for more productive firms and discourage the entry of innovative firms. Faster insolvency procedures can contribute to higher private investment and productivity by facilitating the reallocation of capital and other resources to more productive companies with higher return on their investments. It will also help reduce the problem of NPLs, thus reviving bank lending to firms.

Transaction costs of Italy's insolvency procedures are high. Insolvencies cost about 22% of the estate's value, against the OECD average of 9%, and the recovery rate from an insolvent firm is about 63%, below the OECD average (Figure 1.6). During the crisis the number of defaults has increased rapidly and swelled the already large backlog of cases, estimated at around 100 000 in 2015 and 2016; the average length of court-led insolvencies is still above 7 years and varies greatly across courts, ranging from 2 to more than 16 years. Moreover, liquidation is still by far the most common form of insolvency, accounting in 2015 and 2016 for more than 90% of new insolvency cases and an even higher share of backlog cases (MG, 2017). Also, most insolvencies starting as reorganisation procedures (about 90%) end up as liquidation (Castelli et al., 2016).

Figure 1.6. **Efficiency of insolvency procedures is low**



1. The cost of the proceedings is recorded as % of the value of the debtor's estate. The cost is calculated on the basis of questionnaire responses and includes court fees and government levies; fees of insolvency administrators, auctioneers, assessors and lawyers; and all other fees and costs.
2. The recovery rate is calculated based on the time, cost and outcome of insolvency proceedings involving domestic legal entities and is recorded as % of the amount recovered by secured creditors. The calculation takes into account the outcome: whether the business emerges from the proceedings as a going concern or the assets are sold piecemeal. Then the costs of the proceedings are deducted. Finally, the value lost as a result of the time the money remains tied up in insolvency proceedings is taken into account. The recovery rate is the present value of the remaining proceeds, based on end-2015 lending rates.

Source: World Bank, *Doing Business 2017 Database*.

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Italy's bankruptcy law dates back to 1942 (Box 1.2). Since the mid-2000s the insolvency law has been undergoing a reform process, focusing especially on reorganisation procedures. For instance in 2007, the authorities modified the composition with creditors in the spirit of a Chapter 11-like procedure. The 2015 reform has increased the transparency and competition in compositions with creditors by allowing third parties to bid for the enterprise or parts of it in addition to enabling creditors to present alternative reorganisation plans if the one proposed by the debtor foresees a repayment to unsecured claims lower than 40%. Moreover, the 2015 reform introduced the possibility of using forcing clauses in debt-restructuring agreements (*accordi di ristrutturazione*) when a company owes more

than 50% of its outstanding debts to financial institutions. In this case, forcing clauses will forcibly extend the debt-restructuring agreement, that a company has reached with financial creditors representing at least 75% of its total debt with financial creditors, to dissenting creditors. The agreement does not affect creditors that are not financial creditors.

In addition, in the context of the on-going reform of the justice system, the government in mid-2016 modified, by decree, the bankruptcy law to boost the use of electronic platforms in insolvency cases. The changes will involve the creation of a digital register with updated and comprehensive information on property repossession and insolvency cases – in line with the 2015 EU regulation on cross-border insolvencies – and the possibility of using electronic means in different stages of insolvencies, such as when creating creditors' committees and setting dates for court hearings. These changes are part of wider efforts by the Ministry of Justice to systematically collect and publish data and encourage the use of electronic means across the whole justice system (MG, 2017).

These reforms go in the right direction. Marcucci et al. (2015) reckon that the 2015 reform, if effectively implemented, could reduce the average length of bankruptcy procedures to about 3 years, and to 4-5 years, in a less favourable implementation scenario; also, the average duration of judicial foreclosures should diminish from more than four to around three years.

However, going forward there is a need for comprehensive and organic reform of the bankruptcy law. The frequent modifications of the bankruptcy law in the recent past, while necessary, have undermined legal certainty and made the insolvency regime overly complex. The government has used emergency mechanisms (decrees) to pass some of these reforms while ordinary legislative procedures, involving consultations with a wide range of stakeholders might have been preferable. Also, restructuring procedures aiming at making firms emerge as going concerns need to be streamlined and used more often. For instance, to date more than 90% of structuring procedures started as composition with creditors eventually lead to liquidation either because the composition with creditors is annulled – due to frauds – or creditors do not approve the debtor's plan or the tribunal does not ratify it. On top of this, the composition with creditors is expensive, absorbing about 30% of the asset value (Camera dei Deputati, 2016).

The government is well aware of these problems and in early 2016 submitted to parliament an enabling law to organically reorganise the insolvency regime based on the recommendations of a high-level commission ("Commissione Rodorf"). The main elements of the enabling law are consistent with the 2014 European Commission recommendations on business failures and insolvencies. The enabling law's main aims are to make it easier for insolvent firms to emerge as going concerns through restructuring agreements, encouraging the use of out-of-court restructuring procedures (by lowering the required share of creditors who must agree on it), enhancing court specialisation and introducing an alert procedure to signal, early on, crisis situations so that the firm and creditors might prevent the start of judicial insolvency. To lower the social stigma linked to bankruptcy procedures, the enabling law also replace the term bankruptcy with insolvency, in line with recent changes in other European countries.

The enabling law and the ongoing reform of civil courts hold the promise of providing a coherent framework for insolvency procedures and accelerate them. Increasing court specialisation and providing judges with more specialised training is especially welcome, as evidence attest of their effectiveness (OECD, 2013). Facilitating the use of debt-equity

swaps could facilitate the emergence of insolvent firms as going concerns, which is one of the goals of the new enabling law on insolvency. Debt equity swaps are an important instrument in corporate restructuring (Hart, 2006) but their use in Italy is limited. In court-led procedures – namely composition with creditors – debt equity swap are allowed and apply also to dissenting creditors. However, as noted above most of compositions with creditors lead to liquidation, suggesting debt equity swaps are hardly useful. In out-of-court procedures, debt-equity swaps are possible but they do not apply to dissenting creditors who may insist to be repaid in full (Box 1.2). Applying debt-equity swaps in out-of-court debt restructuring procedures to dissenting creditors (similarly to what the 2015 introduced for financial creditors only) would facilitate the use of debt equity swaps and decrease the likelihood of liquidation.

Box 1.2. **Main elements of Italy's bankruptcy regime**

Italy's bankruptcy law provides for both liquidation (*fallimento*) and – court-led or out-of court – re-organisation plans aiming at making the firm emerge as a going concern;

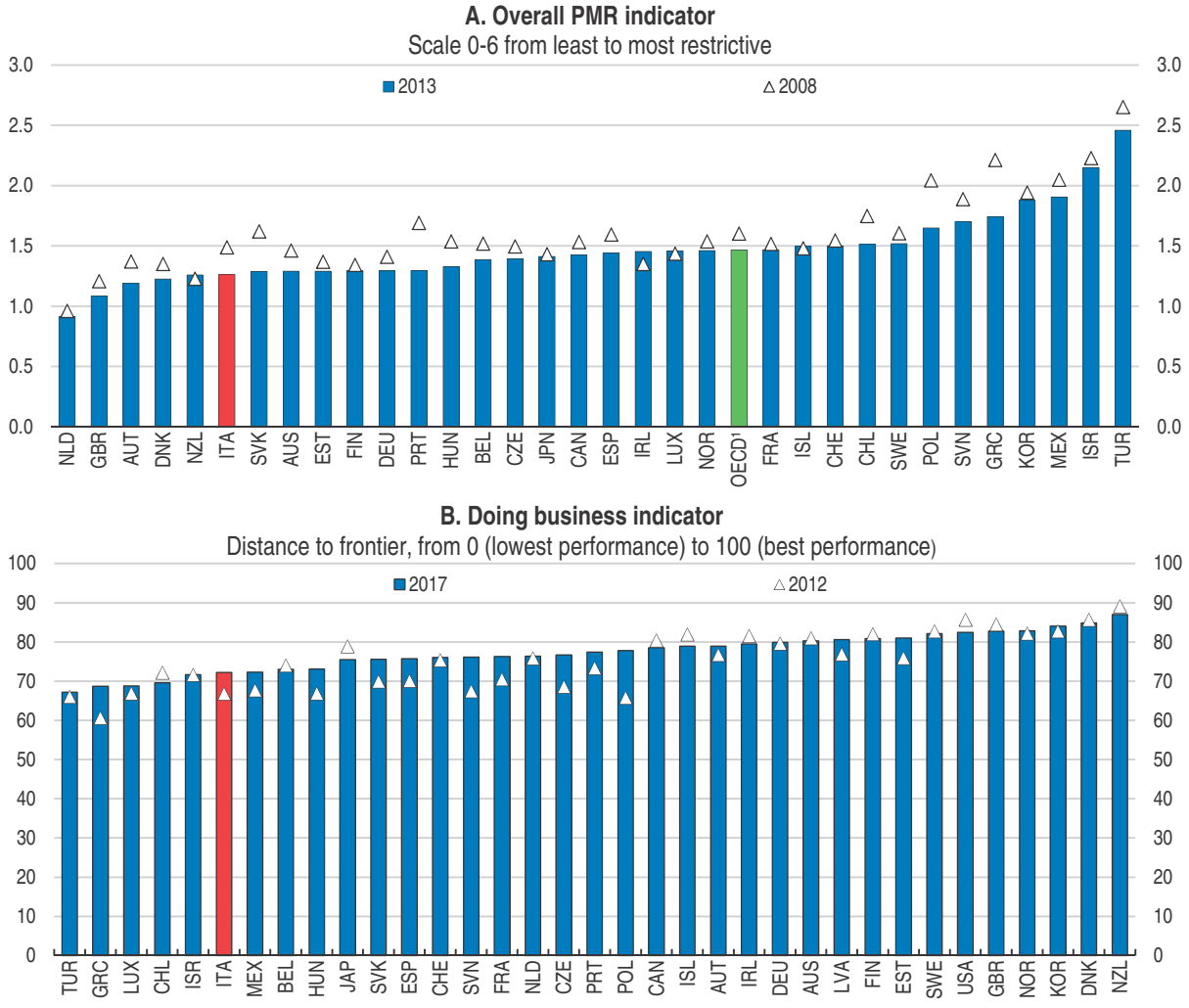
- There are three different types of liquidation: 1) *fallimento*; 2) *liquidazione fallimenare*; 3) *concordato fallimentare*.
- Court-led re-organisation consists of composition with creditors (*concordato preventivo*) whereas out-of-court reorganisation can take the form of debt restructuring agreements (*accordi di ristrutturazione*) and recovery plans (*piani di risanamento*). With debt restructuring agreements, the debtor presents a repayment plan that must be approved by creditors representing at least 60% of the outstanding claims. An expert provides an opinion about the feasibility of the repayment plan, which must be approved by the judge before becoming binding for approving creditors only. Dissenting creditors need to be paid in full. Recovery plans seek to restore the company's financial equilibrium, especially in cases of liquidity or temporary crisis and require an agreement between the debtor and creditors.
- Special procedures apply to financial intermediaries, cooperatives and large enterprises (*Amministrazione straordinaria*).

Enhancing competition and improving regulation

Over the last years, Italy has made progress on opening up product markets to competition as reflected by the improvement in OECD Product Market Regulation (PMR) (Figure 1.7). The easing in product market regulation between 2008 and 2013 was attributable to improvement in the area of state controls and, to a lesser extent, in the areas of barriers to entrepreneurship and barriers to trade and investment. Despite the improvement, there is still room to lower barriers relating to state controls, which is still close to the OECD average, by reducing public ownerships.

However, easing product market regulation has not resulted in visible productivity and investment gains. Problems with implementation and enforcement attributable to inefficiencies in the public administration and judiciary have created a wedge between *de jure* and the *de facto* standards (OECD, 2015c; Allio and Rangone, 2016). The World Bank's Doing Business Indicator captures more closely *de facto* standards as it is based on the actual obstacles businesses face. In this respect, Italy scores poorly compared with the PMR indicator. The Competition Authority (AGCM, 2015) has highlighted that the proliferation of

Figure 1.7. **Restrictions to product market competition have eased**



1. Average of all OECD countries excluding the United States and Latvia.

Source: *OECD Product Market Regulation Database 2013*; and World Bank, *Doing Business 2017 Database*.

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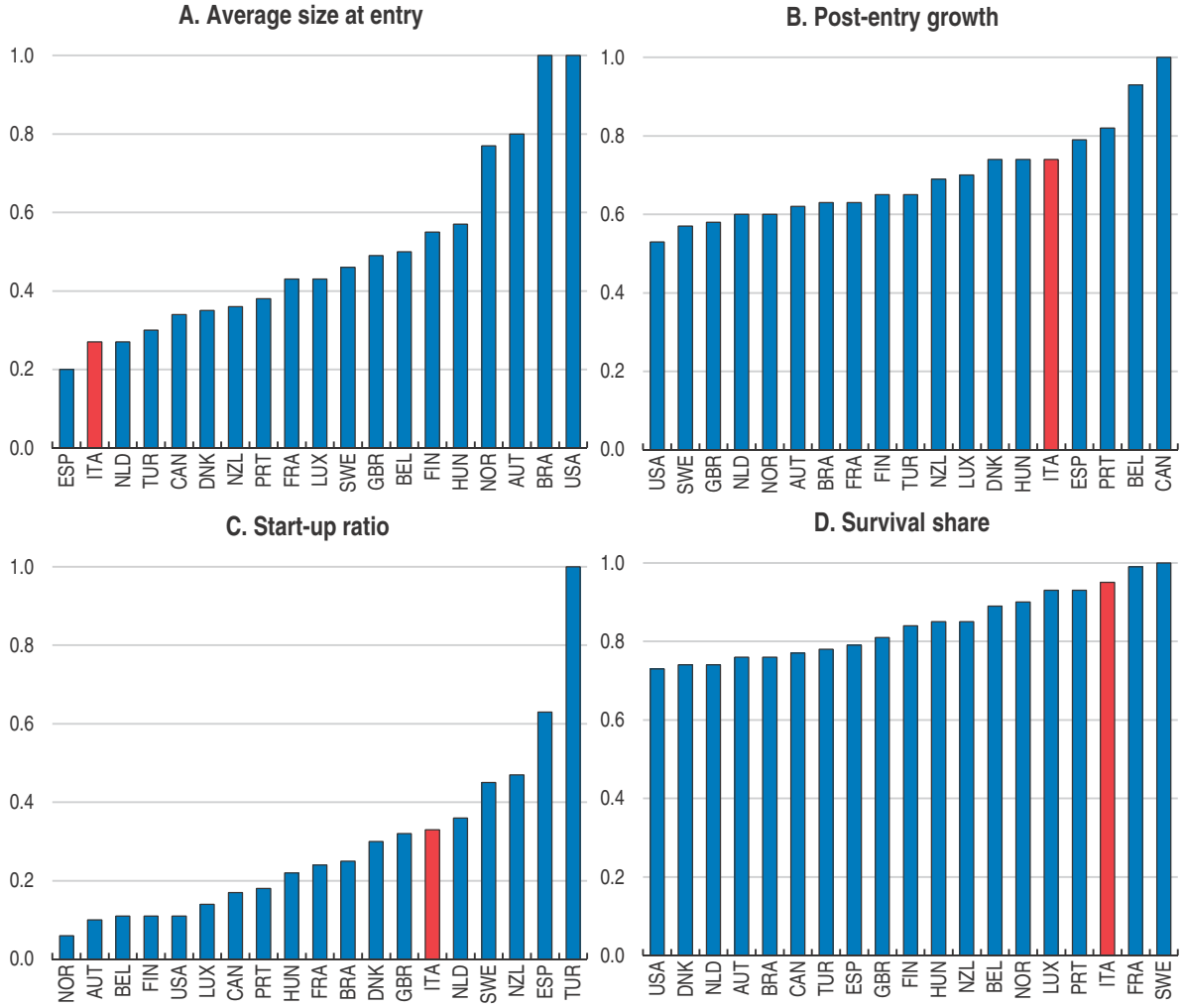
regulations, administrative complexity and a widespread distrust towards competition have abetted incumbents and hampered competitive pressures by fostering legal uncertainty. In many cases, sub-national governments have also resisted efforts to increase competition in sectors historically dominated by municipal enterprises, such transport and other locally provided services.

Regulatory restrictions hindering market entry hamper business dynamism and investment. Compared with other OECD countries, Italy has a low start-up ratio and average size of entry; besides the start-ups' survival rate is high (Figure 1.8). Cross country evidence also show that lower product market regulation is associated with higher investment (Égert and Gal, forthcoming). In this regard, efforts to improve the efficiency of the public administration and the judiciary are welcome and should be pursued vigorously. The ongoing public administration reform contains important provisions on local public services, municipal enterprises and port authorities going in the right directions that, if not diluted, will enhance enhance competition in these sectors.

Figure 1.8. **Start-up dynamics**



Note: The panel illustrates the four components of the growth decomposition normalised over the maximum value across all countries included in the sample.

Source: *OECD DynEmp v.2 Database*; and Calvino, F., C. Criscuolo and C. Menon (2015), "Cross-Country Evidence on Start-Up Dynamics", *OECD Science, Technology and Industry Working Papers*, No. 2015/06, OECD Publishing, Paris, *http://dx.doi.org/10.1787/5jrxtkb9mxtb-en*. Data for some countries are still preliminary.

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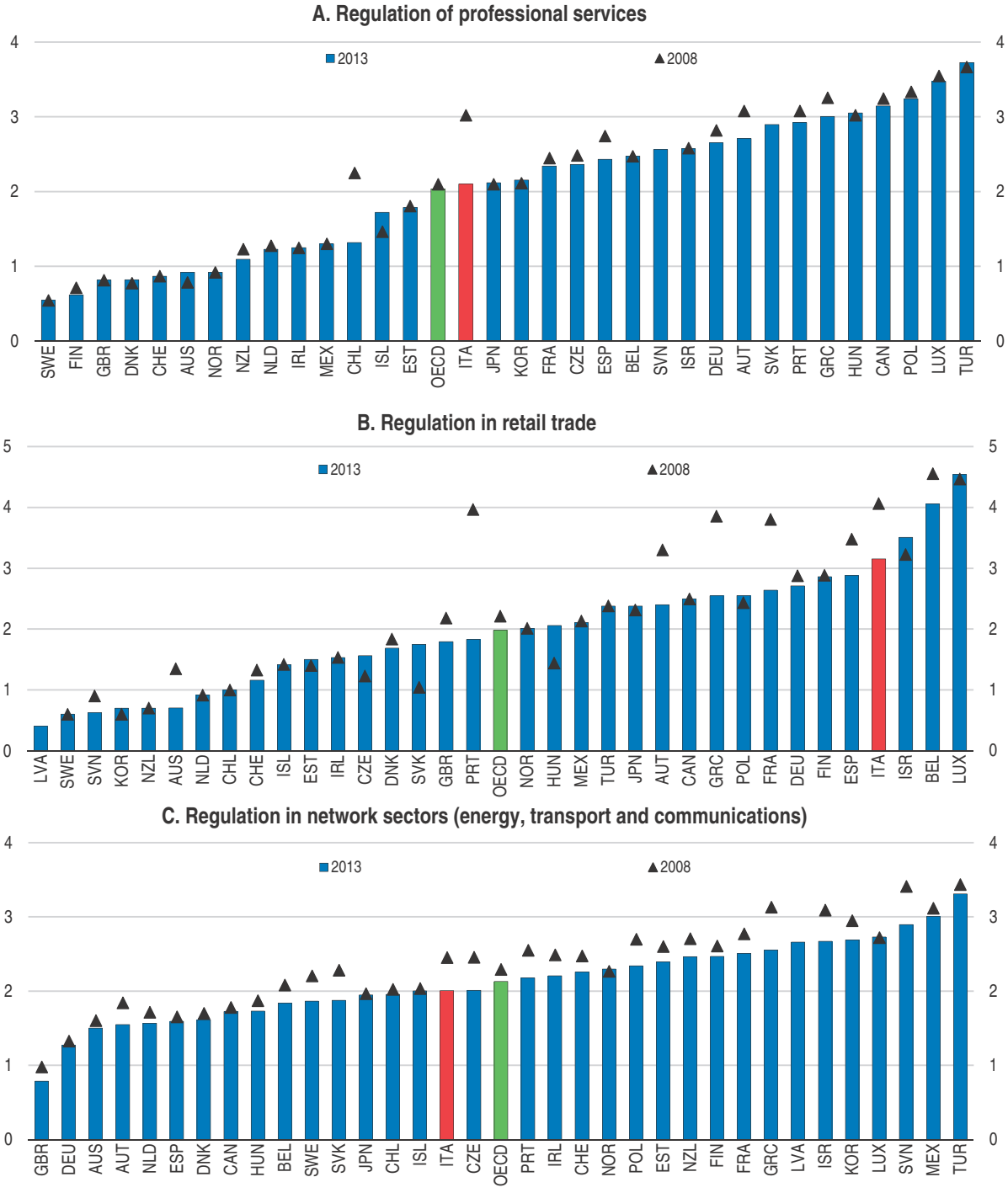
Across sectors, barriers in professional services and network sectors are close to, or below, the OECD average whereas they are still high in retail trade, mainly on account of regulations protecting incumbents and limitations to promotions and discounts (Figure 1.9). The OECD Service Trade Restrictiveness (STRI) index indicates that regulation remains restrictive in transport sector, namely air and maritime transports, but also in some professional sectors such as engineering, legal and accounting services (Figure 1.10). Overall, barriers to entrepreneurship in services can be lowered significantly.

Regulatory restrictions in the services sector can be especially damaging to economic activity, investment and social welfare. Services account for about 18 and 58% of Italy's exports in gross and value added terms, suggesting that Italy's goods' exports rely intensively on services inputs (OECD, 2015d). Restrictive regulation in the services sector therefore affects negatively the competiveness of the Italian industrial sector, in addition to hindering the dynamism of the services sector *per se*, which account for most of Italy's GDP.

Figure 1.9. **Product market restrictions are still high in retail trade**

Index ranges from 0 to 6, from least to most restrictive



Note: In 2013, average of all OECD countries excluding the United States. Panel A, the Slovak Republic and Slovenia are also excluded to calculate the OECD average in 2008 due to missing data.

Source: OECD Product Market Regulation Database 2013.

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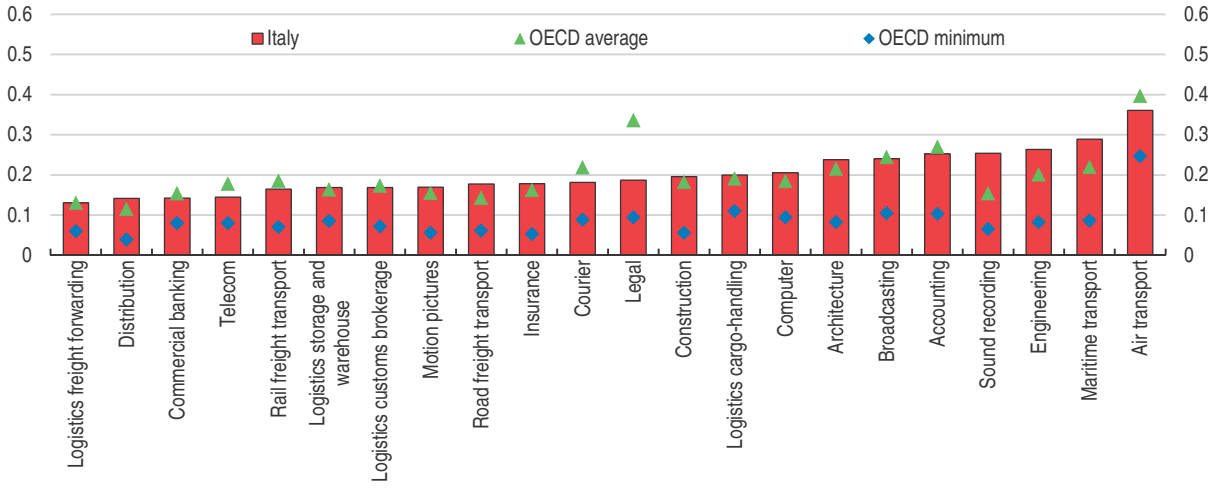
Figure 1.10. **Service trade restrictiveness index (STRI)**

The indices take values between zero and one (the most restrictive)[1]



1. The index includes regulatory transparency, barriers to competition, other discriminatory measures, restrictions on movement of people and restrictions on foreign entry. The STRI methodology takes into account different market and trade cost structures across sectors to ensure that they reflect the relative restrictiveness of each sector. Nevertheless, the indices may not be perfectly comparable across sectors. The indicators are for 2013 or the most recent year available.

Source: OECD Services Trade Restrictiveness Index Database.

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Easing regulation in the services sector will generate large benefits. Results for Italy show that occupational licensing abets nepotism, often leading to lower quality of services (Pellizzari et al., 2011). Easing entry restrictions in the service sector, when undertaken, has yielded good results. In the pharmacy market, a reduction in rents has expanded job opportunities and reduced the likelihood of pharmacists' children to follow their parents' profession (Mocetti, 2016). Pagliero (2015) also reports that the 2006 Bersani reform that partly liberalised the pharmacy and legal profession has had a positive effect on earnings of pharmacy graduates; it has had no effect on law graduates, however, probably because of the long delay in the implementation of the reform in this area.

The competition law the government presented to parliament in 2015, which is still being discussed, goes in the right direction. The law deals with different services sectors such as: insurance to reduce frauds, increase transparency and enhance offer comparability; telecommunications, to make it easier to switch provider; Poste Italiane, to end its monopoly on judicial and administrative notifications; electricity and gas sectors, to remove remaining price regulations. Other measures concern notaries, pharmacies, law firms, banks, fuel stations and pensions funds (AGCM, 2015). The law needs to be swiftly approved without further weakening its provisions. The government should then adopt a new competition law in 2017 to continue its efforts of market opening and expand opportunities.

Easing regulation must also be accompanied by better regulation. In Italy, regulatory impact assessment (RIA) is already required for all legislation started by the executive (OECD, 2015f). *Ex ante* and *ex post* assessment are linked by a requirement to evaluate *ex ante* progress indicators two years after the entry into force of the law. An extensive measurement of administrative burdens and the repeal of redundant laws were undertaken between 2008 and 2012, and in 2014 a new burden-reduction programme was adopted.

There is a need to pursue and deepen these initiatives further so as enhance the quality of regulation and lighten the regulatory burden on businesses. For instance, RIA could be made public and used as basis for *ex ante* public consultation. Open consultations have been conducted on major reforms (such as education, justice and public administration simplification since 2014); however, public consultations are often informal and usually initiated by individual ministries. A single list of laws under preparation or to be amended could facilitate feedback from a wider audience. A stronger *ex ante* assessment would also usefully complement the important effort to assess legislation *ex post*.

