BANCA D'ITALIA
EUROSISTEMA

Annual Report

Rome, 29 May 2018

124th FINANCIAL YEAR

2017

Financial Year 124th

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2017 – 124th Financial Year

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THE INTERNATIONAL ECONOMY

1. CYCLICAL DEVELOPMENTS AND WORLD TRADE

In 2017 the world economy expanded at a brisk and faster than expected pace (3.8 per cent) which, driven by the recovery in investment, extended to the main advanced countries as well as to the emerging and developing economies.

World trade staged a marked recovery, growing once more at a rate that exceeded that of GDP. The expansion in international trade appears to have remained buoyant in the early months of 2018, particularly in the emerging economies. However, firms' assessments of foreign orders suggest a possible weakening across all areas over the course of 2018, most likely attributable to a worsening in business confidence prompted by growing trade tensions between the United States and its primary trading partners.

Favourable cyclical conditions drove up commodity prices in 2017. Agreements between the major oil producing countries helped to absorb the excess supply that had persisted for three years, supporting oil prices. In May 2018, in connection with heightened geopolitical tensions, the fear of significant supply cuts in the medium term pushed oil prices up even further to their highest levels since 2014.

Global inflation increased slightly, mainly owing to rising commodity prices, while the core component remained moderate. The US Federal Reserve continued its monetary policy normalization process, as it has done over the last two years, with limited impact on the markets.

During 2017 the conditions on world financial markets were relaxed. In early 2018, share indices fluctuated sharply and volatility rose rapidly, reflecting fears of a quicker tightening in monetary conditions and the announcement of new protectionist measures by the United States.

The economic situation and macroeconomic policies

The main advanced economies. – Economic growth accelerated to 2.3 percent in 2017 in the advanced countries, almost half a percentage point higher than forecast by the International Monetary Fund (IMF) at the beginning of last year (Table 1.1).

Table 1.1

GDP and inflation in the main advanced and emerging countries
(percentage change on previous period)

	GDP		Inflation (1)	
	2016	2017	2016	2017
Advanced countries	**1.7**	**2.3**	**0.8**	**1.7**
Japan	0.9	1.7	-0.1	0.5
United Kingdom	1.9	1.8	0.7	2.7
United States	1.5	2.3	1.2	1.7
Emerging and developing countries	**4.4**	**4.8**	**4.3**	**4.0**
Brazil	-3.5	1.0	8.7	3.7
China	6.7	6.9	2.0	1.6
India	7.1	6.7	4.5	3.6
Russia	-0.2	1.5	7.1	3.7
Low-income developing countries	3.5	4.7	8.7	9.5

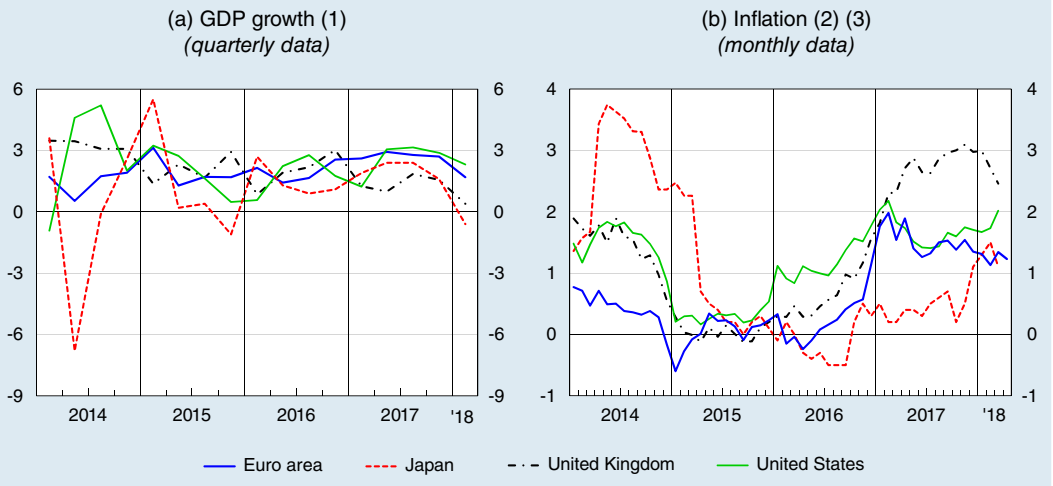
Sources: IMF and national data.
(1) For Japan, the Consumer Price Index (CPI); for the United States, the Personal Consumption Expenditure (PCE) deflator; for the United Kingdom, the Harmonized Index of Consumer Prices (HICP).

The expansion, led by investment and exports, was accompanied by significant increases in employment. Inflation instead remained moderate, at 1.7 per cent on average in 2017, mainly driven by the most volatile components.

In the United States, GDP accelerated compared with the previous year (Figure 1.1.a), in line with the IMF's January forecasts. The robust expansion in private consumption was flanked by even stronger growth in investment.

Figure 1.1

GDP and inflation in the main advanced countries



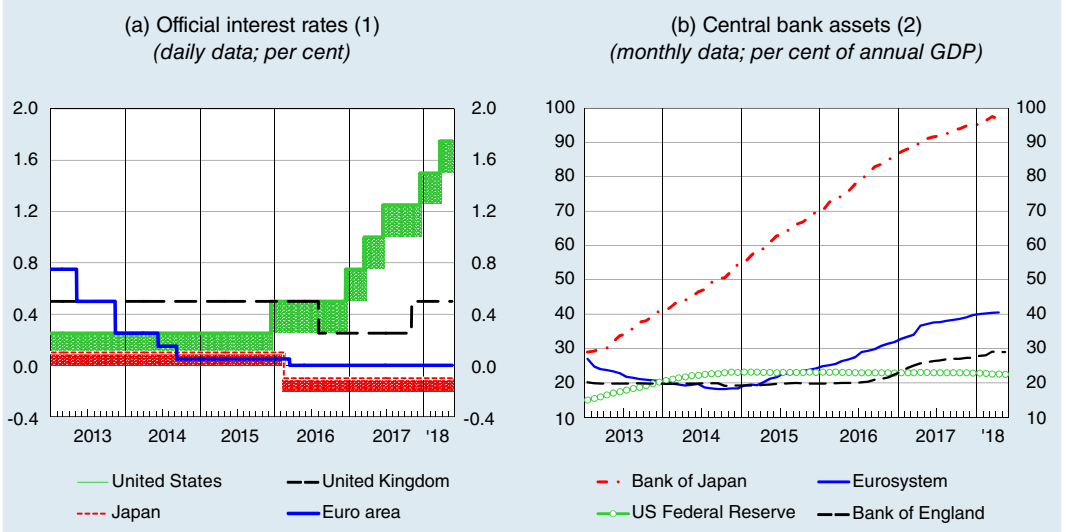
Source: National statistics.
(1) Seasonally adjusted data; annualized quarterly percentage change. – (2) Year-on-year percentage change. – (3) For the United States, the Personal Consumption Expenditure (PCE) deflator; for Japan, the Consumer Price Index (CPI); for the euro area and the United Kingdom, the Harmonized Index of Consumer Prices (HICP).

The unemployment rate, which declined to 4.1 per cent, reached its lowest level in 17 years and is almost half a point below what is considered to be the long-run equilibrium according to assessments by the members of the Federal Open Market Committee of the Federal Reserve. Underemployment, as measured by an indicator that in addition to the unemployed includes those in part-time employment who are willing to work more hours and those who claim to be interested in getting a job but are not actively seeking it, also fell to its pre-crisis low (8 per cent). The rapid improvement in labour market conditions has so far not exerted significant pressures on wages and prices: inflation, measured by the Personal Consumption Expenditure (PCE) deflator, increased only slightly on average in 2017, to 1.7 per cent (1.5 excluding food and energy prices; Figure 1.1.b).

The Federal Reserve continued to gradually normalize monetary policy: with three hikes in 2017 and one last March, it raised the federal funds rate target by 100 basis points, to 1.50-1.75 per cent (Figure 1.2.a); starting in October, it embarked on a gradual downsizing of its balance sheet by progressively reducing the reinvestment of the proceeds of maturing securities (Figure 1.2.b).

Figure 1.2

Official interest rates and balance sheets of the main central banks



Sources: ECB and national statistics.
(1) For the United States, federal funds target range; for Japan, uncollateralized overnight call rate (up to 15 February 2016 the Bank of Japan's monetary policy was based on a quantitative target; since then it has also been based on the official reference rate); for the euro area, rate on main refinancing operations; for the United Kingdom, rate on commercial banks' reserve deposits with the Bank of England. – (2) For the Bank of England, from 2 October 2014, only assets purchased in monetary policy operations (over 90 per cent of the total).

Last December tax reform was passed in the United States (see the box 'The effects of the US tax reform'). This measure had been announced by the new administration but its actual adoption was highly uncertain.[1] In addition, the budget approved in March of this year provides for an increase in discretionary spending of over €500 billion in the current two-year period (equal to about 2.5 per cent of GDP).

[1] A. Anzuini and L. Rossi, 'Fiscal policy uncertainty in the US: a new measure and its recent development', Banca d'Italia, Temi di Discussione (Working Papers), forthcoming.

According to the Congressional Budget Office's most recent assessments, these two pieces of legislation will contribute to a widening of the federal budget deficit, which will rise from 3.5 per cent of GDP in 2017 to more than 5 per cent over the three-year period 2020-22, accentuating the upward trend of the public debt to GDP ratio.

THE EFFECTS OF THE US TAX REFORM

The reform approved in December 2017 considerably reduces personal and corporate income taxes. The main measures, some of which are transitional, are as follows: (a) a reduction in personal income tax rates until 2025 (the top tax bracket has been lowered from 39.6 to 37 per cent) and a 20 per cent business income deduction for sole proprietorships and interests in partnerships; (b) the permanent introduction of a flat corporate income tax rate of 21 per cent instead of the previous top rate of 35 per cent; (c) until 2022, the immediate and full deductibility of capital expenditure and limitations on the deductibility of business interest expense; (d) the permanent elimination of tax on the earnings of foreign subsidiaries, save for a one-time transition tax for the repatriation of offshore cash. According to Congressional Budget Office (CBO) estimates, the reform will translate into lower revenue of around $2,300 billion for the federal budget in the ten years from 2018 to 2027 (including $400 billion in extra interest expenditure); taking account of the positive repercussions on economic activity, its overall cost would fall to around $1,800 billion.

There is broad agreement among private analysts and the international organizations on the short-term expansionary effects of the reform on US economic activity: the tax cuts are expected to stimulate investment, consumption and job creation. The medium-term effects are, instead, more uncertain, and in any event mitigated by the temporary nature of some of the measures. Looking ahead, and all other conditions being equal, the permanent reduction of corporate income tax rates should raise the desired levels of capital stock and, accordingly, productive capacity in the economy. This effect is likely, however, to be offset at least in part by the increase in interest rates which, in equilibrium, would stem from greater federal government borrowing (the impact of the reform in the next five years on the average rates on long-term Treasury debt is estimated by the CBO at two tenths of a percentage point).

According to most of the estimates considered, the reform will raise GDP in the United States by around 1 percentage point after three years. According to the OECD, whose estimates take account of the expansionary stance of the recent federal budget, the overall effect will amount to 1.4 percentage points after just two years. The medium-term forecasts are much more variable. According to the IMF, which after the first five years of the reform expects an adjustment of the federal budget to lower the deficit, the effect on GDP in the US will be practically nil in 2027. According to the CBO, which instead bases its assessments on current legislation, the ten-year increase in GDP will amount to 0.6 percentage points (equivalent to the estimated greater potential output). For the Tax Foundation, also at unchanged legislation, it will amount to almost 3 percentage points (see panel (a) of the table).

The impact on the rest of the world is expected to be moderate overall; it should be relatively stronger in the economies with the closest ties to the United States

(such as Canada), and practically nil for the euro area. This conclusion is borne out by the results of an analysis based on a multi-country empirical model.[1] The effects on the other economies are estimated using this model as a starting point, and hypothesizing an impact on the United States equivalent to that identified by the CBO (see panel (b) of the table). The main channel of transmission to the rest of the world is trade: other countries' exports increase owing to both greater aggregate demand in the United States and to the appreciation of the dollar. These effects are mitigated by a rise in interest rates worldwide.

Effects of the reform on GDP
(percentage points)

	(a) GDP in the United States: estimates by private analysts and institutions					(b) GDP of the main economies			
	1 year	2 years	3 years	10 years		1 year	2 years	3 years	10 years
CBO	0.3	0.6	0.8	0.6	United States (CBO)	0.30	0.60	0.80	0.60
IMF	0.3	0.9	1.2	-0.1	Euro area	0.02	0.04	0.05	0.05
JCT	...	...	...	0.1-0.2	Japan	0.07	0.14	0.19	0.15
OECD	0.7	1.4	...	...	United Kingdom	0.08	0.15	0.21	0.17
TF	0.4	0.9	1.3	2.9	Canada	0.16	0.36	0.51	0.42
TPC	0.8	0.7	0.5	0	China	0.01	0.02	0.02	0.01

Sources: CBO, IMF, Joint Committee on Taxation (JCT), OECD, Tax Policy Center (TPC), Tax Foundation (TF).

[1] L. Metelli and E. Natoli, 'The international transmission of US fiscal shocks: a proxy-SVAR approach', Banca d'Italia, Temi di Discussione (Working Papers), forthcoming.

In Japan GDP growth accelerated to 1.7 per cent, thanks to the contribution of private consumption and investment. In the current year GDP is projected to slow to levels more in line with growth potential, which the Bank of Japan estimates at around 1.0 per cent.

Very modest inflation remains one of the main problems for the Japanese economy. In 2017 inflation picked up again, rising above 1.0 per cent at year-end, mainly owing to the increase in energy and food prices; core inflation instead remained around zero. With medium- and long-term expectations still well below the inflation target of 2 per cent, the Bank of Japan has not changed the highly accommodative monetary policy stance it adopted in October 2016.

In the United Kingdom GDP growth slowed marginally in 2017 compared with the previous year, but much less than feared in the wake of the 2016 referendum on leaving the European Union (Brexit; Table 1.1), as it benefited from the support

of highly expansionary economic policies and favourable cyclical conditions at international level. However, the acceleration in investment and, especially, exports was offset by a marked deceleration in private consumption.

Due to the strong depreciation of the pound sterling, inflation rose to about 3.0 per cent at the end of 2017. The Bank of England, while maintaining a decidedly accommodative stance, increased its reference rate by 25 basis points last November, to 0.5 per cent, the level at which it stood before the referendum.

Significant progress was made in the negotiations with the European Union, but uncertainty about future economic relations remains very high (see the box 'Developments in the Brexit negotiations').

DEVELOPMENTS IN THE BREXIT NEGOTIATIONS

On 29 March 2017 the United Kingdom formally initiated the process of withdrawal from the EU; negotiations began in June of that year. In line with the European Council's guidelines of 29 April 2017, the first round of negotiations dealt with the withdrawal issues, notably the rights of European citizens living in the UK and of British citizens living in the EU, the settlement of the UK's financial obligations deriving from its membership of the EU, and the avoiding of a hard border between Ireland and Northern Ireland. On 15 December, the European Council decided that the first phase of the negotiations had achieved sufficient progress and therefore agreed to move on to the negotiations on future bilateral relations and, as requested by the UK government, on a possible transition period following the withdrawal.

In March 2018, European and British negotiators reached an understanding on some parts of the draft withdrawal agreement, relating among other things to citizens' rights, the financial settlement and a transition period; there is as yet no consensus on the issue of the Irish border. During the transition period, which should run from 30 March 2019 until the end of 2020, the United Kingdom will not take part in any EU decision-making since it will no longer be a member state, though it will continue to benefit from being part of the single market and will be required to comply with European law. However, there will be no certainty about the transition period until the entire withdrawal agreement has been ratified by both parties, according to the principle that, as the EU has reiterated on several occasions, 'nothing is agreed until everything is agreed'.

On 23 March 2018, the European Council issued further guidelines for the negotiations on future relations between the EU and the UK, and established that any agreement must ensure financial stability in the EU, as well as compliance with its laws and its supervisory system. Explicit UK opposition to accession to the European Economic Area, which would allow it to continue to be part of the single market, together with the fact that, from the EU's point of view, the four freedoms (free movement of people, goods, services and capital) are inseparable, mean that no trade agreement can give the UK prerogatives similar to those enjoyed under EU membership, including those deriving from the single passport in the financial sector.

Should there be a free trade agreement, as set out in the European Council's guidelines, trade in goods would not be completely free since, even without tariffs being applied, a series of non-tariff barriers could be introduced. Moreover, trade in services would be subject to the rules of the host country and the current situation of free movement would no longer apply. The guidelines make no reference to financial services which, like other services, would be subject to the general principles of the host country's regulations and to the guarantee of a level playing field. Yet uncertainty over future relations remains high, given that the second phase of the negotiations has only just begun.

If no free trade agreement is reached, trade relations will be governed by the World Trade Organization (WTO) regulations and Most Favoured Nation (MFN) tariffs will be applied to bilateral imports. This would cause more damage to the UK economy than to that of the euro area, especially if less openness to trade were to have repercussions on productivity in the UK.[1]

The impact of any tariffs would be amplified by the fact that, given the highly integrated cross-border production between the two areas, intermediate goods often cross the Channel more than once. Should the UK adopt the same MFN tariffs that the EU applies to third countries, it is estimated that total production costs for UK firms would increase by around 1 percentage point, taking account of national and international value chains.[2] In contrast, the increase in costs for European firms would be marginal, at around 0.1 percentage points, with country-to-country differences depending on the extent to which they rely on manufactured products imported from the UK; in any case the impact on Italy would be even lower than the European average. This can all be attributed to the marked asymmetry in bilateral relations in the supply of intermediate goods: a fifth of the products used in the UK comes from the EU, while only 1.5 per cent of the products used in the EU comes from the UK (0.7 per cent for Italy).

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[1] M. Pisani and F. Vergara Caffarelli, 'What will Brexit mean for the British and euro-area economies? A model-based assessment of trade regimes', Banca d'Italia, Temi di Discussione (Working Papers), 1163, 2018.

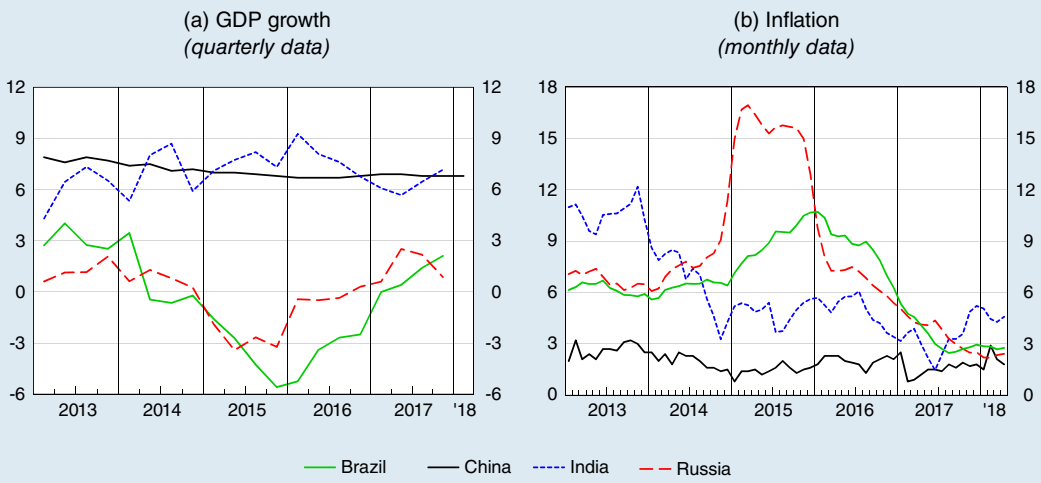
[2] R. Cappariello, M. Damianovic, M. Mancini and F. Vergara Caffarelli, 'EU-UK Global Value Chain trade and the indirect costs of Brexit', Banca d'Italia, Questioni di Economia e Finanza (Occasional Papers), forthcoming.