Encouraging innovation and investment in knowledge-based assets

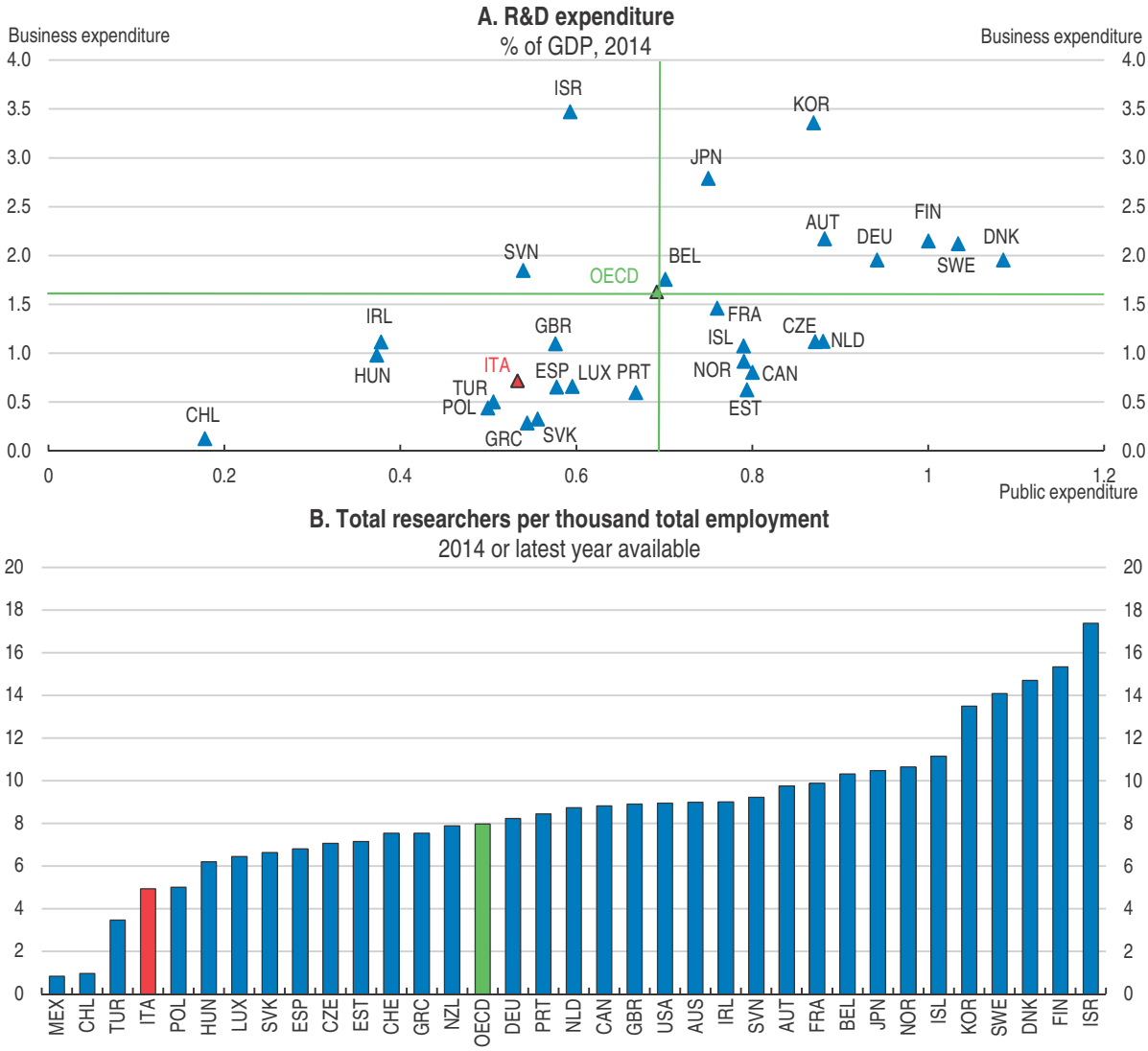
Italy is a below-average innovator among EU countries (EC, 2016). Public and private R&D spending is low by OECD standards and the number of researchers is also low (Figure 1.11). Weak research and innovation activities have resulted in a low number of patents per million of inhabitants (Figure 1.12). Yet, Italy performs considerably better when considering research productivity as the number of patents per number of researchers and unit of R&D expenditure is above OECD average (Figure 1.13). This suggests that low innovation is mostly due to the low level of spending and number of researchers, rather than low productivity.

Italy's research and innovation policy has for a long time suffered from excessive fragmentation. This is attributable to a large number of agencies at national and sub-national levels with responsibilities in policy development and execution and by an equally fragmented financing system. Attempts to simplify the financing system have yielded no results (MIUR, 2015; Filocamo, n.d.). Italy currently counts at least 5 national research funds. Two of them (FFO and FOE) are used to fund universities and public research institutes; others are used to provide direct support measures and include: FIRST, for basic and industrial research and experimental development; FAR, to promote links between universities and industry; FISR, to contribute to strategic research projects as identified by the PNR. In addition, the FSC (*Fondo Coesione Sociale*) and PON (*Programme Operativo Nazionale*) contributes to funding research and innovation activities, mainly based on regional-disparity considerations; finally there are regional and European funds for research and innovation activities (MIUR, 2016).

Frequent and unclear changes in the legislation have led to programmes disconnected from national priorities and lacking unity (MIUR, 2015; Filocamo, n.d.). This has hindered the development of an efficient national innovation system by limiting the flow of knowledge among innovation actors and spillovers, in addition to hampering monitoring and evaluation. The experience of OECD countries suggests the importance of three pillars for a successful research and innovation policy (OECD, 2015g):

- A long term vision based on a national strategy for science, technology and innovation. This is key to enhancing the research and innovation system, and facilitating knowledge flows among all innovation actors (public agencies, research centres and industry); in addition, long-term public research funds can help support projects with high and long-term social returns but too risky for the private sector to undertake (Mazzucato, 2013).
- A serious monitoring and evaluation system. Developing a reliable monitoring and evaluation system is crucial to learn from experience and develop evidence-based policies.

Figure 1.11. **R&D spending and the number of researchers are low**



Note: Panel A, for Mexico and Switzerland the split is not available.
Source: *OECD Main Science and Technology Indicators Database 2016.*

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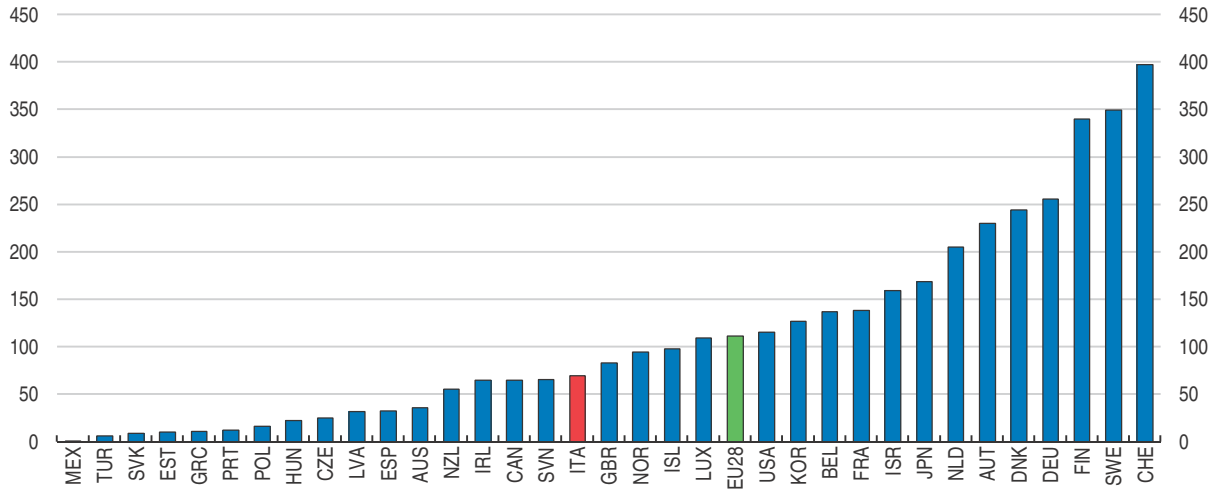
- The right balance between R&D tax credits and direct support measures. Direct support measures, such as, grants, procurement contracts, awards for mission-oriented R&D or support for networks – can be especially important for young firms as they often lack the funds or collateral necessary to finance innovative projects. To be effective direct support measures need be based on competitive and transparent criteria. R&D tax credits can also be effective in raising R&D expenditure but their impact, if not correctly designed, is likely to be larger among already existing and profitable R&D performers (Appelt et al., 2016). R&D tax credits can also provide large companies with additional opportunities for cross-border tax planning. Recent research has indeed shown that if not well designed R&D tax incentives tend to protect incumbents and slow down the reallocation process (Bravo-Biosca, Criscuolo, and Menon, 2013).

Figure 1.12. **The number of patents is low**

Patent applications to the EPO[1] per million inhabitants, 2014 or latest year available



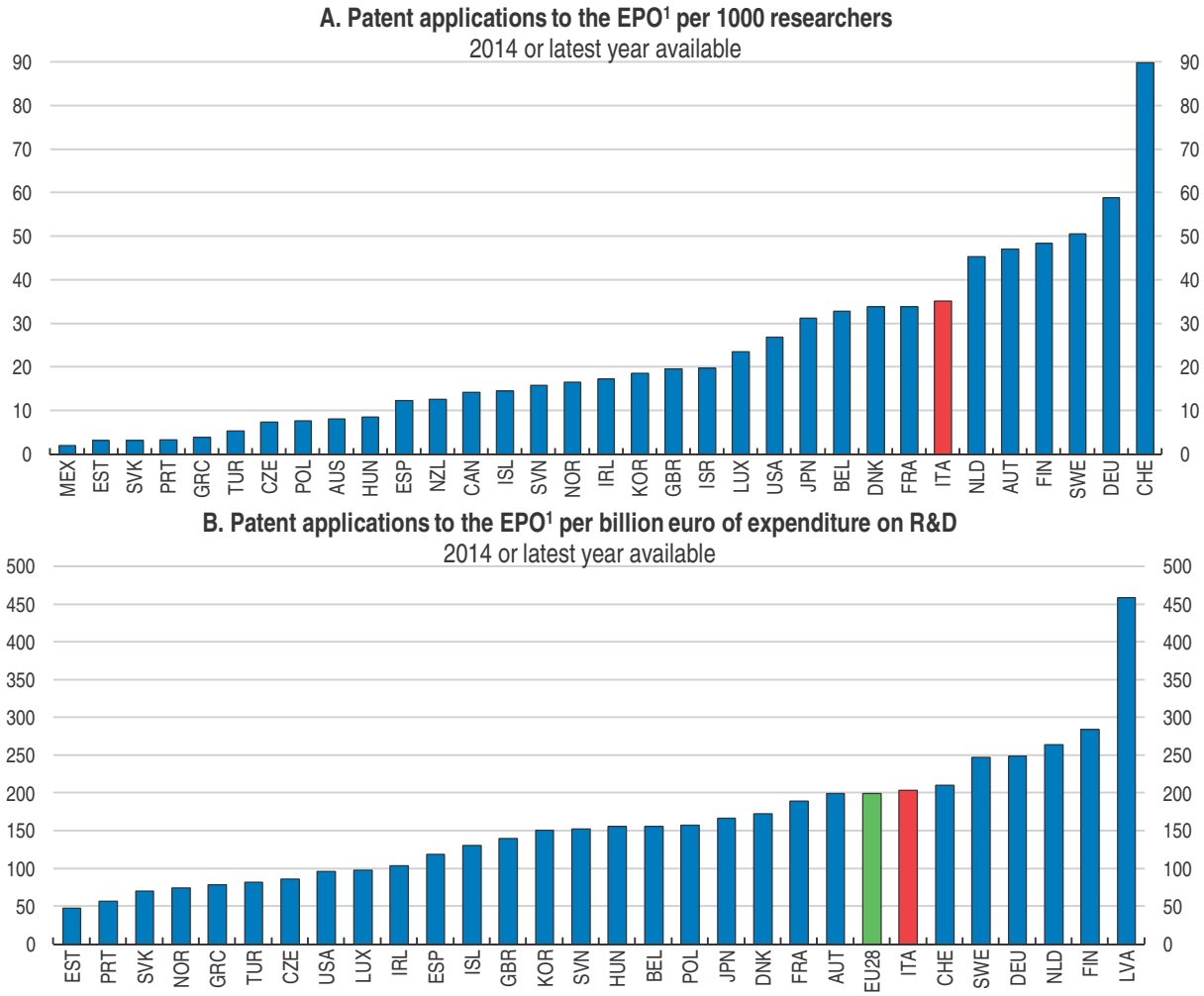
1. European Patent Office (EPO).
Source: Eurostat.

StatLink http://dx.doi.org/10.1787/888933454318

In 2015, the Ministry of Education, University and Research published the National Research Programme (*Pragramma Nazionale per la Ricerca*, PNR) outlining the national research strategy over the next five years (MIUR, 2015). The Programme is coherent with the EU Horizon 2020 Programme. The plan has as overarching theme the establishment of a research and innovation policy's national governance system so as to improve coordination and reduce fragmentation. Specific objectives include: the internationalisation of Italian research activities, especially in the European context; raising investment in human capital to increase the quality and quantity of researchers in the public and private sectors; improving research laboratories and infrastructures; fostering public-private sector collaboration; supporting research and innovation in the "Mezzogiorno"; enhancing research-spending efficiency through reinforcing administrative capacity at all levels. The Plan also allocates EUR 2.5 billion over the 2015-18 (Figure 1.14), which are in addition to the EUR 8 billion higher-education and public-research institutes receive yearly.

The PNR is a welcome step to develop a coherent long-term national research and innovation strategy. Assessed against the three principles highlighted above, the PNR moves towards meeting two of them, namely a long term national strategy for science technology and innovation – through improved governance – and a more effective monitoring and evaluation system – through enhanced administrative capacity. Currently, research output of universities and public research institutes is evaluated by expert groups following the Standards and Guidelines for Quality Assurance in the European Higher Education Area (ESG, 2015). The results of the research quality evaluation exercise (Valutazione Qualità Ricerca, VQR) are used to allocate about 15% of public funding to universities, against about 25% in the United Kingdom (ANVUR, 2016). The Ministry's commitment to allocate a larger share of funds for public research institutes on a competitive basis is therefore welcome. To increase transparency and trust in the system, the government should publish clear guidelines to allocate research funds to universities and public research institutes based on VQR results. Making the results public will strengthen yardsticks competition, which has been found to have a positive effect on research output (Aghion et al., 2010).

Figure 1.13. **Research productivity is high**



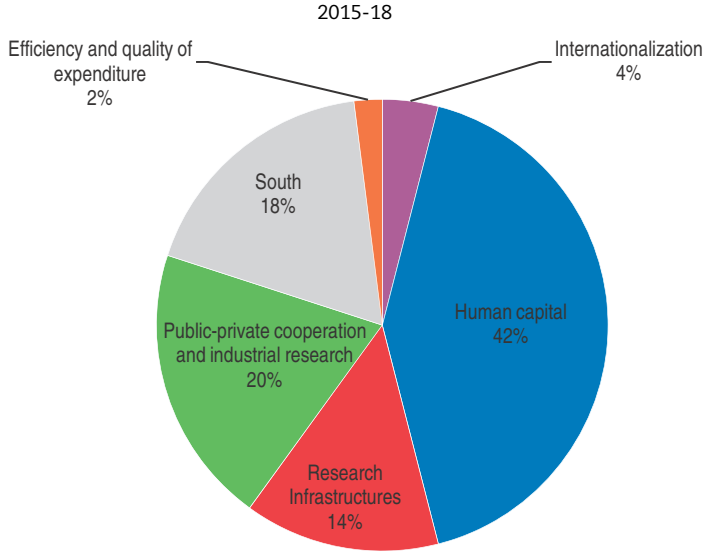
1. European Patent Office (EPO).
Source: OECD Main Science and Technology Indicators Database 2016; and Eurostat.

StatLink http://dx.doi.org/10.1787/888933454124

Encouraging university-industry collaboration is another important specific objective of the PNR 2015-1020. To this end, in 2015 the government introduced a tax credit (to be discussed below) for R&D collaboration between businesses and universities or research institutes. Such support measures are usually predicated on the premise that this type of collaboration often involves basic research, which is likely to yield larger social benefits than applied research, and the existence of hurdles hindering knowledge diffusion (Appelt et al., 2016). Italian universities account for about 60% of the total R&D spending on basic research against only 15% by public research institutes (Figure 1.15). It would be opportune to target support measures aiming at fostering university-industry collaboration to basic research projects as they are less likely to be funded by private sources alone. Mazzucato (2015) and Singer (2015) stress how public funds have played a fundamental role in fostering public-private collaboration on basic research, which has been key to developing pharmaceutical, biotechnology and other science-based industries.

Figure 1.14. **Allocation of National Research Programme funds**

2015-18



Source: MIUR (2015), *Programma Nazionale per la Ricerca 2015-2020.*

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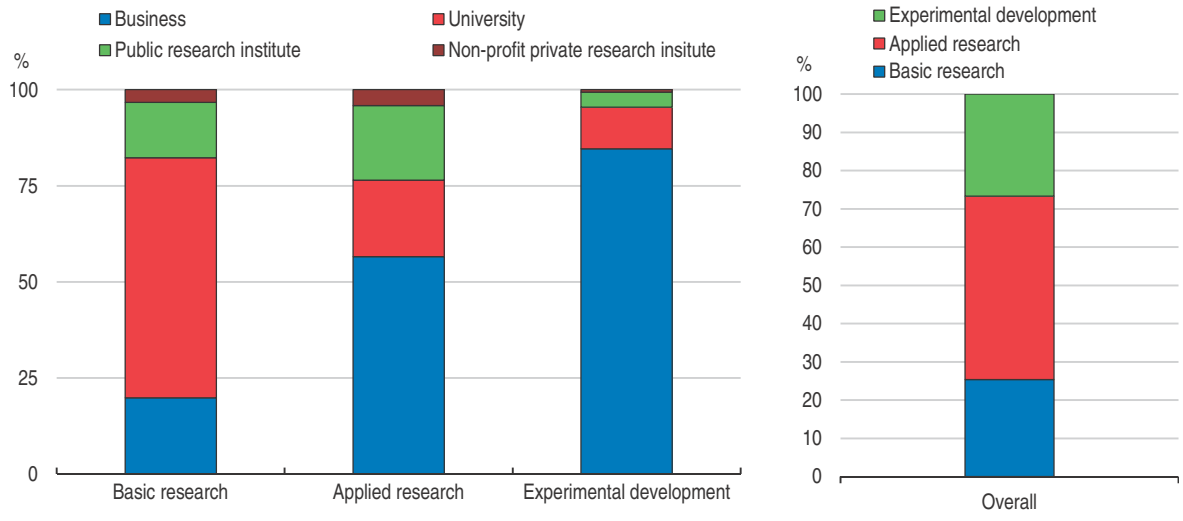
Figure 1.15. **Share of R&D spending by institutional sectors**

2013



Source: ISTAT (2015), *Ricerca e Sviluppo in Italia.*

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Italy has also recently introduced a wide range of incentives to boost innovation under the Industry 4.0 Plan over 2017-20 (Box 1.3). This provides for about EUR 13 billion during 2017-20 to boost investment in digital technologies, innovation and capital accumulation. Unlike other European countries, Italy has lacked for a long time a comprehensive innovation strategy. The initiatives recently undertaken contribute to align Italy's innovation policies to those of other European countries. They also include R&D tax credits and a patent box.

Box 1.3. **Main elements of Italy's Industry 4.0 Plan**

In 2016, the government launched the National Industry 4.0 Plan, which provides a range of incentives for about EUR 13 billion over 2017-20 to boost innovation and skills in new technologies. This is the first national industry plan explicitly aiming at modernising the productive structure of the economy, following similar initiatives in other countries, such as France (Industrie du Futur), Germany (Industrie 4.0) and the United States (Manufacturing USA).

Its key elements include:

- Hyper-depreciation scheme (introduced with the budget law of 2017): companies will be allowed to deduct 250% of the value of investments in selected Industry 4.0 technologies, which are instrumental to the digitalisation and innovation of industrial processes.
- Super-depreciation, (introduced in 2016 and enhanced in 2017): companies will be allowed to deduct from their taxable income 140% of the original cost of machineries, software (if connected selected Industry 4.0 technologies) and other eligible equipment.
- Raising the share of internal R&D spending that is deductible from companies' taxable income to 50% (from 25%) – the same as for external R&D spending – and raising the annual tax-credit celling to EUR 20 million (from EUR 5 million).
- Stronger incentives for investing in start-ups and innovative SMEs by: raising the tax credit to 30% (from 19%) of the invested capital in start-ups and innovative SMEs and raising the maximum eligible investment to EUR 1 million (from EUR 0.5 million); allowing companies to claim a tax credit equivalent to losses of controlled start-ups for their first four years of activity; boosting venture capital dedicated to selected Industry 4.0 technologies through co-investment schemes with private sector funds.

The Industry 4.0 Plan also aims at enhancing the supply of skills relating to new technology by: implementing the Digital School National Plan; increasing the number of students (at university and post-secondary vocational and education training courses) and doctoral researchers in technical and scientific subjects; creating competence centres and digital innovation hubs to promote cooperation and exchanges among universities, businesses, start-ups and public sector so as to foster technological transfer and enhance technical and managerial skills on new technologies.

The Industry 4.0 Plan is flanked by a planned increase in public investments to significantly extend the ultra-broad band network, especially in areas where private operators are unwilling to invest to extend the network.

The R&D tax credits were introduced in 2015 and reinforced with the 2017 budget law (Box 1.3). The R&D tax credit system is formally incremental as only the R&D expenses above the 2012-14 average count towards the tax credit. The fixed reference period (2012-14) implies that for start-ups or other firms with no R&D spending during the reference period the tax incentive is actually volumetric. The tax credit can be carried over if the company is loss making and can be used to offset corporate income and regional taxes and social security contributions but is not refundable. The R&D tax credit system will expire in 2020.

Overall, the introduction of the R&D tax credits is an important step to boost Italy's innovative capacity. R&D tax incentives are used in 28 OECD countries. Most OECD economies – e.g. Australia, Austria, Canada, Chile, France, Iceland and Norway – provide tax incentives on the level of R&D spending; a few other countries – such as the

United States – have tax incentives on the increment in R&D expenditure; still others – e.g. Japan Korea and Spain – apply an hybrid system. Overall countries with the most generous R&D tax credit have volumetric or hybrid systems whereas Italy has introduced an incremental system. The overall trend among OECD countries in the latest years has been to move towards simpler and more generous tax incentives (OECD, 2015e).

The 2015 Stability Law also introduced a patent box, which is a lower tax regime applying to income generated by intellectual property (IP) rights (such as patents, but also trademarks) (Box 1.4). Italy's patent box regime largely complies with the OECD recommendations to prevent base erosion and profit shifting (BEPS). However, Italy's patent box regime applies the reduced tax rate also to income from marketing intangibles, which is against OECD recommendations included in the BEPS Action 5. Italy's patent box regime applies the reduced tax rate also to income from marketing intangibles, which is against OECD recommendations included in the BEPS Action 5. Ownership of IP assets, such as patents, copyrights, trademarks or brands can be easily located in low-tax jurisdiction. To prevent this, some countries have introduced patent boxes, e.g. France in 2001, Hungary in 2003, the Netherlands and Belgium in 2007, Spain and Luxemburg in 2008 and the United Kingdom in 2013. Patent boxes however appear to be unsuited to successfully promote innovation activities, especially by innovative start-ups and SMEs (Appelt et al., 2016). For instance, in 2015 the government received about 4 500 requests to adhere to the new patent box regime, but most of them came from large companies. Start-ups need funds to conduct their research as early as possible whereas there can be a long lag between when the tax relief is received and the R&D expenditure. Also, lower taxes can

Box 1.4. **Italy's patent box**

Italy's patent box provides an exemption for corporate income tax (IRES) and the regional tax on productive activity (IRAP). The exemption regards the income derived from patents and other intellectual property considered functionally equivalent to patents such as know-how, trademarks designs and models eligible to legal protection, software protected by copyrights. The tax exemption was set at 30% for 2015, 40% for 2016 and 50% thereafter.

The types of income covered by the exemption include:

- Third party or intercompany royalties derived from qualifying intellectual properties.
- Share of profits deriving from activities where the intellectual property is used in producing goods or services for sale.
- Gains arising on the transfer of ownership of relevant intellectual property, if 90% or more of the proceeds are re-invested in similar assets.

The amount of income that can benefit from the reduced taxation is in proportion of the share of the qualifying expenditure in the total expenditure incurred to develop the intellectual asset. The calculation of the ratio must be made separately for each intellectual asset. More specifically, the qualifying expenditure consists of R&D expenditure incurred directly by the taxpayer or through collaborations with university or third parties relating to the maintenance and development of the intellectual asset. The qualifying expenditure must be defined consistently with the substantial activities requirement ("modified nexus approach") set out by the OECD Forum on Harmful Tax Practices. The bill requires taxpayers to enter into an Advanced Pricing Agreement (APA) with the Italian Revenue Agency.

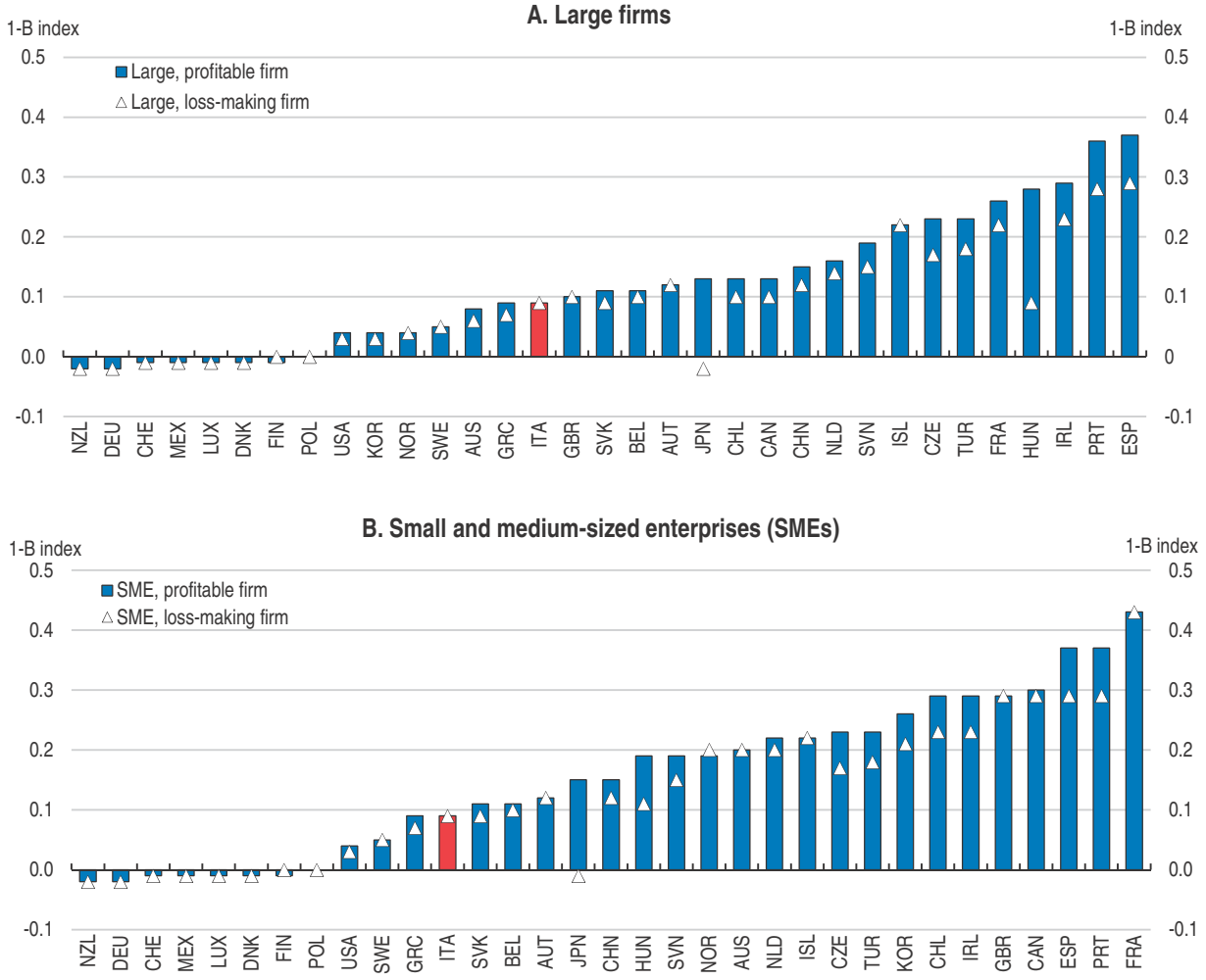
Source: MEF (n.d.), *Disegno di Legge di Stabilità 2015: Relazioni Illustrative*, available at *www.governo.it/sites/governo.it/files/76978-9809.pdf*; OECD (n.d.), "Compendium of R&D tax incentive schemes: OECD Countries and Selected Economies, 2015", available at *www.oecd.org/sti/rd-tax-incentives-compendium.pdf*.

apply to income linked with innovation activities that have taken place before their introduction. Patent boxes provide an *ex post* reward only to successful innovators that already hold monopoly rights on their inventions and receive an income from it. Evidence on the effectiveness of patent boxes is indeed mixed; in the Netherlands the foregone revenue due to the patent box is about 6% of corporate tax revenues (IMF, 2016).

Overall, these recent policy changes are welcome as they show the willingness to put innovation at the forefront of the policy agenda. After these changes, the tax advantage for R&D spending in Italy is still modest compared to most OECD countries. The size of the tax credit is also the same for large and SMEs in contrast with other countries, such as France, the United Kingdom and Canada (Figure 1.16). Then, there seems to be scope to make research and innovation incentives more efficient by targeting them to start-ups and innovative SMEs. These firms are likely to suffer from severe financial constraints hampering

Figure 1.16. **Tax subsidy rates on R&D expenditures**

2015



Note: The tax advantage is calculated as 1 minus the B index, which is a measure of the before-tax income needed to break even on an additional unit of R&D outlay. The index is calculated for a representative firm according to whether it can claim tax benefits against their tax liability in the reporting period. This is an experimental indicator and international comparability may be limited. See also OECD (2015a), *OECD Science, Technology and Industry Scoreboard 2015*. Data for Italy refers to 2017 to take into account the most recent legislative changes.
Source: OECD Science, Technology and Industry Scoreboard 2015.

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their R&D efforts, unlike larger companies that are more able to engage in cross-border tax planning and have better access to finance anyway. This approach is consistent with the OECD's broad policy recommendations on the need to design R&D incentives taking into account differences between large and small firms (OECD, 2015e). A recent study on the United Kingdom system indicates that, if well targeted, R&D tax credits increase R&D and patenting among financially constrained young and SMEs (Dechezlepretre et al., 2016).

Going forward, a carefully evaluation of the new R&D tax credit system will be needed to make sure it is cost-effective and addresses specific market failures. The government should carefully evaluate the effect of the patent box regime on foregone tax receipts and innovation rates and fully align its design with OECD recommendation. If the patent box regime is found not be cost effective, funds should be shifted to programmes targeting young and innovative SMEs.

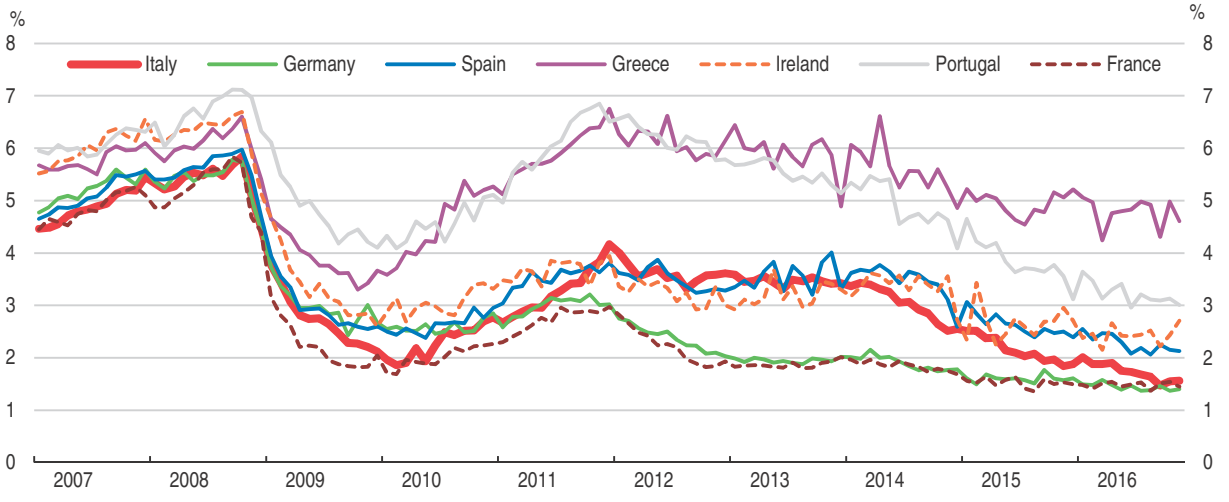
Addressing bank lending constraints

The weak investment recovery is attributable to both demand and supply factors. Bank financing costs have fallen to exceptionally low levels as results of ECB's extraordinarily supportive monetary policy (Figure 1.17). Despite this, bank loans to non-financial corporations has kept declining (Figure 1.18, Panel A). The demand for loans from non-financial corporations started increasing in early 2015 driven partly by the need to finance fixed investment but also inventories and working capital (Figure 1.18, Panel B). The decline in bank loans is then partly attributable to still tight banks' credit standards as evidenced by banks' risk perception, which after a drastic increase from 2008 to 2014 has only recently started to fall.

Banks have poor returns on assets, which have recently started to improve, and large stocks of non-performing loans (NPLs). Along with weak demand, these factors are contributing to slow down loan disbursements. Banks' poor return on assets is attributable to the long and deep recession, but also to poor governance, especially among many cooperative

Figure 1.17. **Lending interest rates have fallen but loan disbursements have recovered only slowly**

Bank interest rates on loans in EUR – new business, maturity up to 1 year



Source: ECB (2016), "MFI interest rate statistics", *Statistical Data Warehouse*, European Central Bank.

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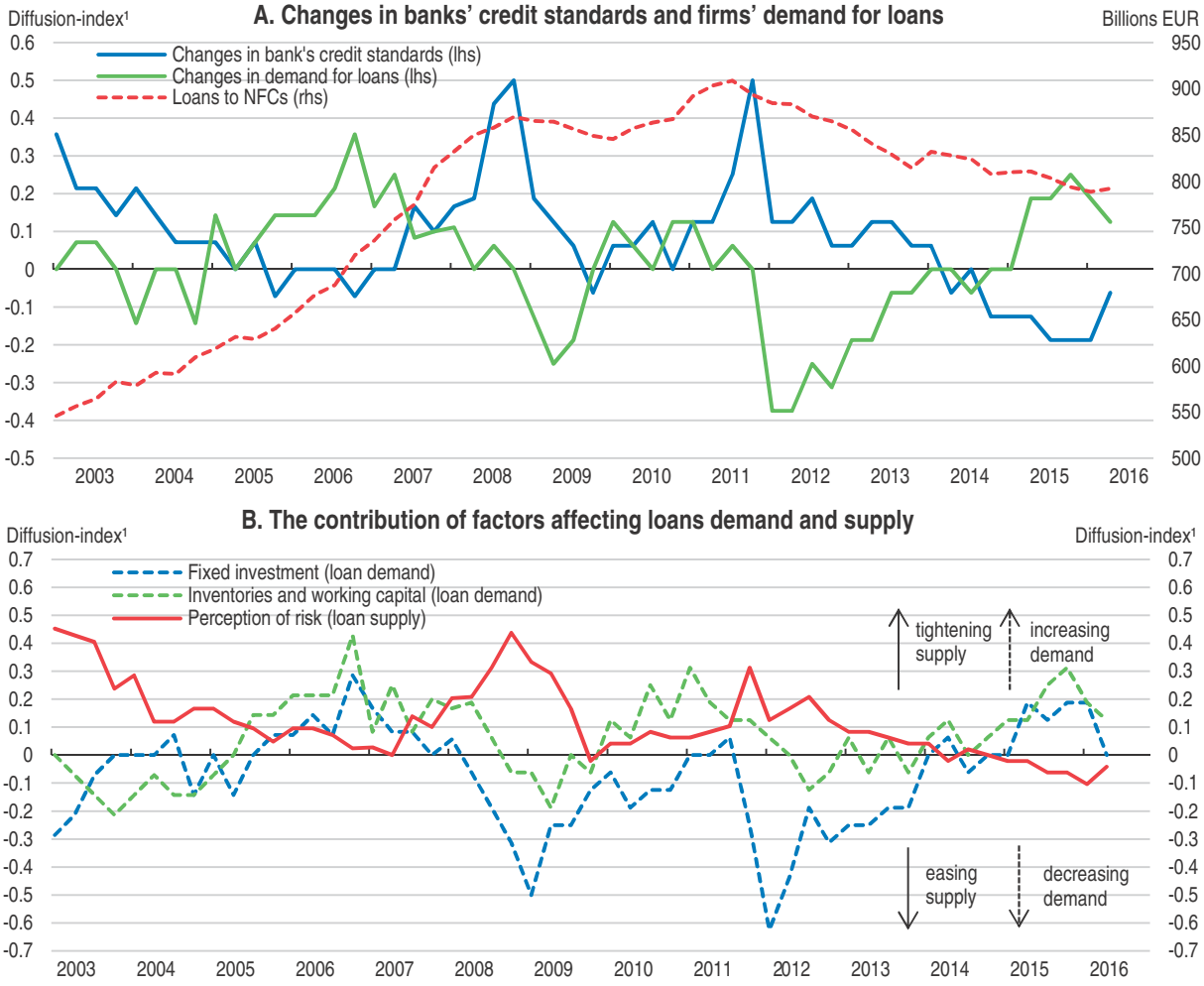
Figure 1.18. **Loan disbursement is still on a downward path**



1. The diffusion index is the weighted average of answers from the ECB bank lending survey, with weights equal to the frequency observed for any possible answer. For questions concerning the supply of credit, the values assigned to the qualitative answers are the following: 1 = tightened considerably, 0.5 = tightened somewhat, 0 = basically unchanged, -0.5 = eased somewhat, -1 = eased considerably. For questions concerning the demand for credit and the share of rejected applications, the numerical values are the following: 1 = increased considerably, 0.5 = increased somewhat, 0 = basically unchanged, -0.5 = decreased somewhat, -1 = decreased considerably. The range of variation of this index is from -1 to +1.

Source: ECB Bank Lending Survey (BLS).

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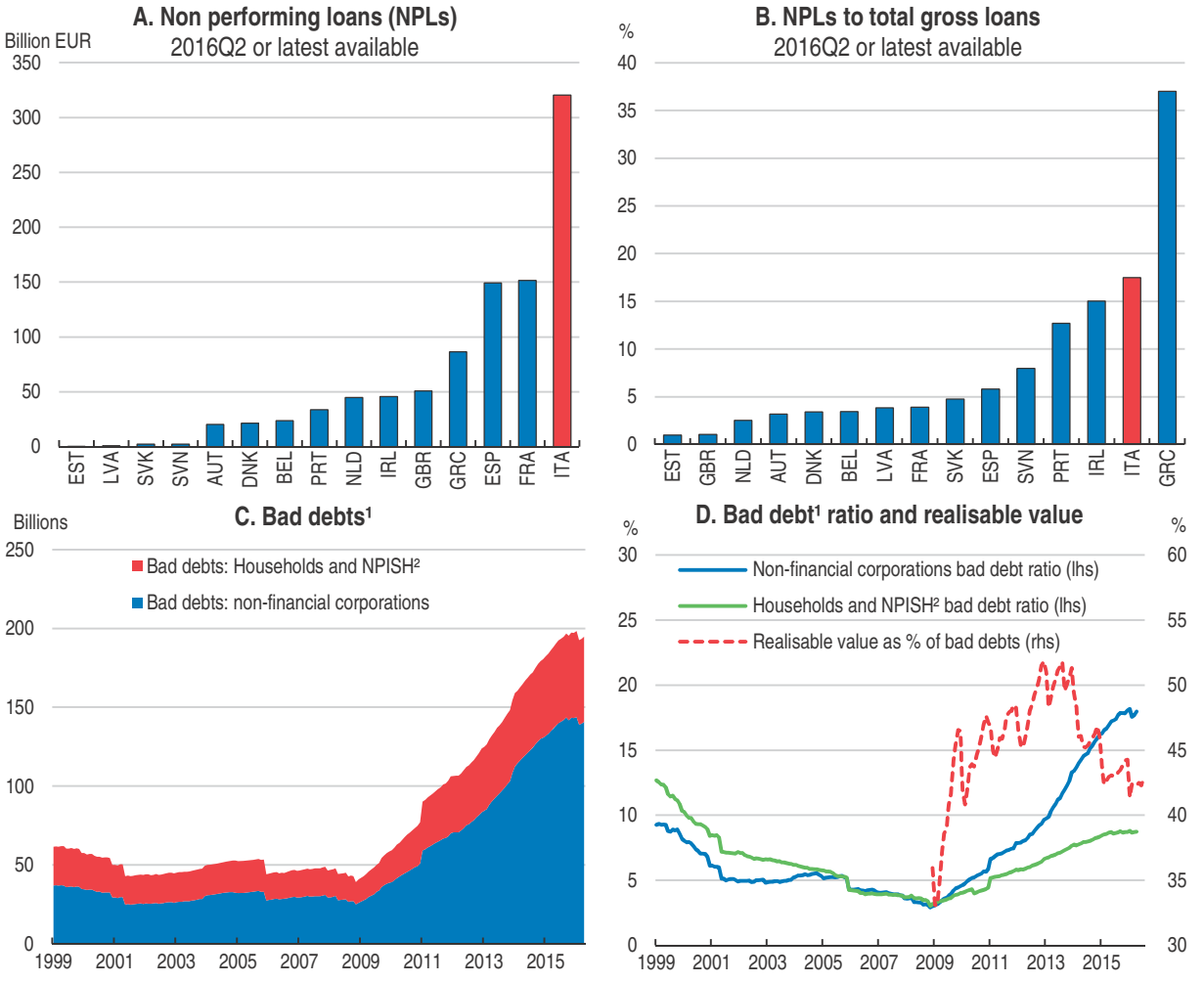
banks, high fragmentation and operating costs that have characterised Italy's banking sector for a long time. For instance, Italy has the fourth largest number of bank branches per 1 000 people, 65% above the EU countries average. Moreover, bank branches are small, employing less than 10 people on average – 63% below the EU average. Overall, this is indicative that there is ample scope to increase efficiency by reducing the number of bank branches.

The government has taken important steps in this area by promoting a new voluntary code of conduct for banking foundations and mandating for mutual banks to consolidate or become joint-stock companies while for large cooperative banks to turn into joint-stock companies. Improving the conduct of banking foundations and lowering their influence over single banks, by diversifying foundation's portfolio, is key to improving banks' performance as banking foundations have often provided a link between banks and local governments, distorting lending and managerial decisions (e.g. Boeri, 2013).

NPLs, net of provisions, amounted to about 90% of banks' capital at end-2015, the second highest highest among EU countries. The gross value of non-performing loans is about EUR 350 billion, representing about 18% of all outstanding loans (Figure 1.19, Panels A and B). The total gross NPLs can be subdivided into: 1) bad loans ("sofferenze"), accounting for about 60% of NPLs (about EUR 200 million); they are the most problematic type of NPLs as they involve loans to insolvent counterparties; and 2) past-due or likely to default loans, amounting to about EUR 150 billion; for them a return to performing status is still possible. The rise in bad loans during the post-crisis period is mostly attributable to the non-financial corporation sector (Figure 1.19, Panel C). In the past years, banks increased loan loss provisions substantially, which reached about 100% of operating profits in 2013-14; as a result the net realisable value of bad loans (i.e. the gross value of bad loans minus provisions) dropped from more than 50% to just above 40% (about EUR 85 billion) (Figure 1.19, Panel D). The net value of bad loans is backed by personal and collateral guarantees with a nominal value of about EUR 120 million.

Figure 1.19. **The stock of non-performing loans is large**



1. Bad debts ("sofferenze") comprise the most risky non-performing loans. The realisable value of bad debt is the gross value of bad debts less provisions already made.
2. Non-Profit Institutions Serving Households.

Source: Thomson Reuters; IMF Financial Soundness Indicators; and Bank of Italy.

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The rise in NPLs in recent years is partly attributable to the unfavourable macroeconomic developments. Yet, Italy's NPL ratios were higher than in other European countries even in the pre-crisis period due to the banking sector's structural challenges highlighted above. The stock of NPLs is weighing on banks' balance sheet and contributing to constraining credit supply, especially towards more risky borrowers such as start-ups and SMEs. NPLs impinge negatively on the credit supply through two main channels: lowering profitability and tying up capital. First, NPLs reduce banks profitability either through higher costs of provisions or lower future income streams. NPLs also hurt banks' profitability by weakening their balance sheet, thus raising risks perceptions, and undermining investors' confidence. Second, because of the higher risk weights on impaired assets, NPLs tie up banks' capital, thus curtailing the supply of new loans to other firms. Illustrative evidence from banks in the euro area reveals that a high ratio of NPLs is associated with lower lending growth, higher funding costs, lower interest income and profitability, and weaker capital buffers (Aiyar et al., 2015a).

Policies to successfully deal with NPLs should be framed around three main pillars: tightening regulatory policies, developing a market for distressed debt and improving insolvency and loan foreclosure procedures (Aiyar et al., 2015a; Liu and Rosenbeg, 2013). The government has taken important steps in these directions by streamlining and accelerating insolvency and foreclosure procedures and attempting to create a distressed debt market. Major initiatives include: shortening the period for tax deductibility of loan losses from 5 years to 1 year, in line with other EU countries; establishing a government guarantee scheme on senior tranches of securitised non-performing loans that is compliant with EU state-aid rule; coordinating the creation of the private-sector fund (Atlante) by a large set of Italian financial institutions to support banks' recapitalisation and invest in securitised non-performing loans; reforming loan foreclosing procedures, which could cut the length of foreclosing procedures from 3 and half years to about 7-8 months. The latter includes the so-called "Marcian Pact", which enables, in case of missed repayments, to transfer a real-estate collateral to the creditor in a simple procedure; if collateral's value exceeds the amount owed, the creditor will reimburse the difference to the debtor. Also, to facilitate the sale and the valuation of collaterals, stamp duties on auction sales of real-estate collateral have been reduced to EUR 200. Finally, "non possessory lien" now allows companies to keep and use the asset given as guarantee.

These are positive developments but there still remains a large gap between the realisable value of bad loans in banks' accounting books and market-based valuations. The large valuation gap stems from the high discount rate investors use for valuing non-performing loans compared to banks due in part to the costly, long and uncertain loan-foreclosure procedures, which raise perceived risks. A survey of the Bank of Italy covering the 2011-14 period (Carpinelli et al., 2016) reveals the average length of loan recoveries was 3.5 years; the average recovery rate was about 40% on average and declining. Some of the government's reforms discussed above aim at accelerating foreclosure procedures. Also, the largest Italian banks have taken steps to improve the management and recovery of NPLs but smaller banks may lack the resources and capacity to do the same.

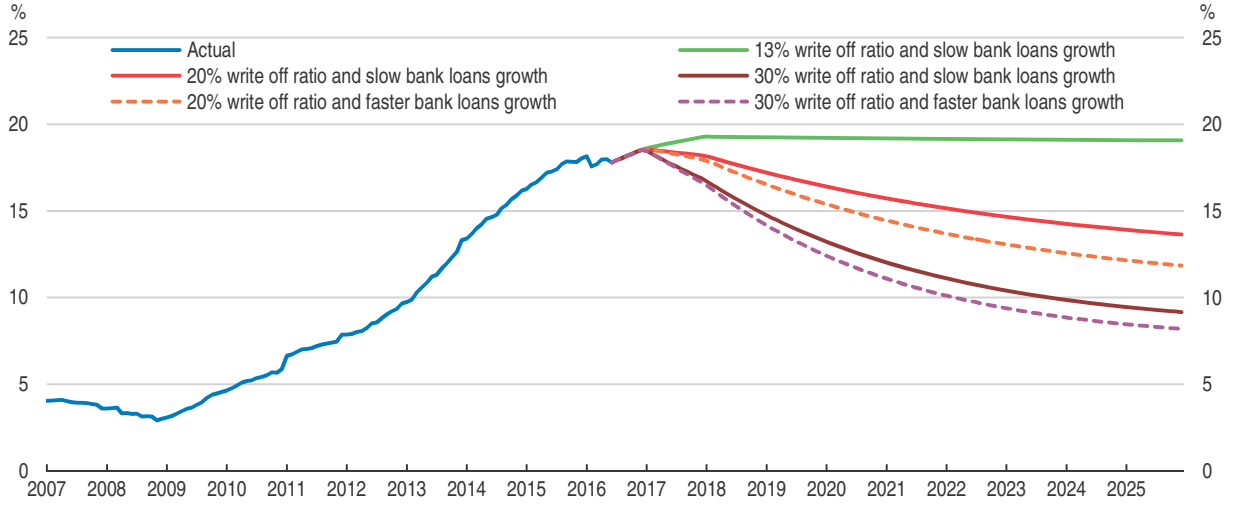
To accelerate the reduction of banks' NPLs and promote the development of a liquid and deep market for them the supervisors could set gradual, bank-specific, credible and time-bound quantitative targets to work out legacy NPLs. This would be consistent with

recently published Draft Guidance to Banks on Non-Performing Loans (ECB, 2016), following which banks, especially those with a large stock of NPLs, should develop a NPLs' reduction strategy, including short-term (1 year) and medium-term (3 years) quantitative targets.

Setting targets is the approach followed in Ireland, after the crisis, and Japan in the late 1990s and early 2000s, which proved successful in reducing the stock of NPLs and creating a distressed debt market. Targets to dispose of NPLs should be bank specific so as to tailor them to the banks' characteristics. Banks with high NPLs should report their strategy and operational plan to the supervisor on a quarterly basis and explain any deviations from them. Non-compliance should trigger supervisory measures such as imposing sales of assets, suspension of dividend payments and reduction of operating costs. Incentives to accelerate the reduction of NPL's could consist of tax incentives linked to NPLs work-out rates. It is urgent to act soon as the return of bad debts to levels comparable to the pre-crisis will take several years even if banks markedly increase the write-off ratio of bad-debts and loans growth accelerates (Figure 1.20).

Figure 1.20. **The decline in bad debts will be gradual**

Bad debts as % of total loan outstanding



Note: The figure depicts the bad debt ratio (bad debts as share of outstanding loans) of the non-financial corporation sector for different write-off ratios of bad debts. The write off ratio of bad debts is computed as the ratio between the value of bad debts written off in a given year and the average stock of bad debts in the same year; the value of bad debts written off is calculated as the value of new write-offs (sourced from ABI-Cerved (2016) for 2015) minus the net change in bad debts. The write-off ratio bad-debts was 12.6% in 2015. The scenario of slow bank loans growth assumes 1% loans growth in 2016, 2% in 2017 and 3% in 2018 and thereafter. The scenario of faster bank loans growth assumes 1% loans growth in 2016, rising progressively to 4% in 2017 and 6% in 2018 and thereafter. All different scenarios assumes a yearly default rate of 3.5% in 2016, 3% in 2017 and 2.5% in 2018 and thereafter.
Source: Bank of Italy and OECD calculations.

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Consistent with ECB's Draft Guidance to Banks on Non-Performing Loans (ECB, 2016), the supervisors should make sure to phase in, from 2018 as currently envisaged, stricter rules relating to write-offs, loan provisions and valuation of collaterals (IFRS9). Under the current International Financial Reporting Standard (IFRS), Italian (and EU) banks follow a backward-looking (incurred-loss) approach to loan provisions, leaving ample room for judgment that can result in insufficient provisions and write-offs. Also, current rules allows for the accrual of interest income from NPLs (as banks keep recording in their books uncollected interest income though the borrower is unlikely to repay either the principal or

the interest of the loan) thus inflating banks' profitability and discouraging the disposal of NPLs. Finally, there is not clear guidance regarding the valuation of collateral. The United States differ in this respect as, according to the GAAP treatment of NPLs, banks are obliged to: 1) suspend the accrual of interest income from NPLs after 90 days past due on payment or if the loan is deemed uncollectable; and 2) write down of NPLs to the collateral value after 6 months, with the collateral value based on the current price and no account for any forecast increase in market valuation. As a result, in the United States banks have recognised loan losses early in the crisis. NPLs peaked at 5% of gross loans in 2009 and have since then declined to below 2%. Importantly, the 6-month write off requirement leads to the gradual disposal of NPLs, thus contributing to the depth and liquidity of the distressed debt market and facilitating price discovery for NPLs. Because of this, in the United States the distressed debt market is significantly larger than in Europe (Altman, 2012; Aiyar et al., 2015a, 2015b).

Attracting foreign capital and catering to investors seeking a higher risk-return profile should support growth and liquidity of a distressed debt market. Developing a liquid market for distressed asset would allow banks to manage and dispose of their NPLs more rapidly and efficiently. According to some industry estimates Italy' distressed debt market is promising and could become one of the largest in the world, given the large stock of NPLs (PWC, 2016a; PWC, 2016b). In 2015 completed loan sales amounted to EUR 17 billion – against EUR 44 and 23 billion in the United Kingdom and Ireland, the two largest markets in Europe – which is still low compared with the stock the NPLs. However, most of these transactions concern unsecured loans as the valuation of collaterals attached to non-financial corporation loans is problematic (ECB, 2016a). Euro area wide efforts to develop a secondary market for non-financial corporation NPLs would also be beneficial (ECB, 2016b).

A liquid market for NPLs would reduce the likelihood of fire sales by banks, which are likely to aggravate the fragility of the banking system, and reduce investment and output (Shleifer and Vishny, 2011); this would contribute to a virtuous cycle, whereby progress in cleaning banks' balance sheets and restructuring distressed borrowers improves confidence, enhances bank profitability and frees up resources to support new lending. Japan provides a good example of how to develop a distressed debt market in relationship banking environment (Box 1.5).

Boosting alternative sources of finance

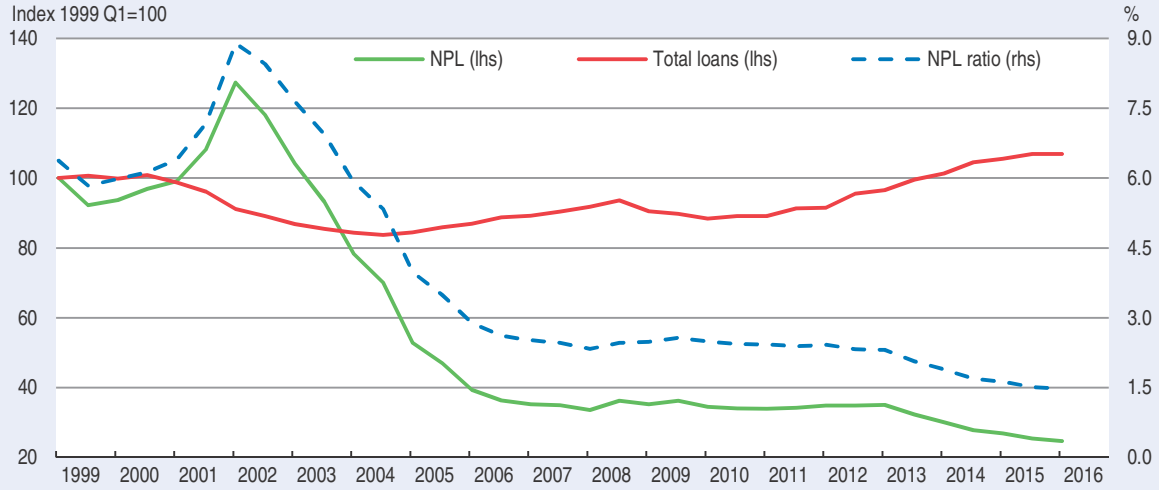
SMEs are the backbone of Italy's economy but along with young companies they face more difficulties in accessing bank credit than large companies. This is due to information asymmetries between lenders and borrowers, which are especially severe for SMEs, start up and young firms (OECD, 2015b; EC, 2014). These information asymmetries can preclude or ration access to credit, in addition to raising its cost, because of higher perceived risks by lenders.

In Italy, non-bank sources of finance are underdeveloped. Bank loans account to about 62% of firms' financial debt. Italy offers few opportunities for equity investment as the stock exchange is small compared with the size of the economy, and the private equity and venture capital industries are also small. Also, the family-based ownership of many SMEs might discourage the entry of outside investors in firms' equity. Firms' controlling stakes benefit from an inheritance-tax exemption, which discourage the sale of equity shares to outside investors and entrenches family ownership (which is often averse to hiring professional managers or adopting modern management practices).