The main emerging economies. – Economic activity in the emerging and developing countries accelerated to 4.8 per cent in 2017, benefiting from recovering foreign demand and commodity prices (Table 1.1).

In China, GDP rose by 6.9 per cent (Figure 1.3.a), almost half a percentage point more than forecast by the IMF at the beginning of last year. Net exports once again contributed positively to GDP. However, the process of rebalancing the economy towards domestic consumption has not stopped, with the latter still providing the main contribution to growth (4.1 percentage points), while that of investment has decreased slightly owing to the reduction of production capacity in mining and heavy industry as well as to the gradual tightening of monetary and macro-prudential policy intended to contain the growing indebtedness of the Chinese economy.

Figure 1.3

GDP and inflation in the main emerging countries (1)



Source: National statistics.
(1) Year-on-year percentage changes.

Private debt in relation to GDP almost doubled over the past decade, in part fuelled in recent years by funding channels other than bank credit and bond issues. These alternative channels are still directly or indirectly managed by banks, but are much less regulated, and constitute a significant vulnerability for the Chinese economy.[2] In 2017, the authorities introduced measures to strengthen regulation and supervision in different segments of the financial sector to limit the risks of instability, slowing down the growth in corporate indebtedness.

Public debt grew to almost half of GDP in 2017; according to IMF estimates, however, the ratio would be significantly higher if local government off-balance-sheet liabilities[3] were considered.

In 2017 the Chinese authorities limited their foreign exchange interventions and renewed efforts to open the economy, particularly by expanding the list of sectors in which it is possible to make foreign direct investment without the need for prior authorization; in November they announced the gradual liberalization of foreign shareholding in the financial sector. Measures were also taken regarding the foreign investments of residents to redirect them from sectors considered prone to speculation (such as sports, entertainment and real estate) to those deemed of a more strategic nature (such as the Belt and Road Initiative, which aims to promote Eurasian infrastructural integration, or the Made in China 2025 initiative launched to improve the quality of industrial production).

In 2017 China devoted increasing attention to the need to foster sustainable development, including in environmental terms. Measures have been taken to limit pollution; these include the imposition of a new tax on industrial emissions,

[2] IMF, *Global Financial Stability Report*, April 2018.
[3] IMF, *Fiscal Monitor*, April 2018.

the introduction of further restrictions on the use of coal, and a ban on the import of certain types of pollutants.

In India, economic activity slowed to 6.7 per cent in 2017, held back by the adverse effects of demonetization at the end of 2016 (see *Annual Report for 2016*, 2017) and by the difficulties encountered in the introduction of the new indirect taxation system, in force since last July. In the second part of last year increases in food and energy prices pushed inflation above 5 per cent (Figure 1.3.b), a value close to the upper bound of the reference range set by the central bank which, from August onwards, left its monetary policy rates unchanged, interrupting the expansionary cycle under way since 2015.

Beginning in the autumn, the Indian government embarked on a massive plan to recapitalize public sector banks, which are saddled with around three quarters of the system's total non-performing loans, in order to stimulate lending to the private sector; the central bank was given more power to encourage banks to speed up the bad loan recovery process.

In Brazil and Russia rising commodity prices fostered a more rapid recovery in economic activity, which in both countries also benefited from the revival in consumption driven by lower inflation and improved labour market conditions. However, economic activity continues to be affected by the uncertainty associated with the political situation in Brazil and by international tensions in the case of Russia; the latter's banking sector still shows signs of fragility.

Low-income developing economies. – Economic activity in low-income developing countries, which account for about 4 per cent of the world's GDP, strengthened in 2017 (Table 1.1), also thanks to the recovery in the prices of the commodities that many of these countries export.

Over the past five years, the stock of public debt has risen by around 15 percentage points more than GDP to 55 per cent of GDP on average in 2017; public or public sector-guaranteed external debt amounted to about 30 per cent of GDP. In the past decade a lot of these economies had already benefited from debt relief programmes coordinated by the IMF and the World Bank. In recent years, the increase in indebtedness was mainly caused by the adverse effects that the decrease in commodity prices had on revenue, by the adoption of accommodative fiscal policies, and by the depreciation of the local currency against the dollar, the currency in which a significant proportion of the debt is denominated.

The increase in debt recorded in recent years has been accompanied by a rise in financial vulnerability; according to the estimates of the Debt Sustainability Framework (DSF), developed jointly by the IMF and the World Bank, around 40 per cent of these countries are currently in a debt crisis or at high risk of entering into one.

The DSF was launched in 2005 to assess the sustainability of external and public debt in low-income countries and has recently been revised to enhance transparency on the status of those countries and to allow a better evaluation of their potential debt repayment capacity. Other measures of a similar nature include the G20's endorsement,

in March 2017, of the Operational Guidelines for Sustainable Financing, which promote greater transparency in fiscal policies and debt management.

In a context of rising financial vulnerabilities, public investment in low-income countries depends substantially on funding by multilateral development banks, whose strengthening in terms of lending capacity is currently at the centre of the international community's attention (see the box 'The debate on strengthening the lending capacity of multilateral development banks').

THE DEBATE ON STRENGTHENING THE LENDING CAPACITY OF MULTILATERAL DEVELOPMENT BANKS

Achieving the Sustainable Development Goals set by the United Nations in 2015 (the '2030 Agenda') calls for the mobilization of very significant financial resources. Solely in relation to the infrastructure needs of the medium and low income countries, some studies suggest that investment in the order of $1-1.5 trillion per year will be needed until 2030, in addition to that originally planned.[1]

In expectation of a sharp increase in the demand for loans from the multilateral development banks, also in consideration of the important role played by these institutions in funding infrastructure projects in the emerging and developing economies, the international community has launched initiatives to increase these banks' lending capacity. Given the limited amount of new resources that the shareholder countries are willing to grant them through capital increases (after two years of negotiations, the World Bank succeeded in obtaining an increase in paid-in capital of $7.5 billion), greater lending capacity should mainly originate from a better use of the margins offered by the balance sheets of these institutions, while preserving their financial soundeness.

In the two years 2016-17, following the Action Plan to Optimize Multilateral Development Banks' Balance Sheets, approved by the G20 at the end of 2015, the largest multilateral development banks[2] launched initiatives aimed, among other things, at (a) increasing leverage by maintaining their AAA ratings; (b) exchanging some credit exposures to further diversify their own portfolios; and (c) strengthening their self-financing capacity by reducing operating costs, revising upwards their lending rates for longer maturities and for beneficiaries with higher income per capita, and reforming the policies for transferring profits to funds for the poorest countries.

Standard and Poor's (S&P) estimates that the 19 multilateral lending institutions it examined could increase their overall credit exposure by a further $1,000 billion while keeping their respective ratings unchanged.[3]

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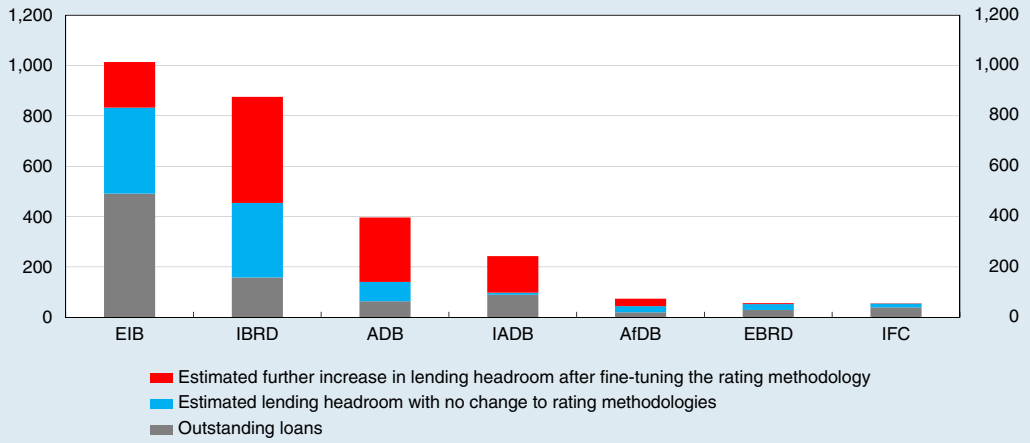
1 A. Bhattacharya, J. Oppenheim and N. Stern, 'Driving sustainable development through better infrastructure: key elements of a transformation program', Global Economy & Development Working Paper, 91, July 2015.

2 The African Development Bank (AfDB), the Asian Development Bank (ADB), the European Bank for Reconstruction and Development (EBRD), the European Investment Bank (EIB), the Inter-American Development Bank (IDB), the International Bank for Reconstruction and Development (IBRD) and the International Finance Corporation (IFC).

3 S&P Global Ratings' Credit Research, 'How much can multilateral lending institutions up the ante?', New York, Alacra Store, 2016.

In line with these findings, a study conducted by the Bank of Italy estimated that the seven largest multilateral development banks (all AAA-rated), which are responsible for about 90 per cent of the total exposures of the 19 institutions evaluated by S&P, could increase their overall credit exposure from the current $894 billion to $1,680 billion and still keep their ratings unchanged (see the figure).[4]

Lending capacity of the 7 largest multilateral development banks (1)
(billions of dollars)



Source: R. Settimo, 2017, see footnote 4.
(1) Data as at 2015. Lending capacity is linked to the objective of maintaining a triple-A rating.

Some research has shown nevertheless that the methodologies used by the rating agencies to assess the creditworthiness of the multilateral lending institutions do not take due account of the special nature of multilateral development banks. In particular, these methodologies could underestimate the benefits deriving from holding a de facto preferred creditor status and overestimate the penalties associated with the single name concentration in the loan portfolio.[5]

The abovementioned Bank of Italy study demonstrated that a better understanding of these aspects could significantly reduce capital absorption and, in this way, further increase the overall lending capacity of the seven largest multilateral development banks to $2,716 billion, maintaining their AAA ratings (see the figure). These estimates should, however, be taken with caution in that they were calculated assuming a constant allocation of resources and unchanged creditworthiness on the part of both the beneficiary and the shareholder countries.

[4] R. Settimo, 'Towards a more efficient use of multilateral development banks' capital', Banca d'Italia, Questioni di Economia e Finanza (Occasional Papers), 393, 2017. Estimates based on 2015 data. The results are very similar if the aggregates are updated to the 2016 figures. The quantifications are based on the methodology currently used by S&P to evaluate the creditworthiness of multilateral lending institutions.

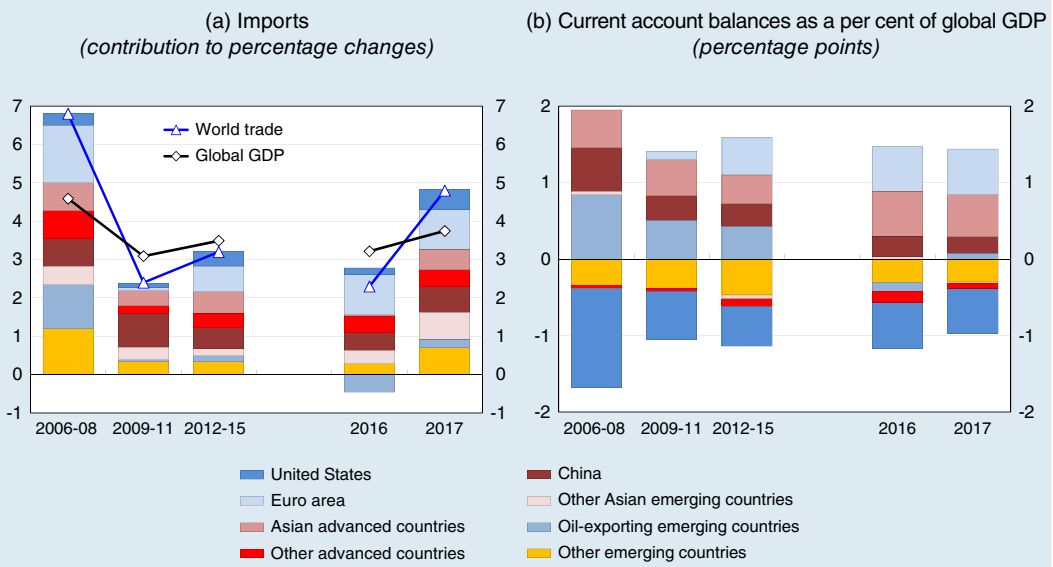
[5] W. Perraudin, A. Powell and P. Yang, 'Multilateral development bank ratings and preferred creditor status', IDB Working Paper Series, 697, 2016; C. Humphrey, 'Are credit rating agencies limiting the operational capacity of multilateral development banks?', Paper commissioned by the G24 as part of its work programme on enhancing the role of MDBs in infrastructure finance, 30 October 2015.

International trade and global current account imbalances

The acceleration in global economic activity was associated with a significant recovery in trade which, after five years of modest expansion, returned to growth at a pace exceeding that of GDP (Figure 1.4.a).

Figure 1.4

International trade of goods and services by volume and current account balance in the main countries and areas



Source: Based on IMF, *World Economic Outlook*, April 2018.

The strongly expansionary phase appears to have continued into the first part of 2018. Early indications from firms' assessments of foreign orders point to a slowdown starting in the second quarter. These developments represent a partial correction compared with the high levels reached in the past. They could also signal a deterioration in the confidence of firms operating in international markets, following heightened uncertainty about the evolution of US trade policies with respect to the main trading partners.

In 2017, trade in goods and services grew twice as fast as in the previous year to nearly 5 per cent, the highest rate since 2012. This performance was mainly driven by investment, the demand component with the highest import content, and by the increase in commodity prices, which supported the spending capacity of countries rich in natural resources as well as investment in the energy sector.

The expansion of imports has been strongest in the emerging economies (6.4 per cent) but has staged a significant recovery in the advanced ones as well (4.2 per cent). The main contributors were Asia (including China), the euro area and, to a lesser extent, the United States; the contribution of the oil-exporting countries became positive again as they benefited from the recovery in the terms of trade. In China the acceleration in imports (6.9 per cent) was slower than that in exports (9.2 per cent), in part an effect of the slowdown in investment in that country.

Global current account imbalances held stable overall compared with 2016, at levels lower than those prevailing in the period 2006-08. The rebound in oil prices has helped to close the oil-exporting countries' deficit; China's current account surplus continued to narrow, to 1.3 per cent of GDP, owing both to a smaller surplus in the goods balance and a larger deficit in the services balance. Conversely, Japan's surplus widened to 4 per cent of GDP and so did, to a lesser extent, that of the euro area, to 3.5 per cent. In the United States the deficit remained stable at 2.4 per cent of GDP (Figure 1.4.b).

The global trade integration process continued to feel the pull of opposing forces, a trend that has been under way since the onset of the global financial crisis. On the one hand, negotiations on a large number of liberalization agreements have begun at bilateral and regional level with the aim of not only removing obstacles to free trade in goods and services but also of facilitating cross-border production and investment through the elimination of discriminatory practices and the development of agreed upon technical and regulatory standards. On the other hand, protectionist pushes have become stronger as of late, especially on the part of the United States.

Last September marked the provisional entry into force, pending final approval by national parliaments, of the Comprehensive Economic Trade Agreement (CETA) between the European Union and Canada, which provides for the almost complete removal of tariff barriers in the trade in goods, the mutual opening of the respective service sectors, and preferential access to public procurement and investment. Last year also saw the finalization of the negotiations on the Economic Partnership Agreement (EPA) between the EU and Japan, which is primarily focused on removing trade barriers on food products. In early 2018, eleven Pacific Rim countries including Canada and Mexico signed the Comprehensive and Progressive Agreement for Trans-Pacific Partnership (CPTPP), despite the withdrawal of the United States.

By contrast, according to recent analyses by the IMF, following the global financial crisis there has been an increase in trade-restrictive measures by G20 countries, especially by the emerging ones, whose trade barriers were already significantly higher compared with the advanced countries.[4]

In 2018 protectionist pressures from the United States increased sharply. While the outcome of the negotiations for a revised North American Free Trade Agreement (NAFTA) remains uncertain, at the beginning of the year the US government raised the tariffs on imports of certain products, including aluminium and steel (respectively to 10 and 25 per cent); the EU, Canada and Mexico have been temporarily exempted from these measures, while other countries (Argentina, Australia, Brazil and South Korea) have been granted a permanent exemption in exchange for a voluntary restriction of their exports of aluminium and steel to the United States. The US government has also indicated its intention to impose additional tariffs of 25 per cent on a number of Chinese imported products worth around $50 billion (that is, about a tenth of total imports from China). The restrictive measures are expected to enter into force following a public consultation to be completed at the end of May; China has already announced retaliatory measures of similar magnitude on US imports, especially food, if the negotiations under way between the two countries were to fail.

[4] IMF, *World Economic Outlook*, April 2018.

According to the assessments of the main international institutions and research centres, the direct impact of all these measures would be limited; however, the effect on the US economy would be more negative. The indirect effects, which would result from potential bilateral retaliatory measures, although difficult to measure, would be pervasive and far-reaching, owing to the interconnectedness of global value chains and the negative impact of increased uncertainty on the investment decisions of multinational companies.

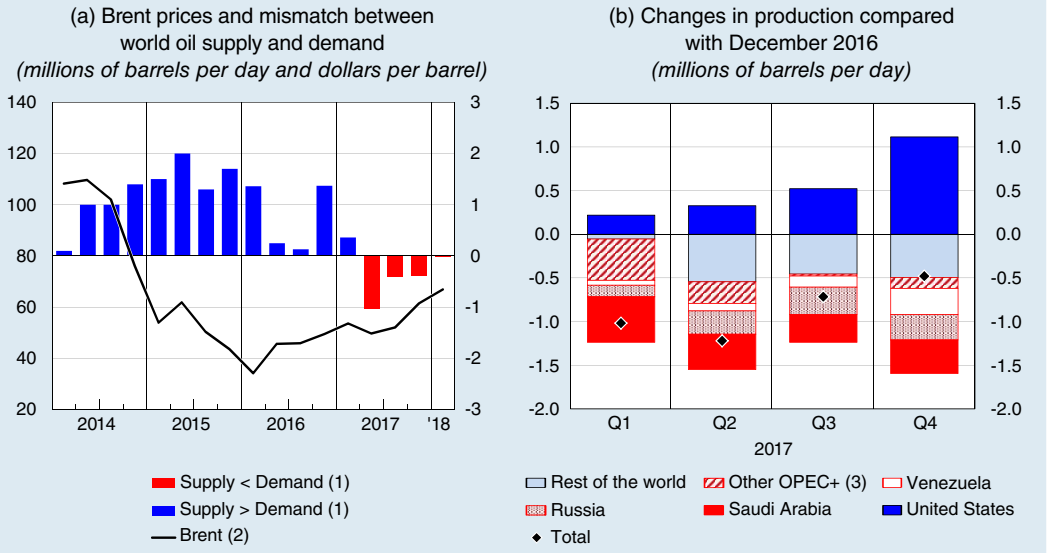
The persistence of the US trade deficit (4.2 per cent of GDP), which is particularly strong with respect to China, was cited by the US government as one of the main factors behind the decision to raise tariffs. However, developments in the overall deficit of a given country mainly depend on macroeconomic and structural factors; moreover, bilateral balances do not fully reflect the origin of the value added incorporated in the goods traded between two countries; these balances, therefore, could be significantly different if they were adjusted to take account of this. Specifically, the US trade deficit with China would be narrowed by about one third if it were calculated on the basis of the origin of the value added incorporated in the goods.[5]

Commodity prices and markets

Oil prices. – Oil prices rose in 2017, surpassing $60 dollars per barrel in December thanks to the reduction in excess supply that had been a key feature of the market during the previous three years (Figure 1.5.a). Global demand for oil, which was repeatedly revised upwards by the International Energy Agency (IEA), increased by 1.5 million barrels per day on the previous year, while supply increased only slightly, by 0.4

Figure 1.5

Oil supply and demand and changes in crude oil production



Sources: Based on EIA, IEA and Thomson Reuters Datastream data.
(1) Right-hand scale; millions of barrels per day. – (2) Dollars per barrel. – (3) OPEC+ excluding Saudi Arabia, Venezuela and Russia.