Box 1.5. **The development of a distressed debt market in Japan**

The collapse of the Japanese financial bubble in 1991 lasted for more than 10 years, resulting in plunging asset prices and a rising stock of banks' NPLs. During 1998-2002, the government took decisive measures to create a market for and resolve NPLs. In the subsequent years, the stock of NPLs first increased, as banks were forced to recognise them; afterwards it diminished drastically (Figure 1.21).

Figure 1.21. **Policy measures helped to lower the NPL ratio in Japan**



Source: Thomson Reuters.

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The first step in resolving banks NPLs was to induce banks to sell the collateral provided by distressed SME borrowers so as to create a distressed debt market, focusing initially on collateral. Until the late 1990s, banks had made insufficient provision for NPLs as the assessment of loan losses was largely left to the judgment of individual banks. In addition, banks did not have adequate incentives to make sufficient provisions as they were not allowed to deduct them from taxable income.

In 1998, the Financial Reconstruction Law required banks to classify distressed borrowers more precisely than previously and this played an important role in accelerating NPL disposals. The 1998 Law also created the Resolution and Collection Corporation (RCC) as a government-owned agency (owned by the Deposit Insurance Corporation) by merging two government-owned institutions that had the responsibility of collecting bad loans from failed housing loan companies, banks and credit cooperatives. Consequently, its portfolio initially consisted of real estate collateral on defaulted loans. The 1998 Law also gave RCC the power to purchase distressed assets at fair market value, securitise NPLs, restructure companies and participate in debt-equity swaps, thus accelerating the disposal of NPLs.

In 2001, the Emergency Economic Measures further accelerated the disposal of collateral owned by nonviable SMEs. The measures required major banks to remove NPLs from their books within three years after their recognition by selling them directly to the market, pursuing bankruptcy proceedings, or by rehabilitating borrowers through out-of-court workout procedures. Any remaining loans had to be sold to RCC at fair price. Between 1999 and 2002, the RCC purchased loans worth JPY 55 trillion (USD 495 billion, 10.9% of GDP) at 96% discount. The RCC also improved the transparency of the NPL market by setting standards of disclosure and publishing information on collateral.

In 2002 the government announced the Financial Revitalization Program with the aim to promote corporate debt restructuring for large firms. Authorities tightened loan assessment standards for large borrowers (using market information such as stock prices, credit ratings and discounted cash flow analysis). This led banks to reclassify part of their portfolio as sub-performing and sell such assets in the distressed debt market.

Box 1.5. **The development of a distressed debt market in Japan** *(cont.)*

Overall, these measures resulted in a large increase in banks' NPL write-offs and NPL market transactions, and the distressed debt market evolved. In the mid-1990s, the market was dominated by foreign funds that were able to achieve very high internal rates of return (30-50%) as banks sold collateral linked to NPLs at low prices. As the number of investors (especially Japanese) in the distressed debt market rose and the banks started using auctions, prices increased and the internal rate of return of buyers dropped to single digits. Overall, the process was not painless. The number of failed financial institutions rose progressively during the 1990s to reach 56 in 2001.

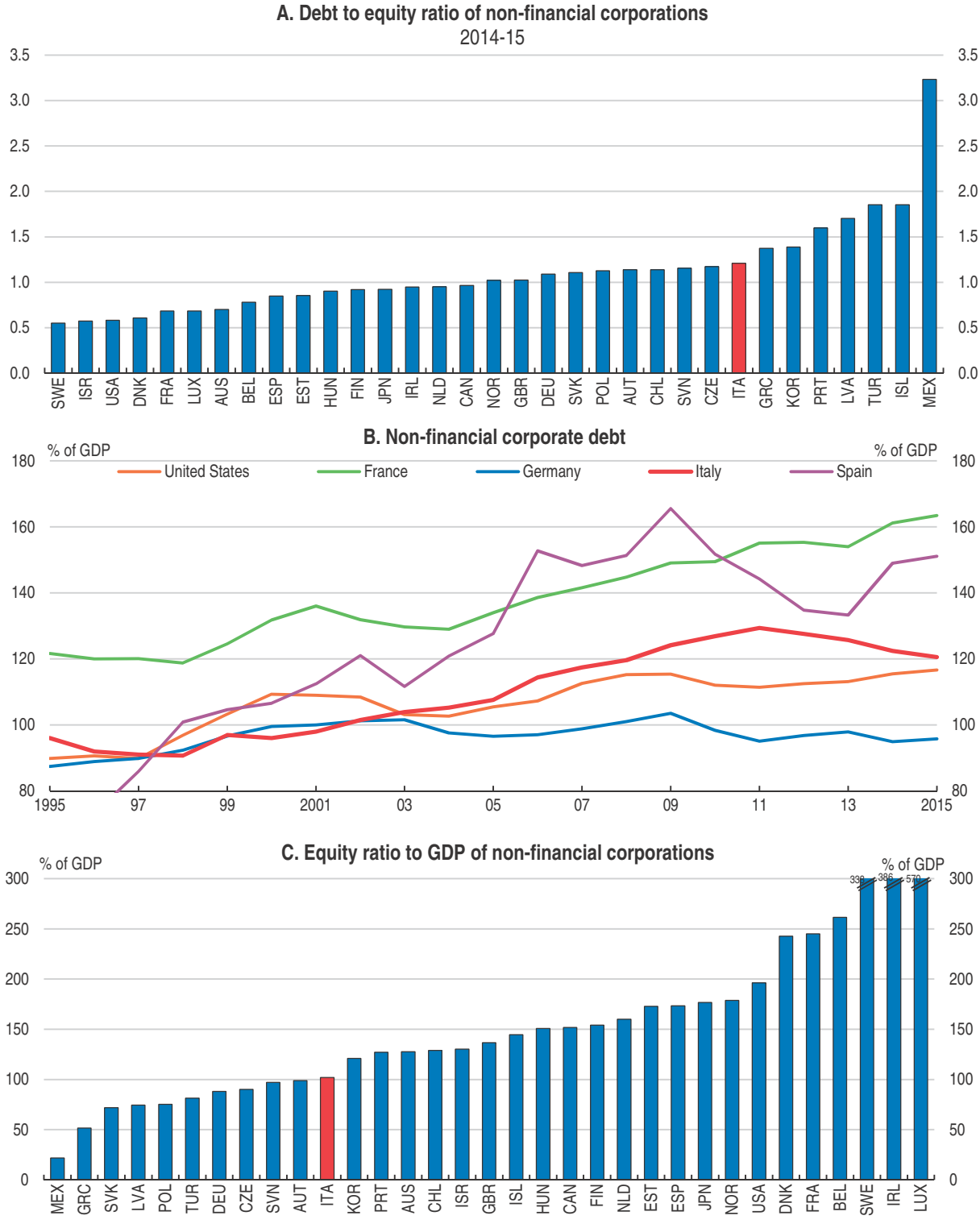
Source: Ohashi, K. and M. Singh (2004), "Japan's Distressed Debt Market", *IMF Working Paper*, No. WP/04/86, IMF; Callen, T. and J.D. Ostry (2003), *Japan's Lost Decade: Policies for Economic Revival*, IMF; Gomi, H. (2007), "Japan Non-Performing Loan Problem and Financial Reconstruction", Paper presented at the Conference *Financial Stability And Financial Sector Supervision: Lessons From The Past Decade And Way Forward*, organised by IMF Regional Office for Asia and the Pacific (OAP), Keio University.

As results, Italian companies are undercapitalised. The debt-to-equity ratio of Italian non-financial corporations has historically been higher than in most OECD countries and increased during the post-crisis period (Figure 1.22). Excessive reliance on debt compared to equity damages firms' long-term investment and growth prospects. Evidence across OECD suggests that during the post-crisis period companies with rising debt to equity ratio had lower productivity growth (OECD, 2016a). Equity capital can indeed provide (along with free cash flow) the long-term perspective that innovative and risky investment requires. Relying excessively on debt can on the contrary blunt management's incentives to invest and innovate as a larger share of the return on investment will accrue to creditors through interest payments.

Basic policy principles to diversify the source of corporate finance away from bank lending towards market-based debt and equity include (OECD, 2015a): the removal of tax incentives that favour debt over equity, the simplification of equity listing rules to encourage initial public offerings, reforms to promote private equity and venture capital industries and a liquid and deep corporate bond markets. In the past years, the government has taken on these issues with the following measures (part of the Finance for Growth and Industry 4.0 plans):

- The process for SMEs' listing in the stock exchange (Alternative Investment Market) has been simplified and the ELITE programme launched to introduce SMEs to capital markets. The notional interest rate applied to the injections of new equity (allowance for corporate equity, ACE) was increased progressively from 3% to 4.75% in 2016. Italy's ACE has contributed to reduce the debt to equity ratio of Italian firms (Panteghini et al., 2012). The 2017 Draft Budgetary Plan lowers this rate to 2.3% (from 2.7%) in line with market interest rates.
- Tax advantages and streamlined procedures to issue bonds by unlisted SMEs (minibonds) have been introduced. Due to their inherent characteristics (small size, lack of ratings, etc.) SMEs are normally ill-equipped to tap corporate bond markets (Nassr and Wehinger, 2015). Italian SMEs have traditionally made little or no use of the corporate bond market due to demand and supply factors: potential investors have little or no information on issuers and emissions involve high fixed costs. Also, unlike its peers, Italy lacks a mass of intermediaries specialising in the placement and underwriting of corporate bonds (Bank of Italy, 2016). The crisis has exacerbated these problems as in its aftermath the number of small issuers decreased (Accornero et al., 2015). The new

Figure 1.22. **Debt equity ratio of non-financial corporations is high because of low equity**



Note: The debt to equity ratio measures the extent to which firms finance their activities out of their own funds. The higher (lower) the ratio, the higher (lower) the leverage and the greater is the risk for firms' creditors.
Source: *OECD Financial Statistics Database*; and *OECD National Accounts Database*.

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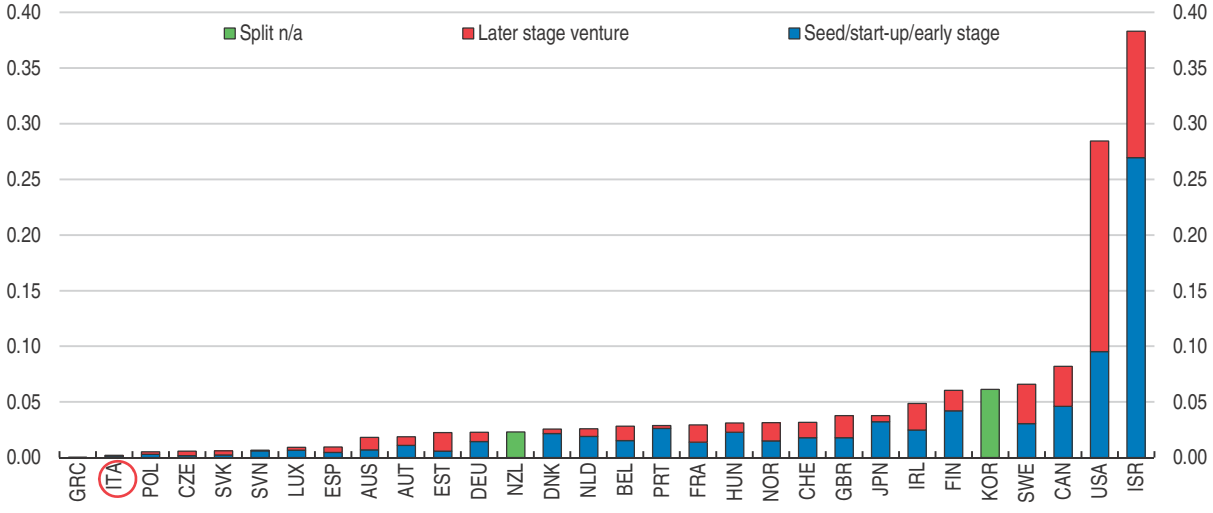
regulatory regime for minibonds seems to have inverted these trends. Thus far more than 220 minibonds have been issued for a face value close to EUR 8.6 billion and a number of specialised investment funds have started to operate.

- Venture capital is severely underdeveloped in Italy (Figure 1.23). To develop a venture capital industry the government has recently established a fund (Invitalia Venture) to co-invest with national and international private investors in highly innovative start-ups and SMEs. As at May 2015 the fund had a capital of EUR 65 million (EUR 50 million provided by the state). This development is consistent with practices in other OECD countries where government co-investment with private partners and fund-of-funds have replaced direct public investment (Wilson, 2015). The literature has underlined the important role that direct public investment in innovative start-ups and SMEs, if managed on strict selection investment criteria and in partnerships with private investors, can play in the development of a private-sector venture capital industry (Jeng and Wells, 2000; Lerner, 1999; Cumming 2007). The Israeli venture capital industry was built through government funding (Box 1.6). The development of the stock and private equity markets are also important as they provide venture capitals with a way to exit and monetise their investments (e.g. Black and Gilson, 1998; Jeng and Wells, 2000; Wilson, 2015; Nassr and Wehinger, 2016).
- Incentives for start-ups and innovative SMEs include the opportunity for firms to sponsor start-ups (up to 5 year-old firms) by buying their fiscal losses. The listed firm must own at least 20% of the start-up. Also investors in innovative startups and SMEs benefit from a tax credit of 30% of the invested capital in start-ups and innovative SMEs.
- Individual Saving Plans (*Piani Individuali di Risparmio*) are similar to Individual Saving Accounts as for retail investors they are exempted from capital gain taxes; funds must invest 70% of their resources in instruments issued by EU companies having a stable organisation in Italy.

Figure 1.23. **The venture capital industry is underdeveloped**

% of GDP, 2014 or latest available year



Source: OECD (2015), *Entrepreneurship at a Glance 2015*, OECD Publishing, Paris.

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Box 1.6. **The Yozma Fund and the origins of the Israeli venture capital industry**

The origins of the Israeli venture capital industry lie in a government initiative in 1993 that created the YOZMA Venture Fund. Public investment in the Fund was used to leverage foreign private investment in Israeli companies. YOZMA was accompanied by equity guarantees for foreign investors, programmes to link Israeli firms with foreign business angels and to encourage exits of Israeli venture firms on foreign stock exchanges.

The Israeli government invested USD 100 million at the outset to launch the Fund, which was given the objective of investing in 10 new private venture capital funds. Each fund was required to have three types of partners: nacnet domestic venture capitalists, a foreign venture capital firm, and an Israeli investment company or bank. The objective was to attract financing in Israeli companies and nurturing a domestic private venture capital industry by offering matched co-financing at a rate of 50-50, with the obligation to invest in start-up and early-stage companies in Israel. The ten hybrid public/private funds were with around USD 20 million. The government retained a 40% equity stake in the funds, which the private partners had the option to buy out after five years if the fund was successful. This was a particularly attractive deal for foreign venture capital firms and provided an exit strategy for the government. The buy-out option was exercised in most cases, leading to the privatisation of the venture capital funds. The government also created an additional fund of USD 20 million through which it could invest directly in Israeli technology ventures.

The funds were mainly invested in the ICT and life science/biotechnology companies. Initial individual investments typically ranged between USD 1 million and USD 6 million. With the backing of prominent American, European and Israeli investors, YOZMA launched its second fund in 1995. Investment decisions were mainly taken by the international partners.

The YOZMA initiative also developed close working relationships with several of the leading academic institutions and technology incubators in Israel. Some of the most promising companies in the YOZMA portfolio were spin-offs from these institutions. By 2000, The private sector accounted for almost all of the venture capital investments in Israel. This allowed the government to phase out in the late 1990s both the YOZMA equity programmes and the equity guarantees.

Source: OECD (2016b), *SME and Entrepreneurship Policy in Israel 2016*, OECD Publishing, Paris, *http://dx.doi.org/10.1787/9789264262324-en*; Baygan (2003), "Venture capital policies: Israel", *STI Working Paper*, No. 2003/3, OECD Publishing, Paris.

These initiatives go in the right direction and results have been encouraging although insufficient so far to revive investment and innovation. To produce long-lasting results and contribute to change the financial structure of the Italian economy, the government should ensure the continuity of these measures over the medium to long term. Also, the government should avoid targeting measures to specific geographic areas; these policies need address specific market failures and therefore should specifically target start-ups and innovative SMEs irrespective of their location.

Policy recommendations

Speeding up insolvency procedures

- Reform the bankruptcy legislation in an organic and comprehensive way as envisaged by the enabling law being discussed by parliament.
- Use debt-equity swaps more frequently by forcing creditors to share the burden for firms restructuring.

Enhancing competition and improving regulation

- Approve the competition law being discussed by parliament.
- Approve and fully implement the public administration reform to open up to competition local public services.
- Make more extensive and better use of regulatory impact analyses, especially by engaging with stakeholders in *ex ante* consultative processes.

Encouraging innovation

- Increase as planned the share or research funding allocated through competitive procedures; publish clear guidelines to allocate research funds to universities and public research institutes based on research assessment.
- Evaluate the effectiveness of recently introduced research and development tax credits and other fiscal incentives in terms of innovation outcomes and forgone tax receipts.

Addressing bank lending constraints

- Continue to develop the secondary market for NPLs.
- As envisaged by the European Supervisory Mechanism, set gradual and bank-specific targets to reduce non-performing loans, backed up by sanctions such as additional provisioning, sales of assets, suspension of dividend payments and restructuring banks operations.
- Set clear guidelines for the valuation of collateral.

Boosting alternative sources of finance

- Foster the development of the venture capital industry by leveraging private funds and expertise.
- Maintain current policies to diversify sources of business finance, especially for SMEs such as allowance for corporate equity, the tax advantages and streamlined procedures to issue bonds by unlisted SMEs (minibonds).

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Chapter 2

Enhancing employability and skills to meet labour market needs

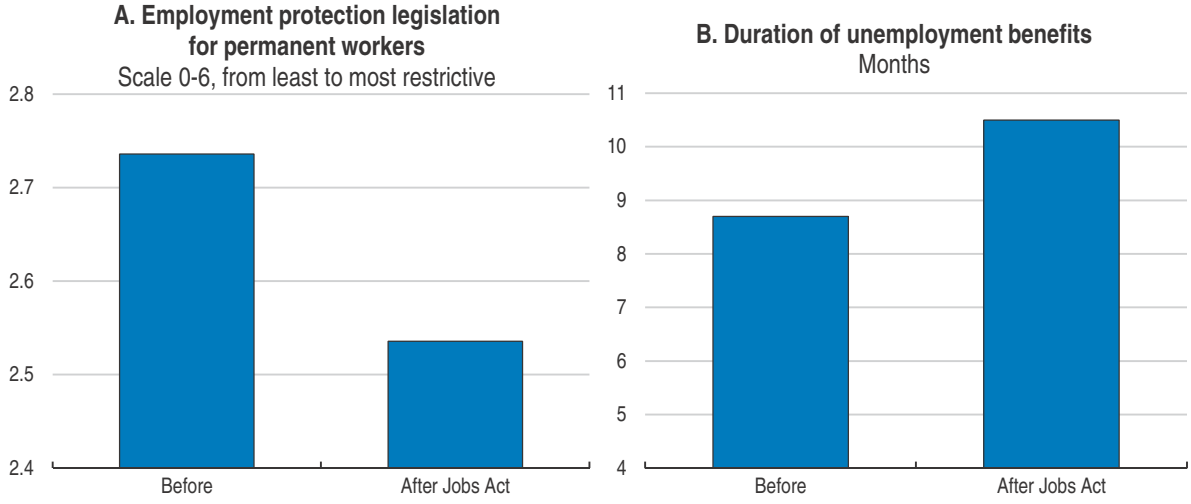
The various deficiencies of the labour market and the educational system have resulted in high unemployment, low labour force participation, low skills levels and high skill mismatch. Job creation is key to tackling the high unemployment rates, especially for the young and long-term unemployed. Promoting jobs without paying attention to their quality and to the skills required by employers may have adverse impact on welfare and productivity. The Jobs Act and Good School ("Buona Scuola"), two major reforms of the labour market and the educational system, are good steps in the right direction. The Jobs Act and the temporary social security contribution exemptions have contributed to raise employment. By strengthening job search and training policies, the Jobs Act can enhance jobseekers' employability. Increasing the effectiveness of public employment services, given the low spending level, remains a challenge. The Good School reform has the potential to improve school outcomes and provide more aligned skills to the job market. Increasing employability by upgrading skills that match employer needs remains a priority. Business involvement in education and training institutions at all educational levels will be paramount to ensure the provision of relevant skills, the availability of traineeship and apprenticeship places and provide on-the-job training. The adaptability of skills could be encouraged by lowering barriers to labour mobility and boosting work-based learning.

The statistical data for Israel are supplied by and under the responsibility of the relevant Israeli authorities. The use of such data by the OECD is without prejudice to the status of the Golan Heights, East Jerusalem and Israeli settlements in the West Bank under the terms of international law.

The Italian labour market faces several challenges: increasing employment levels, especially for women and youth, enhancing skills to meet labour market needs and reducing regional disparities. Unemployment has started decreasing but is still high compared to other OECD countries, especially among youth. Long-term unemployed represents a high share of those without a job. Despite recent progress, labour force participation is still low, notably among women and in southern regions. The duality of the labour market, with some workers benefiting from stringent protection legislation and others having precarious or less protected jobs, has led to increased inefficiency and inequality. The mismatch between the supply and demand of skills is significant and under-skilling is particularly worrisome, highlighting not only a disconnection between the available and needed skills in the job market, but also a low level of available skills.

The government introduced and is implementing two major reforms in the labour market and the educational system – the Jobs Act and the Good School. The Jobs Act aims at tackling labour-market duality, increasing flexibility while strengthening job search and training policies. The Jobs Act has brought Italy closer to a "flexicurity" approach (Figure 2.1), by enhancing, at the same time, flexibility and security in the labour market. The Jobs Act together with social security contribution exemptions have contributed to raise employment. The *Good School* reform seeks to improve education outcomes and skills of the Italian workforce by increasing autonomy of school governance, giving incentives to teachers for career development, fostering digitalisation, and strengthening the link between school and work.

Figure 2.1. **The Jobs Act has made the labour market more flexible and improved the unemployment benefit system**



Notes: After Jobs Act refers to year 2015. Panel A shows employment protection legislation for permanent workers against individual dismissals, preliminary estimations made by the OECD for the purpose of this survey. Duration of unemployment benefits is calculated by INPS (2016).
Source: OECD calculations and INPS 2016.

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A fully implemented Jobs Act and Good School could increase employability of the Italian workforce by increasing the efficient allocation of skills and upgrading the skills of Italians, matching them to the employer's needs. The reforms can promote more and better quality jobs, and improve the distribution of the benefits of growth. The measures will help to boost long-term labour productivity associated with better labour outcomes and efficient allocation. This chapter assesses how well the government's reforms of the labour market and educational system tackle labour market challenges and what further measures are necessary.

The Italian labour market faces several challenges

Unemployment rates are still high and participation rates are low, especially for women and the South

The unemployment rate started falling in 2015, but is the fourth highest in the OECD (Figure 2.2). The young suffer the most, with nearly 40% of the economically active young population being unemployed. Unemployment spells of more than one year represented 60% of total unemployment (Figure 2.2, Panel C). The crisis has widen disparities for the most disadvantaged demographic groups. Individuals living in the south of the country, young and less educated saw their situation disproportionately worsen compared to other groups (Adda and Triggari, 2016).

Young entering the labour market in Italy may have to wait a long time before getting an employment. Italy has the second highest proportion of young people not in education, employment or training in the OECD (Figure 2.3). More than 30% of young people between 15 and 29 years old spend more than a year not in education and unemployed or inactive, one of the highest waiting times among OECD countries (OECD, 2016f). There is also a wide gap between the north and south of the country (Figure 2.3).

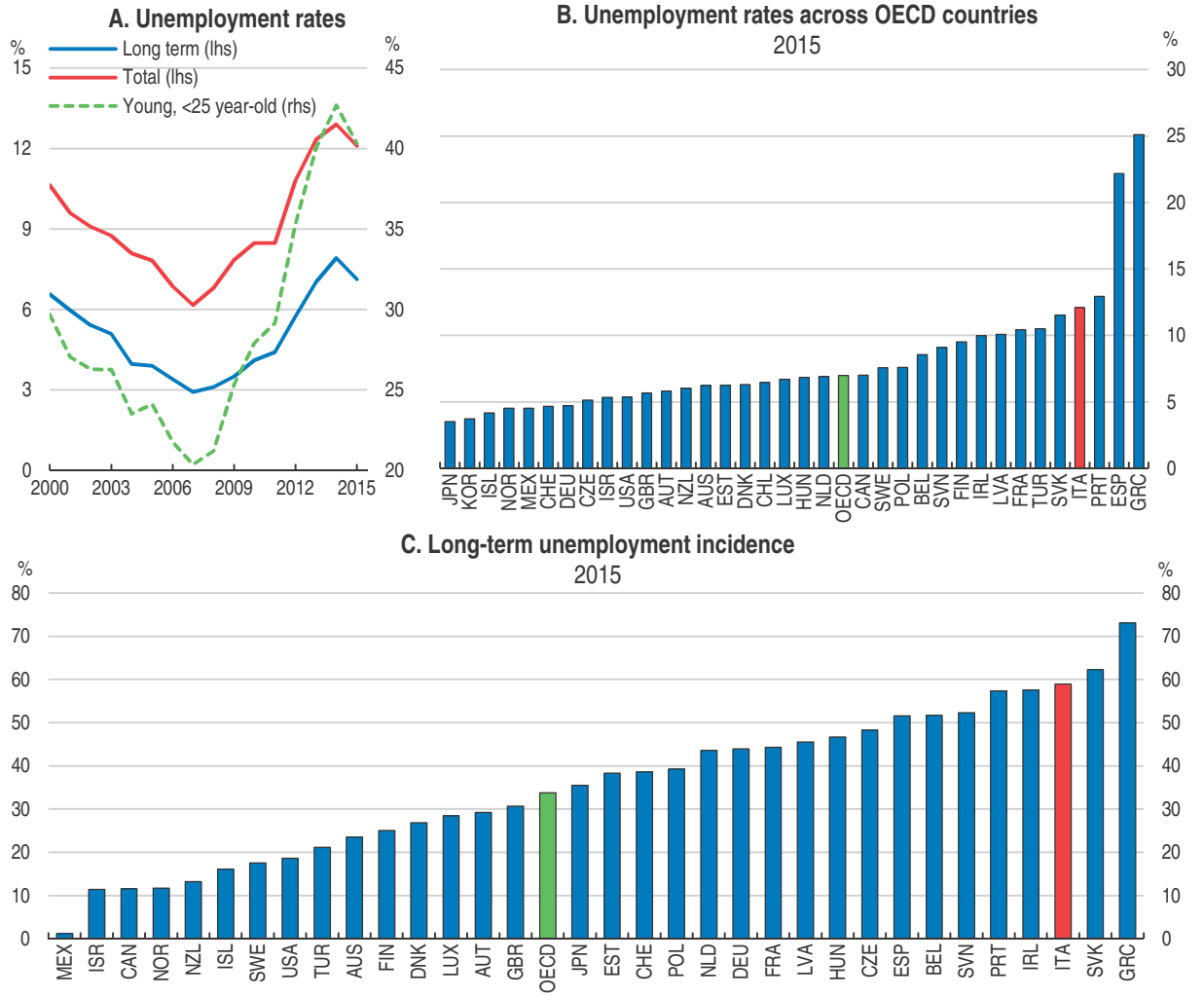
Non-participation rates for Italian women are the third highest in European countries, being especially high in southern regions where non-participation rates are larger than 50% (Figure 2.4). This is strongly influenced by social norms, including responsibility for caring for children or older family members. Only 24% of Italian children up to three years old are enrolled in formal childcare, against the OECD average of 33%. The government recently took measures to support female employment by increasing child care facilities, work-life balance and introducing a tax credit for low-income working mothers. However, measures to increase services for the elderly and making the tax system more second-earner supportive are necessary to boost female employment rates.

A large share of the working age population encounters labour-market difficulties (40% of the 18-64 years-olds which are not in full-time education). Employability barriers are related to insufficient work-related capabilities, lack of financial incentives to look for a job (such as, low potential pay or relatively generous out-of-work benefits) or scarce job opportunities (Browne et al., 2016). The most common problems include low education and low professional skills, each faced by at least half of the out of work or with weak labour market attachment, highlighting the need for skills-upgrading.

High labour market duality

Stringent employment protection for permanent jobs accompanied by low protection for temporary ones has resulted in a dual labour market. The percentage of temporary workers in Italy is high, compared to the OECD average (Figure 2.5). The majority of young people, including the highly-educated, hold temporary contracts – 60% of these contracts are

Figure 2.2. **Unemployment rates are decreasing, but are still high, especially for youth and the long-term unemployed**



Note: Total refers to age 15-64. Long-term unemployment is defined as unemployment lasting 12 months or more.
Source: *OECD Labour Force Statistics Database*, June 2016.

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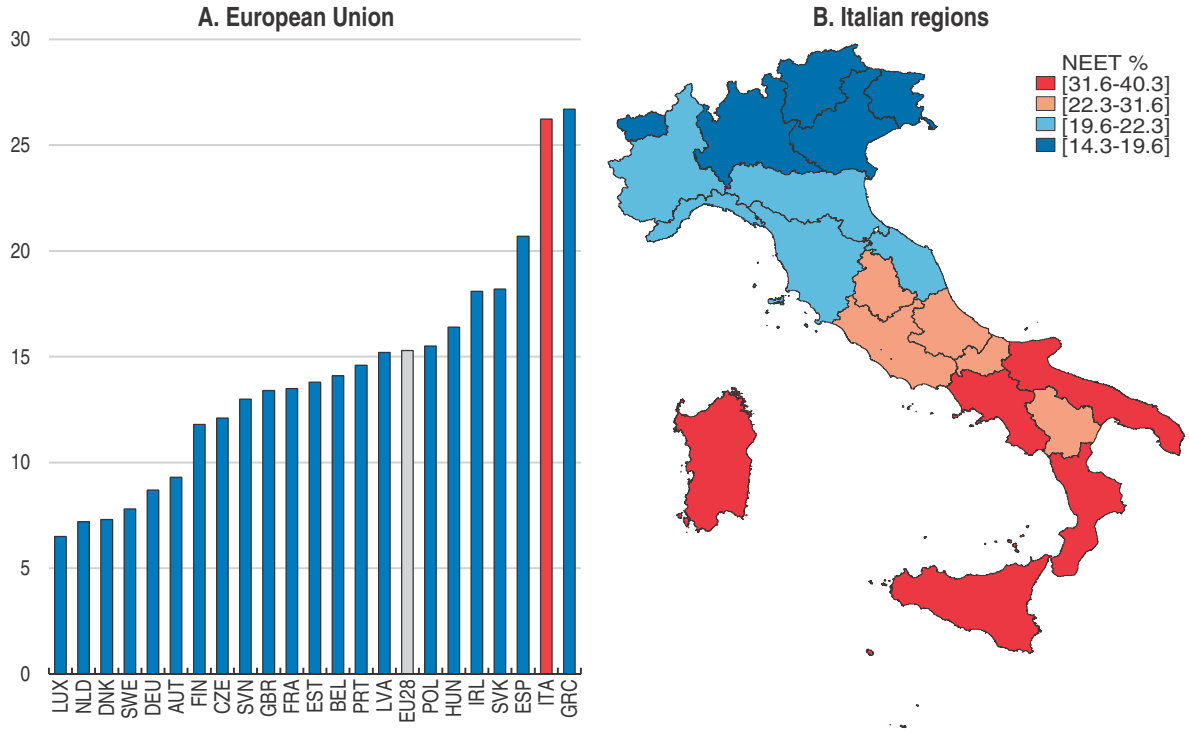
held by workers aged 15-24. Temporary workers typically face a wage penalty, weaker earnings growth, lower job stability, and they suffer from high job strain (OECD, 2015c and Hijzen and Menyhert, 2016). 70% of job creation took the form of temporary contracts in 2014 according to INPS data, the National Institute of Social Security, and transitions from temporary to permanent status are limited (Figure 2.5, Panel B). This implies that temporary contracts are not used as port of entry to permanent contracts, but as an alternative form of employment used by employers to increase flexibility (Berton et al., 2011).

Skills of Italian workers lag behind

The skill level of Italians is lagging behind other OECD countries and the regional variation in literacy proficiency is very large. The mean level of Italian literacy skills is well-below the average (Figure 2.6). Similar results are found using numeracy proficiency.

Figure 2.3. **Too many young in Italy do not work or participate in training or study**

Share of population aged 15-29 who were neither in employment nor in education or training (NEET) in 2014



Notes: Colours in the map represent quartiles of the share of the NEET distribution, red being the highest quartile and dark blue the lowest quartile.

Source: ISTAT, *NOI-Italia Database 2016*.

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Centre and northern Italian regions tend to outperform southern regions in Italy, but fall below the average. The exception is tertiary educated Italians in the northern and central regions, which perform similarly to the average in other OECD countries.

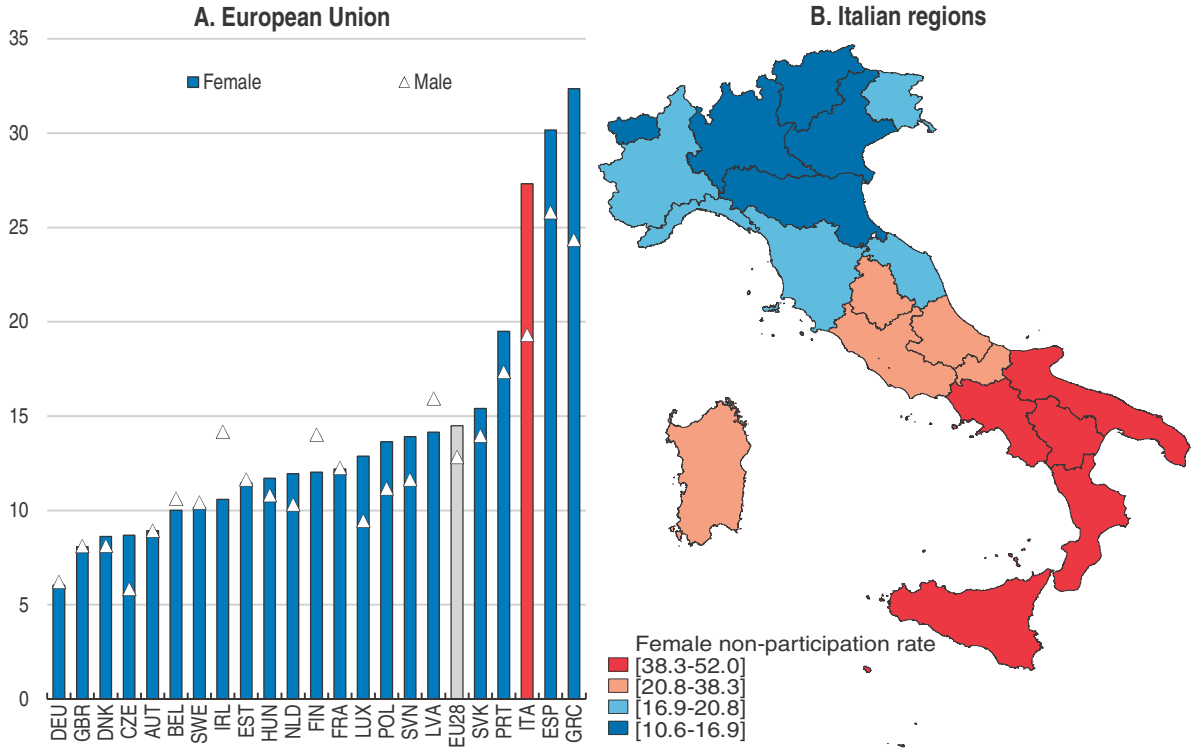
Low levels of skills are an obstacle to higher productivity and material living standards, which are low relative to OECD or other European countries. Education, training, and lifelong learning foster a virtuous circle of higher productivity and more employment, which improves the quality of life, boosts income growth and reduces income inequality as higher education and skills are a prerequisite of better employment opportunities. Raising skills should be a priority, but the available skills must match employer needs, because high and persistent skill mismatches are costly for employers, workers and the society.

Skill mismatch is widespread

Skill mismatch is pervasive in Italy. Skill mismatch emerges when workers are over-skilled for their current jobs as they are not able to fully utilise their skills and abilities in the job; or when they are under-skilled for their current jobs – they lack the skills normally needed for their job. The OECD Survey of Adults Skills (PIAAC) shows that around 12% of Italian workers are over-skilled and 8% are, under-skilled (Figure 2.7). Both measures are above OECD averages which are 10% and 4%, respectively.

Figure 2.4. **Non-participation rates are especially high for women and in southern regions**

Population aged 15-74 unemployed and inactive not searching for work but able to work as percentage of total population



Notes: Colours in the map represent the quartiles of the female non-participation rates distribution, red being the highest quartile and dark blue the lowest quartile.

Source: ISTAT, *NOI-Italia Database 2016*.

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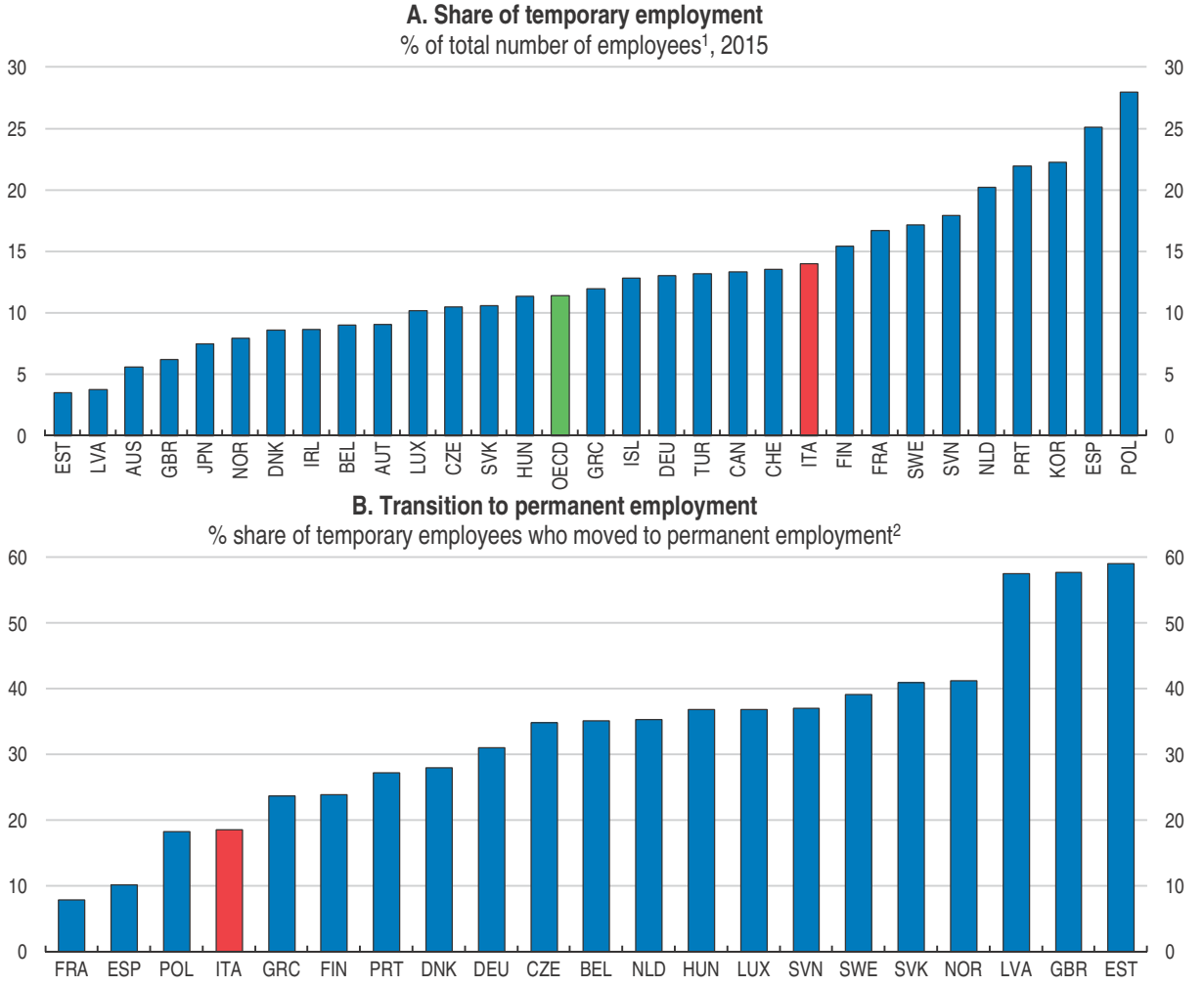
Under-skilling is worrisome in Italy, being one of the highest across the countries participating in PIAAC. This highlights not only a disconnection between the available and needed skills in the job market, but also the low level of available skills. High shares of under-skilled workers are associated with low levels of proficiency (Figure 2.8).

Qualification mismatch is also high in Italy (Figure 2.9). PIAAC data shows that 13% of Italian workers report having higher qualifications than those required for their jobs – i.e. over-qualified – while 22% of workers have jobs where the required qualifications are lower – i.e. under-qualified. While the share of over-qualified workers is the lowest among OECD countries, the share of under-qualified workers is the highest.

Skill mismatch is heterogeneous across Italian regions. Southern regions in Italy tend to have a higher incidence of under-skilled workers, while in the North there is a higher share of workers that are over-skilled (Figure 2.10, Panel A). This happens even if the share of skill-mismatched workers in the South is lower than in the rest of the country, mainly because of a smaller share of over-skilling in that region (Figure 2.10, Panel B). Qualification mismatch is widespread across the country, with workers in the different regions having similar probabilities of being over-qualified. Workers in the South have higher probability of being under-qualified.

Figure 2.5. **The share of temporary contracts is high and the transition rate to permanent contracts low**



1. Data refer to those aged 15 years and over.
2. 2014 for Belgium, the Czech Republic, Estonia, France, Germany, Greece, Italy, Luxembourg, Norway, Poland, Slovenia, Sweden, the United Kingdom and the EU28 aggregate. 2013 for Denmark and Iceland. 2012 for the Slovak Republic.

Source: OECD Labour Force Statistics Database, June 2016; Eurostat 2016 and EU-SILC.

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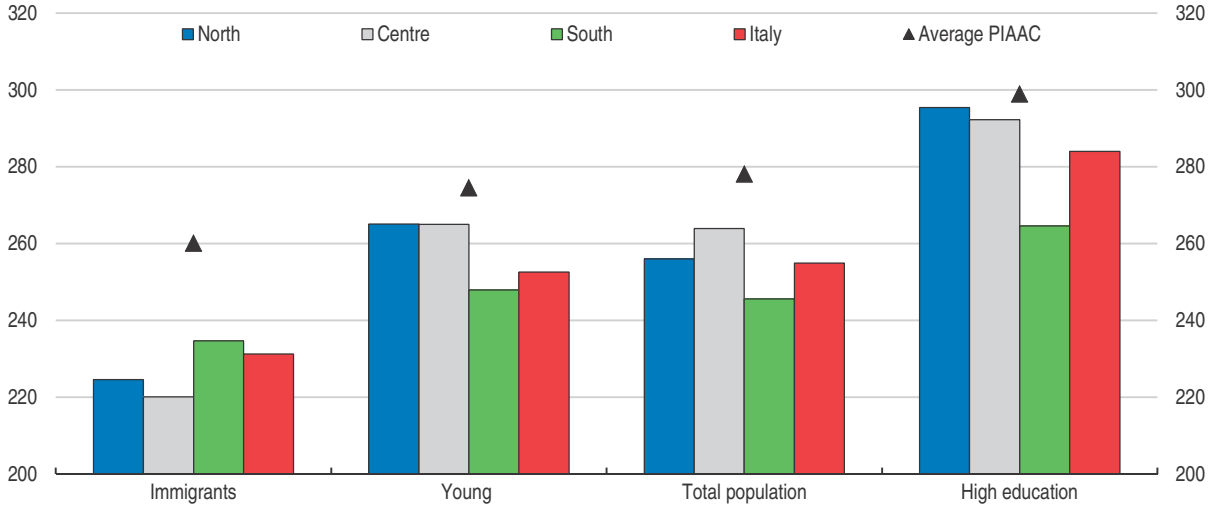
The regional disparity has very different implications. While under-skilling is a reflection of low levels of skills in the workforce; over-skilling highlights a productive structure with weak demand of highly qualified workers compared with the skills supplied by the educational system.

Skill mismatches, under or over-skilling, require policies to enhance the efficiency of skill allocation by fostering labour mobility and to make the education and training system more responsive to labour market needs. Other reforms to tackle over or under-skilling are different in nature. In order to tackle under-skilling educational reforms aiming at raising skills levels that match employer's demands are needed.

Tackling over-skilling calls for demand-side policies to encourage businesses move into higher value added products, such as innovation incentives and knowledge-based economic development strategies (Chapter 1), to increase the demand for high-skilled jobs.

Figure 2.6. **Skills of Italians lag behind those of people in other OECD countries**

Average literacy score-points by socio-demographic groups



Notes: The data shows the average literacy proficiency score for each socio-demographic group. Young: 16-34 year-olds; Immigration refers to first-generation immigrants (foreign-born and foreign language) and second-generation immigrants (native-born and foreign language); High education is tertiary education. North: Piedmont, Lombardi and Liguria, Provincia Autonoma Di Bolzano-Bozen, Provincia Autonoma Di Trento, Veneto, Friuli-Venezia Giulia and Emilia-Romagna. Centre: Toscana, Umbria, Marche and Lazio. South: Abruzzo, Molise, Campania, Puglia, Basilicata, Calabria, Sicilia and Sardegna. Regions with less than 30 observations are excluded. 22 OECD countries participated in the OECD Programme for the International Assessment of Adult Competencies (PIAAC). See Box 2.1 for a definition of skills.

Source: OECD calculations using Survey of Adults Skills (PIAAC) 2012.

StatLink http://dx.doi.org/10.1787/888933454438

Enhancing the working environment and making wages more flexible would also allow a better match of supply and demand of skills by better rewarding highly skilled workers. All these policies could help reduce the high share of highly educated young Italians who choose to emigrate.

The faces of skill mismatch

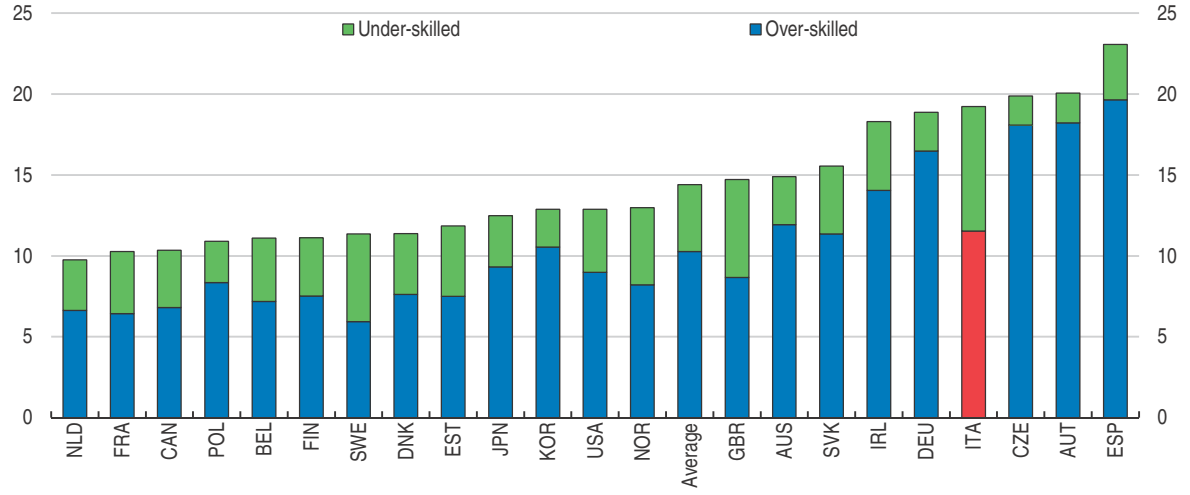
Young and more educated people have a higher probability of being over-skilled or over-qualified (Figure 2.11). Having achieved upper-secondary or tertiary education implies being 15% more likely over-skilled or over-qualified compared to lower educated peers (See Box 2.2 for detailed results). This highlights an educational system that does not provide the skills actually required by the enterprises, together with a production structure characterised by low demand for highly skilled workers.

Workers holding permanent contracts have a lower probability of being under-qualified and higher probability of being over-qualified (Figure 2.11). This could reflect that workers in order to obtain permanent contracts sacrifice jobs that better match their own qualifications. Being a migrant worker increases the probability of being under-skilled and over-qualified. This is probably related to underperforming in a foreign language which also implies working in jobs that require a lower qualification.

Industries such as knowledge intensive business services (KIBS) and high-technological manufacturing tend to have less over-qualified and more under-qualified workers than traditional services and low-technological manufacturing (Figure 2.11). This finding is probably related to the presence of skills shortages in these industries.

Figure 2.7. **The level of skill mismatch is high**

% of over- and under-skilled workers in literacy, 2012

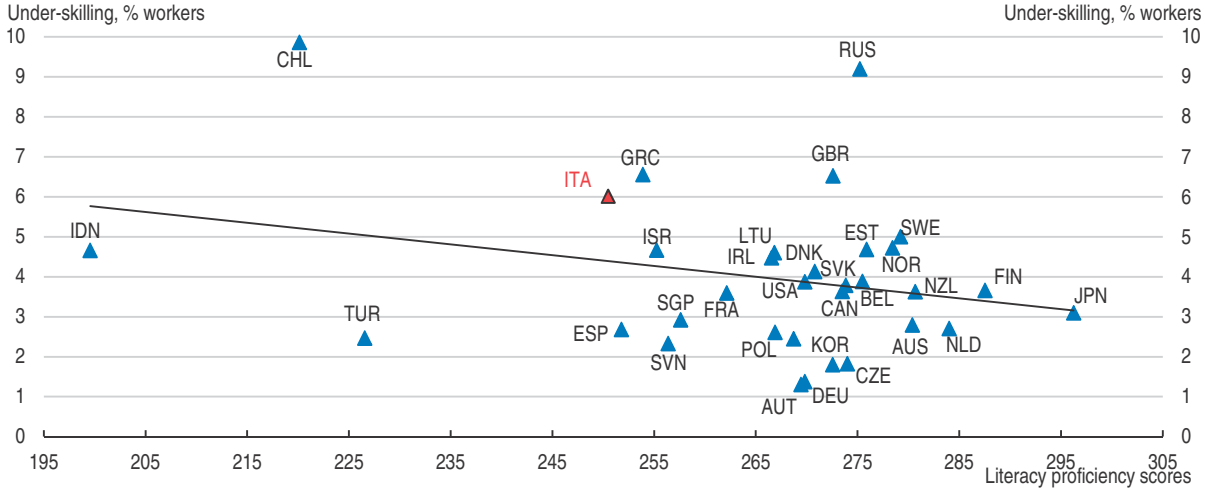


Note: Data for United Kingdom corresponds to England and Northern Ireland. Data for Belgium corresponds to Flemish Community. Over-skilled workers are those whose proficiency score is higher than that corresponding to the defined maximum threshold of self-reported well-matched workers – i.e. workers who neither feel they have the skills to perform a more demanding job nor feel the need of further training in order to be able to perform their current jobs satisfactorily – in their occupation. Under-skilled workers are those whose proficiency score is lower than that corresponding to the defined minimum threshold of self-reported well-matched workers in their country and occupation. Ten different thresholds are used to define the maximum and minimum thresholds. The maximum thresholds are defined from the 90th to the 99th percentile. The minimum thresholds are defined from the 1st to the 10th percentile. The share of mismatched workers is then the average of the share of mismatched workers across the 10 different thresholds. Countries are ranked in ascending order of the percentage of workers over-skilled in literacy.

Source: OECD calculations using Survey of Adults Skills (PIAAC) 2012.

StatLink http://dx.doi.org/10.1787/888933454188

Figure 2.8. **High share of under-skilling is associated with low skill levels**



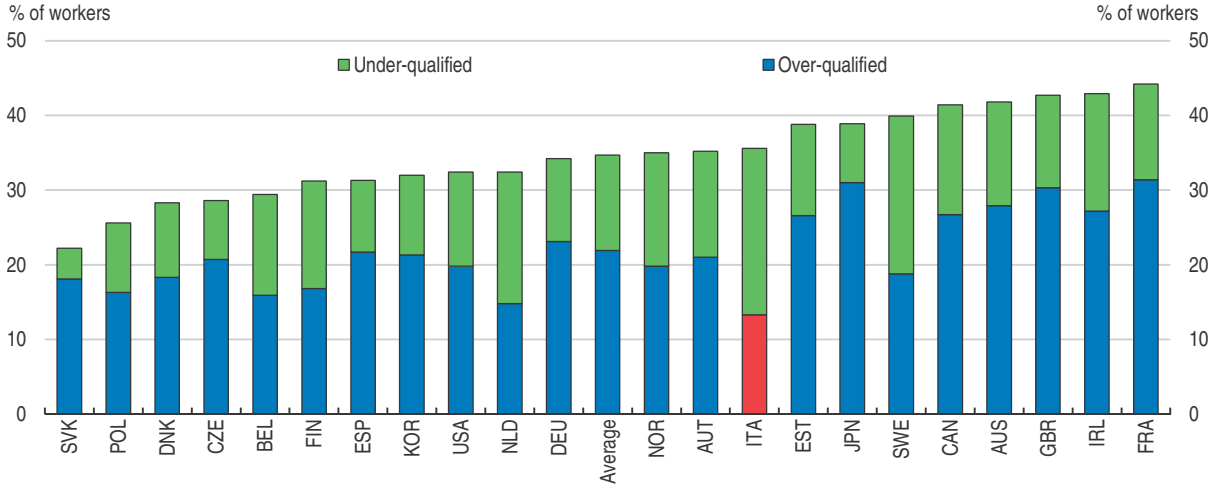
Note: Data for the United Kingdom corresponds to England and Northern Ireland. Data for Belgium corresponds to the Flemish Community. Data for Indonesia corresponds to Jakarta. Correlation between under-skilling and proficiency scores is -0.3 significant at the 10% level.

Source: OECD (2016), *Skills Matter: Further Results from the Survey of Adult Skills*.

StatLink http://dx.doi.org/10.1787/888933454447

Figure 2.9. **The share of under-qualified workers is the highest among OECD countries**

Percentage of workers over- and under-qualified



Notes: Data for the United Kingdom corresponds to England and Northern Ireland. Data for Belgium corresponds to the Flemish Community. Over- (under-) qualified workers are defined as those whose highest qualification is higher (lower) than the qualification they deem necessary to get their job today. See Box 2.1 for the definition of mismatches.
Source: OECD calculations using Survey of Adults Skills (PIAAC) 2012.