[5] OECD and WTO, 'Trade in value-added: concepts, methodologies and challenges (joint OECD-WTO note)', 2012.

million barrels per day; inventories, which the IEA only measures for OECD countries, decreased and in March of this year were lower than the average for the last five years.

Oil prices continued to rise in early 2018, driven by growing global demand and a reduction in the overall supply, which was only partially offset by increased production in the United States. In this context, heightened geopolitical risks – also due to the announcement by the United States of its decision to withdraw from the nuclear deal with Iran, OPEC's third largest producer – accentuated fears of a stronger contraction in global crude oil production. In May oil prices surpassed $75 per barrel and futures prices point to a very small decrease in prices in the medium term.

The agreement concluded at the end of 2016 between OPEC members and other oil-producing countries including Russia (a group known as OPEC+) to cut global inventories and rebalance the oil market has been in force since the beginning of 2017. To reach these objectives, the deal provided for crude oil production to be capped at agreed upon levels for six months, a time frame which was subsequently extended to the end of 2018. The objectives having in large part been attained, the OPEC+ countries cut their supply by about 1.0 million barrels per day in 2017 as a whole compared with December 2016 (Figure 1.5.b).

Unexpected and temporary interruptions in production, such as those in the North Sea and in the Gulf of Mexico, also contributed to the contraction in the supply of crude oil. Effects of a more lasting nature are instead linked to the decline in investment recorded in recent years in the more mature conventional oil fields and, to a greater extent, in Venezuela, where, also following heightened internal political tensions, there was a collapse in production.

Production instead continued to increase in the United States, driven by growth in non-conventional sources that exceeded expectations. In early 2018 the US supply of crude oil surpassed that of Saudi Arabia and was only 0.6 million barrels per day lower than that of Russia, which remains the world's largest producer. After the US Congress lifted the ban on exporting crude oil, US sales abroad rose sharply and were accompanied by an increase in investment in storage and transport facilities.

Other commodity prices. – The prices of non-oil commodities, which had been recovering since 2016, rose further in 2017, in line with the stronger than expected growth observed in the major economies. The prices of industrial metals benefited from the widening supply gap:[6] production in China was cut to limit pollution during the winter season, leading to increased imports together with a contraction in the global supply.

International financial markets

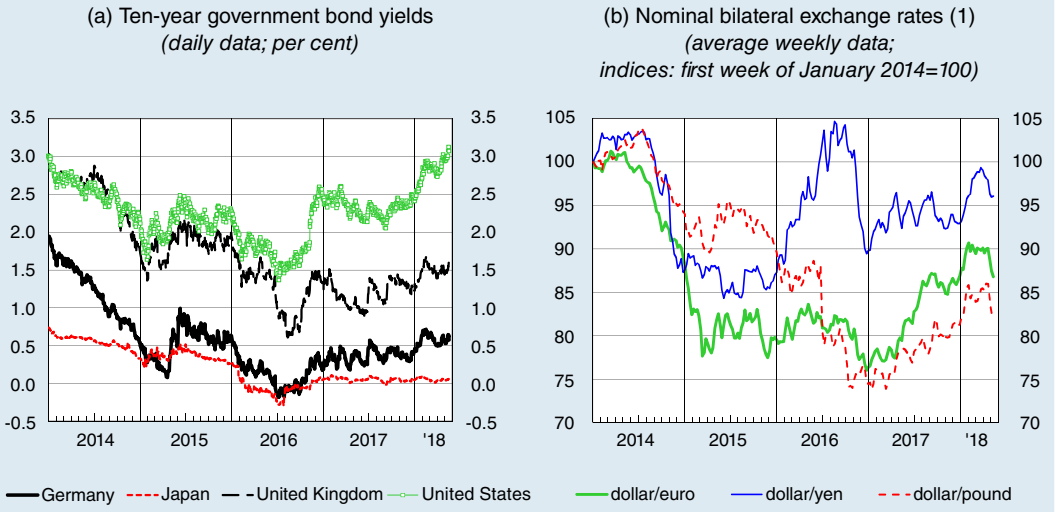
Conditions on the world financial markets were relaxed in 2017. Against the backdrop of a low volatility environment, long-term yields in the advanced economies remained moderate and the prices of the riskiest financial assets rose. However, volatility has started to increase again and share prices have fluctuated sharply since the beginning of the year.

[6] IMF, *World Economic Outlook*, April 2018.

Long-term interest rates in the US decreased in the first part of 2017, coinciding with weak inflation (Figure 1.6.a); from the end of August onwards, yields started to increase again, incorporating expectations of higher growth and inflation. Interest rates began to rise more sharply in early 2018 owing to the release of macroeconomic data on wages and inflation that exceeded expectations and led to an upward revision of monetary policy rate expectations. In the other main advanced economies, long-term yields held stable during most of 2017 but started to rise again at the end of the year in expectation of a less accommodative monetary policy stance. The exception was Japan, where ten-year yields remained practically nil.

Figure 1.6

Long-term interest rates and exchange rates in the main advanced countries



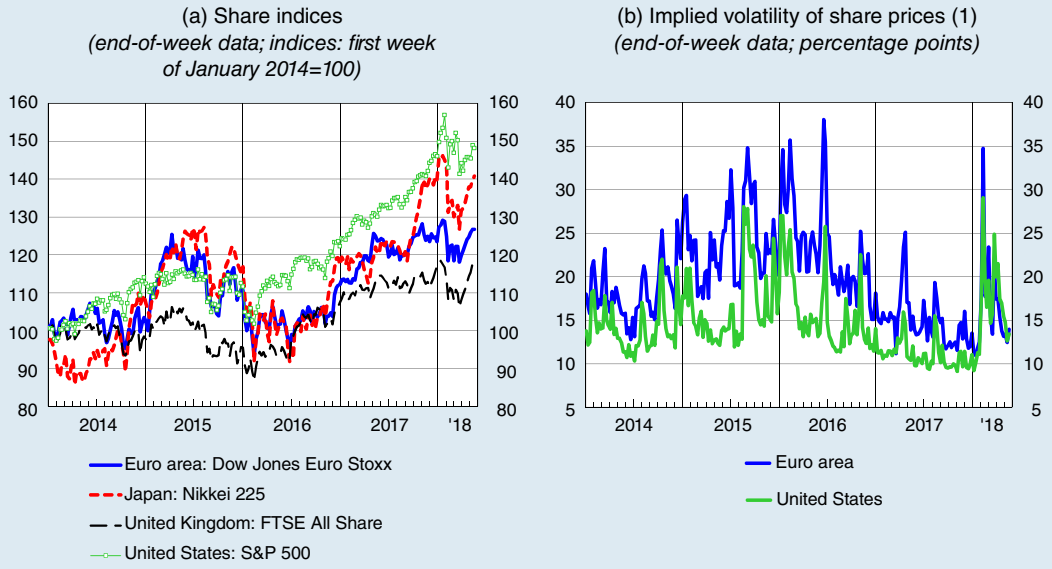
Source: Thomson Reuters Datastream.
(1) An increase in the index signals depreciation.

Share prices continued to grow in 2017, reaching new historical highs (Figure 1.7.a). Financial market volatility dropped to its lowest levels since the financial crisis (Figure 1.7.b). Since February 2018, however, share prices have fluctuated sharply and volatility has gone up again in connection with the upward revision of interest rate expectations and the exacerbation of tensions between the United States and China. The increase in volatility was amplified by technical factors such as, among others, the closing of speculative positions on financial derivatives (see the box 'Increased volatility in the financial markets', *Economic Bulletin*, 2, 2018). Uncertainty about economic policies, which had dropped sharply in 2017, also rose again.

Last year and in early 2018 the dollar depreciated against the main currencies. Despite the gradual increase in interest rates decided by the Federal Reserve, the weakening of the US dollar seems to have been influenced by the uncertainty about the effects of economic policies in the US, improved growth prospects in other major advanced economies and, vis-à-vis the euro, the easing of political risk following the French and German elections. Since the end of March, however, the dollar has begun to appreciate, in part benefiting from better than expected macroeconomic developments in the United States (Figure 1.6.b).

Figure 1.7

Share indices and implied volatility in the main advanced countries

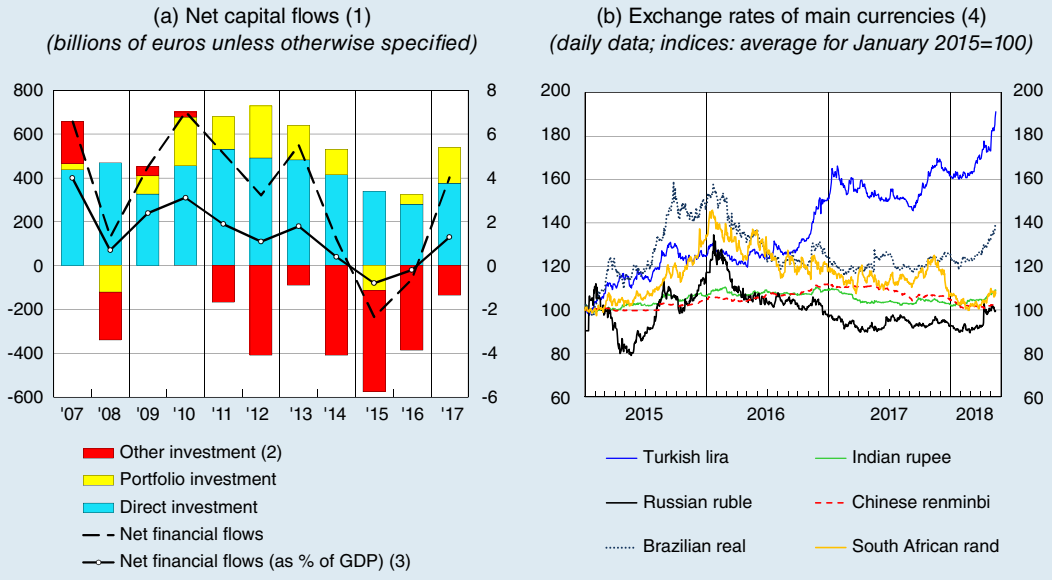


Source: Thomson Reuters Datastream.
(1) Stock market indices: VSTOXX for the euro area and VIX for the United States.

The financial conditions for the emerging economies remained accommodative overall. In 2017 net flows of capital returned positive as an effect of the significant and widespread increase in inflows from abroad and the substantial reduction in capital outflows from China (Figure 1.8.a). The overall

Figure 1.8

Capital flows and exchange rates in the emerging countries



Sources: Based on IMF and Thomson Reuters Datastream data.
(1) Balance of inflows and outflows of capital to and from the euro area; does not include changes in official reserves and other flows relating to the official sector. – (2) Includes bank and commercial loans, currency deposits, and other assets and liabilities. – (3) Right-hand scale. – (4) Exchange rate against the dollar. An increase in the index signals depreciation.

dynamics reflected growth in direct and, to a larger extent, portfolio investments as well as the smaller outflows relating to the other components, including the banking sector. There was an increase in the issuance of dollar-denominated bonds on the part of sovereign and private-sector issuers in the main emerging economies. Last year and in early 2018 share indices recorded widespread gains that were only in part dampened by the recent heightening of tensions in the international markets.

In 2017 the currencies of the emerging economies displayed differing trends (Figure 1.8.b). In China the renminbi appreciated by 10 per cent thanks to the performance of net capital flows, which also facilitated a recovery in the country's official reserves (to $3,089 billion), following the historic low reached at the beginning of the year. Starting in early 2018, the currencies of the emerging economies have by and large depreciated against the dollar as a response to the interest rate hike in the United States. The weakening was more pronounced for the Brazilian real and, especially, the Turkish lira, the latter being affected by domestic political uncertainty which has played a part in driving it to historic lows.

THE EURO-AREA ECONOMY

2. THE ECONOMY AND FISCAL POLICIES OF THE EURO AREA

The recovery of economic activity in the euro area, under way since spring 2013, strengthened and spread to all the countries in the area. In the first quarter of 2018, growth fell back slightly, returning in line with the average for the last three years.

After fears of deflation subsided at the beginning of 2017, inflation gradually increased; however it is still far from the Eurosystem's definition of price stability, especially as regards the core component. A steady recovery in inflation is expected over the next few years, but this will depend on the reabsorption of spare labour capacity, which is still difficult to measure accurately, and on the recovery of firms' and workers' expectations as regards the setting of prices and wages.

Significant support continues to come from economic policy measures, in particular from the very favourable monetary conditions. According to European Commission estimates, the fiscal policy stance in the euro area was neutral in 2017 and is expected to become slightly expansionary in 2018.

In 2017 the Commission presented a number of initiatives to reform the governance of the Economic and Monetary Union, including proposals to complete the banking union and the capital markets union, and the plan to strengthen the European Stability Mechanism (ESM), which could serve as a kind of European monetary fund.

Cyclical developments

In 2017 euro-area GDP increased by 2.4 per cent, a rate close to that of the US and higher than those of the United Kingdom and Japan. Compared with 2016, the acceleration was mainly due to sales in foreign markets, accompanied by a marked increase in industrial production. The contribution of domestic demand fell slightly, but remained robust.

The dispersion of growth rates between the euro-area economies declined to its lowest level since the launching of the Monetary Union (Table 2.1). By contrast, the output gap is still highly differentiated; the European Commission estimates that last year in the euro area it had narrowed to -0.5 per cent from -1.3 in 2016, calculated as the average for countries where the gap was still negative (such as Greece, Italy and Luxembourg) and others where it was basically in balance (such as Germany, Spain and Austria).

Exports grew by 5.1 per cent, favoured by the acceleration of international trade in all the leading economies (see Chapter 1, 'Cyclical developments and world trade').

Table 2.1

GDP in the main euro-area countries (1)
(chain-linked prices; percentage changes on previous period)

	2015	2016	2017	2017				2018
				Q1	Q2	Q3	Q4	Q1
France (2)	1.1	1.2	2.2	0.7	0.6	0.5	0.7	0.3
Germany	1.7	1.9	2.2	0.9	0.6	0.7	0.6	0.3
Italy	1.0	0.9	1.5	0.5	0.4	0.4	0.3	0.3
Spain	3.4	3.3	3.1	0.8	0.9	0.7	0.7	0.7
Euro area (3)	2.1	1.8	2.4	0.6	0.7	0.7	0.7	0.4

Sources: Based on national statistics and Eurostat data.
(1) The quarterly series are adjusted for seasonal and calendar effects. – (2) The quarterly data do not include the revised annual data released on 15 May. – (3) Reference is to the current euro area, with 19 members.

Exports were mainly directed towards the non-euro-area European countries and China. Imports, on the other hand, declined by 4.3 per cent. The current account surplus, which had been rising since 2013, remained broadly stable at 3.5 per cent of GDP; the favourable increase in volume was countered by the worsening terms of trade, mainly due to higher oil prices.

Household expenditure in 2017 increased by 1.7 per cent, almost in line with the previous two years; the propensity to save was essentially unchanged at 12.0 per cent. Household income benefited from further improvements in labour market conditions: employment increased by 1.6 per cent, accelerating for the third consecutive year. The rate of unemployment, which had risen to 12.0 per cent in 2013, dropped to 9.1 per cent, but this is still 1.5 percentage points higher than before the crisis.

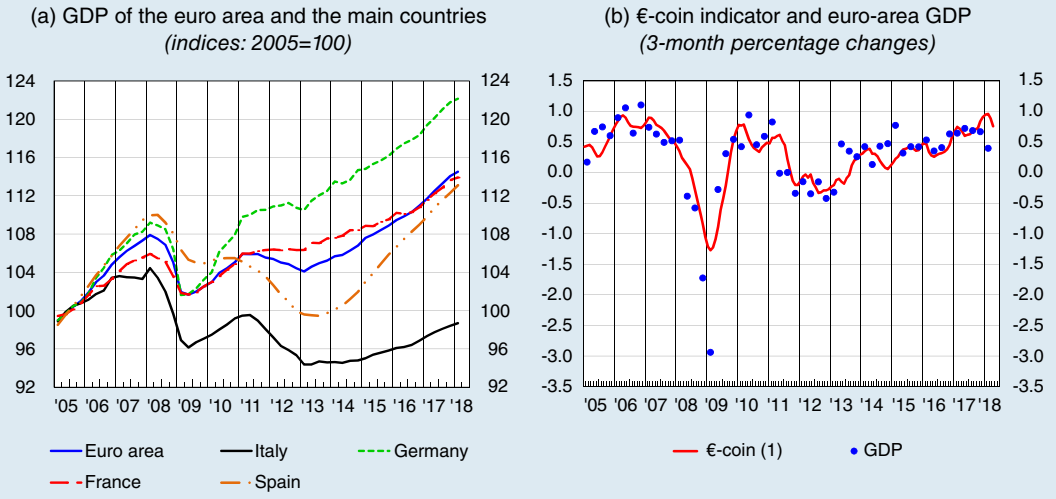
Gross fixed capital formation grew by 2.9 per cent on average in the area and by a larger amount in the four major economies; overall it was almost 5 percentage points below the 2007 level.

At the start of 2018 there were some signs of a slowdown, although this now appears to have been temporary. In the first quarter, euro-area GDP grew by 0.4 per cent on the previous quarter (Figure 2.1.a) - less than most professional forecasters had expected. The Bank of Italy's €-coin indicator, which provides a monthly estimate of GDP growth in the euro area, net of short-term volatility, strengthened steadily in 2017, reaching its highest level since spring 2000 in February 2018; it weakened in March and April although it is still high in historical terms (0.76 in April; Figure 2.1.b).[1]

[1] See the methodology described in F. Altissimo, R. Cristadoro, M. Forni, M. Lippi and G. Veronese, 'New eurocoin: tracking economic growth in real time', *The Review of Economics and Statistics*, 92, 2010, 1024-1034, also published by the Bank of Italy in Temi di Discussione (Working Papers) 631, 2007. The monthly updates of the indicator are published on the websites of the Bank of Italy and the Centre for Economic Policy Research - CEPR.

Figure 2.1

Euro-area GDP and the €-coin indicator



Sources: Bank of Italy, Eurostat and Istat.
(1) See the section dedicated to the €-coin: April 2018 on the Bank of Italy's website. The €-coin estimate for April 2018 was completed before GDP data for the first quarter of 2018 became available.

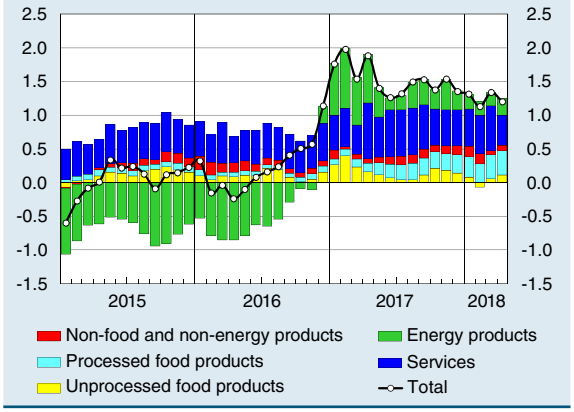
Prices and costs

In 2017 consumer price inflation in the euro area rose from virtually zero in the two previous years to 1.5 per cent; it was highest in Spain and Germany (respectively 2.0 and 1.7 per cent) and lowest in Italy and France (1.3 and 1.2 per cent). The dispersion between all the euro-area countries was the same as the previous year. Price growth was, however, still low by historical comparison, particularly as regards the core component, which last March was less than the average for the period 1999-2017 in 16 of the 19 countries belonging to the Monetary Union.

The recovery in inflation in 2017 was almost entirely due to the most volatile components (energy and food products, the prices of which were influenced by particularly bad weather conditions early in the year; Figure 2.2). Core inflation stood at 1.0 per cent, just above the average for the previous four years (see the box 'Low inflation in the euro area and the global economy'). Despite the acceleration in economic activity, wage pressures were still quite weak, slowed by persistent underuse of productive resources (see the box 'Wage growth in the euro area during the double-dip recession').

Figure 2.2

Inflation in the euro area and contributions of its components (1)
(monthly data; 12-month percentage changes and percentage points)



Source: Based on Eurostat data.
(1) Harmonized Index of Consumer Prices.

According to analysts' expectations in the medium term, surveyed by Consensus Economics in April, inflation is expected to remain at 1.5 per cent in 2018 as a whole, increasing gradually over the next five years. Similar signals can be extrapolated from financial asset prices. Inflation expectations in the first quarter of 2018, based on inflation swap returns at two years and at five-ten years, stood at 1.3 and 1.7 per cent respectively. Since the start of 2017, inflation option prices have indicated that there is virtually no likelihood of negative inflation at the five-year horizon.

LOW INFLATION IN THE EURO AREA AND THE GLOBAL ECONOMY

Many factors have contributed to the low inflation that has characterized the global economy over the last five years, as highlighted by numerous studies, including some carried out at the Bank of Italy. In the euro area, a large role has been played by firms' reduced labour costs and low profit margins in a context of substantial spare capacity and labour force underutilization, as well as by worsening inflation expectations, which have been reflected in both wage and price dynamics.[1]

According to analyses carried out by some international institutions, with increased economic integration, global cyclical conditions should play a bigger part in determining inflation in the main advanced economies, with a corresponding weakening of the relationship between price dynamics and cyclical conditions (the Phillips curve) and thus of the efficacy of each country's economic policies. However, empirical evidence for the euro area has not yielded conclusive results.[2]

An analysis of inflation developments in the main advanced economies carried out at the Bank of Italy using an econometric model that takes into account individual countries' interdependencies and specificities confirms that price dynamics can largely be explained by a common component (global factor).[3] However, the analysis also finds that this global factor is highly correlated with the more volatile components of consumer price inflation, such as energy commodity prices, and modestly correlated with core inflation, which is loosely linked to the global component.

A study conducted using a general equilibrium model[4] reached similar results: in the euro area, international factors, especially the rapid fall in oil prices, seem to have played a large role in lowering inflation both during the global financial crisis and in the two years 2014-15. Core inflation, however, has remained low in recent

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1 For an overview of the studies on low inflation in the euro area carried out by the Bank of Italy and by other Eurosystem central banks, see S. Neri and S. Siviero, 'Low inflation in the Eurozone', *Vox*, 15 August 2015; M. Ciccarelli and C. Osbat (ed.), 'Low inflation in the euro area: Causes and consequences', European Central Bank, Occasional Paper Series, 181, 2017.

2 The global output gap's direct effect on inflation is due to: the growing international integration of trade channels and production processes caused by global value chains, capital mobility, and the increased substitutability of production factors; see R. Auer, C. Borio and A. Filardo, 'The globalization of inflation: the growing importance of global value chains', BIS Working Papers, 602, 2017; 'Domestic and global drivers of inflation in the euro area', European Central Bank, *Economic Bulletin*, 4, 2017, 68-95.

3 A. Carriero, F. Corsello and M. Marcellino, 'The global component of inflation volatility', Banca d'Italia, Temi di Discussione (Working Papers), 1170, 2018.

4 L. Burlon, A. Notarpietro and M. Pisani, 'Exchange rate pass-through into euro-area inflation. An estimated structural model', Banca d'Italia, Temi di Discussione (Working Papers), forthcoming.

years, largely owing to both the decline in aggregate demand and employment that followed the 2008-09 and 2012-13 recessions and the subsequent weak recovery, during which lingering spare capacity and labour force underutilization continued to act as a brake on wage and price dynamics in many countries. Monetary policy has maintained its ability to affect inflation: the launch of unconventional measures in 2014-15 supported price growth and translated into a depreciation of the euro and an improvement in inflation expectations.[5]

Overall, the results of these studies suggest that, even in the presence of deflationary pressures at global level, internal factors are the main culprit in the euro area's low inflation of recent years. In this context, maintaining price stability has called for a vigorous monetary policy response.

[5] G. Bulligan, 'The effect of the Eurosystem Expanded Asset Purchase Programme on inflation expectations: evidence from the ECB Survey of Professional Forecasters', Banca d'Italia, Questioni di Economia e Finanza (Occasional Papers), forthcoming; G. Bulligan and D. Delle Monache, 'Financial market effects of the ECB unconventional monetary policy announcements', Banca d'Italia, Questioni di Economia e Finanza (Occasional Papers), 424, 2018.

WAGE GROWTH IN THE EURO AREA DURING THE DOUBLE-DIP RECESSION

The growth in nominal non-farm private sector wages in the euro area, which was around 2.5 per cent annually between 2000 and 2008, was particularly low during the last two recessions, contributing to the weakness of inflation. Since the start of the current expansionary phase in 2013, wage growth has remained muted at an average of 1.7 per cent per year. This is true despite the fact that the number of those in employment returned to levels close to pre-crisis highs and that the unemployment rate fell by around 3 percentage points between 2013 and 2017 (to 9.1 per cent on average in 2017).

Wage growth varied from country to country, owing in part to the different pace of cyclical recovery. In Italy and Spain, which had unemployment rates above the euro-area average (11.9 and 21.9 per cent respectively on average for the period), wages rose by barely 1.0 per cent a year. The increase in wages in Germany, while more robust (2.5 per cent), is still modest on a historical basis when looked at in relation to the unemployment rate, which last year fell to 3.6 per cent, its lowest level since the beginning of the series in 1991.

According to an estimate of the relationship between wage growth and the economic cycle (the wage Phillips curve) for the euro area, the hourly wage in the non-farm private sector is highly reactive to labour market conditions as measured by the unemployment rate, to hourly productivity and to inflation expectations.[1]

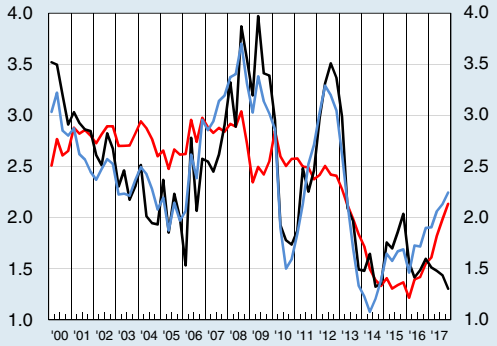
[1] Wage growth incorporates expected inflation since workers care about real wages, i.e. their purchasing power for a given level of prices. The estimated model approximates the expectations with lagged inflation, but is robust to the use of different measures of expected inflation, such as the expectations polled by Consensus Economics.

However, the output of the model and the data often do not align perfectly (panel (a) of the figure): in particular, the slowdown in wage growth following the 2008-09 global crisis was stronger than predicted by the model; the acceleration since the start of the recovery in 2013 has been instead weaker. These developments may reflect the fact that the unemployment rate is not always an exhaustive measure of labour market slack. Specifically, since the global financial crisis of 2008-09 there has been a substantial increase in involuntary part-time workers, in conjunction with the loss of jobs (extensive margin), in all the main euro-area countries, including Germany; this has been coupled with a reduction in hours worked per capita (intensive margin)[2] that is decidedly more pronounced than the downward trend previously seen (panel (b) of the figure). During the recent recovery, hours worked stagnated considerably and only in 2017 did their cyclical component begin to signal an expansion.

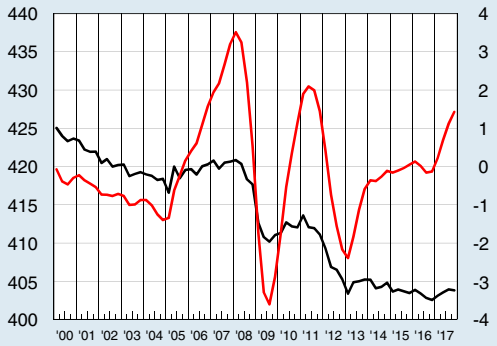
The inclusion of the cyclical component of the intensive margin of labour utilization in the estimation model can considerably improve its explanatory power (panel (a) of the figure) and can explain more accurately the sharp wage fluctuations observed since the global financial crisis.[3]

Wage growth and hours worked per employee in the non-farm private sector (1)
(quarterly data)

(a) Actual and expected wage growth (1)
(percentage changes)



(b) Hours worked per employee: level and estimated cyclical component (2)
(hours per quarter)



Source: Based on Eurostat data.
(1) Standard estimate: $\pi_t^w = c + \beta_1 \cdot \pi_{t-1}^w + \beta_2 \cdot U_{t-4} + \beta_3 \cdot \Delta PROD_t + \beta_4 \cdot \pi_{t-1}^p$. Estimate with intensive margin: $\pi_t^w = c + \beta_1 \cdot \pi_{t-1}^w + \beta_2 \cdot U_{t-4} + \beta_3 \cdot \Delta PROD_t + \beta_4 \cdot \pi_{t-1}^p + \beta_5 \cdot HOURGAP_{t-3}$, where π_t^w is the hourly wage growth rate; U_t is the unemployment rate; $\Delta PROD$ is the hourly productivity growth rate; π_t^p is consumer inflation, used as a proxy for inflation expectations; $HOURGAP_t$ is the cyclical component of the number of hours worked per person employed. Estimate period: Q1 2000 to Q4 2017. – (2) Hours worked per employed person. – (3) Right-hand scale.

[2] This may be an optimal choice so as not to waste specific human capital. Some countries have special schemes (*Cassa integrazione guadagni* in Italy and *Kurzarbeitergeld* in Germany) that allow for adjustment to the intensive margin to protect employment levels.

[3] G. Bulligan, E. Guglielminetti and E. Viviano, 'Wage growth in the euro area: where do we stand?', Banca d'Italia, Questioni di Economia e Finanza (Occasional Papers), 413, 2017.

There are, however, other factors at play. The soft labour market over the last two years explains only in part the modest wage growth. Inflation expectations, which have been very subdued, have likely contributed as well. In some countries, such as Italy, this has translated into a return to implicit forms of indexation to past inflation, which has been particularly low in recent years.

The recent improvement in the cyclical component of hours worked suggests that euro-area wage growth could strengthen over the next two years, confirming the most recent Eurosystem projections.[4]

However, the uncertainty that surrounds the measurement of such component is one reason to take a cautious, gradual approach to monetary policy adjustment.

[4] ECB, Eurosystem staff macroeconomic projections for the euro area, December 2017.

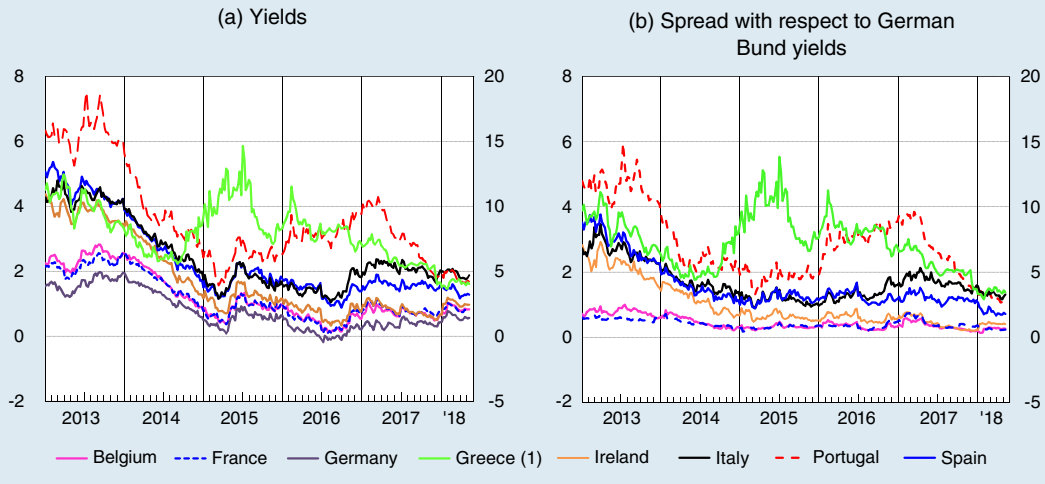
The financial markets

In 2017 the strengthening economic recovery, fewer concerns about the banking sector, the results of the elections in France in the spring (which allayed the fear of instability in the country), and the still strongly expansionary monetary policy stance all contributed to the improvement in financial market conditions.

During 2017, the yield on the ten-year German Bund increased by around 25 basis points (Figure 2.3). We estimate that this rise reflects the expected increase in short-term rates over the next decade, caused by the consolidation of economic growth and the gradual rise in inflation in the euro area although the level of term premiums should be considerably lower (see the box 'Long-term yields and term premiums' in Chapter 14, *Annual Report for 2016*, 2017).

Figure 2.3

Government securities yields and spreads
(end-of-week data; percentage points)



Source: Based on Bloomberg data.
(1) Right-hand scale.

During 2017 the spread with respect to German ten-year Bund yields remained almost unchanged in Italy and Spain, while it narrowed in the rest of the euro-area countries, notably in Portugal (by 200 basis points) following the end of the excessive deficit procedure, and in Greece (by 325 basis points), especially as a result of its agreement with the European Union on the granting of a new loan.

Spreads on corporate bonds in euros decreased markedly both in the investment grade and the high-yield segments, continuing to benefit from the Eurosystem's corporate sector purchase programme (CSPP). Spreads declined primarily in the first half of 2017, while in the last months of the year the escalation of global uncertainty factors led to a rebalancing of portfolios, which penalized assets with the highest risk, including high-yield bonds in the euro area.

Share prices in the area were supported by positive expectations for corporate profits and consolidation of the economic recovery. Over the year, they rose by 8 per cent, albeit with differences from country to country, and their volatility decreased.

At the beginning of February 2018 the publication in the United States of macroeconomic data reporting higher-than-expected inflationary pressures fuelled fears of monetary tightening by the Federal Reserve that would be faster and more intense than previously forecast by market operators. This led to a sharp drop in US stock indices, coupled with a spike in volatility. The downward adjustment of equity prices was amplified by some strategies employed to cover short positions on volatility (see the box 'Increased volatility in the financial markets', *Economic Bulletin*, 2, 2018). Tensions rapidly spread to international markets, including those of equities and of high-yield bonds in the euro area which, after a partial recovery, suffered from deepening concerns linked to international trade policies; since the end of March 2018, share prices have started growing again, more than recovering the losses observed at the beginning of the year. The German ten-year Bund yield, after having increased considerably in the first two months of 2018, decreased following the publication of short-term economic data on the euro area, which were below expectations.

Fiscal policies

The fiscal stance. – The latest European Commission estimates[2] show that in 2017, with an output gap of -0.5 percentage points of GDP, the euro area's fiscal policy stance, as measured by the change in the cyclically-adjusted primary balance, was neutral. In November 2016 the Commission had suggested an expansionary stance for 2017 up to 0.5 points of GDP, as a point of equilibrium between the objective of macroeconomic stabilization and the sustainability of the public finances.[3]

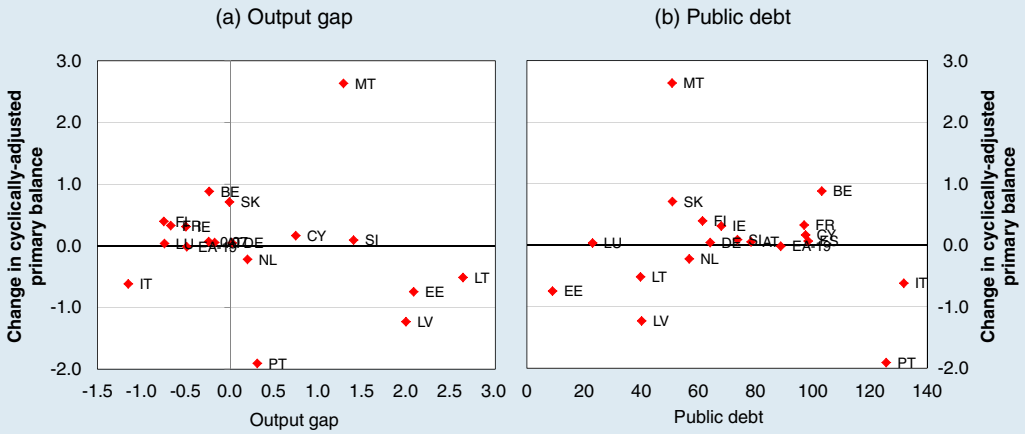
[2] Unless otherwise indicated, the data under consideration were extrapolated from the European Commission's 'Spring 2018 Economic Forecast', May 2018.

[3] European Commission, 'Council Recommendation on the economic policy of the euro area', COM(2016) 726 final.

With reference to the leading economies, the fiscal stance was neutral in Germany and Spain, contractionary in France (an output gap of 0.3 percentage points of GDP) and expansionary in Italy (0.6 points). Of these four countries, the output gap seems to be zero in Germany and significantly smaller in the other three, compared with 2016 (Figure 2.4). Overall, the fiscal stance of individual states did not reflect their specific cyclical situation (see the box 'Fiscal policy in the euro area during the crisis years' in Chapter 3, *Annual Report for 2016*, 2017).

Figure 2.4

The fiscal policy stance in 2017 (1)



Source: Based on data from European Commission, 'Spring 2018 Economic Forecast', May 2018.
(1) Data as a percentage of GDP. Does not include Greece because the country is still subject to the assistance programme; a positive (negative) change in the primary surplus adjusted for the economic cycle indicates a restrictive (expansive) fiscal policy stance.

For 2018, the Commission's estimates suggest that the euro area's fiscal stance will be slightly expansionary. As regards the leading economies, the cyclically-adjusted primary balance should be 0.2 percentage points in Italy, 0.3 points in France and Germany, and 0.5 points in Spain. Last November, the Commission proposed a draft recommendation to the Council in which it called for a broadly neutral fiscal stance on average in the euro area in 2018.[4] The Commission also recommended that national fiscal policies, in compliance with the Stability and Growth Pact, should aim to support investment and to improve the quality and composition of public expenditure. The Council concurred with this position.[5]

The budget outcomes. – The improvement in the public accounts continued in 2017: for the euro area the average deficit was 0.9 per cent of GDP, 0.6 percentage points lower than the previous year and 5.4 points below the peak of 2009. Two thirds of the improvement came from the primary surplus and the remainder from the decrease in interest payments. The Commission expects the deficit to narrow slightly in 2018.

[4] European Commission, 'Council Recommendation on the economic policy of the euro area', COM(2017) 770 final.

[5] EU Council, 'Recommendation of the Council on the economic policy of the euro area', press release of 23 January 2018.

Last year the ratio of public debt to GDP in the euro area declined for the third consecutive year, to stand at 86.7 per cent. The decrease of 2.3 percentage points reflected the primary surplus (1.1 points) and the fact that nominal GDP growth was higher than the average cost of the debt (1.1 points). The debt ratio declined in Germany, Italy and Spain (-4.1, -0.2 and -0.7 points, respectively) and rose in France (0.4 points); it is expected to decline this year in the area as a whole (-2.2 points).