StatLink http://dx.doi.org/10.1787/888933454450

Skill mismatch harms productivity and well-being

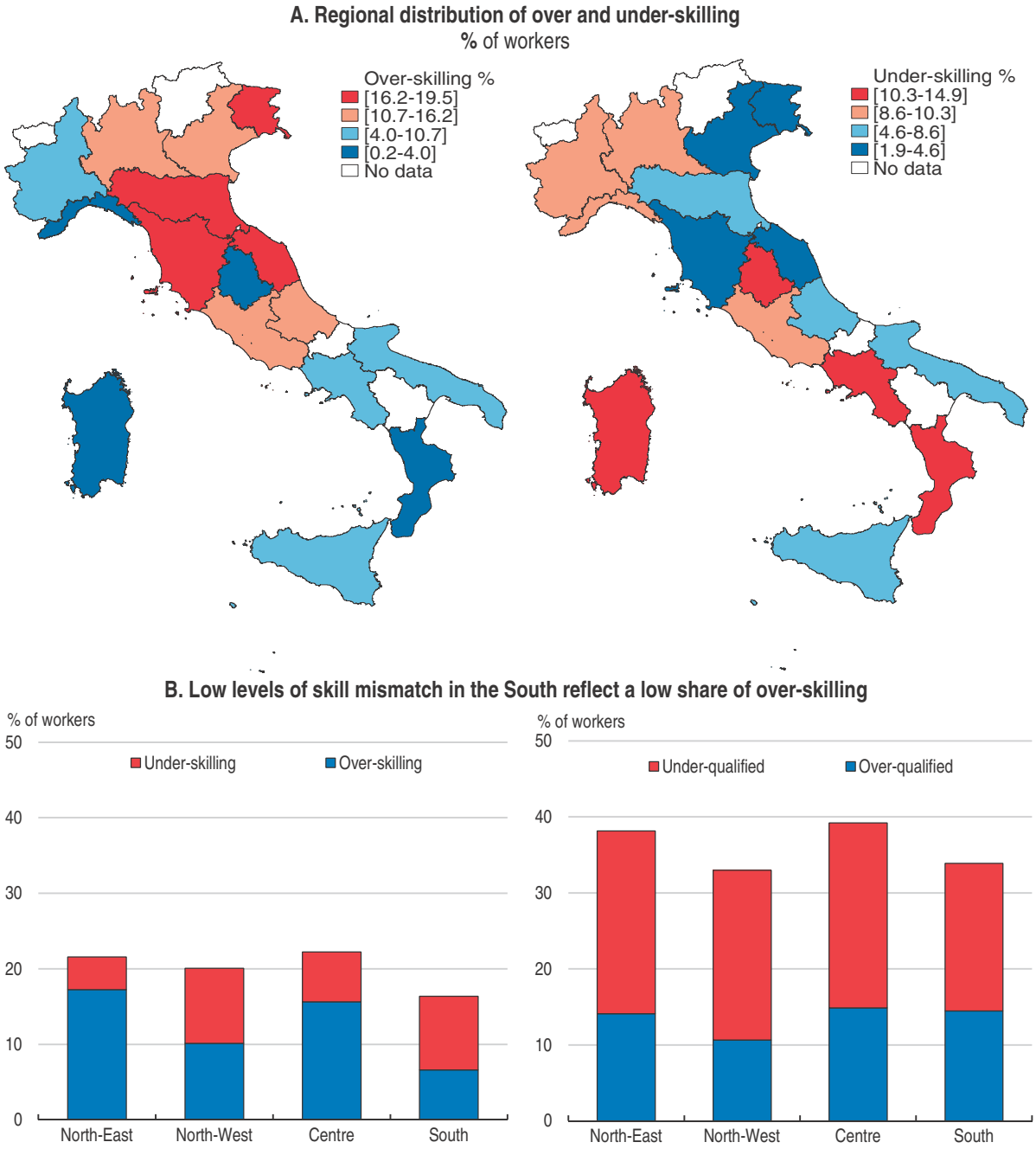
The available skills must match those required by the employers. Otherwise, skill mismatches can have adverse effects on economic growth and individual's well-being. Illustrative evidence shows that Italy could boost its level of labour productivity by 10% if it were to reduce its level of mismatch within each industry to that corresponding to the OECD best practice (Figure 2.12) (Adalet McGowan and Andrews, 2015a). Higher skill mismatch is associated with lower labour productivity through a less efficient allocation of resources. A higher share of under-qualified workers is linked with both lower allocative efficiency and lower within-firm productivity.

At the individual level, qualification and skill mismatches entail significant economic and social costs for individuals. Over-qualification and over-skilling carries scars on earnings and employment prospects (Quintini, 2011; Montt, 2015). In Italy, over-qualified and over-skilled workers suffer a significant wage penalty compared to well-matched workers (Figure 2.13, Panel A). Over-skilling and over-qualification lower job satisfaction (Figure 2.13, Panel B) as they imply unrealised expectations and lower returns on investment in education. Under-qualified workers receive higher wages and enjoy higher job satisfaction than well-matched workers. This could be explained by hiring processes, management of human resources and wage setting mechanisms that prevent employers from adapting tasks and wage levels to the workers' qualifications.

Labour market reforms to boost employability

Employment protection legislation needs to support flexible labour markets, while job search and training measures need to support jobseekers by improving their employability and helping them find an appropriate job. Flexible labour market regulation together with

Figure 2.10. **In the South under-skilling prevails in the North over-skilling**



Notes: Panel A shows percentage of workers that are over-skilled (left) or under-skilled (right). Colours show the quartiles of the over- and under-skilling distribution, red being the highest quartile and dark blue the lowest quartile. For the mismatch definitions see Box 2.1.
Source: OECD calculations based on the survey of Adults Skills (PIAAC) 2012.

StatLink http://dx.doi.org/10.1787/888933454463

tackling rules and regulations providing disincentives to change jobs and location could potentially improve the match of jobseekers' skills with those skills required by jobs. This could boost productivity and well-being while promoting a more inclusive labour market.

Box 2.1. **Defining and measuring skills, mismatch and shortages**

How are skills defined? The International Assessment of Adult Competencies (PIAAC), a Survey of Adult Skills, measures adults' proficiency in key information-processing skills – literacy, numeracy and problem solving – and gathers information and data on how adults use their skills at home and at work (OECD, 2013b).

Although there is no strict definition, mismatch and shortage describe situations in which workers' skills or qualifications exceed or fall short of those required for the job. Shortages occur when the skills sought by employers are not available in the pool of potential recruits. Mismatches, in turn, mean that workers are not well-matched with their current jobs. Shortages can induce mismatch as employers, unable to find what they needed, recruit mismatched workers (OECD, 2014a).

There are different types of mismatch:

- qualification mismatch refers to workers having higher (or lower) qualifications than required to get the job
- information-processing skill mismatch is observed when workers have better (or worse) numeracy or literacy skills than those possessed by workers who feel well-matched in the same job.

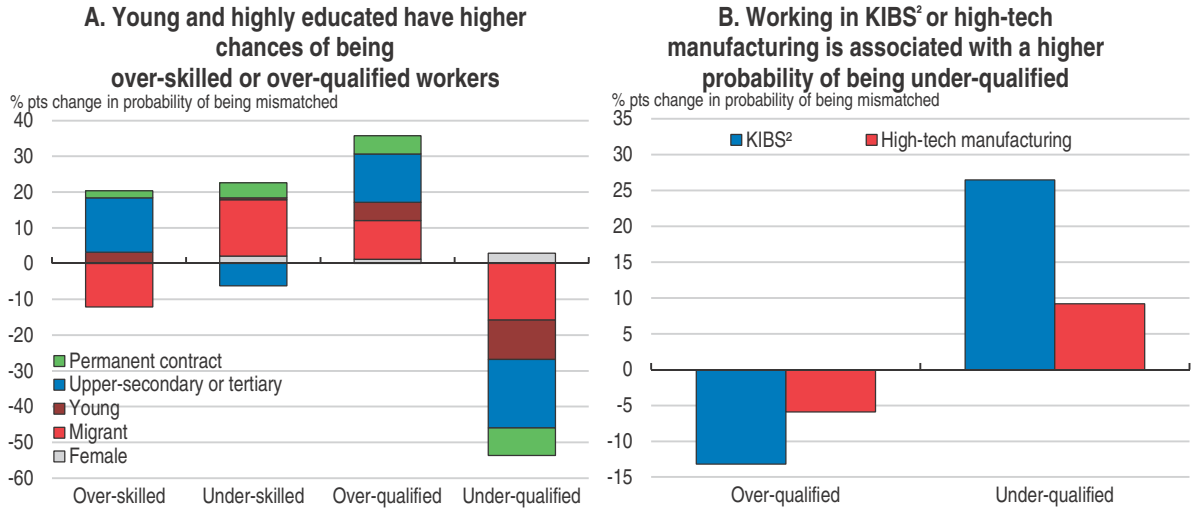
There are several approaches to measuring qualification mismatch. One is to compare the education level of a worker and the required qualification level corresponding to his/her occupation code. A second approach is to use the modal qualification – i.e. the most common qualification – of workers in each occupation as the qualification requirement. A final approach is based on workers' opinions on the match between their jobs and education, which is the definition used in this chapter. PIAAC asks workers what would be the usual qualifications, if any, "that someone would need to get (their) type of job if applying today". The answer to this question is used as each worker's qualification requirement and compared to their actual qualification to identify mismatch. While biased by individual perceptions, self-reported qualification requirements have the advantage of being job-specific rather than assuming that all jobs with the same occupational code require the same level of qualification as the first two measures.

This chapter defines skill mismatches using the information-processing skills. There are also several ways to measure skill mismatch. One is to ask workers to assess themselves their skill level and that required for their job. Another approach is to directly measure the skills of individual workers, literacy and numeracy, and to compare them with the skill use at work (CEDEFOP, 2010). The main drawbacks are assuming that skill use can be a proxy for job requirements, and that skill proficiency and skill use are similar concepts while they are not.

The most robust available measure for skill mismatch is to combine information on self-reported skill mismatch and skill proficiency as developed in Pellizzari and Fichen (2013). Specifically, for each available skill domain and each job (defined as occupations at 1 digit), the bottom and top thresholds (e.g. the 95th and 5th percentiles) requirements are defined as the minimum and the maximum proficiency of self-reported well-matched workers, i.e. workers who report that they do not feel they "have the skills to cope with more demanding duties than those they are required to perform in their current job" and they do not feel they "need further training in order to cope well with their present duties". Workers are over-skilled if their score is higher than the top percentile score of the self-reported well-matched while they are under-skilled if their score is lower than the bottom percentile score of the self-reported well-matched. The main limitation of this measure is that it uses 1-digit occupation codes because of sample size, assuming that all jobs with the same occupation code have the same skill requirements.

Qualification mismatch and skill mismatch do not need to match. Although qualification mismatch is easier to measure since education is included in more databases, it does not take into account: i) skills gained or lost beyond the formal qualifications; ii) differences in the quality and orientation of various education and training systems; and iii) on-the-job learning or adult learning/training.

Figure 2.11. **Gaps in the likelihood of being mismatched explained by worker and job characteristics as compared to a well-matched worker**[1]



1. For the mismatch definitions see Box 2.1. See Box 2.2 for the complete set of estimations. Marginal effects coming from logit regressions having as dependant variable a categorical dummy indicating mismatch and as explanatory variables: education, gender, type of contract, nationality, age, firm size, public sector, and full-time. The baseline category is an Italian man, over 30's, with low education (no education, primary education and lower secondary education), working in a small firm (less than 10 employees), residing in the North and working in traditional services under a fixed term contract.
2. Knowledge intensive business services.

Source: OECD calculations based on the Survey of Adults Skills (PIAAC) 2012.

StatLink http://dx.doi.org/10.1787/888933454470

Rationalising employment protection

In 2015, Italy enacted a comprehensive labour market reform – the Jobs Act – and introduced temporary cuts to employers' social security contributions. Coverage and duration of unemployment benefits were increased, bringing Italy closer to a "flexicurity" approach by enhancing flexibility and security in the labour at the same time. The Jobs Act has implemented a new single open-ended contract with increasing levels of protection with job tenure, aiming principally at tackling labour market duality. New permanent contracts during 2015 were exempted from social security contributions (capped at EUR 8 060 annually for the first 3 years); exemptions were reduced in 2016 (to EUR 3 250 for 2 years).

Firing costs were made less uncertain for firms by restricting the grounds for reinstatement in cases of dismissal without just cause. Reinstatement only remains for discriminatory dismissals and for non-existing breach of conduct. Workers judged to be unfairly dismissed for objective reasons (i.e. economic or technological changes as reasons for the redundancy) are not eligible for reinstatement, with firms providing monetary compensation instead. The monetary compensation is 2 gross monthly salaries per year of tenure (a minimum of 4 and a maximum of 24 monthly wages). A fast-track settlement was introduced by-passing courts upon agreement between the workers and employers. The compensation is 1 monthly salary per year of work (minimum 2 and maximum 18). The amount of the fast-tracked settlement compensation is closer to the OECD average of 14 months at 20 years of tenure (see OECD, 2013a).

Box 2.2. **The probability of being mismatched**

In order to understand the determinants of mismatch an empirical study was carried out using microdata from PIAAC data. Skill and qualification mismatch were measured as explained in Box 2.1. A logit regression model was used to examine how individual and job characteristics impact the probability of being mismatched (over-skilled, under-skilled, over-qualified or under-qualified). One regression for each concept was run.

$$Mismatched = \phi\ (\alpha + \beta X + \varepsilon) \quad (1)$$

Mismatch is the dependent variable representing the status of the worker (mismatched = 1). ϕ is logistic distribution. X is the matrix of explanatory variables including gender, age, type of contract, nationality, education, firm size, public sector, full-time, industry, and region. ε represents the error term. The following table provides a summary of the econometric results.

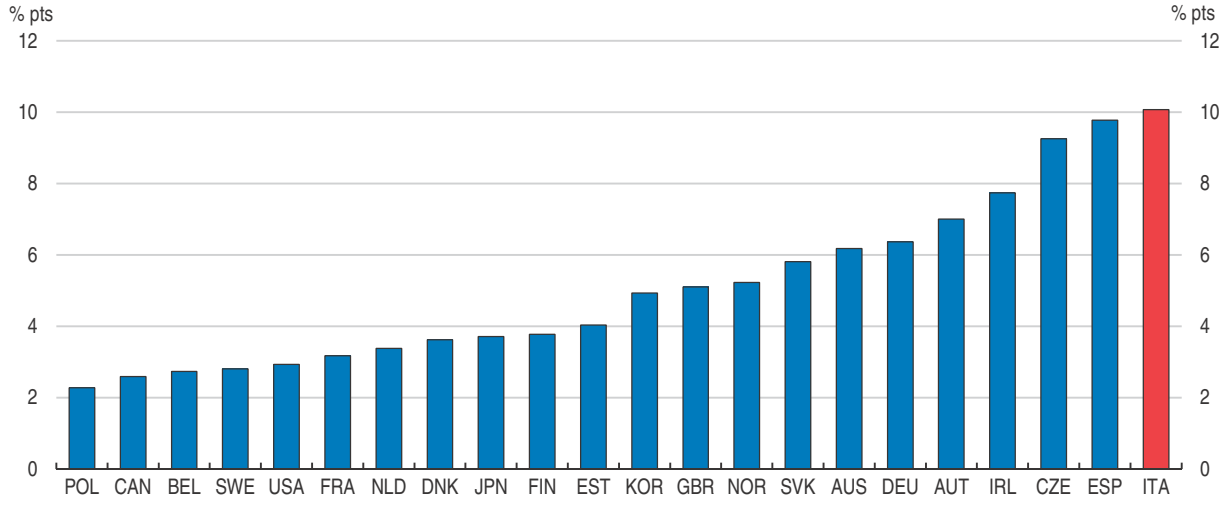
Table 2.1. **Marginal effects from logit regressions**

	Over-skilled	Under-skilled	Over-qualified	Under-qualified
Female	-0.000	0.021	0.012	0.029
	(0.019)	(0.022)	(0.016)	(0.030)
Migrant	-0.121***	0.158***	0.108***	-0.158***
	(0.034)	(0.031)	(0.020)	(0.041)
Young (less than 30)	0.032	0.005	0.051**	-0.110**
	(0.029)	(0.034)	(0.022)	(0.054)
Upper and post-secondary education	0.152***	-0.062**	0.136***	-0.192***
	(0.026)	(0.026)	(0.016)	(0.027)
Tertiary	0.177***	-0.039		
Education	(0.031)	(0.031)		
Medium size firm	0.071***	-0.049*	-0.001	0.047
(11-50 employees)	(0.022)	(0.027)	(0.020)	(0.032)
Large firm (> 50 employees)	0.067***	-0.029	0.010	0.011
	(0.021)	(0.024)	(0.021)	(0.032)
Permanent contract	0.020	0.042	0.051***	-0.077*
	(0.027)	(0.028)	(0.017)	(0.041)
Full-time worker	0.139***	-0.064***	0.009	0.037
	(0.037)	(0.022)	(0.019)	(0.045)
Public sector	-0.061***	0.032	-0.063***	0.263***
	(0.023)	(0.027)	(0.023)	(0.024)
Services	0.031	-0.007	0.042**	-0.051
	(0.019)	(0.018)	(0.018)	(0.031)
Knowledge intensive business services	0.029	0.024	-0.132***	0.265***
	(0.032)	(0.037)	(0.037)	(0.046)
High tech manufacturing	0.035	-0.091**	-0.059	0.092*
	(0.039)	(0.046)	(0.041)	(0.050)
Centre	-0.030	0.069*	0.011	-0.009
	(0.022)	(0.041)	(0.025)	(0.033)
North-West	-0.110***	0.111***	-0.027	-0.049
	(0.025)	(0.040)	(0.024)	(0.034)
South	-0.149***	0.137***	0.004	-0.083**
	(0.034)	(0.037)	(0.022)	(0.034)
N observations	1.953	1.953	2.002	2.002
Pseudo-R^2	0.21	0.17	0.37	0.23

Notes: All explanatory variables are categorical variables. *** is significant at 1%, ** at 5% and * at 10%.
Source: OECD calculations using the survey of Adults Skills (PIAAC) 2012.

Figure 2.12. **There is a large scope to boost productivity by reducing skill mismatch**

Gains to labour productivity from reducing skill mismatch to the OECD best practice

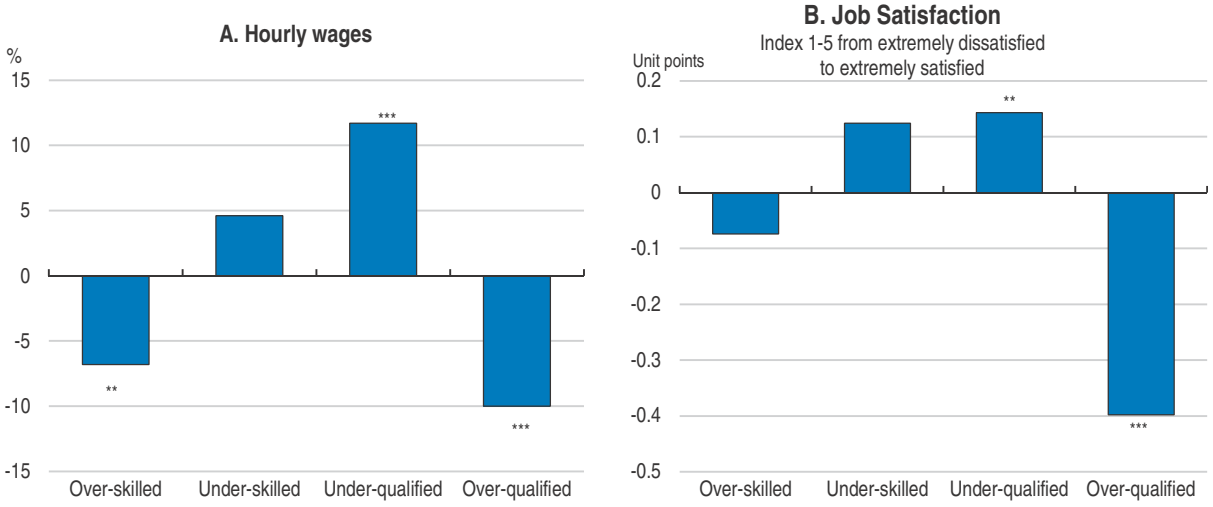


Notes: The chart shows the difference between the actual productivity and a counterfactual productivity level based on lowering the skill mismatch in each industry and country to the best practice level of mismatch. Both the actual and counterfactual numbers are calculated by aggregating 1-digit industry level mismatch indicators using a common set of weights based on the industry employment shares for the United States. For example, lowering the skill mismatch to best practice leads to a simulated gain of around 10% in Italy and 3% in the United States.

Source: Adalet McGowan, M. and D. Andrews (2015), "Labour Market Mismatch and Labour Productivity: Evidence from PIAAC Data", *OECD Economics Department Working Paper*, No. 1209.

StatLink http://dx.doi.org/10.1787/888933454485

Figure 2.13. **Over-skilled or over-qualified workers earn less and have lower job satisfaction**



Notes: Panel A shows the impact of mismatch with respect to well-matched peers as a percentage of hourly wages. Panel B shows the impact of mismatch with respect to well-matched peers in unit points of job satisfaction. For instance, the hourly wage for an over-skilled worker is about 7% lower than that of a well-matched worker with the same worker and job characteristics. For the mismatch definitions see Box 2.1. Marginal effects coming from regression of the logarithm of hourly wage and job satisfaction controlling for education, gender, type of contract, nationality, age, firm size, public sector, full-time, region, industry of work, and literacy score. Regressions contain dummies for every type of mismatch at the same time. Job satisfaction is an index ranging from 1 (extremely dissatisfied) to 5 (extremely satisfied). *** is significant at 1%, ** at 5% and * at 10%.

Source: OECD calculations based on the Survey of Adults Skills (PIAAC) 2012.

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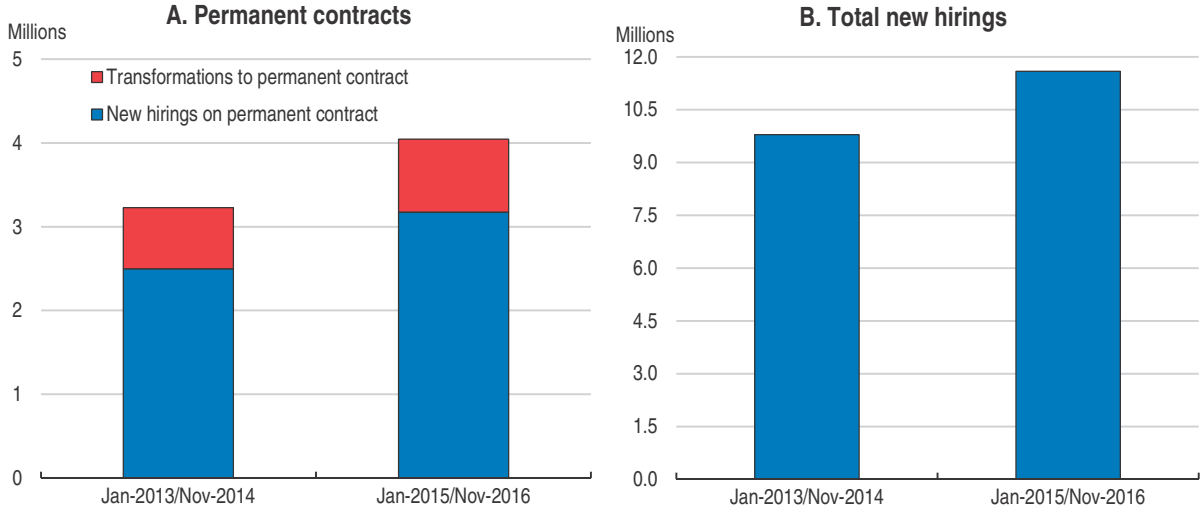
Theoretical and empirical evidence suggests that lower dismissal costs help firms create more jobs by making the labour market more flexible (Mortensen and Pissarides, 1994; Cingano et al., 2010; Haltiwanger et al., 2013 and OECD, 2010; 2013a). OECD (2016b) finds evidence that reforms decreasing employment protection, when implemented in highly segmented labour markets, do not result in short-term employment losses. The Spanish 2012 reform is an example of this. Illustrative evidence indicates that the Italian Jobs Act and the temporary social security exemptions have boosted new permanent contracts (Figure 2.14). The Jobs Act also encouraged the transformation of temporary, atypical and apprenticeship contracts into permanent ones, starting to tackle labour market duality. More time is needed for a proper impact evaluation of the Italian reform.

Figure 2.14. **The Jobs Act together with the exemption of social security contributions have boosted hirings and permanent contracts**



Source: Istituto nazionale della previdenza sociale (INPS), Osservatorio sul Precariato.

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Firing restrictions make it more difficult for firms to adapt the workforce's skills to their changing needs and lower incentives of hiring (Cingano et al., 2010; Haltiwanger et al., 2013; and OECD, 2010, 2013a) hampering the skill allocation efficiency. Stringent employment protection measures tend also to discourage workers from moving from one job to another (Bassanini and Garnero, 2013) that would offer them a better skills match (Brunello et al., 2007). Adalet McGowan and Andrews (2015b) show that reducing the stringency of regulations for permanent contracts in Italy to best practice is associated with roughly a 7 percentage point reduction in skill mismatch. Evidence for Italy shows that after a reform, enacted in 2012, to decrease the costs of firings on permanent contracts (the "Fornero" law), the probability of being well-matched increased by 5 percentage points (see Box 2.3).

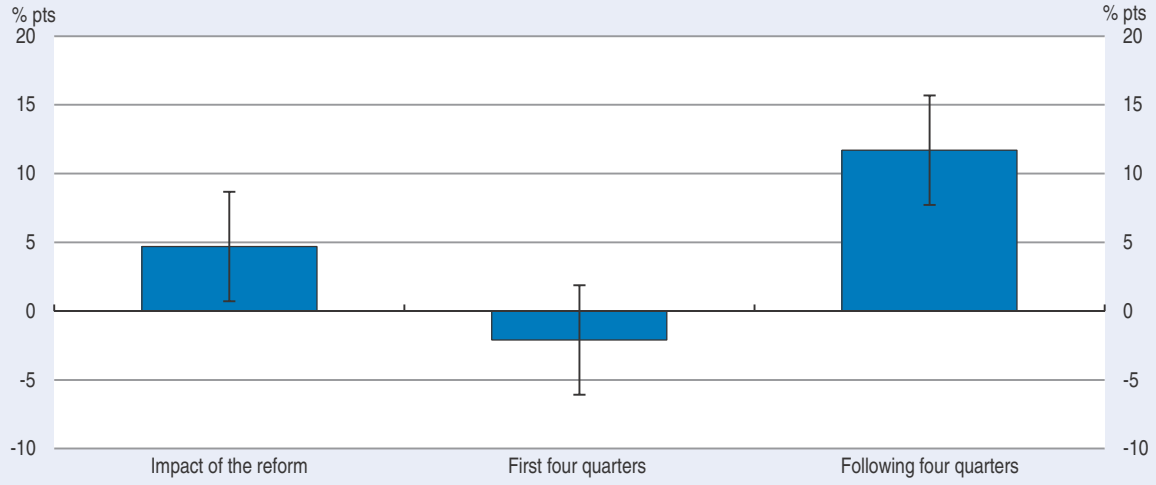
By reducing duality, the reform could also help to reduce skill mismatch and increase inclusiveness. Providing more people with permanent contracts has the potential advantage of increasing on-the-job training among workers (Cabrales et al., 2014; Booth et al., 2002; OECD, 2002). Increasing the incentives to transform temporary and apprenticeship contracts into permanent ones, has the benefits of making the temporary and apprenticeship contracts stepping-stone toward permanent contracts, allowing preserving the good matches.

Box 2.3. **Employment protection legislation and qualification mismatch: Evidence from the "Fornero reform"**

A reform of the Italian labour market enacted in 2012 – also known as "Fornero Law"– created unprecedented quasi-experimental conditions to identify empirically the effect of employment protection regulation on mismatch. Until 2012, Italy had a two-tier EPL regime. Small firms (until 15 employees) had to pay a monetary compensation to unlawfully dismissed workers; on the contrary, larger units could be compelled to reinstate the worker to her former job and to pay her all foregone wages and social security contributions since dismissal. The "Fornero Law" largely increased the room for monetary compensations putting an upper limit to the monetary firing costs for the firms above the fifteen-employee threshold, leaving EPL in smaller firms unchanged.

Evidence, using a difference-in-differences approach, shows that the probability of being well-matched, in terms of qualification, increased by 4.7 percentage points after the reform (Figure 2.15). Consistent with the idea that it takes a minimum of time for workers' turnover to give rise to better matches, the estimates also show that the effect is non-significant during the first year after the reform, while emerging neatly afterwards. Further analyses show that this effect mainly occurred through a reduction of under-qualification among prime and old age workers.