The structural deficit, i.e. adjusted not only for the effects of the economic cycle but also for those of temporary measures, would be slightly lower at 0.6 per cent of GDP. In 2018 it would increase to 0.8 per cent.

The excessive deficit and macroeconomic imbalance procedures. – During 2017, based on the 2016 budget outcomes, the excessive deficit procedures against Greece and Portugal were closed. The procedure against France was closed in May 2018 following the 2017 budget outcomes, while that against Spain, for which the Commission expects a level of net borrowing below 3 per cent of GDP in 2018, remains open.

In November, on the basis of the Draft Budgetary Plans (DBPs) for 2018, the Commission highlighted the risks of a violation of European fiscal rules, in relation to 2018, in six countries: Austria, Belgium, Italy, Portugal, Slovenia (for the preventive arm of the Stability and Growth Pact), and France (for the corrective arm of the Pact).[6] Last April the Commission assessed that Austria's update of its DBP submitted following the installation of its new government was broadly in line with the fiscal rules.[7]

According to European Commission assessments made in the context of the macroeconomic imbalance procedure and published in March, Cyprus and Italy are among the euro-area economies with excessive macroeconomic imbalances. Italy's imbalances are due to poor productivity, the high public debt, the volume of non-performing loans and the high unemployment rate. The Commission considers that some of the other large euro-area economies, such as France, Germany and Spain, also have imbalances but they are not considered to be excessive. In the case of France, the imbalances are due to low productivity and the high public debt; in Germany they are primarily the result of low investment and persistent and large current account surpluses, while for Spain they depend on the unemployment rate and the size of private and public debt.

Financial assistance to countries in difficulty. – In 2017 the ESM disbursed €8.5 billion to Greece, corresponding to the third tranche of the third financial assistance programme that began in the summer of 2015 (Table. 2.2). The payment was conditional on the approval of a further memorandum of understanding, signed in July of last year, that called, among other things, for further progress in terms of the sustainability of the public finances, financial stability, competitiveness and the modernization of the public administration.

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[6] European Commission, '2018 Draft Budgetary Plans: Overall assessment', COM (2017) 800 final, 2017.

[7] European Commission, 'Commission opinion of 12.4.2018 on the updated Draft Budgetary Plan of Austria', C(2018) 2224 final.

Table 2.2

Financial assistance to euro-area countries in difficulty (1)
(billions of euros)

	2011	2012	2013	2014	2015	2016	2017	Total to May 2018 (2)	Total support programme
Ireland	34.7	21.1	10.9	0.8	–	–	–	67.6	67.5
Portugal	34.0	27.5	10.0	5.2	–	–	–	76.6	78.0
Greece	41.5	109.9	32.0	11.7	10.5 (3)	10.3	8.5	261.6 (3)	331.7
Spain	–	39.5	1.9	–	–	–	–	41.3	41.3
Cyprus	–	–	4.9	1.3	1.0	0.1	–	7.3	10.0
Total	**110.2**	**197.9**	**59.7**	**18.9**	**11.5**	**10.4**	**8.5**	**454.3**	**528.5**

Sources: For bilateral loans to Ireland, National Treasury Management Agency; for loans from the European Financial Stability Facilty (EFSF), the European Financial Stabilisation Mechanism (EFSM) and ESM, those institutions' websites; for the first support programme for Greece, European Commission, 'The second economic adjustment programme for Greece', European Economy, Occasional Papers, 94, 2012; for the IMF loans not part of that programme, press releases on the occasion of each disbursement.
(1) There may be discrepancies due to rounding or to variations in the exchange rate between the currency in which loans are denominated and the euro. – (2) Data updated to 18 May 2018. – (3) Takes into account the repayment to the EFSF in February 2015 of funds appropriated but not used (€10.9 billion).

In the early months of 2018, after verifying that sufficient progress had been made,[8] €5.7 billion were disbursed to Greece, corresponding to the first of the four tranches of the third financial assistance programme.[9] It is envisaged that the programme will come to an end in August 2018.[10]

Greece's budget surplus rose from 0.6 per cent of GDP in 2016 to 0.8 per cent in 2017. According to European Commission forecasts, in 2018 the surplus is expected to fall to 0.4 per cent of GDP, partly as a result of the budgets agreed with the European authorities during the last programme and positively assessed by the Eurogroup. The primary surplus in 2018 is in any case likely to be higher (at 3.7 percentage points of GDP) than the European Commission's objective (3.5 points).

European governance

During 2017, various initiatives were undertaken in the EU to reform European governance which has, however, yielded few results overall. The slow rate of progress reflects the differences between those who want to prioritize the reduction of risks in individual economies (risks connected with a high government debt held by the banks in the individual countries or with poor quality bank credit) and those who

[8] European Commission, 'Compliance Report: ESM Stability Support Programme for Greece. Third Review', March 2018.

[9] On 27 March 2018, the ESM approved the disbursement of the fourth tranche of the third financial assistance programme, amounting to €6.7 billion: €5.7 billion were disbursed on 28 March and the remaining €1 billion will be paid out by 15 June.

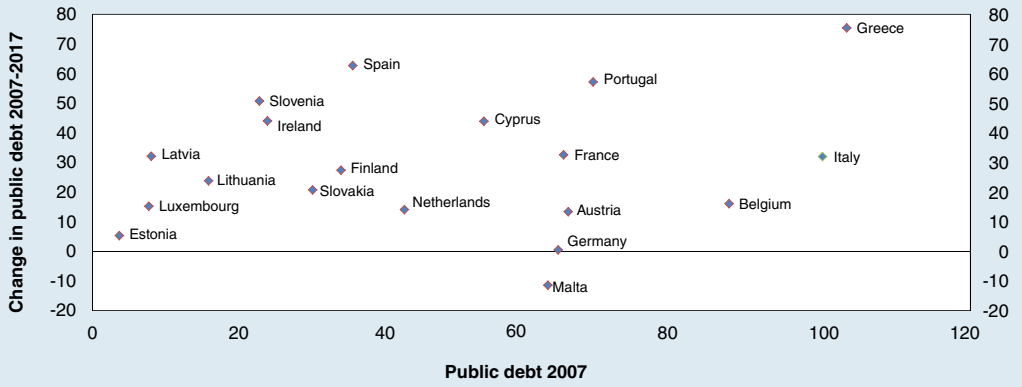
[10] The Council of the European Union, 'Eurogroup statement on Greece', press release of 22 January 2018.

consider it more important to create shared tools to address the risks faced by the member states and the area as a whole (for some possible alternatives, see the box 'Public debt in the euro area: some recent proposals').[11]

PUBLIC DEBT IN THE EURO AREA: SOME RECENT PROPOSALS

In 2017, public debt in the euro area amounted to 86.7 per cent of GDP, around 22 percentage points higher than ten years earlier. This increase, recorded in almost all countries, is mainly attributable to the effects of the economic crisis, although even before its onset, the debt was high in some member states (see the figure).

Public debts and their evolution in the euro area



The presence of countries with a high public debt in a currency area is a source of systemic risks. Even if these countries are fundamentally solvent, they are in any case more subject to the risk of a liquidity crisis, with effects that tend to have negative repercussions for the other member states, given their close economic and financial links.

In order to deal with these risks, some mechanisms have been suggested recently which, alongside the budgetary rules already in force, are meant to (i) discourage further debt increases and (ii) facilitate an orderly and swift reduction of the existing debt.

As far as the first point is concerned, there have been proposals to introduce a European sovereign debt restructuring mechanism:[1] clarifying the conditions and procedures for restructuring would reduce that part of the cost of a sovereign default

[1] The first proposal of this kind was made by F. Gianviti, A.O. Krueger, J. Pisani-Ferry, A. Sapir, and J. von Hagen, 'A European mechanism for sovereign debt crisis resolution: a proposal', Bruegel, Brussels, 2010. For an extensive review, see M. Committeri and P. Tommasino, 'Managing sovereign debt restructurings in the Eurozone. A note on old and current debates', Banca d'Italia, Questioni di Economia e Finanza (Occasional Papers), forthcoming.

[11] For a particularly influential contribution to the public debate by a group of French and German economists, see A. Bénassy-Quéré et al., 'Reconciling risk sharing with market discipline: A constructive approach to euro-area reform', CEPR Policy Insight, 91, 2018.

caused by uncertainty over the manner and timing of its solution; it would make the no-bailout clause in the European Treaties more credible;[2] it would also facilitate the formation of public securities prices in line with the issuer's credit risk, with positive effects on budgetary discipline.

Nevertheless, it would be counterproductive to automatically link the restructuring to the breaching of set debt thresholds or to a country's request for financial assistance, as envisaged in some proposals, thereby eliminating any discretion on the part of the European authorities.[3] In order to distinguish between an insolvent country and one that is temporarily illiquid, all kinds of different information must be assessed in a non-automatic way. Using specific threshold values may induce liquidity crises or affect pro-cyclical dynamics: for example, an economic slowdown caused by exogenous factors, which means that the debt approaches the threshold value, could trigger an increase in the risk premium, making it even more likely that debt will exceed this threshold. The risk of such perverse spirals is greater when several countries have high debt levels, as in today's Europe.

In any case, introducing a set of rules for sovereign debt restructuring might be of limited use. The uncertainty over the outcome and time frame of a restructuring is only part of the cost of an insolvency. Given the high level of economic and financial links among euro-area countries, the negative effects would be extremely serious for both the country directly involved and the other member states, and it would also be very difficult for investors to calculate these effects ex ante.

A second set of proposals deals directly with the problem of how to reduce the high debt levels currently observed in many euro-area countries. It is important to maintain rigorous budgetary policies at national level to reach this goal. Since this kind of strategy necessarily requires a long time horizon,[4] there is the risk that a new crisis could interrupt the process of improvement. This is why the possibility of putting the consolidation of the public finances at national level alongside coordinated action at the European level has been suggested.

Specifically, a proposal was made to create a European fund into which a share of the public debt of each euro-area country is paid (the European Redemption

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[2] Article 125 of the Treaty on the Functioning of the European Union reads as follows: 'The Union shall not be liable for or assume the commitments of central governments, regional, local or other public authorities, other bodies governed by public law, or public undertakings of any Member State, without prejudice to mutual financial guarantees for the joint execution of a specific project. A Member State shall not be liable for or assume the commitments of central governments, regional, local or other public authorities, other bodies governed by public law, or public undertakings of another Member State, without prejudice to mutual financial guarantees for the joint execution of a specific project'.

[3] As an extreme case, see Deutsche Bundesbank, 'Approaches to resolving debt crises in the euro area', in *Monthly Report*, 68, 7, 41-62, which hypothesizes that a request from a European country for assistance from the European Stability Mechanism (ESM) would automatically trigger a three-year extension on the maturity of the sovereign debt of the country in question.

[4] For Italy, for example, in a realistic macroeconomic scenario and with a primary surplus of around 3 to 4 percentage points of GDP, it would take about ten years to bring the debt-to-GDP ratio back to below 100 per cent (see 'Sviluppo dell'economia e stabilità finanziaria: il vincolo del debito pubblico', a speech given by Ignazio Visco, Governor of the Bank of Italy, at the 63rd Conference on Government Studies, Varenna, 21 September 2017 - only available in Italian).

Fund, ERF).[5] On reaching maturity, these government securities would be replaced by others issued by the ERF, which would redeem them. Participating States would make a credible pledge[6] to guarantee sufficient annual funds to the ERF for interest payments and redemptions of maturing ERF securities. This mechanism would have the advantage of drastically and immediately reducing the volume of government securities placed on the market every year. Compared with ERF securities, national issuances are more affected by the risks connected with fluctuations in investor confidence: based on its statutory provisions, revenues from the Fund would be earmarked for servicing the ERF's debt and the securities it issues would be highly liquid. The Fund could therefore cause the euro-area sovereign spread to narrow, thereby strengthening the area's financial stability to the benefit of all member countries.

The proposal has been criticized for fear of systematic transfers of resources to countries with a lower credit rating. This fear is heightened by the fact that in some proposals the ERF takes on the semblance of a fully-fledged common budget. However, the mechanism can be designed so that there are no systematic transfers and with a mandate limited to managing the debt transferred from member countries.[7]

[5] The first proposal in this direction was made by the German Council of Economic Experts (see 'Assume responsibility for Europe', in its *Annual Report 2011/12*, 2011). For an overview see M. Cioffi, M. Romanelli, P. Rizza and P. Tommasino, 'How we learned to stop worrying and (almost) love debt redemption', Banca d'Italia, Questioni di Economia e Finanza (Occasional Papers), forthcoming.

[6] The credibility of this system could be guaranteed by a commitment to set aside a fixed share of a national income (e.g. seigniorage or VAT) for the ERF budget.

[7] A system of this kind is presented and discussed by M. Cioffi, M. Romanelli, P. Rizza and P. Tommasino, forthcoming, op. cit.

In March 2017, coinciding with the 60th anniversary of the signing of the Treaty of Rome, the European Commission published a white paper on the future of Europe, setting out the alternative scenarios for future integration among the member states and for the functioning of the Union (see Chapter 3, 'Macroeconomic developments and fiscal policies in the euro area' in *Annual Report for 2016*, 2017).

In May the Commission presented a reflection paper on the future of the Economic and Monetary Union,[12] which takes up the model developed by the 2015 Five Presidents' Report.[13] The document proposes, as a first step, to complete the banking union and the capital market union by the end of 2019, and then, by 2025, to strengthen the architecture of the Economic and Monetary Union, including providing it with a common instrument for macroeconomic stabilization.

In December, the Commission presented a package of reform proposals including the one to transform the current ESM into a European Monetary Fund and the

[12] European Commission, 'Reflection Paper on the Deepening of the Economic and Monetary Union', COM(2017) 291 final, 2017.

[13] European Commission, 'Completing Europe's Economic and Monetary Union', 2015.

incorporation into EU law of some parts of the Treaty on Stability, Coordination and Governance.[14]

The first proposal envisages the transformation of the ESM into a legal entity within the meaning of EU law. The new institution would also be entrusted with the management of a backstop, a last resort instrument for use in the event of bank crises, whenever the resources of the Single Resolution Mechanism (SRM) become insufficient. In any case, the funding provided would then be gradually returned by the banking sector. The Commission also proposes that on certain matters that require the unanimous agreement of the ESM, the Fund may decide on the basis of a qualified majority, thus removing the veto power held today by the individual countries participating in the Mechanism.

The second proposal concerns the incorporation into EU law of some parts of the Treaty on Stability, Coordination and Governance. It should be noted that according to the Commission, member states have in fact already transposed the content of the Fiscal Compact into their national systems (see Chapter 6, 'Budgetary policies' in the *Annual Report for 2011*, 2012).

The Commission also proposed including two instruments in the EU budget: one to provide financial support to those countries engaged in the delivery of structural reforms and the other to achieve macroeconomic stabilization in the euro area in the event of severe asymmetric shocks.[15]

In addition, the Commission is about to present a proposal, announced in 2017, to create the appropriate legal framework to support the possible issuance of European bonds guaranteed by the sovereign bonds of the euro-area member states.

Most of the Commission's legislative proposals to promote the capital markets union in Europe are at the negotiation stage. The project aims to integrate national markets through the harmonization of the legislation relevant to the activities of those markets. Following the adoption in December of the measure on simple, transparent and standardized securitization, several other measures are being discussed, including: the creation of a European regime for individual pension products to facilitate cross-border portability, which would increase the mobility of workers in the EU; appropriate prudential treatment for different kinds of investment firms, subjecting the largest and most complex firms to the same kind of supervision as banks, while smaller firms would work under a simplified scheme; the reduction of barriers to the cross-border distribution of investment funds; standard rules for the preventive restructuring of businesses in financial difficulty so as to facilitate their recovery; and the laying down of a harmonized regime at European level in relation to crowdfunding and covered bonds to increase their circulation in the EU. The Commission also presented an action plan for innovative financial technology (FinTech), and another on sustainable finance. Progress in market integration has

[14] European Commission, 'Further Steps Towards Completing Europe's Economic and Monetary Union: A Roadmap', COM(2017) 821 final, 2017.

[15] European Commission, 'New Budgetary Instruments for a Stable Euro Area Within the Union Framework', COM (2017) 822 final, 2017.

however been hampered by the persistence of very diverse national rules, especially regarding corporate and bankruptcy law, taxation and supervisory procedures.

As regards banking union, in 2017 the EU Council undertook to reduce the high volume of NPLs (non-performing loans) that were a feature of several banking systems.[16] Then, in March 2018, there followed a package of legislative proposals from the European Commission (see Chapter 13, 'Banks and institutional investors'). These proposals are in addition to the legislative provisions for the banking sector that are currently being negotiated in the Council and the Parliament, which concern measures to align EU rules with international standards by introducing, among other things, new requirements for financial leverage and liquidity, and for loss-absorption capacity.[17] With reference to the Minimum Requirements for Own Funds and Eligible Liabilities (MREL) - a very controversial point - the Bank of Italy spoke in favour of a balanced and not excessive calibration of the requirements, in line with the needs of resolution, and for their gradual implementation (see the box 'The new rules on the MREL requirement and the effects on bank funding', *Financial Stability Report*, 1, 2018). Lastly, the negotiations are in deadlock as regards the European Deposit Insurance Scheme, the missing pillar of the Banking Union.

[16] Council of the European Union, 'Council conclusions on action plan to tackle non-performing loans in Europe', press release of 11 July 2017.

[17] In particular this refers to the total loss-absorbing capacity (TLAC) of global systemically important banks and to the minimum requirements for own funds and eligible liabilities (MREL) for the other banks.

3. MONETARY POLICY IN THE EURO AREA

The monetary policy stance was recalibrated very gradually in 2017. The economy's growth prospects strengthened and indications emerged that inflation would return to below, but close to, 2 per cent. However, there was still great uncertainty regarding the speed with which inflation would converge to this objective, the degree of slack in the labour force that still hampered the recovery of wages, and the rate at which inflation expectations would increase. Core inflation has not yet shown signs of a sustained upward trend.

Monetary policy instruments were gradually recalibrated without generating tensions in the financial markets or sudden changes in long-term interest rates as many had feared. The ECB's Governing Council constantly emphasized the need for prudence, persistence and patience while maintaining an ample degree of monetary accommodation even going forward, subject to data as they become available and to the outlook for prices.

All the instruments at the Council's disposal will be used to provide the expansionary monetary conditions: net asset purchases, the large stock of acquired securities in the Eurosystem's portfolio, reinvestments, and forward guidance on official rates.

Monetary policy action

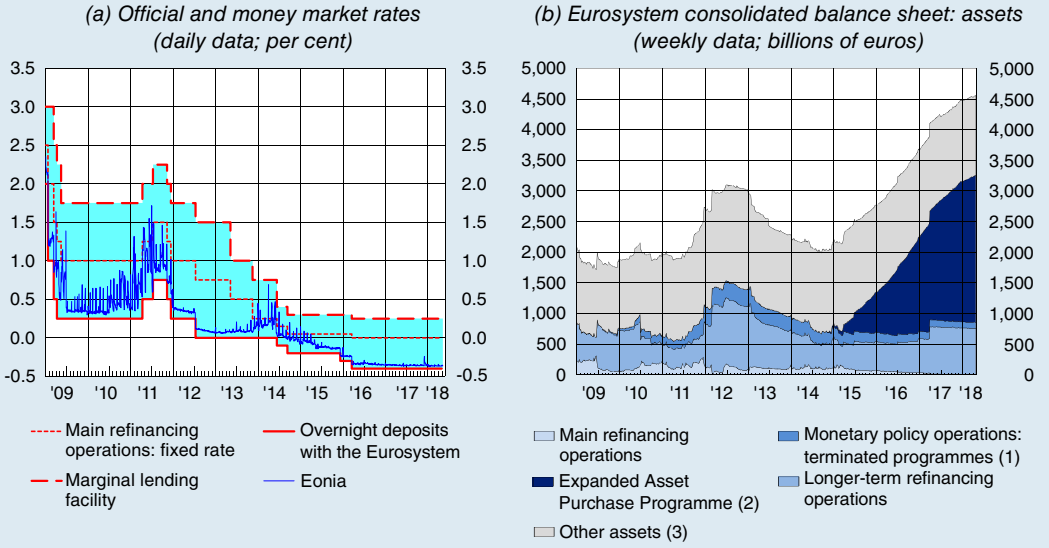
During 2017 the Governing Council gradually recalibrated monetary conditions while still maintaining a very high degree of accommodation. The Council responded to the changes in inflation expectations, which gradually improved but were still plagued by considerable uncertainty and lacked a strong upward trend in the core components.

Pursuant to the decisions taken in December 2016, in April 2017 the pace of net purchases under the Expanded Asset Purchase Programme (APP) was reduced from €80 to €60 billion per month, with the intention of continuing the purchases at least until the end of the year. At the same time, the Council kept official rates unchanged (at 0.0 per cent for the main refinancing operations and at -0.4 per cent for the deposit facility; Figure 3.1) and reiterated that it expected them to remain at levels equal to or lower than those currently in force for a prolonged period of time, well beyond the end of net purchases.

In June, the Council removed from its communication the indication of a possible further reduction in official rates below their current levels and reiterated its intention to keep them unchanged for a prolonged period of time. This change in the communication reflected the stronger economic growth recorded since the spring, which resulted in lower uncertainty regarding inflation's ability to continue gradually returning towards values consistent with the definition of price stability.

Figure 3.1

Official interest rates in the euro area and the Eurosystem's consolidated balance sheet



Sources: ECB and Thomson Reuters Datastream.
(1) Covered bond purchase programme (CBPP and CBPP2) and securities markets programme (SMP). – (2) Covered bond purchase programme (CBPP3), asset-backed securities purchase programme (ABSPP), public sector purchase programme (PSPP) and corporate sector purchase programme (CSPP). – (3) Marginal lending facility, gold and other assets denominated in euros and in foreign currency.

At its October meeting, the Council again recalibrated the monetary policy instruments: it reduced the pace of purchases but preserved a high degree of monetary accommodation in view of the still ample margins of underutilized labour, weak wage dynamics and the slow recovery of inflation expectations. Net purchases under the APP were reduced from €60 to €30 billion per month starting in January 2018, and the duration of the programme was extended until at least the end of September 2018 or beyond if necessary. The Council announced that the Eurosystem would continue to reinvest the principal payments from maturing securities for an extended period of time after the end of the net asset purchases and in any case for as long as necessary. It also decided that refinancing operations would continue to fully satisfy the demand for fixed-rate liquidity at least until the end of the last reserve maintenance period of 2019.

Thanks to the gradual pace and the careful communications, the progressive recalibration of monetary conditions took place without generating volatility or adverse reactions in the financial markets or sudden increases in long-term yields (see the box 'Monetary policy recalibration' and the section 'Interest rates and the euro exchange rate'). The concerns expressed by some regarding the emergence of tensions similar to those observed in the US in 2013 after the Federal Reserve announced the end of its asset purchase programme (quantitative easing) did not materialize.

MONETARY POLICY RECALIBRATION

The ECB Governing Council started the recalibration of monetary policy measures in December 2016 against the backdrop of steady improvements in the euro-area macroeconomic outlook and lower deflationary risks. In 2017 the Council grew more confident that inflation would gradually return to levels

consistent with price stability. However, the estimated size and rate of reduction of underutilized production capacity and labour, as well as the pace of the recovery in inflation expectations in a context of prolonged low price growth, remain uncertain.

The persistent uncertainty regarding the timing and size of the effects of the recovery on wage and price growth warrants the Governing Council's prudent approach in recalibrating the monetary stimulus. The goal of bringing inflation to levels consistent with price stability must be pursued with perseverance – insofar as convergence towards the inflation aim still depends on ample monetary stimulus – and with patience while waiting for the effects of the measures adopted to fully unfold.[1]

Several analyses, also including those by the Bank of Italy, confirm the validity of a gradual adjustment to the monetary policy stance and of careful communication given the current context of uncertainty and still low inflation.

The available data indicate that announcements of euro-area monetary policy decisions between 2014 and 2017 had a significant role in strengthening both the economy and price developments, through the reaction of exchange rates and long-term interest rates and by increasing inflation expectations.[2] This demonstrates that, during the course of 2017, the gradual recalibration of monetary policy did not lead to market over-reactions. Analyses based on general equilibrium models suggest that the confirmation, even during the recalibration of monetary stimulus, of the link between the expected future duration of the APP and the evolution of inflation could have contributed to adjusting inflation towards levels consistent with the definition of price stability.[3]

An empirical study[4] analysed the response of GDP and prices to monetary policy stimulus during phases of recession and expansion in the euro area. The findings indicate that expansionary monetary policies require a longer period of time to fully pass through to prices than the restrictive policies adopted during strong cyclical expansions, as a strongly negative output gap must first be reabsorbed before any significant pressure can be exerted on prices. The findings confirm that a persistent and prudent recalibration of monetary policy measures would likely be appropriate following a prolonged recessionary phase.

In the euro area, aggressive expansionary responses have helped, in the past, to keep inflation expectations from falling below levels consistent with price

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1 'Monetary Policy in the Euro Area', speech by Mario Draghi, President of the European Central Bank, at The ECB and Its Watchers XIX Conference organised by the Institute for Monetary and Financial Stability, Frankfurt, 14 March 2018.

2 G. Bulligan and D. Delle Monache, 'Financial market effects of ECB unconventional monetary policy announcements', Banca d'Italia, Questioni di Economia e Finanza (Occasional Papers), 424, 2018.

3 L. Burlon, A. Notarpietro and M. Pisani, 'Macroeconomic effects of an open-ended Asset Purchase Programme', Banca d'Italia, Temi di Discussione (Working Papers), forthcoming.

4 M. Cecioni, 'Asymmetric and state-dependent effects of ECB monetary policy', Banca d'Italia, Temi di Discussione (Working Papers), forthcoming.

stability.[5] However, in the current macroeconomic context, gradual monetary policy recalibration is warranted on account of two factors: first, the slow and gradual recovery in inflation expectations, which in recent years have declined and become more difficult to influence, responding slowly to movements in realized inflation;[6] second, the uncertainty regarding the amount of slack still present in the economy, which could be greater than that shown by traditional indicators (see the box 'Wage growth in the euro area during the double-dip recession' in Chapter 2). A high degree of uncertainty about economic conditions or monetary policy transmission mechanisms suggests a cautious approach, as widely discussed in previous economic analyses.[7]

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5 F. Busetti, G. Ferrero, A. Gerali and A. Locarno, 'Deflationary shocks and de-anchoring of inflation expectations', Banca d'Italia, Questioni di Economia e Finanza (Occasional Papers), 252, 2014; G. Ferrero, M. Pietrunti and A. Tiseno, 'Benefits of gradualism or costs of inaction? Monetary policy in a time of uncertainty', Banca d'Italia, Temi di Discussione (Working Papers), forthcoming.

6 L. Bartiloro, M. Bottone and A. Rosolia, 'What does the heterogeneity of the inflation expectations of Italian firms tell us?', Banca d'Italia, Questioni di Economia e Finanza (Occasional Papers), 414, 2017.

7 See for example W.C. Brainard, 'Uncertainty and the effectiveness of policy', *The American Economic Review*, 57, 2, 1967, 411-425.

In March of this year, the Council further amended its communication, removing the reference to the possibility of increasing the pace of net purchases in the event of adverse scenarios. However, it confirmed that the programme would continue at least until the end of September 2018 and in any case until it sees a sustained adjustment in the path of inflation towards the objective. In addition, the Council indicated that it intended to leave official rates at their current levels well beyond the end of net purchases. The Council further reiterated the need for an ample degree of monetary accommodation, implemented by means of various instruments: net asset purchases, the large stock of acquired securities in the Eurosystem's portfolio, reinvestments, and forward guidance on official rates.

Inflation's sustainable adjustment will be assessed on the basis of the convergence of inflation expectations towards the objective, the degree of uncertainty around this trend, and the robustness of the price outlook to a reduction in the degree of monetary accommodation.

Monetary policy operations

The Eurosystem has continued to provide funds to banks through fixed-rate tenders with full allotment of the amounts requested. In March 2017, the last targeted longer-term refinancing operation (TLTRO2) was carried out, disbursing €217 billion on a net basis, of which €65 billion to Italian counterparties (Table 3.1). Overall, the four operations, conducted on a quarterly basis since June 2016, allocated a net amount of €330 billion to euro-area banks, of which €128 to Italian banks.

By the end of April 2018, the Eurosystem had purchased €2,400 billion worth of financial assets under the APP, of which €431 billion in private assets and €1,969 billion in government securities; €301 billion were purchased by the Bank of Italy (Figure 3.1.b and Table 3.2).

Table 3.1

Funds allotted through TLTRO2
(millions of euros)

Settlement date	Euro area		Italy	
	Gross amount	Net amount (1)	Gross amount	Net amount (1)
June 2016	399,289	31,426	138,946	29,187
September 2016	45,270	34,227	17,437	16,567
December 2016	62,161	48,001	17,808	17,714
March 2017	233,474	216,734	67,167	64,971

Sources: ECB and Bank of Italy.
(1) The net amount of the funds allotted is calculated taking into account the voluntary repayment by banks of the first TLTRO.

Table 3.2

Securities held for monetary policy purposes under the APP
(millions of euros; April 2018)

	Eurosystem	Bank of Italy
CBPP3 (1)	252,228	39,286
ABSPP (2)	27,019	0
PSPP (3)	1,968,645	300,886
CSPP (4)	151,851	16,810

Sources: ECB and Bank of Italy.
(1) Covered Bond Purchase Programme. – (2) Asset-Backed Securities Purchase Programme. – (3) Public Sector Purchase Programme. – (4) Corporate Sector Purchase Programme.

Interest rates and the euro exchange rate

On account of the ample liquidity in the banking system, in 2017 and in the first few months of this year, money market rates remained stable at levels that were close to the rate on the deposit facility (Figure 3.1.a).

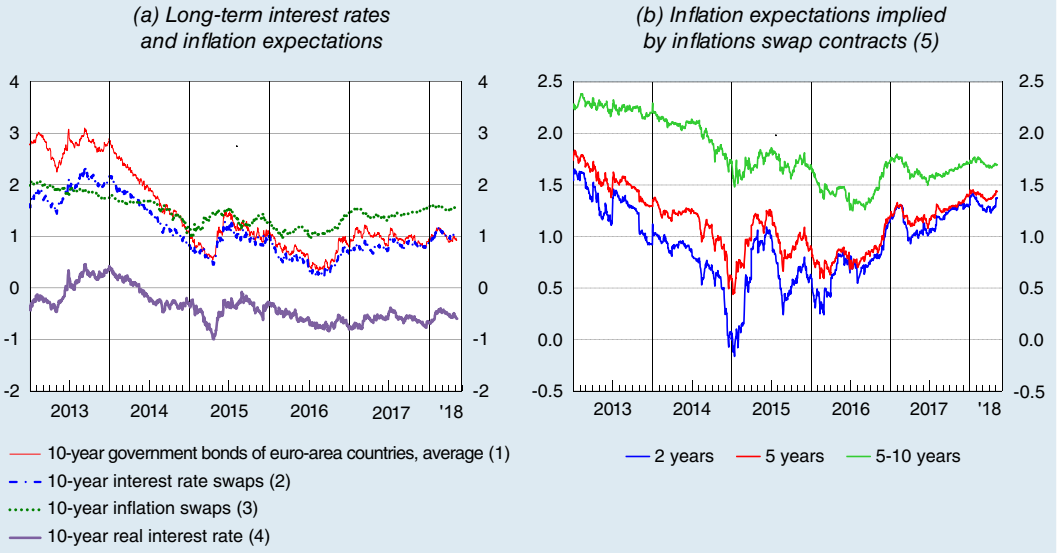
Monetary policy recalibration has not generated large fluctuations in long-term nominal yields; at the end of April 2018, the ten-year government bond yield averaged 0.9 per cent in the main euro-area countries (Figure 3.2.a). Even long-term real yields recorded minor fluctuations (-0.5 per cent in April).

Inflation expectations derived from inflation-linked swap contracts trended upwards after declining in early 2017, but then flattened in the first few months of 2018 (Figure 3.2.b). On average in April, the two-year forward rate five years ahead was 1.3 per cent while the five-year forward rate five years ahead was 1.7 per cent.

In 2017 the euro exchange rate gradually increased (by 5.6 per cent in nominal effective terms and by 13.8 per cent against the dollar; Figure 3.3). The most marked appreciation occurred between April and August, probably in connection with the improved growth outlook for the euro-area economies and the dissipation of political risks after elections in a number of European countries. During the year, the positions

Figure 3.2

Long-term interest rates and inflation expectations in the euro area
(daily data; per cent)

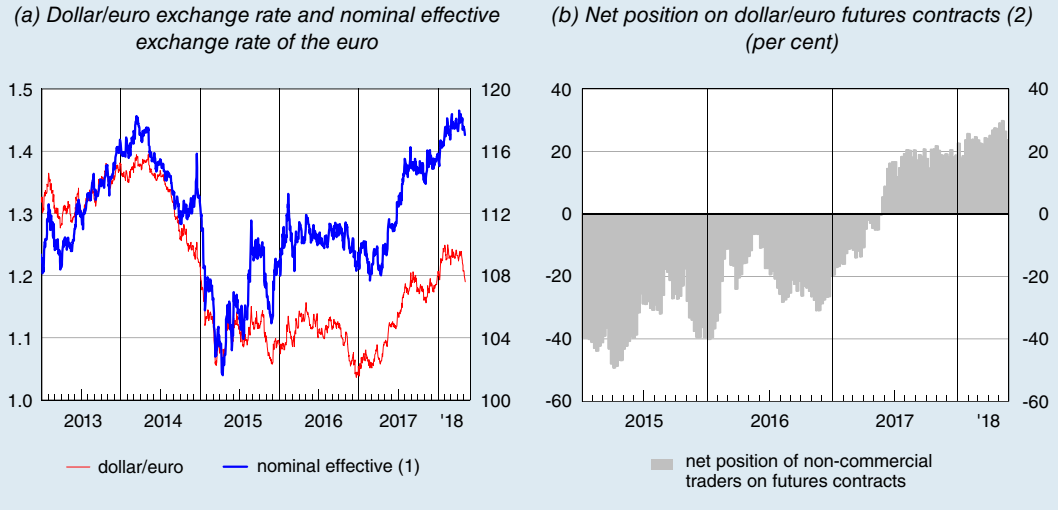


Sources: Based on Bloomberg and Thomson Reuters Datastream data.
(1) Average yields on the benchmark 10-year government bonds of Austria, Belgium, Finland, France, Ireland, Italy, the Netherlands, Portugal, Spain and Germany, weighted by GDP at constant 2017 prices. – (2) Fixed rate on 10-year interest rate swaps in euros. – (3) Fixed rate on 10-year euro-area inflation swaps. – (4) Fixed rate on 10-year interest rate swaps deflated by the fixed rate on 10-year inflation swaps. – (5) Fixed rate implied by inflation swap contracts, 2 years ahead, 5 years ahead and 5-year forward inflation swaps 5 years ahead.

taken by derivatives market operators signalled expectations of a further strengthening in the common currency against the US dollar. This trend seems to have stalled in recent weeks in response to indications of a better than expected macroeconomic outlook in the euro area.

Figure 3.3

Exchange rates of the euro
(daily data)



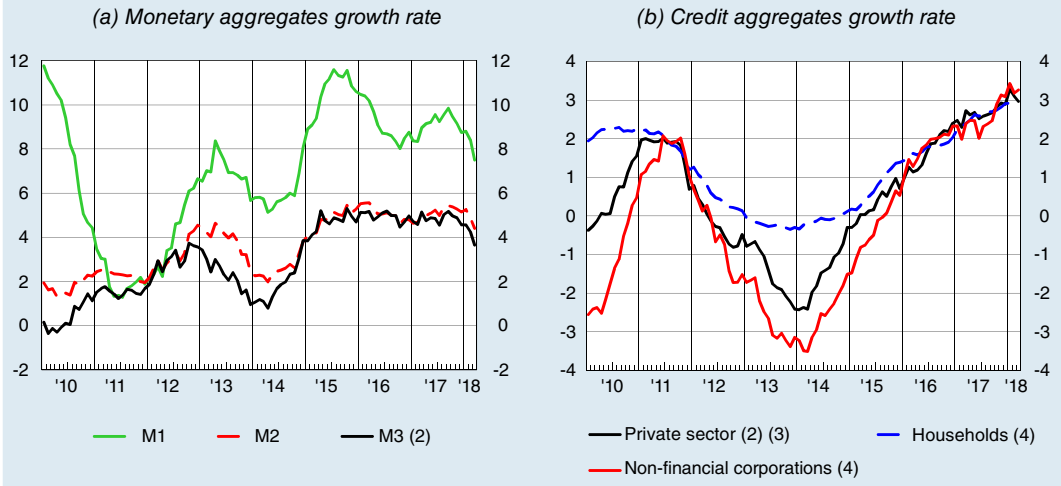
Sources: ECB and Thomson Reuters Datastream.
(1) Index: 1999 Q1=100. A rise in the index corresponds to an appreciation. Right-hand scale. – (2) Difference between long and short positions of non-commercial traders on dollar/euro futures contracts, as a percentage of total outstanding positions.

The currency and credit

The twelve-month growth in M3 in 2017 remained nearly stable at around 5 per cent, but fell in the first few months of this year to 3.7 per cent in March (Figure 3.4.a). Money growth was driven by the purchase of government bonds under the APP and the low opportunity cost of holding more liquid instruments.

Figure 3.4

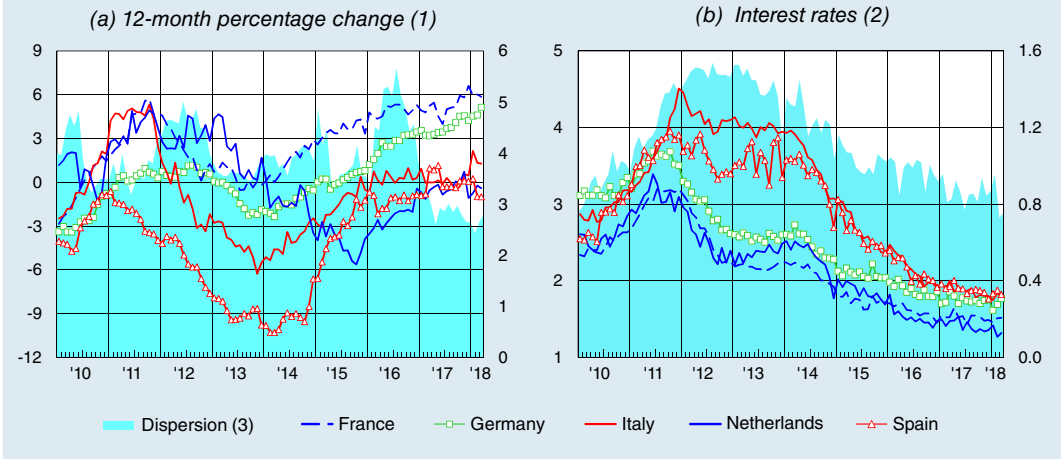
Monetary and credit aggregates in the euro area (1)
(monthly data; 12-month percentage changes)



Source: ECB.
(1) Changes calculated on end-of-month data adjusted for calendar effects. – (2) From June 2010 onwards the data do not include repos with central counterparties. – (3) Loans in euros and other currencies granted by monetary financial institutions, adjusted for the accounting effects of securitizations. The private sector consists of households, non-profit institutions serving households, non-financial corporations, insurance companies and pension funds, non-money-market investment funds and other financial institutions. – (4) Loans in euros and other currencies granted by monetary financial institutions, adjusted for the accounting effects of securitizations.