Figure 2.15. **Estimated impact of the "Fornero reform" on the probability of being well-matched**



Notes: Estimates using a sample of workers with permanent contracts observed in the Italian Labour Force Survey (LFS) during the period Q1 2011, Q3 2014. A difference-in-differences model of the probability of being well-matched is estimated: $Y_{ijkt} = \beta_0 + \beta_1 TREAT_{ijkt} + \beta_2 POST_t + \beta_3 TREAT \times POST + \beta_4 X_{ijkt}) + \gamma_t + \delta_t + \varepsilon_{ijkt}$. Y_{ijkt} is categorical variable reflecting a well-matched worker ($Y_{ijkt} = 1$) if her educational attainment at quarter t is equal to the median educational level observed on all employees within the same economic activity j and occupation k at the same point in time t. $TREAT_{ijkt}$ takes the value of one for firms employing more than fifteen workers, $POST_t$ signals the post-treatment period (from Q4 2012 onwards), X_{ijkt} is a vector of controls that include demographic (sex, age, education, citizenship, region of residence, marital status and household type) and job (sector of economic activity, occupation type, share of temporary workers and full-time workers within the same sector and occupation) characteristics as major determinants of (mis)match. The model includes year- (γ_t) and quarter (δ_t) fixed effects. β_3 is the parameter of interest, which is expected to be positive. The blue bar represents the impact of the reform, β_3, in percentage points. The thin lines represent the 90% confidence bands.

Source: Berton, F., F. Devincenti and S. Grubanov (2016), "Employment protection legislation and qualification mismatch: evidence from a reform", *Working Papers*, No. 151, Laboratorio Riccardo Revelli.

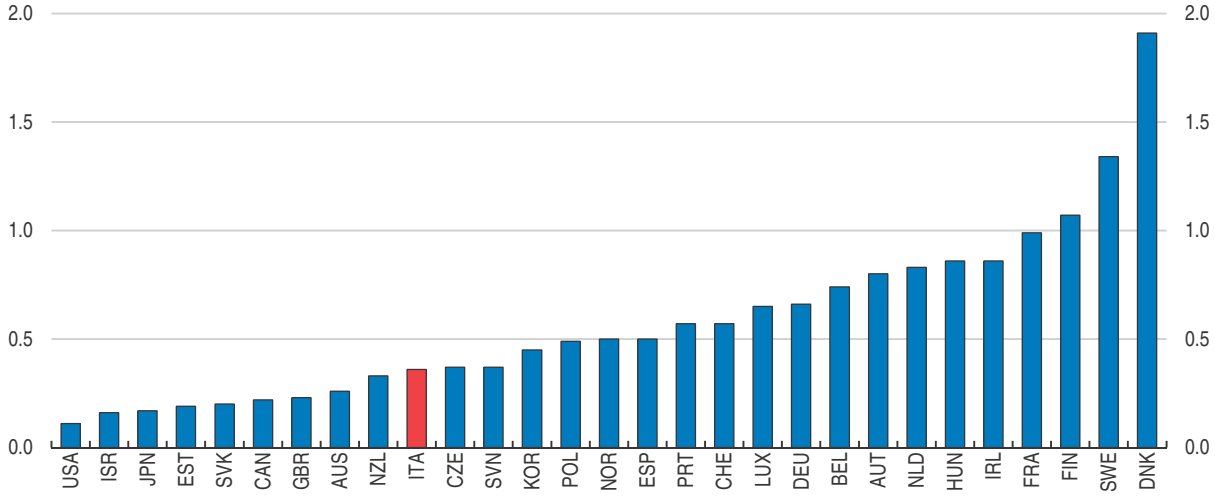
StatLink http://dx.doi.org/10.1787/888933454504

Job search and training policies should adopt a "matching skills" approach

Job search and training policies should help ensure that those out of work return to employment in the most appropriate job. Italy is one of the countries with lowest spending on active labour market policies (ALMPs) across OECD countries (Figure 2.16). The spending per unemployed reached an annual amount of EUR 1 800 per unemployed in 2014, while in France it amounts to EUR 7 460. This reflects, in part, limited fiscal space; hence improving the spending efficiency and targeting will be needed in order to improve outcomes.

Figure 2.16. **Spending on active labour market policies is low**

% of GDP



Notes: Active labour market policies cover services and activities of the public employment services and labour market policy measures that provide temporary support for groups that are disadvantaged in the labour market. The data shown should not be treated as strictly comparable across countries or through time, since data at the level of individual countries in some cases deviate from standard definitions and methods; see notes to Annex Table Q of the *OECD Employment Outlook 2016*, available at *www.oecd.org/els/emp/employment-outlook-statistical-annex.htm*. 2014 or last year available; the United Kingdom 2011, Spain, Poland and Ireland 2013.
Source: OECD Employment and Labour Market Statistics.

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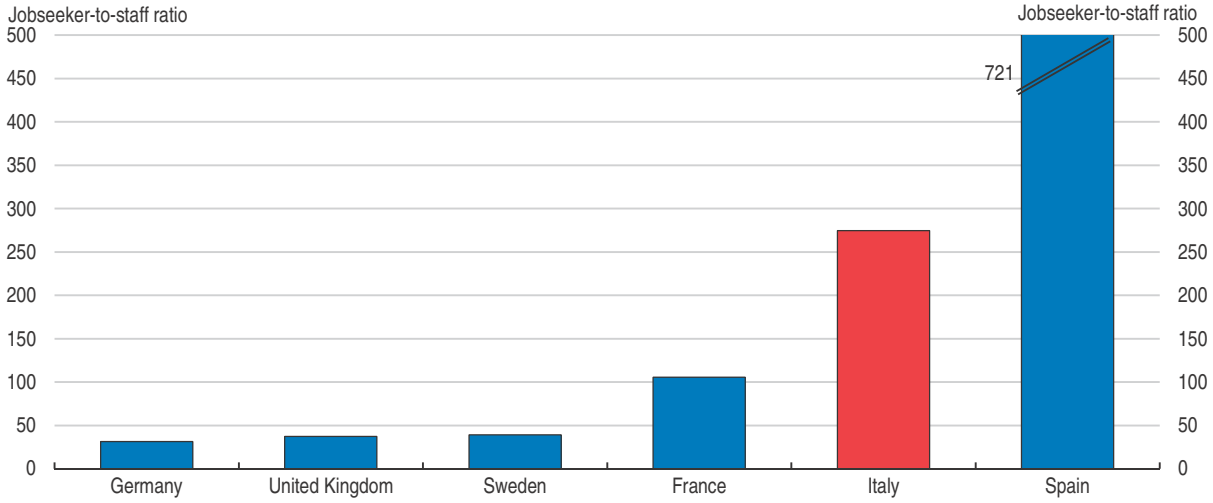
The jobseeker-to-staff ratio in public employment services (PES) is high compared to other European countries (Figure 2.17). Decreasing it in order to manage effectively the large numbers of jobseekers together with well-trained caseworkers will be key for increasing effectiveness of PES. Evidence shows that by lowering caseloads per staff, PES offices could intensify counselling, monitoring and sanction efforts as well as contacts with local firms, resulting in shorter benefit durations. The costs of hiring additional caseworkers could be offset by decreased benefit expenditure after a period of ten months (OECD, 2015a). Since there is little fiscal room, a reduction of the jobseeker-to-staff ratio can be achieved by reallocating staff within the public administration, after assuring they have received training and are qualified as counsellors. Using private agencies can also help scaling up PES.

The newly created National Agency for Active Labour Market Policies (ANPAL) could be key to raising effectiveness of job search and training policies. ANPAL main tasks include coordinating and supervising regional centres implementing job search and training policies, setting minimum national level standards of services for active policies, creating a new and unique information system of employment services and keep a register of

Figure 2.17. **Reducing the jobseeker-to-staff ratio[1] would increase the effectiveness of PES**



1. Year 2012.

Source: Mandrone (2014), "Youth Guarantee and the Italian PES: insights from ISFOL PLUS Survey data", *CIMR Research Working Paper Series, Working Paper*, No. 21.

StatLink http://dx.doi.org/10.1787/888933454209

private employment agencies. Provinces are in charge of active measures, leading to highly differentiated quality of services and fragmentation of measures and regulations. ANPAL aims at reducing existing regional differences (Mandrone, 2014) and making sure that the training received in one region is valid across the country. Multi-level governance, i.e. ANPAL coordinating all local employment centres at the municipality, provincial and regional level, is going to be key for the success of the institution.

The Jobs Act introduced unemployment benefits conditional on participating in activation measures designed by ANPAL. Individuals receiving unemployment benefit (NASpI) for a duration exceeding four months will be entitled to a voucher (assegno di ricollocazione). The amount varies depending on the employability profile, and can be spent in training or education at public or private employment services. Conditionality has been reinforced by making employment centres and private agencies being able to cash the voucher only once the unemployed has found a job. At the end of 2016 a pilot plan was launched for 20 000 users. This is a positive measure, since financial incentives, such as training vouchers, have proved to promote training and can improve equity in access to learning, particularly for the low skilled (OECD, 2005a).

No particular policy can serve as a universal tool for improving the labour market perspectives of the unemployed (Martin, 2014 and OECD, 2015a). Policies need to be tailor-made to the individual (including detecting short-term versus potentially long-term unemployed), which calls for effective profiling techniques. Profiling methods are being used for the first time within the Youth Guarantee (YG) scheme that has been set up by the Government in 2014. The YG ensures that those between 18 and 30 years old receive a good offer of apprenticeship, training, continued education or employment that is suited to their abilities and experience within four months of becoming unemployed or leaving education. Once a youth is registered in the scheme a system calculates the difficulty of employability and allows the counsellor to develop an employability path most suited to the characteristics of the young. Good results were obtained; 1 in 3 youths registered in the

scheme found a job within one month, 40% was employed within three months (ISFOL, 2016a). These methods should be extended to all unemployed or registered within PES. ANPAL, learning from this experience, is working to set up a profiling system for all unemployed. However, implementation is still lagging behind.

The profiling techniques should reinforce the importance of skills in the matching activities. PES need to work closely with employers to ensure that individuals' skill profiles are matched to labour market needs. They can develop public-private partnerships to ensure the timeliness and relevance of appropriate activation measures as well as education and training offers (WEF, 2014).

Italy lacks a practice of systematic assessment of the labour market impact of activation programmes. Assessment was difficult because of the existence of multiple programmes at the regional level, without centralised coordination and the inexistence of appropriate data with which to undertake a proper impact assessment. Only recently, designed for the YG, evaluation techniques started to be developed. The emphasis should be on ensuring that resources are channelled towards programmes that proved to be effective in helping people gain employment in jobs that match their skills.

Supporting labour mobility

Fostering mobility within occupations, sectors and/or regions on the basis of sound labour market information can contribute to a dynamic labour market enabling new productive matches to take place between individuals' skills and jobs. Regional mobility in Italy is one of the lowest in OECD countries (OECD, 2016d). This is, at least in part, due to the fragmentation of measures and regulations across regions, making the transfer of qualifications and skills across regions difficult. There is no information on job opportunities across the country, raising the need of a unified labour market information system.

Ensuring that qualifications are transferable, coherent and easy to interpret is essential to promote labour mobility. A national directory of qualifications needs to be implemented in order to provide national recognised and transferable skills across sectors, occupations or regions. A 2015 state-regions agreement provided for a register of regional vocational qualifications, as part of a national register of education, training and professional qualifications. This is a positive step, but implementation has encountered barriers and remains difficult. The recognition of qualifications needs to be strengthened by ensuring a valid national register.

Residential and geographical mobility can help decrease skill mismatches and increase productivity. Policy interventions in housing markets, such as transaction costs on buying property and rent control and tenant-landlord regulations, have been shown to be important for residential mobility (Andrews et al., 2011), and are relevant to reduce mismatch (Adalet McGowan and Andrews, 2015b). Lowering transaction costs from buying a home in Italy to the best practice in OECD would imply a reduction in skill mismatches of 4 percentage points. Making rules governing tenant-landlord relations more landlord-friendly or increasing the responsiveness of housing supply to prices to the best practice would decrease skills mismatch by 4 and 8 percentage points, respectively (Adalet McGowan and Andrews, 2015b).

Raising skills that match labour market needs

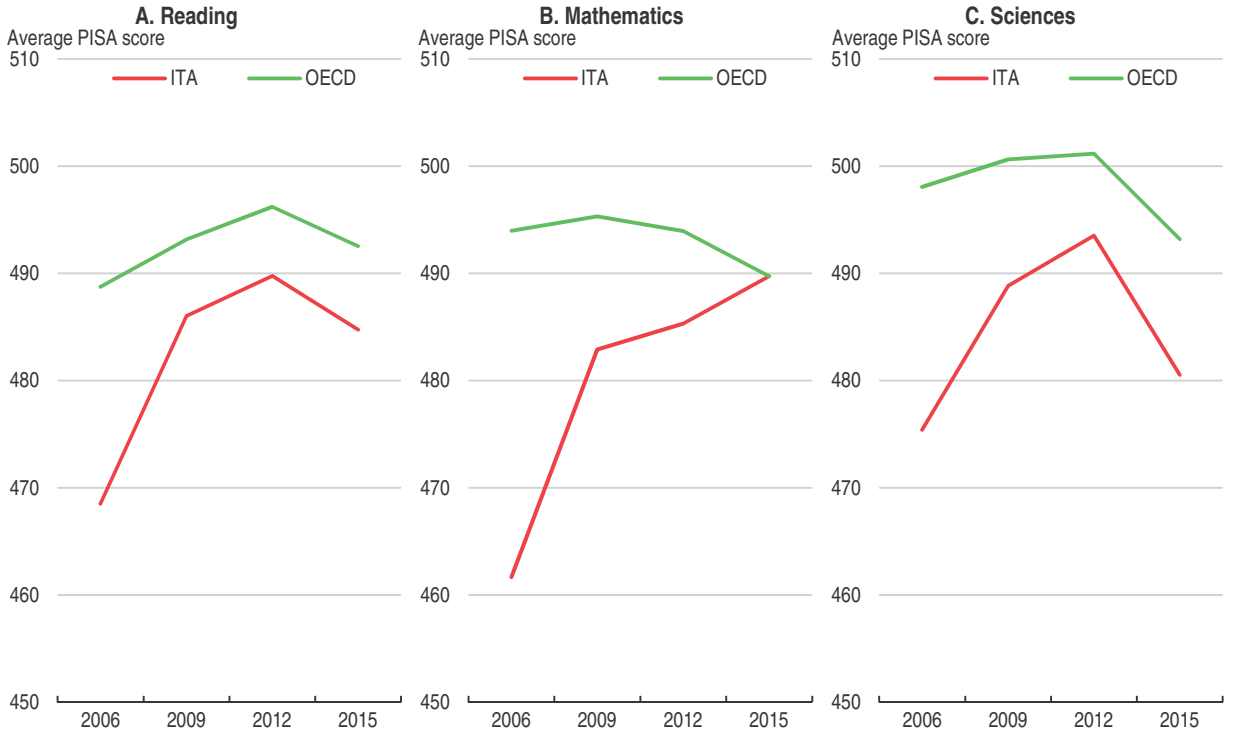
Employability depends on the education and training system proving sound general skills and skills aligned to the job market. The system should be flexible enough to adapt to changing skills needs. The adaptability of the skills should be encouraged through work-based learning. Business involvement in education and training institutions at all educational levels will be paramount to ensure the provision of relevant skills, the availability of internships and apprenticeships and provide on-the-job training.

Italy is undertaking a national skills strategy project with the OECD between 2015 and 2017. Using the OECD Skills Strategy framework, the project's diagnostic phase identified a set of key skills challenges including developing skills at all levels and strengthening multilevel governance and partnerships to improve skills outcomes.

Improving skills at school

There have been consistent signs of improvement in the quality of education in the latest years. Scores in reading, math and sciences among 15-year olds have increased more than the OECD average (Figure 2.18). However, average levels of proficiency in reading and sciences are still low compared to other countries.

Figure 2.18. **School results have improved but they are still below the OECD average**



Source: OECD, *PISA 2006, 2009, 2012 and 2015 Databases.*

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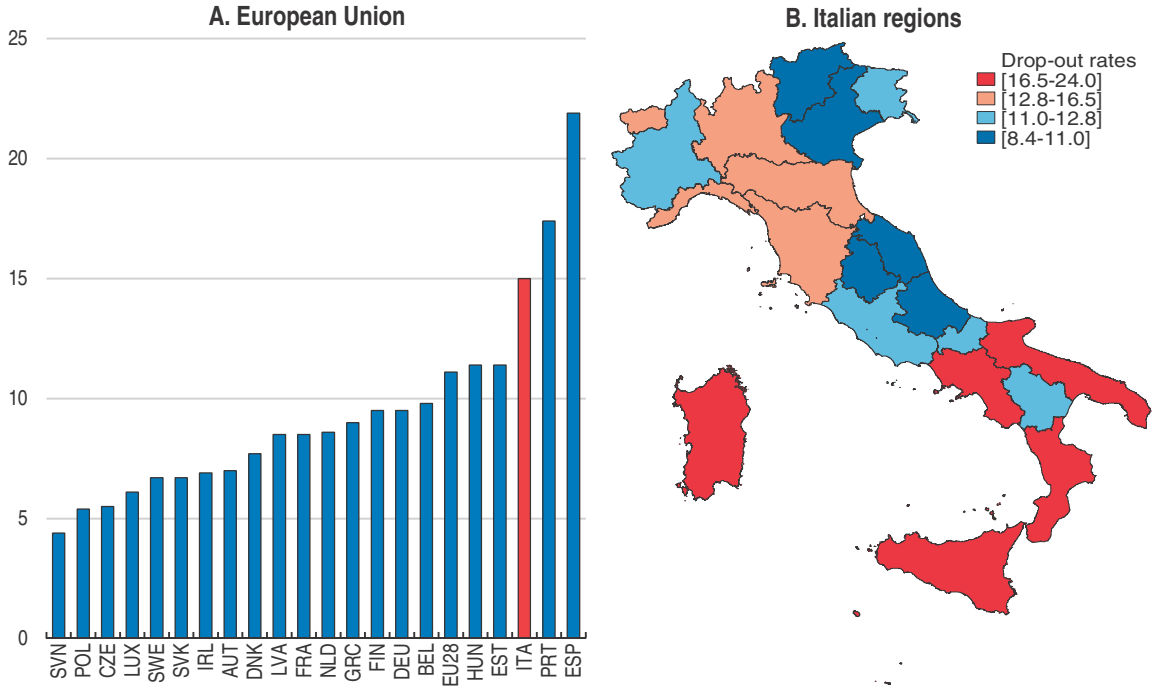
Successive governments have made efforts to improve the education system with positive results. The early school leaving rate is falling but remains still high and varies wildly across the country (Figure 2.19). There is also a big gender gap, as the different between drop-out rates for boy and girls is 5.5 percentage points.

Figure 2.19. **Drop-out rates are high with big geographical dispersion**

% of population aged 18-24 who has left education and training with at most a lower secondary education diploma



Note: Colours in the map represent quartiles of the distribution of the drop-out rates, being red the highest quartile and dark blue the lowest quartile.

Source: ISTAT, NOI-Italia Database 2016.

StatLink http://dx.doi.org/10.1787/888933454524

With the aim of improving school outcomes, a comprehensive reform of school – Good School – was passed in 2015. The *Good School* reform gives more autonomy to schools and requires all schools in Italy to complete a self-evaluation report in which they address, among other factors, the quality of school management, instruction and students' learning outcomes (see Box 2.4). These measures are potentially far-reaching. International evidence shows that autonomy only works if coupled with accountability (Hanushek and Woessmann, 2011), and higher school management quality is strongly associated with better educational outcomes (Bloom et al., 2015). The success of the self-evaluation measure will depend on the proper implementation of the planned evaluation system of school heads in order to increase their accountability.

Teachers have limited career prospects and low salaries compared to other high skilled professions. Attracting the best-qualified graduates into the teaching profession is very difficult for the Italian education system. The teaching career system offers only a single career pathway with fixed salary increases based solely on seniority. *Good School* reform introduces merit-based bonuses into teacher's salaries, makes teacher's recruitments under open-ended contracts via open competition, and foresees provisions for on-the-job training for teachers. The reform could potentially provide incentives to improve teaching methods with positive effects on educational outcomes. However, the career system has not been changed, which could lead to partial results (OECD, 2005b). In order to have a significant impact on teaching methods, a career system based on the

Box 2.4. **The Good School Reform**

The Italian government approved a comprehensive education reform – "*La buona scuola*" – on July 2015. Projections in the 2015 National Reform Programme suggest that, of all structural reforms in Italy, the school reform is likely to have the largest positive impact on GDP in the long-term (MEF, 2015:110-111) – reaching an increase of 2.6% of GDP. The main points of the reform concern:

- **School autonomy:** School principals will have greater autonomy in managing human, technological and financial resources and will be subject to external evaluation every three years.
- **Teacher recruitment:** From 2016 onwards only access to the profession via open competitions will be allowed. In two years, the government has added almost 120 000 teachers to the official school register, either through the extraordinary hiring plan or registrations related to the current academic year. The recruitment plan is intended to fix the long-standing problem of "waiting lists" of qualified teachers.
- **Introduction of performance-based components for teacher salaries:** Each year, the best performing teachers in each school will receive a one-off bonus. The school principal will identify the best-performing teachers using criteria established by the school's teacher evaluation committee (comprised by the school principal, teachers, an external evaluator and two parent representatives). Compulsory on-the-job training for teachers is also included.
- **Work-based learning:** Traineeships are to become compulsory for students in the last three years of upper secondary education (at least 400 hours for students in vocational education and 200 hours for students in general education). They can take place either in the private sector or in the public administration
- **Digital and language skills:** The reform includes a national three-year plan ("*Piano Nazionale Scuola Digitale*") to strengthen digital competences among teachers and students, improving Internet connections and innovative learning environments. It also foresees opportunities for introducing the "content and language integrated learning" (CLIL) methodology from primary level onwards.

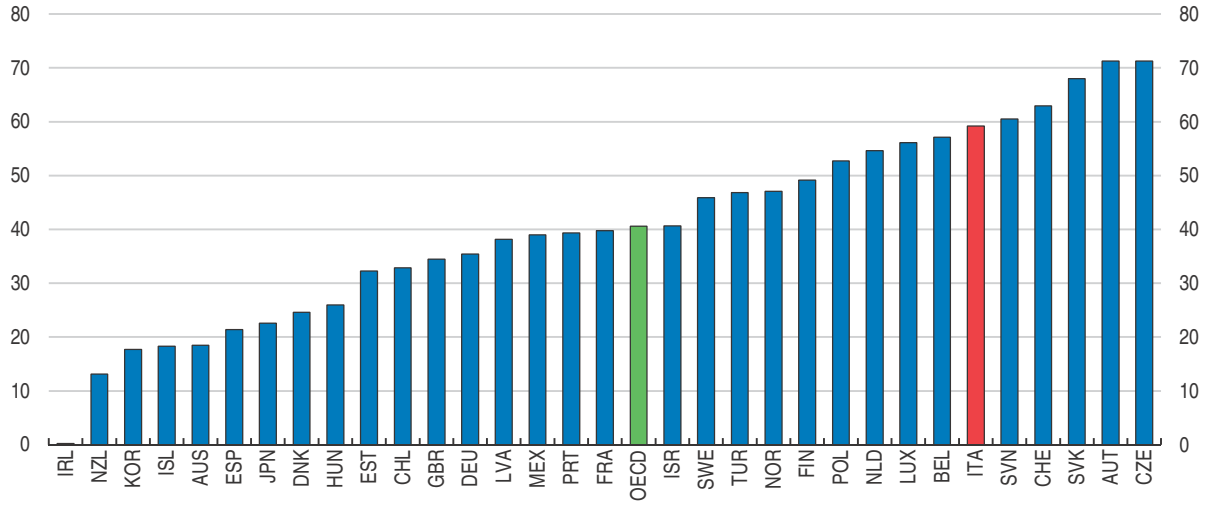
recognition of the commitment and merits supported by a well-functioning teacher assessment is needed. The reform also provides mobility of teachers across the country in order to reduce the large variability in school quality across the country.

VET in upper-secondary education is well developed in Italy, with 60% of students enrolled in upper-secondary education following vocational programmes, above the OECD average (Figure 2.20, Panel A). Vocational schools are based on school learning with limited involvement of the business sector. As a consequence, the share of young people (15-29) studying and working at the same time is less than 4% in contrast with the EU average of 12.9%.

A more integrated system of work-based learning, as foreseen by the *Good School*, will help increase the skill level and align VET output to labour market' needs. The reform includes mandatory hours in a workplace for vocational and general pathways. International evidence suggests that dual training, in school and at the workplace, enhances the employment prospects of participants substantially (OECD, 2015b). The system provides a challenge to the Italian schools, which do not have experience on student placement and search for traineeships.

Figure 2.20. **VET in upper-secondary education is well developed in Italy**

% of 15-19 year-olds enrolled in upper-secondary education that follow vocational programmes



Source: OECD (2016), *Education at a Glance 2016*, OECD Publishing, Paris.

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Dual systems require tight collaboration between businesses and schools to ensure the creation of quality work-based experiences. The government is forging alliances with several large companies and different stakeholders to this end. However, in some of the economically less dynamic regions, finding businesses that can provide quality work-based training is likely to be challenging and alternative solutions may have to be explored. The 2017 Budget Law foresees extended social security contribution exemptions for newly permanent or apprenticeships contracts for young people who have done a stage or internship within the firm, giving incentives to firms to become involved in the system.

An assessment system aimed at verifying the training effectiveness needs to be implemented. The capacity to monitor the quality of training and the labour market outcomes of VET needs to be strengthened. The assessment system should feed policy evaluation with a view of streamlining the VET curriculum, training quality and to align student enrolment with the labour market needs through reinforced career guidance, starting at the end of lower secondary education.

Improving skills beyond school

Boost work-based learning

Increasing employability requires improving the transition from school to work to foster the benefits of youth skills. Apprenticeships can help both young people to maintain the link with the labour market and to gain useful work-relevant skills (Cedefop, 2015a; OECD, 2015b). Apprenticeships have been subject of several reforms (introduced between June 2012 and May 2014; together with the recent Jobs Act). These reforms, in addition to the measures included in the school reform, aim to overhaul the apprenticeship system. In particular, it enables students to use apprenticeships to gain upper-secondary qualifications and simplifies training requirements for apprenticeship contracts.

Apprenticeships still remain underutilised. With a downward trend since 2009, less than 15% of the young aged between 15 and 29 years old are employed with apprenticeships contracts (ISFOL, 2015). Within the Youth Guarantee programme apprenticeships are the least used solutions for young, in contrary to best practices and the European Commission' guidelines. The most used instrument is internships (ISFOL, 2016a). Internships could provide valuable opportunities to gain work experience. However, quality apprenticeship systems which imply the participation in a training programme agreed to by firms, education institutions, PESs and local authorities, are better suited to increase the employability in high quality jobs, and reduce school drop-outs.

The main challenge for apprenticeships in Italy remains the link between education and training and its quality. The Italian system consists of three main types of apprenticeship: professional apprenticeship; apprenticeship aimed at acquiring a diploma or a vocational qualification; apprenticeship for higher education and research. The last two lead to an education qualification, at upper-secondary, post-secondary or tertiary level. In this sense, they integrate a dual-system, connecting training and work. However, only the first type of contract is used in more than 90% of the hirings (ISFOL, 2015). During the year 2013 slightly less than one apprentice out of three was able to enjoy a formal education under the professional apprenticeship contract. For the rest, access to training – as required by law – resides in the initiative of individual firms. Since there is no information system or adequate monitoring, no formal education is provided.

A unique data collection source on the participation of apprentices and students in training activities and firms' needs would be beneficial for the system to work properly. There is no structured and organised national system of control and monitoring of the training provided by firms, which is the crucial element of the apprenticeship contract. Specific quality criteria need to be set for firms offering apprenticeships as done in other countries (Box 2.5).