Figure 3.5

Loans to non-financial corporations in euro-area countries
(monthly data)



Source: ECB.
(1) Loans in euros and other currencies granted by monetary financial institutions, adjusted for the accounting effects of securitizations. – (2) Weighted average of interest rates on new short-term and medium/long-term loans, with weights equal to the 24-month moving averages of new disbursements; includes current account overdrafts. – (3) Unweighted standard deviation of growth and interest rates for 12 euro-area countries; right-hand scale.

In the same period, bank lending to the private sector gradually accelerated (3.0 per cent in the twelve months ending in March from 2.4 per cent at the end of 2016; Figure 3.4.b), thanks to the improvement in the economy and the favourable supply conditions. Lending accelerated for both households (3.0 per cent from 2.0 per cent) and non-financial corporations (3.3 per cent from 2.3 per cent).

Lending conditions remained very expansionary and there was a further reduction in credit market fragmentation among euro-area countries. The average rate of new loans to firms remained broadly unchanged at nearly 1.6 per cent, a low level by historical comparison. Even the average cost of new mortgages to households remained very low at 1.9 per cent. The dispersion in the dynamic and in the cost of loans to firms returned to the low levels recorded before the start of the sovereign debt crisis (Figure 3.5).

According to the quarterly survey on bank lending in the euro area, credit supply conditions improved for firms and households. The non-standard monetary policy measures seem to have helped to underpin the supply of credit to the economy and to improve the capital and liquidity positions of banks. Credit demand has increased, buoyed by low interest rates and the recovery in fixed investment.

THE ITALIAN ECONOMY

4. OVERVIEW

Italy's economic recovery, which has proceeded virtually without a break since the second quarter of 2013, gained strength in 2017. However, the pace is slower than on previous occasions and slower than in the other main euro-area countries owing to the exceptional depth and duration of the preceding recession (see the box 'Economic cycles in Italy').

ECONOMIC CYCLES IN ITALY

Italy's GDP has been growing gradually and almost uninterruptedly since the second quarter of 2013. However, the characteristics of both the recovery and of the previous contraction in economic activity differ greatly from those of most of the past economic cycles observed in Italy, as they have the distinctive features of a financial crisis.[1]

The last recession, if considered overall as a double-dip recession,[2] was exceptional in terms of its duration (20 quarters; see the table), the depth of the contraction (nearly 10 per cent of GDP in cumulative terms, against the decreases of 5.6 and 4 per cent recorded respectively during the Great Depression of 1929 and the oil crisis of the early 1970s), and finally because of the size of the output gap, negative by nearly 5 per cent.[3]

So far, the recovery has been of a similar duration (20 quarters to date; see the table) to the most recent expansions, but GDP recovery has been much slower, about a third of that recorded on average in the expansionary phases since 1970. GDP is still 5.5 per cent lower than in the first quarter of 2008 and remains about 2 percentage points below potential GDP (in contrast, it recorded positive values at the peak of the previous expansionary phases).

The current expansion also differs from previous ones in its composition. Among the main components of demand, only exports, which depend above all on the performance of the global economy, have exceeded the previous peak levels since

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[1] IMF, *World Economic Outlook*, April 2009. According to the International Monetary Fund, recessions associated with financial crises are usually more intense and longer than those caused by other types of shock. Recovery phases may be slower and characterized by a weak recovery in national demand and by tight credit conditions.

[2] The latest recession is considered to have been a double-dip one, characterized by a local minimum in the second quarter of 2009 and a local maximum in the second quarter of 2011.

[3] A. Bassanetti, M. Cecioni, A. Nobili and G. Zevi, 'Le principali recessioni italiane: un confronto retrospettivo', *Rivista di Politica Economica*, 3, 2011, 281-318.

Economic cycles in Italy (1970-2018) (1)

ECONOMIC CYCLE DATES		Duration (*quarters*)		Intensity (cumulative change in GDP, as a percentage)		Intensity (output gap in the quarter indicated, in percentage points)	
minimum	maximum	expansion	recession	expansion	recession	minimum	maximum
1971 Q4	1974 Q1	9	5	14.3	-4.0		
1975 Q2	1977 Q2	8	2	10.9	-0.2		
1977 Q4	1980 Q1	9	12	14.2	-0.4		
1983 Q1	1992 Q1	36	6	27.6	-1.5	-3.1	1.2
1993 Q3	1996 Q1	10	3	7.1	-0.4	-2.4	0.4
1996 Q4	2001 Q1	17	9	11.4	-0.3	-1.4	2.7
2003 Q2	2008 Q1	19	20	7.5	-9.6	-0.3	3.8
2013 Q1	to date	20 (to date)		4.6 (to date)		-4.8	-1.9 (to date)

Source: Based on Istat data.
(1) Recessions are identified based on Istat dating until 2010 (see Istat, *Rapporto annuale. La situazione del Paese nel 2010*, 2011) and on our estimates for the period after that. Istat's dating, previously done by ISCO and then by ISAE, follows the methodological approach of the National Bureau of Economic Research (NBER), in which 'a recession is defined as an absolute and prolonged decline in the level of economic activity, spread across various sectors of the economy'. The analysis of cyclical turning points is based on the performance of 6 variables (the ratio of overtime hours to total hours worked in large firms, the industrial production index, the rail transport of goods, the value added of market services, plant and machinery investment, and the imports of goods) summarized by a composite coincident indicator; see F. Altissimo, D.J. Marchetti and G.P. Oneto, 'The Italian business cycle: coincident and leading indicators and some stylized facts', Banca d'Italia, Temi di Discussione (Working Papers), 377, 2000. The latest complete cycle identified shows a double-dip recession characterized by a local minimum in 2009 Q2 and by a local maximum in 2011 Q2. The latest data refer to 2018 Q1.

2015. The stock of fixed capital, at chain-linked prices and net of depreciation, only stabilized in 2017, after four years of modest reductions (-0.9 per cent cumulatively), the first for which there is statistical evidence.[4] Based on our estimates, the difference between the credit-to-GDP ratio and its long-term trend,[5] which had always turned positive at the peak of the previous cyclical phases, is still negative by around 10 percentage points.

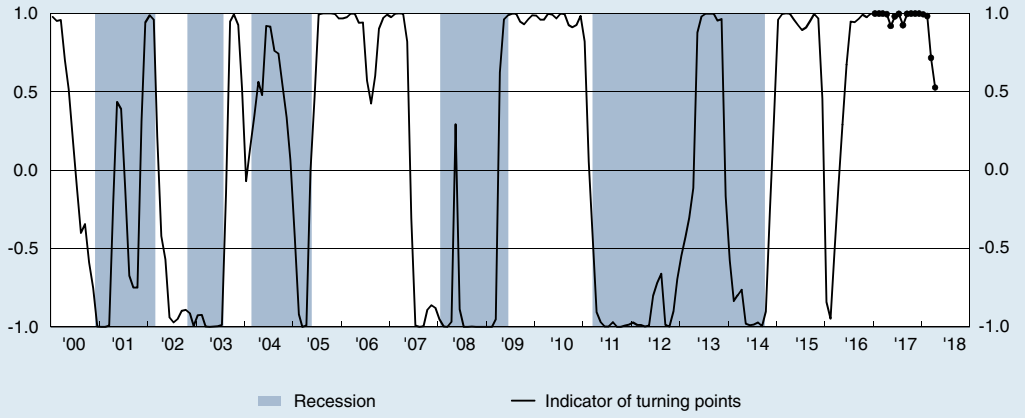
[4] Excluding housing, net capital has continued to decline (-0.2 per cent in 2017; -3.4 cumulatively since 2011).

[5] The credit-to-GDP gap is identified according to the model created by the Bank of Italy (see P. Alessandri, P. Bologna, R. Fiori and E. Sette, 'A note on the implementation of a countercyclical capital buffer in Italy', Banca d'Italia, Questioni di Economia e Finanza (Occasional Papers), 278, 2015). For its recent and expected trends, see *Financial Stability Report*, 1, 2018.

Recovery seems particularly slow by historical standards in the euro area too – although GDP has far exceeded pre-crisis levels and, as in Germany and France, expansion has been ongoing for almost nine years – which confirms the severe repercussions for production deriving from financial and banking crises. The overall performance of the euro area is in line with what happened in the US following the global financial crisis, taking account of the delay in the start of the recovery in Europe.[6]

There is evidence, confirmed by the work of analysts and institutions, that a particularly long and deep recession may be followed by a longer period of recovery. An indicator of turning points in industrial production in Italy as at April 2018 still shows that expansion is more likely than recession, despite some dips in recent months (see the figure).

Indicator of turning points in Italy's industrial production (1)



Source: Based on Istat data.
(1) The indicator is given by the difference between the estimates of the probability of expansion and of recession in the growth cycle for industrial production, which differs from the dating of Italy's economic cycle. The blue areas highlight the recession phases: see A. Baffigi and A. Bassanetti, 'Turning-point indicators from business surveys: real-time detection for the euro area and its major member countries', Temi di Discussione (Working Papers), 500, 2004.

Looking ahead, risks may stem from a worsening of the international situation, which could lead to severe downturns in households, and firms' confidence and to excessive volatility on the financial markets, or from abrupt changes in economic policies.

[6] CEPR, *Euro Area Business Cycle Dating Committee: a slow but steady euro-area recovery*, 2017.

GDP accelerated by 1.5 per cent on average in 2017, compared with 0.9 per cent in the previous year (Table 4.1). Growth exceeded the projections made by the leading professional forecasters at the beginning of the year (see the box 'The determinants of economic activity in 2017 according to the Bank of Italy's model') and involved all the main areas of the country. Nevertheless, it was stronger in the regions of northern Italy, which as usual benefited more from the expansion of world trade (see the box 'Regional trends').

Table 4.1

Sources and uses of income in Italy
(per cent)

	Per cent of GDP in 2017 (1)	2016			2017		
		Change		Contribution to GDP growth (2)	Change		Contribution to GDP growth (2)
		Chain-linked volumes	Deflators		Chain-linked volumes	Deflators	
Sources							
GDP	–	0.9	0.8	–	1.5	0.6	–
Imports of goods FOB and services (3)	27.6	3.5	-3.4	-1.0	5.3	3.1	-1.4
of which: goods	21.7	3.6	-4.2	-0.8	5.1	3.6	-1.1
Uses							
National demand	96.6	1.1	0.2	1.1	1.3	1.0	1.3
Consumption of resident households (4)	60.7	1.4	0.1	0.9	1.4	1.2	0.8
Consumption of general government	18.6	0.6	1.0	0.1	0.1	0.8	0.0
Gross fixed investment	17.5	3.2	-0.2	0.5	3.8	0.6	0.6
Plant, machinery, armaments and cultivated biological resources	6.7	7.4	-0.6	0.4	8.2	0.4	0.5
Products of intellectual property	2.8	0.0	0.5	0.0	1.4	0.6	0.0
Construction	8.0	1.2	-0.1	0.1	1.1	0.6	0.1
Changes in stocks (5)	–	–	–	-0.4	–	–	-0.2
Exports of goods FOB and services (6)	31.0	2.4	-1.1	0.7	5.4	1.7	1.6
of which: goods	25.3	2.2	-1.1	0.5	5.2	1.9	1.3
Net exports	–	–	–	-0.2	–	–	0.2

Source: Istat, national accounts.
(1) At previous year's prices. – (2) Chain-linked volumes. Percentage points. – (3) Includes residents'expenditure abroad. – (4) Includes non-profit institutions serving households. – (5) Includes valuables. – (6) Includes non-residents'expenditure in Italy.

THE DETERMINANTS OF ECONOMIC ACTIVITY IN 2017 ACCORDING TO THE BANK OF ITALY'S MODEL

In 2017 Italy benefited from the favourable global economic climate and from the firming of domestic consumption and investment. Economic policies also provided significant support, albeit to a lesser extent than in previous years. Overall, growth was more solid and balanced, exceeding the initial projections of all the leading analysts and institutional forecasters.

Based on calculations made using the quarterly model of the Italian economy,[1] Table A shows the contribution of several factors to the deviation of the growth in GDP and inflation from the projections formulated at the start of 2017

[1] A description of the general characteristics and main equations of the quarterly model of the Italian economy is contained in G. Bulligan, F. Busetti, M. Caivano, P. Cova, D. Fantino, A. Locarno and M.L. Rodano, 'The Bank of Italy econometric model: an update of the main equations and model elasticities', Banca d'Italia, Temi di Discussione (Working Papers), 1130, 2017.

Table A

Main contributions to growth and to inflation: revisions with respect to the projections made in January 2017

(per cent and differences, in percentage points, in annual growth rates)

	GDP	Investment	Exports	Inflation
Outturn for 2017 (1)	1.6	3.9	6.0	1.3
January 2017 projections (1)	0.9	2.8	3.8	1.3
Differences (2)	0.7	1.1	2.2	0.0
of which: foreign demand	0.2	0.2	1.5	0.0
international prices	0.4	0.3	1.1	0.1
exchange rates	-0.1	-0.1	-1.0	-0.1
energy prices	0.1	0.0	0.1	0.0
lower uncertainty	0.1	0.8	0.0	0.0
other (3)	0.0	-0.1	0.5	0.0

(1) For GDP and its components: chain-linked values; growth rates calculated using quarterly data adjusted for seasonal and calendar effects. – (2) Contributions to the revisions of GDP, inflation, exports and investment deriving from the changes in the performance of each of the factors with respect to that hypothesized in the projections presented in *Economic Bulletin*, 1, 2017. – (3) Includes certain residual factors.

(see *Economic Bulletin*, 1, 2017). Overall, GDP growth was more than 0.5 percentage points higher than projected.

The more positive developments in the international economy contributed significantly to strengthening the growth in GDP: the acceleration in global demand and the greater, partly related, increase in the prices of our main trading partners more than offset the negative effects of the euro's nominal appreciation, thereby stimulating exports.

The growth in Italian firms' investment in capital goods was also higher than projected at the start of 2017, driven by better prospects in foreign markets, lower uncertainty and greater confidence. These indications can be inferred from business surveys, which reported a lower dispersion of demand expectations and more favourable assessments on expected order levels and production. In fact, confidence indices have reached their highest levels since 2007.

Inflation was above the slightly negative levels recorded the previous year, consistent with the projections made at the start of 2017. Upward pressures stemming from the acceleration in prices at international level were mitigated by the effects of the euro's nominal appreciation. Overall, the gradual strengthening in inflation solidified, although inflation remains low.

While economic policies (specifically, the persistence of very favourable monetary and financial conditions and the moderately expansive fiscal stance) continue to contribute significantly to economic activity, growth seems to be progressively less reliant on this form of support.

Table B shows our assessments of the contributions of monetary and fiscal policies to GDP growth in the three years 2016-18, formulated with the quarterly

model of the Italian economy.[2] According to these estimates, roughly two thirds of the growth in GDP in 2018 will be attributable to expansionary policies, which accounted for all of the growth in 2016. The contribution of monetary policy should average about half that calculated for 2016, consistent with the reduction in monetary stimulus (see Chapter 3, 'Monetary policy in the euro area'), while the contribution of fiscal policy should remain broadly stable throughout the three-year period.

Table B

GDP growth and the contribution of economic policies
(differences in annual growth rates and contributions in percentage points)

	2016	2017	2018
GDP growth (1)	1.0	1.6	1.4
Contribution of economic policies (2)	1.8	1.2	0.9
of which: monetary policy	1.5	0.9	0.7
fiscal policy	0.3	0.3	0.2

(1) For 2018, the projection published in *Economic Bulletin*, 1, 2018. – (2) Monetary policy takes account of all the measures introduced by the ECB Governing Council since 2014.The contribution of fiscal policy is calculated by simulating the macroeconomic effects of the measures included in the budget law. For the two years 2017-18, the measures that provide the largest expansionary contribution are the tax incentives to firms for investment (super- and hyper-amortization), the increase in public investment, and the renewal of public-sector employment contracts.

[2] These factors are not shown in Table A as the information necessary to calculate their impact on economic activity in the previous year were largely already available when the projections were formulated at the start of 2017.

REGIONAL TRENDS

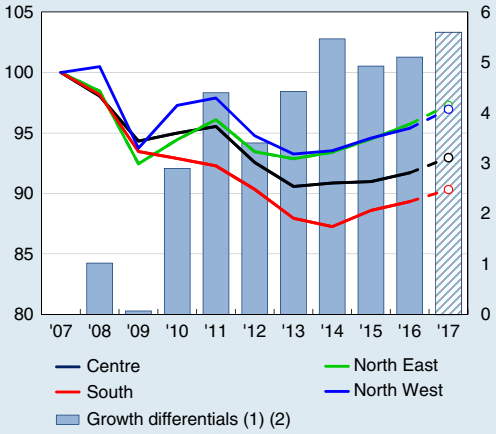
The economic recovery strengthened throughout Italy last year. According to the estimates provided by Prometeia, in 2017, as in the previous year, the pace of growth in the regions of the Centre and North – especially the North West and North East – was higher than in the South (see panel (a) of the figure). Stronger growth in the Centre and North was also confirmed by the Bank of Italy indicator that monitors quarterly economic activity in the macro-areas.[1] According to this indicator, GDP slowed slightly in the second half of the year in the South and North East of the country.

Compared with 2007, when output peaked on the eve of the crisis, Prometeia estimated that in 2017 GDP was lower by around 4 percentage points in the Centre and North and by around 10 points in the South (see panel (a) of the figure). Demographic developments attenuated the divergence in per capita terms because the population of the Centre and North grew much more than that of the South, owing to migration within Italy and from abroad (see the box 'Southern Italy's economy after the recession' in Chapter 5, *Annual Report for 2016*, 2017). Between 2007 and 2017 GDP per capita fell by more than 8 percentage points in the Centre and North and by 10 points in the South. In 2017, GDP per capita in the South was around 56.6 per cent of the figure for the Centre and North (57.7 per cent in 2007).

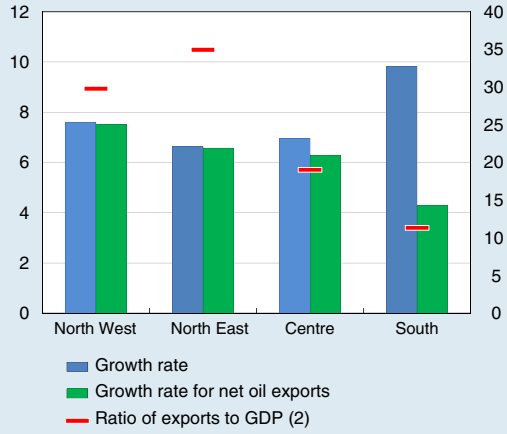
[1] The quarterly indicator of regional economic activity is based on a parsimonious set of variables comprising (a) annual data on regional GDP released by Istat; (b) Italy's quarterly series of GDP; and (c) quarterly territorial indicators from various sources. The data are combined using temporal disaggregation techniques of time series, respecting both the constraints on the aggregation of time series (quarterly and annual territorial data) and on regional data (at national level and on macro-areas); see V. Di Giacinto, L. Monteforte, A. Filippone, F. Montaruli and T. Ropele. 'A quarterly indicator of regional economic activity in Italy (ITER)', Banca d'Italia, Questioni di Economia e Finanza (Occasional Papers), forthcoming.