The uptake of apprenticeships amongst small and medium-sized firms is particularly low. SMEs can be sensitive to the risks of engaging in this form of training, especially if they are unsure of what will be expected of them in the course of training an apprentice, or whether they will be able to retain the apprentice post-training. Given the importance of SMEs in Italy, targeted measures are needed. SMEs need not only financial incentives, but a supportive business environment offering practical assistance. To create such an environment, a coordinated strategy involving all stakeholders in a sector or a community is paramount. Chambers of commerce, employers' organisations and trade unions, sectoral federations, VET providers and public employment services need to cooperate to promote an apprenticeship culture (Cedefop, 2015b).

Higher education needs to meet labour market needs

Italy stands out among countries with a small share of tertiary graduates, reflecting poor labour market outcomes. The earnings of tertiary-educated graduates relative to those adults with only upper secondary education is low in Italy – 142% compared to the OECD average of 155% (OECD, 2016a). The unemployment rate among tertiary educated adults is among the highest in OECD countries (Figure 2.21). The time needed to complete tertiary programmes is almost twice as long as the theoretically time required (ANVUR, 2016).

Box 2.5. **Learning from well-performing dual-VET Systems in OECD countries**

Some OECD countries such as Austria, Germany and Switzerland benefit from a very well developed vocational education and training (VET) system. In those countries, VET is a common pathway to stable and well paid jobs. It is a way to have high-skilled workers and avoiding young people failing out of the education system or the labour market. The study of their systems brings up four major points. In a first place, there is a strong stakeholder involvement; all parties are participating in the establishment of programmes. Secondly, all countries help students finding apprenticeship places. Thirdly, they also give incentives to firms for hiring trainees. Finally, they monitor apprenticeship places by providing licences and staff training.

Austria, Germany and Switzerland have set up **specific organisations to manage the dual-VET system** and to make it responsive to labour market needs. Those organisations regroup social partners and VET teachers in order to build a system working for all parties involved. In Austria and Switzerland, social partners are responsible for introducing and updating "ordinances" – which usually define the profile of the post, competencies that need to be acquired and set out final examinations requirement. In Switzerland, employers are the only one entitled to initiate reforms procedures for VET ordinance. Germany has implemented an "Innovation Circle on VET" where employers, trade unions, academia and regions work together to think about upgrading the VET system.

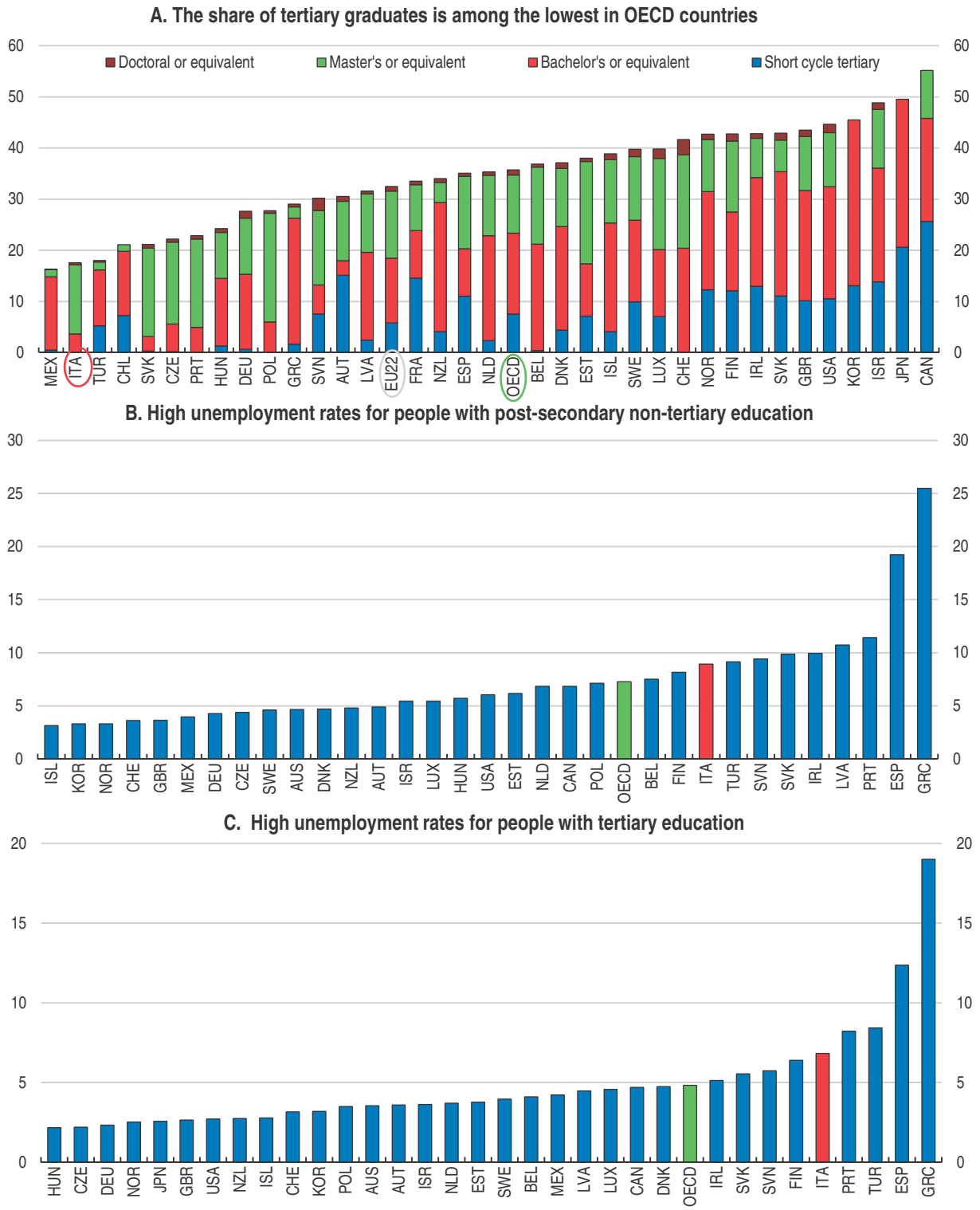
In order to **help apprentices to find a place** to train, countries have developed different strategies. In Germany, the Federal government has an "Apprenticeship pact" with the Chamber of Commerce and Industry to increase the number of apprenticeship places. They also started a new programme called JOBSTARTER which is supposed, among others things, to help students to find apprenticeship places. In Switzerland, twice a year, the Link Institute for Market and Social Research conducts a survey, in order to estimate demand and supply for apprenticeships. When there is a mismatch, measures are taken; it finances the set-up of a host company network and takes initiative to help weakest students to find apprenticeship places. In some sectors, when firms are too small or too specialised to train an apprentice, alliances are created. Firms work together in the training programme. Moreover, funds are developed to share costs of apprenticeship between all companies of a certain sector. In Switzerland, 13 funds have been made mandatory.

In Austria and Germany, governments provide **subsidies or tax reliefs for enterprises** participating in apprenticeship schemes to incite companies to take apprentices. In Austria, there is a tax exemption for training relationship and financial incentive for the creation of additional apprenticeship places per companies. In Germany, for students who have not found an apprenticeship place, who are socially disadvantaged or have a learning disability, an internship programme has been implemented. It covers the intern's wages and social contributions for the company which take the apprentice on probation for 6 to 12 months.

Quality is assured by a strict **monitoring system** on companies employing apprentices. In Austria and in Switzerland, training firms have to obtain a licence to train apprentices. In Austria, the license is delivered by the apprenticeship office. It proceeds, with the help of the Federal Economic Chamber, at an examination of enterprises. In order to obtain the certificate of apprenticeship, enterprises have to fulfil some prerequisites: "carry out the activity in which the apprentice is to be trained, need to be equipped and managed in a way that it is a position to impart to the apprentice all the knowledge and skills included in the occupation profile and have a sufficient number of professionally an pedagogically qualified trainers must be available in the company". In Germany, Austria and Switzerland, trainers in companies have to complete a formation to be allowed to train apprentices.

Source: OECD (2010), *Learning for Jobs*, OECD Publishing, Paris, *http://dx.doi.org/10.1787/9789264087460-en*.

Figure 2.21. **Labour market outcomes of tertiary graduates are unattractive**



Notes: Panel A: Percentage of adults aged 25-64 by highest level of educational attainment in 2015. Panels B and C year 2015, unemployment rate of 25-64 year olds by highest level of educational attainment.
Source: OECD (2016), *Education at a Glance 2016*, OECD Publishing, Paris. See Annex 3 for notes.

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The government has taken measures to increase the quality in higher education. Under the 2010 reform, an increasing proportion of public funding for universities should be allocated on the basis of research and teaching performance. In 2015, the share of performance-related funding rose to 20% of total funding, from 13.5% in 2013, and the National Reform Programme confirmed the government's intention to gradually increase this to 30% (MEF, 2015). The 2017 Budget law introduced several measures to increase the quality of the research system, such as additional funding for the best departments and the best researchers, and increased annual endowment for ANVUR (the national agency for evaluation of the university and research system). A measure to allocate funds to universities taking into account employability rates of students is being evaluated. This is very positive measure as it gives universities incentives to focus on increasing employability of its students and should be implemented.

More funding will be key to improve the quality of education. Education expenditure is low, particularly in tertiary education, both relative to GDP (1.0% of GDP, compared to the OECD average of 1.6%) and to the number of students (expenditure per student was 71% of the OECD average). Giving the limited fiscal room, one alternative could be to increase tuition fees which are low compared to other OECD countries (OECD, 2016a) provided that scholarships for poor students are strengthened and a system of income-contingent loans is introduced to ensure fair access to universities for all. Very recently, the government has created a fund (right to study) financing tax exemption and grants for students in need, defined according to their family income; to the best 400 students of secondary schools who enrol in a state university, a grant of EUR 15 000 net a year is available together with the tax exemption. This is a positive measure since it can help increase the enrolment in tertiary education for the most needed youth.

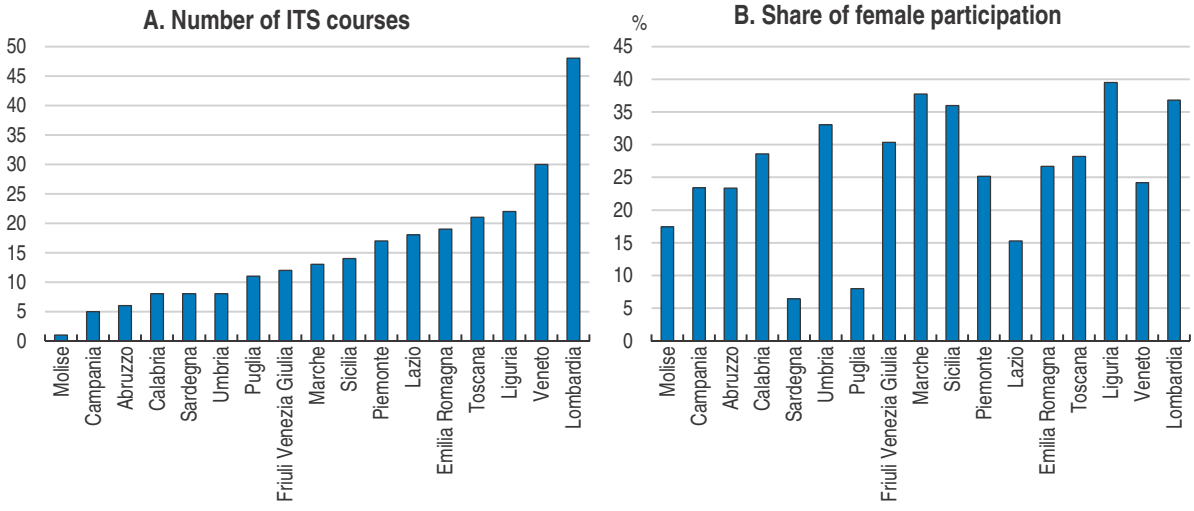
The combination of study and work can help young to develop the skills required in the labour market and reduce the drop-out from university courses. Large part of the practical studies in tertiary education takes place within the schools rather than promoting on-job experiences in the private sector. Less than 60% of students in tertiary education have a working experience (AlmaLaurea, 2016) which is low relative to other OECD countries. This explains, at least in part, the high drop-out rates from university courses, with almost 40% of students not completing the degree (ANVUR, 2016). Empirical evidence confirms that graduates in Italy, who worked besides their studies needed much less time to find their first job (AlmaLaurea, 2016).

A good example of business involvement into tertiary programmes has been developed in Italy. Higher technical institutes (Istituti Tecnici Superiori – ITS) have been created. They provide short-cycle vocationally-oriented tertiary programmes preparing students for rapid entry into the labour market, and valuable working apprenticeships while studying. The higher technical institutes are autonomous bodies, they are mixed public-private institutions which result in a strong synergy between employers, training institutions and universities and research centres. Stakeholders are involved by systematic consultation with social partners regulated and ensured by inter-ministerial decree. ITS courses are implemented with a strong focus on local needs and individualised training routes. The experience of ITS has been positive as graduating students have high level of employability, 73% of the graduates are employed in a job that matches their studies 12 months after finishing (INDIRE, 2016).

These short-cycle programmes strengthen the responsiveness of VET to labour market demand, but enrolment remains still untapped. Participation in vocationally-oriented tertiary programmes is very low – less than 1%, very low with respect to an average of 18% across OECD countries. They are concentrated in the most industrialised regions and suffer from low female participation (Figure 2.22). One of the reasons is that tertiary VET programmes suffer from low demand among young who prefer academic fields. Career guidance at early stages together with full information on labour market outcomes will be key to influence student choices.

Figure 2.22. **The offer of higher technical VET programmes remains concentrated in most industrialised regions and female participation is low**

Year 2016



Source: ITS, INDIRE, *MIUR Database*.

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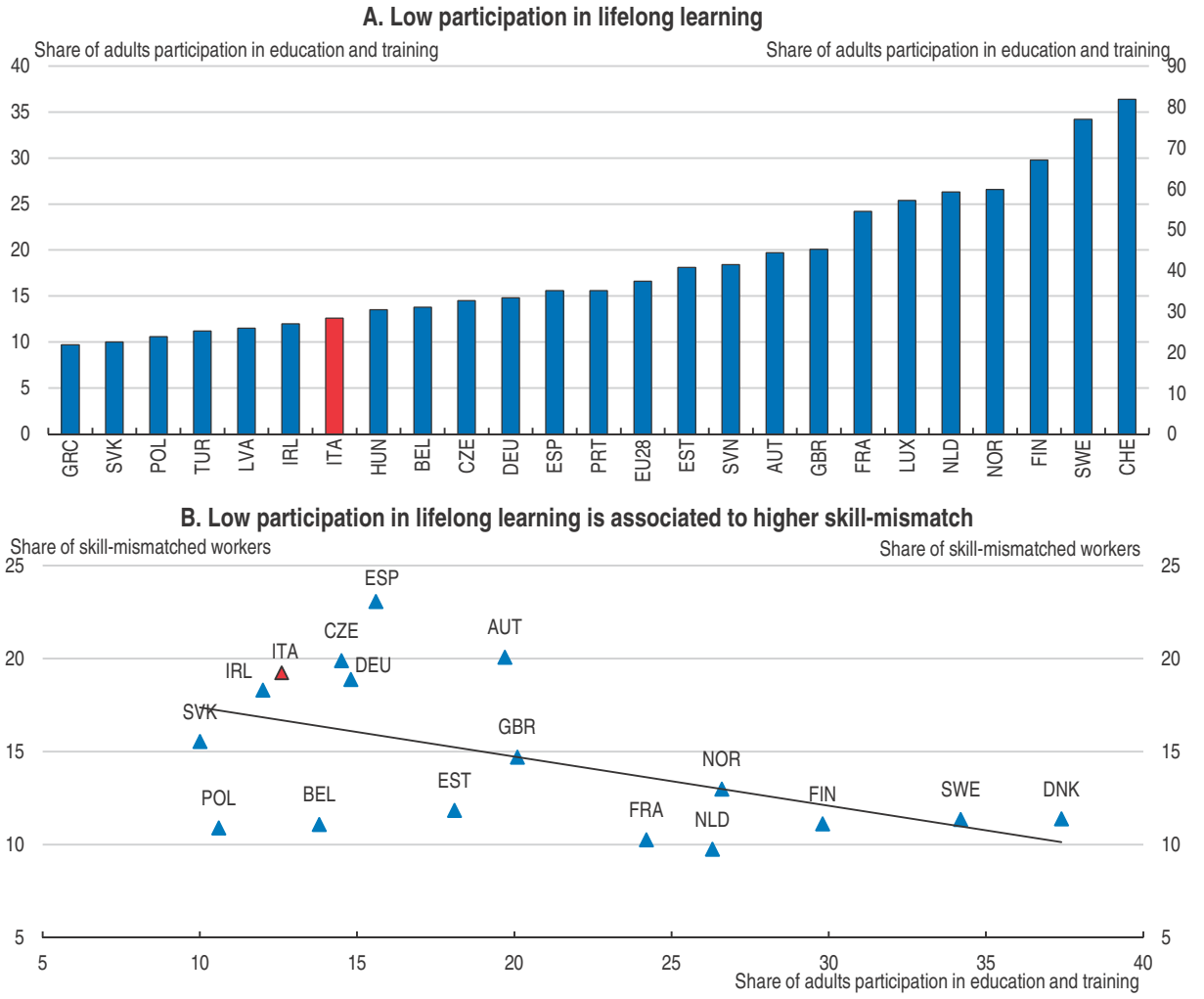
Italy must continue to strengthen programmes encouraging work-based learning. *Good School* reform includes measures in order to boost courses in higher technical institutes, which include linking funding to strict quality criteria, increase the permeability between the ITS and academically-oriented higher education, and simplification of administrative procedures. A national body involving the business sector and other key stakeholders should be established to undertake strategic planning, coordination, and ensure the education-work experience mix reflects not only student preferences but also local labour market needs. Recently, the Government passed a decree creating a three year tertiary degree including one year of on-the-job training. The Government should make sure not to hurt the successful ITS system and that there are no overlaps in the offer. The aforementioned national body could be key to plan and coordinate the existing educational offer.

Incentivising lifelong learning

Lifelong learning is key to help reduce skill mismatch as it helps to update or acquire specific and transversal skills needed by employers. Participation in lifelong training is one of the lowest in the European Union and is associated with the presence of high skill mismatch (Figure 2.23). The government recently took actions to increase the provision of adult education and training, by setting up specialised institutions, the Centri Provinciali

Figure 2.23. **More effort needs to be put in upskilling the labour force**



Note: For skill mismatch measures see Box 2.1. Share of adults (aged 25-64) participating in education and training formal or informal refers to 2015, while skill mismatch for to 2012. The correlation between participation in adult education and training with skill mismatch is -0.5, significant at 5% level.

Source: Eurostat, Adult Education Survey; and OECD calculations using PIAAC 2012.

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per l'Istruzione degli Adulti (CPIAs). CPIAs provide first level courses or Italian language pathways, while second level courses are carried out by upper-secondary schools providing technical, vocational or artistic pathways (Marescotti, 2014).

A life-long learning system needs to be further developed. The system is characterised by a diversity of development of networks and services for lifelong learning in the North and South of the country (ISFOL, 2016b). There is an absence of a national regulatory framework on lifelong learning with a clear national plan. Finally, there is clear need of developing instruments to reach and involve disadvantaged and low-skilled workers.

The participation of low-qualified adults in lifelong learning is particularly low. Facilitating their integration into formal education could help them acquiring general and relevant skills. This can be achieved by making education systems more flexible; increasing the offer of part-time programmes, distance learning and increasing the number of options through which students can combine financial, career and family needs.

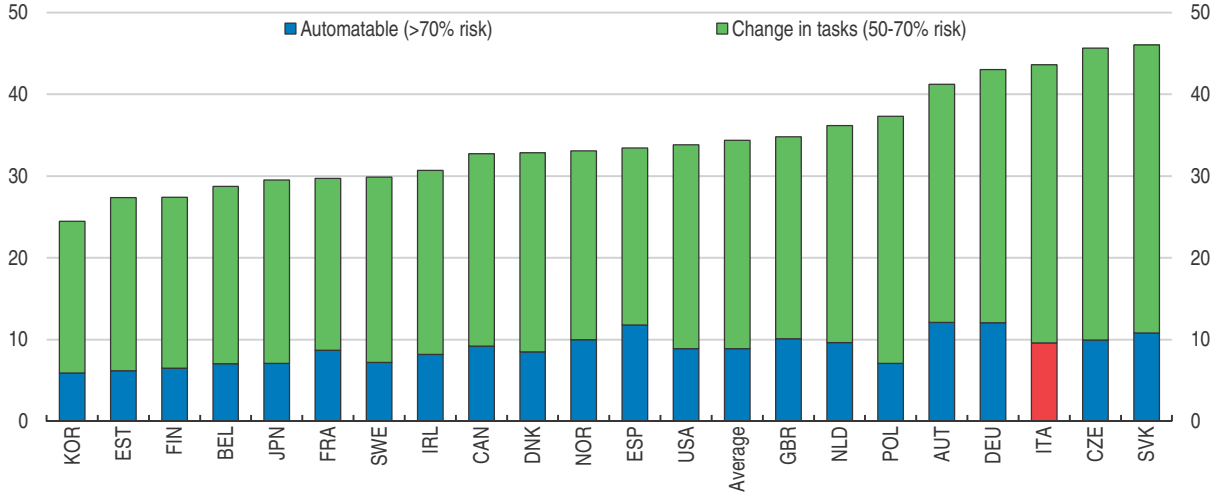
Employers tend to provide less on-the-job training for low qualified workers, because of the higher costs (Cedefop, 2016). Individual learning accounts and vouchers have been successfully used by other countries (for example, Austria and Belgium) to encourage individuals to acquire training, and sharing the costs between the state and individuals. There is also a need to disseminate information on the rewards from lifelong learning in terms of labour market outcomes, e.g. employability and unemployment, wage evolution and job quality indicators.

Developing advanced skills

The demand for digital skills is growing across all occupations. Even manual workers need to have some digital skills, and are asked to handle basic work with computer (Arntz, et al., 2016). In contrast, routine and manual tasks are becoming less prevalent and the share of these jobs on the overall employment is gradually decreasing. These changes are likely to continue and Italy has a high share of jobs at risk due to automation (Figure 2.24).

Figure 2.24. **The risk of job loss due to automation is high**

% of workers in jobs at high and medium risk of automation



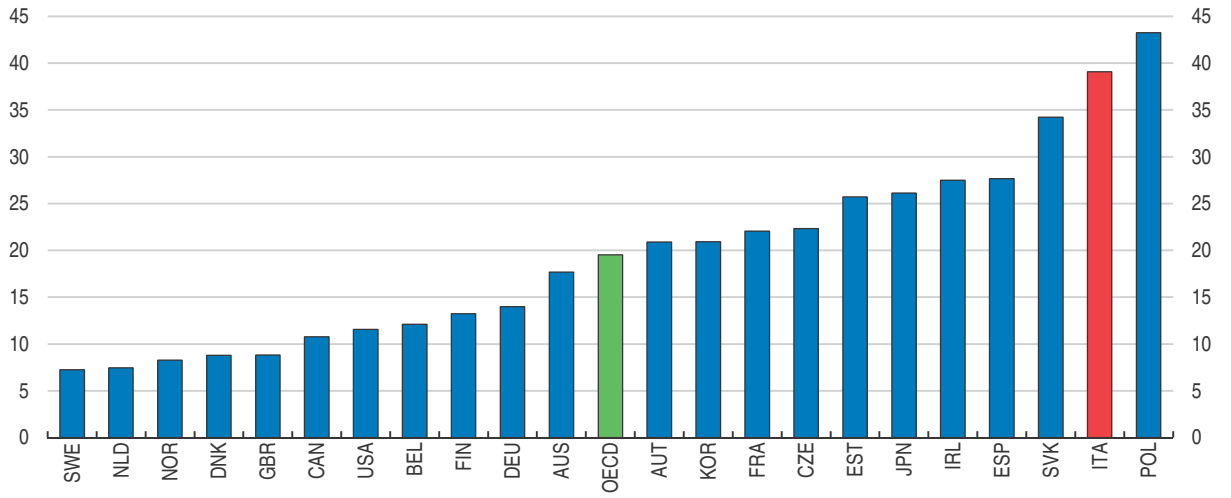
Note: Data for the United Kingdom corresponds to England and Northern Ireland. Data for Belgium corresponds to the Flemish Community.
Source: Arntz, M., T. Gregory and U. Zierahn (2016), "The Risk of Automation for Jobs in OECD Countries: A Comparative Analysis", *OECD Social, Employment and Migration Working Papers*, No. 189, OECD Publishing, Paris.

StatLink http://dx.doi.org/10.1787/888933454579

Italian workers are poorly prepared for the digital economy. The share of adults with no computer experience is the second highest among OECD countries, pointing to the need to enhance access to digital skills training (Figure 2.25). Basic digital skills should be adequately taught and strengthened at all levels of education and training, including adult training and active labour market policies. Some OECD countries have implemented a number of policies to promote digital literacy and inclusion for specific groups of the population who may lag behind (e.g. older people and women). A good example is the case of Norway with a national programme for digital inclusion (OECD, 2016e). The programme has developed web based resources for educators and trainers in digital competence. In addition, a magazine is being developed to inspire elderly non-digital citizens to get involved in the digital world. Plans are also on their way to develop national indicators of digital competence and digital inclusion.

Figure 2.25. **Many adults lack computer skills**

Share of adults aged 15-65 with no ICT experience



Source: OECD Skills Outlook 2013 Database.

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The Government has stepped up efforts to improve digital literacy of Italian citizens. The Digital National Plan, launched in late 2015, provides funds (EUR 1.1 billion) to improve school's IT infrastructure. The *Good School* reform includes a plan, *Digital School*, to strengthen digital competences among teachers and students, and improving Internet connections in schools. Measures with the allocation of EUR 1.1 billion of resources have been approved; for infrastructure interventions, learning spaces, technological equipment, administrative digitisation and connectivity, digital skills and staff training. These are positive steps as they contribute to close Italian schools' deficit in digital infrastructure and digital skills. If fully and correctly implemented these measures could drastically improve the quality and effectiveness of the Italian school system and contribute to reduce existing skill mismatches and skill shortage in the labour market.

Italy has a very low share of science, technology, engineering and mathematics (STEM) graduates and ICT specialists (EC, 2016b). A large share of employers encounters problems to hire precisely in those fields because of lack of candidates or inadequate skills (Excelsior, 2016). In 2016, the government launched the National Industry 4.0 Plan, which provides a range of incentives (for about EUR 13 billion) to boost innovation and skills in new technologies over 2017-20. This is the first national industry plan explicitly aiming at modernising the productive structure of the economy. The Plan pays attention to the development of relevant specialist digital skills through university courses and higher technical institutes, funding research by developing clusters and doctorates and creating competence centres and digital innovation hubs. The Plan could boost the demand of high digital skills, increasing the imbalances and requiring skill transformation for many employees. Enterprises will need to provide the appropriate training to their workforce in order to adapt.

Policy recommendations

Labour market reforms to boost employability

- Ensure ANPAL has the powers to coordinate local employment services offices and set national standards on job search and training policies.
- Increase staff-to-job seeker ratios and specialisation of counsellors in public employment services.
- Implement a systematic assessment of the labour market impact of activation programmes to focus funding on those that are performing well.
- Facilitate labour mobility between regions, occupations and sectors through skills recognition and the use of skills assessment.

Raising skills that match labour market needs

- Create partnerships between schools and the business sector to create quality work-based learning opportunities for students as envisaged by the Good School reform.
- Develop work-based learning programmes based on apprenticeships across all levels of education, including universities.
- Introduce minimum training quality standards to the firms proving traineeships, internships and apprenticeships.
- Scale up the post-secondary vocational education and training (VET) system with high involvement of the business sector based on the Instituti Tecnici Superiori.
- Establish a national body on VET, involving all the key stakeholders to ensure strategic coherence and coordination in the VET system.
- Target the low skilled in lifelong learning by facilitating integration into formal education through part-time programmes in post-secondary education and vocational training.
- Develop digital skills at all levels of education and training.

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