GDP and exports

(a) GDP at chain-linked values
(indices: 2007=100; percentage points)



(b) Exports and ratio to GDP (3)
(annual growth rates and per cent)



Sources: For panel (a), up to 2016, Istat, *Regional accounts*, for 2017, Prometeia; for panel (b), Istat.
(1) Differentials between GDP growth rates in the Centre and North and in the South. The growth rate is calculated between 2007 and time t. – (2) Right-hand scale. – (3) Export growth rate in 2017; ratio of exports to GDP in 2016.

The upturn in productivity continued in the early part of this year: in the first quarter of 2018 the number of favourable, as opposed to unfavourable, assessments of the economic outlook by the manufacturing firms polled by Istat increased throughout Italy, most markedly in the North where, from mid-2017 onwards, it was already consistently positive.

In 2017 all the macro-areas benefited from the favourable performance of exports, whose impact on economic activity was nevertheless greater in the Centre and North, where their share in value-added terms was higher (see panel (b) of the figure). Excluding the sharp rise in refined petroleum exports, which was concentrated in Sicily and Sardinia, exports in the South would have recorded growth of 4.3 per cent, less than that in the other macro-areas. In 2017 the positive differential of export growth compared with demand potential, already evident in the regions of the Centre and North on average over the previous five years, extended to the South, indicating that Italy's capacity to compete on the international markets strengthened throughout the country.

According to the results of the Survey of Industrial and Service Firms, the expansion of investment in the industrial sector was nationwide. The banks interviewed as part of the Regional Bank Lending Survey reported an increase in loan applications for investment in all areas in 2017.

Consumption also appeared to expand at a faster pace in the regions of the Centre and North: according to Prometeia, household expenditure on consumption grew by 1.6 per cent in the North in 2017, in line with 2016, and by 1.3 and 1.1 per cent respectively in the Centre and South, slowing slightly compared with the previous year.

Employment growth instead displayed a similar pattern across the country; for the first time since the outbreak of the crisis, job losses in the construction sector ceased. The number of those in employment was unchanged in the Centre and North; it increased in the South. The unemployment rate fell throughout Italy, most markedly in the Centre and North; in the South, the reduction was partly braked by the higher rate of labour force participation than in the other areas.

Despite the stagnation in manufacturing, the economy continued to expand in Italy in the first quarter of 2018 at a similar pace to that recorded at the end of last year (0.3 per cent on the previous quarter according to Istat's preliminary estimates). The rate of GDP growth also held steady in Spain, but slowed sharply in both France and Germany. The latest information on economic performance, especially the surveys conducted among firms and households and the Ita-coin indicator,[1] suggest that the economy will continue to expand in Italy in the second quarter too.

Italy's GDP is still 5.5 per cent below the level of the first quarter of 2008, before the impact of the global financial crisis was felt. Instead, in Spain, France and Germany GDP has risen above that level by about 3, 7 and 12 per cent respectively. Italy's GDP is still 0.9 per cent below the peak recorded in the second quarter of 2011, just before the sovereign debt crisis.

Last year, growth was buoyed by national demand, which accelerated with respect to 2016, and by foreign trade. Household consumption continued to pick up and investment in capital goods, which had remained weak in the early stages of the recovery, strengthened considerably. The improvement in business confidence and in firms' prospects as the expansion gained hold, as well as favourable credit access conditions, contributed to this, as did the renewal of tax incentives and the launch of the national Industry 4.0 Plan, which incorporates measures to support investment in new digital technologies and automation.

Investment in intangible goods began to increase once more, particularly that in R&D, which received targeted tax breaks and benefited from a set of measures to ease the restrictions on the financing of innovative business projects. Investment in construction also increased, although the gap with respect to pre-crisis values remains significant. This was partly due to a reduction in general government investment, which remains unprecedentedly low in nominal terms (2.0 per cent of GDP, down from 3.0 per cent in 2008).

Export growth (5.4 per cent) was greater than that recorded in 2016 and outpaced the expansion in demand in the main markets for Italian goods. Imports accelerated at a slower pace, even though driven by the surge in exports and in expenditure on transport equipment (components that provide the strongest stimulus to purchases of intermediate or final goods from abroad). Foreign trade thus made a positive contribution to GDP growth for the first time since 2013.

[1] The Ita-coin indicator developed by the Bank of Italy tracks the underlying dynamics of the Italian economy. For the methodology used to construct the indicator, see the box 'Ita-coin: a coincident indicator of the Italian economic cycle', *Economic Bulletin*, 2, 2015.

Gross national saving rose to 20.1 per cent of gross disposable income, returning to the average level of 2001-10 (Table 4.2). The increase in the national saving rate during the year was entirely due to greater saving by general government. The propensity to save of the private sector as a whole diminished, and particularly that of households, reflecting continued attempts to return to the same levels of consumption as before the crisis. Gross investment is historically low in relation to national income: the expansion in fixed investment during the year was offset by a reduction in stocks. The balance on the external current account continued to grow at a steady pace and was positive for the fifth consecutive year, rising to the highest level since the mid-1990s thanks to the improved performance of Italian exports on many markets (see Chapter 15, 'Italian goods exports in the last twenty years: trends and determinants').

Table 4.2

Saving and gross investment in Italy
(per cent of gross national disposable income)

	Average 1981-1990	Average 1991-2000	Average 2001-2010	2013	2014	2015	2016	2017
General government saving	-6.6	-3.3	0.7	0.2	0.3	1.2	0.5	1.2
Private sector saving	28.8	24.6	19.4	18.0	18.8	17.8	19.2	18.8
of which: consumer households (1)	20.0	14.0	8.0	5.9	6.0	5.7	5.6	5.1
Gross national saving	22.3	21.3	20.1	18.1	19.1	19.0	19.7	20.1
Gross investment	23.2	20.5	21.3	17.2	17.2	17.6	17.2	17.3
Memorandum item:								
Balance on current transactions with the rest of the world	-0.9	0.9	-1.3	1.0	1.9	1.5	2.5	2.8

Source: Based on Istat data.
(1) Includes non-profit institutions serving households.

Employment also continued to increase last year (1.1 per cent), especially payroll employment on fixed-term contracts. Permanent payroll employment was affected by changes in the system of social security contributions for new hirings. The number of people in employment returned close to the average level recorded in 2008: it was significantly lower in manufacturing (by about 15 per cent) but higher in services (by more than 5 per cent). Labour demand in the service sector continued to favour less qualified jobs (see the box in Chapter 8, 'Changes in the structure of employment in Italy in the last ten years'). Labour force utilization is still low: hours worked per capita were again more than 5 per cent lower than the average value for 2007. Unemployment decreased from 11.7 per cent in 2016 to 11.2 per cent; at the same time, labour market participation increased with the raising of the retirement age and the drop in the number of discouraged unemployed workers as the economic situation improved.

Value added increased in all the main sectors except agriculture. Labour productivity in manufacturing topped the level recorded before the crisis by more than 10 per cent while in the private service sector, where the recovery in employment was concentrated, it just managed to close the gap.

New legislation was passed in 2017 to improve the regulation of markets and business activity. Two years after the target date, the first annual law on competition

took effect in several sectors, although its provisions were of generally limited impact. The enabling act to reform the regulation of corporate crises and insolvency, which was passed last autumn and is awaiting enactment, should help to speed up recovery procedures and allow more efficient solutions to corporate crises, thereby improving our production system's competitiveness.

Fiscal policy remained moderately expansionary for the fourth year running. However, the effects of the strengthening economic recovery on tax receipts and the further decrease in interest expense more than offset the impact of the expansionary measures, leading to a small decline in net borrowing, from 2.5 per cent of GDP in 2016 to 2.3 per cent. The debt-to-GDP ratio diminished by 0.2 percentage points with respect to 2016, to 131.8 per cent. Action to support banks in difficulty amounted to 0.3 percentage points of general government net borrowing in 2017 (see the box in Chapter 11, 'The impact on the public accounts of the financial sector support measures'). Less favourable borrowing conditions would not jeopardise the stability of public and private sector debt if the present growth rate were maintained and fiscal policy remained prudent (see the box 'The normalization of financial conditions and the Italian economy').

THE NORMALIZATION OF FINANCIAL CONDITIONS AND THE ITALIAN ECONOMY

The improvement in economic activity has strengthened the capacity of the Italian economy to sustain a progressive normalization of market interest rates with respect to today's exceptionally low levels. This, however, is predicated on the confirmation of current growth forecasts and on the continuation of a credible and prudent fiscal policy stance. This assessment is corroborated by a number of simulations hypothesizing scenarios in which yields go up.

The private sector's ability to honour its debts in the event of unexpected rate hikes appears sound, partly thanks to the reduction in firms' leverage recorded in recent years. If, in 2018, the costs of borrowing were 100 basis points higher than the estimates in the most recent macroeconomic projections, the share of debt held by vulnerable households and firms would amount to 12 and 28 per cent respectively,[1] much lower levels than those observed during the sovereign debt crisis (19 and 47 per cent in 2012). Levels of vulnerability would be higher (though still low by historical standards) for some categories only, such as households resident in the South or those with other forms of debt in addition to mortgage loans, especially loans for consumer credit; as for firms, small businesses and those operating in the construction sector would be the most vulnerable.

[1] Households are considered vulnerable when their debt service to income ratio is above 30 per cent and their disposable income is below the median (see V. Michelangeli and M. Pietrunti, 'A microsimulation model to evaluate Italian households' financial vulnerability', *International Journal of Microsimulation*, 7, (3), 2014, 53-79, also published by Banca d'Italia, Questioni di Economia e Finanza (Occasional Papers), 225, 2014). Vulnerable firms are those whose gross operating income is negative or whose ratio of net interest expense to gross operating income exceeds 50 per cent (see A. De Socio and V. Michelangeli, 'A model to assess the financial vulnerability of Italian firms', *Journal of Policy Modeling*, 39, 2017, 147-168, also published by Banca d'Italia, Questioni di Economia e Finanza (Occasional Papers), 293, 2015). For details on the scenarios in the analysis, see *Financial Stability Report*, 1, 2018.

In the last three years the debt-to-GDP ratio has remained practically unchanged at very high levels. Based on the current macroeconomic outlook,[2] which already incorporates the hypothesis of a progressive rise in market rates, this ratio is expected to begin to come down this year. Without changing the hypotheses on economic growth and fiscal policies, an additional increase of 100 basis points in yields on government securities with respect to this scenario would slow, but not endanger, a gradual reduction in public debt as a share of nominal GDP.[3] Part of the reason for this is the high residual duration of Italy's public debt – more than seven years – which dilutes and defers over time the sensitivity of the cost of debt to an increase in market rates: a permanent increase of 100 basis points in the cost of issuing debt would translate into greater interest expenditure relative to GDP compared with the baseline scenario of roughly 0.1, 0.2 and 0.4 percentage points over one, two and three years respectively. The same simulations indicate, however, that the progressive decline in debt requires that current growth rates be confirmed, public finance policies continue to be credible and prudent, and financial market conditions remain orderly.

[2] The Bank of Italy's latest macroeconomic projections were published in *Economic Bulletin*, 1, 2018. The new forecasting scenario, prepared as part of the Eurosystem staff macroeconomic projection exercise, will be published in June.

[3] 'Monetary policy in the euro area: past, present and near future', speech by Deputy Governor, F. Panetta, at the Università Cattolica del Sacro Cuore, Rome, 6 April 2018. The hypothesis that growth and fiscal policies remain unchanged even with an increase of 100 basis points in yields appears reasonable, given the past trends. The scenarios considered do not contemplate any concomitant global financial shock.

After fluctuating around zero since the beginning of 2014 and mostly below zero in 2016, the harmonized rate of consumer price inflation turned newly positive in 2017 (1.3 per cent on average), boosted by the most volatile components, such as food and energy products. Core inflation, which is net of these components, also increased but was nevertheless still very low (0.8 per cent against 0.5 in 2016). This level reflects not only the temporary effects stemming from the reduction of university fees at the end of 2017, but also modest wage growth owing to the substantial margins of unutilized labour and the low inflation expectations incorporated into collective bargaining agreements in previous years.

The increase in contractual earnings slowed in the non-farm private sector, from 0.8 per cent in 2016 to 0.6 per cent. However, the labour agreements signed towards the close of 2017 envisage gradually higher wage growth from the beginning of this year.

The crises at some banking groups were overcome and banks strengthened their capital and financial situation. Credit quality continued to improve, partly thanks to more robust economic growth.

Lending to the private sector increased, although only moderately in the case of firms. The weak performance is not very different, however, from that observed during the expansionary phases that followed deep recessions or financial crises in the past. Credit supply conditions remain accommodating.

5. HOUSEHOLDS

In 2017 growth in households' disposable income strengthened, thanks primarily to the recovery in payroll employment, and continued to drive the expansion in consumption under way since mid-2013. Consumer confidence also improved considerably in the second half of the year, reflecting more favourable labour market expectations. There was a further decrease in the propensity to save, by both historical and international standards; this could signal an attempt to return to pre-crisis consumption levels.

Income inequality rose slightly between 2014 and 2016, as measured by the inter-quintile ratio; over the last ten years it has been affected by the worsening of the conditions for less well-off households. In 2016, the percentage of individuals living in absolute poverty reached a ten-year high.

Our estimates indicate that in 2017 the decline in household property wealth came to a halt, despite a further modest decline in residential real estate prices, which do not yet reflect the recovery in demand.

Income and income distribution

In 2017 the growth in the disposable income of consumer households accelerated slightly at current prices (Table 5.1), but slowed in real terms to 0.6 per cent, reflecting the gradual rise in inflation (see Chapter 9, 'Prices, costs and competitiveness'), not as yet matched by a similar increase in wages. The growth in payroll employment income was boosted by the increase in persons in employment, in line with the strengthening of the economic recovery; self-employment income also rose, despite the sharp fall in the number of job positions (see Chapter 8, 'The labour market'), as did net property income. The redistributive measure introduced by general government boosted household income, thanks above all to the increase in social benefits.

Considering equivalized income[1] in real terms, the data from the Survey on Household Income and Wealth (SHIW) for 2016 indicated a growth of 3.5 per cent compared with 2014 (Table 5.2), but still 10.9 per cent lower compared with 2006.[2] According to the assessments of households interviewed between January and October 2017, income continued to increase last year as well.

[1] Equivalized income is equal to the ratio of total household income to the number of equivalized adults. The latter is calculated using the OECD modified equivalence scale, which assigns a value of 1 to the head of the household, 0.5 to each member aged 14 and over and 0.3 to each member under the age of 14.

[2] According to national accounts data, in the years 2014-16, real disposable income of consumer households in relation to the population rose by 2.9 per cent and fell by 10.6 per cent between 2006 and 2016.

Table 5.1

Household gross disposable income and saving rate (1)
(at current prices, unless otherwise indicated)

	% of households' gross disposable income in 2017	2015	2016	2017
		Percentage change		
Employment income	61.3	2.2	2.4	2.3
Income per full-time equivalent payroll worker	–	1.1	0.4	0.2
Self-employment income (2)	26.3	1.5	1.0	1.9
Income per full-time equivalent self-employed worker	–	1.9	1.4	3.7
Net property income (3)	22.0	1.1	-0.3	0.6
Social benefits and other net transfers	32.2	2.3	1.5	1.6
of which: net social benefits	33.2	2.0	1.2	1.7
Net social security contributions (-)	23.2	2.0	1.6	2.5
of which: paid by employers	15.1	1.4	1.0	2.5
Current taxes on income and wealth (-)	18.6	3.6	1.4	1.3
Gross disposable income	**100.0**	**1.6**	**1.5**	**1.7**
In real terms (4)	–	1.4	1.3	0.6
In real terms, adjusted for expected inflation (4) (5)	–	1.8	1.1	-0.5
In real terms, adjusted for past inflation (4) (6)	–	1.2	1.4	0.0
		Percentage share		
Average propensity to save (7)	**–**	**8.2**	**8.1**	**7.4**
Calculated on income adjusted for expected inflation	–	8.2	7.9	6.2
Calculated on income adjusted for past inflation	–	7.9	7.8	6.5

Sources: Calculations and estimates based on Istat and Bank of Italy data.
(1) Data for consumer households. – (2) Mixed income and income drawn by members of quasi-corporations. – (3) Gross operating profit (mainly rental income), net rents from land and intangible assets, actual net interest, dividends and other profits distributed by companies. – (4) Deflated using the consumer household consumption deflator. – (5) Gross disposable income net of expected losses on net financial assets due to inflation (estimated on the basis of the Consensus Economics survey). – (6) Gross disposable income net of losses on net financial assets due to inflation calculated ex-post. – (7) Ratio of saving (gross of depreciation and net of changes in pension fund reserves) to gross disposable income.

According to SHIW data, in 2016 the equivalized income held by 20 per cent of the most well-off population as a whole was 6.3 times that of the 20 per cent with the lowest income (6.0 in 2014). This inter-quintile ratio, which stood at 5.3 in 2006 (the lowest value of the 2000s), was affected by the more marked fall in the incomes of less well-off families during the decade of the global economic crisis.[3]

The share of individuals at risk of poverty[4] has grown further: it was 22.9 per cent in 2016, 0.6 points higher than in 2014, and is greater among foreigners (55.0 per cent) and in the South and Islands of Italy (39.4 per cent); in the decade 2006-16 the share of individuals living in poverty rose by 3.3 percentage points. According to Eurostat's definition, which takes account of individuals at risk of poverty and also those at risk of social exclusion,[5] this share was 30.0 per cent, 4.1 percentage points higher than in 2006 and 6.5 points higher than the EU average.

[3] From 2006 to 2016 the total equivalized income of individuals with the lowest income fell by 22.0 per cent against 7.0 per cent for those with the highest income.

[4] Persons at risk of poverty are those who live on an equivalized income that is less than 60 per cent of the national median.

[5] Persons living in households in conditions of severe material deprivation or low work intensity.

In 2016, one in three minors suffered economic hardship, against roughly one in four on average in the EU.

Table 5.2

Equivalized disposable income (1) (2)
(in euros at 2016 prices and percentage changes, unless otherwise indicated)

	2016	2008-2010	2010-2012	2012-2014	2014-2016
Average equivalized income	18,584	0.5	-10.8	-1.3	3.5
Centre and North	21,478	0.5	-12.9	-1.1	4.9
South and Islands	13,117	0.0	-4.6	-1.5	-0.5
Worker, apprentice, shop assistant	13,560	-1.5	-8.9	3.1	1.4
Clerical worker, middle manager, teacher	22,071	2.5	-7.6	-2.0	5.7
Manager	37,173	-9.0	-3.2	-10.9	8.7
Self-employed worker	23,506	3.2	-11.3	-1.7	-0.3
Retired	19,287	-1.7	-5.5	-2.1	2.9
Unemployed with no pension	5,210	6.2	-18.3	-10.1	-13.4
1 household member	19,467	2.2	-13.1	3.1	1.1
2 household members	22,021	1.0	-10.0	1.7	3.0
3 household members	19,269	-2.0	-7.8	-4.2	0.0
4 household members	17,385	1.7	-15.3	0.1	6.4
5 or more household members	13,211	-1.4	-3.4	-7.2	7.2
Italians (3)	19,368	1.5	-9.8	-2.3	3.9
Foreigners (3)	11,254	-4.6	-17.2	7.2	-1.1
Home owner	21,155	1.8	-9.3	-1.3	2.2
Tenant	10,784	-3.1	-13.6	-5.6	5.5
Gini index (4) (5)	0.335	0.001	0.004	-0.002	0.006
Centre and North	0.302	0.001	0.013	-0.011	0.008
South and Islands	0.340	0.002	0.005	0.019	-0.006
Inter-quintile ratio (5) (6)	6.3	0.2	0.1	0.2	0.3

Sources: Bank of Italy, Survey on Household Income and Wealth, Historical Database (Version 10.0, March 2018).
(1) Overall household incomes (including imputed rents for houses used by owners) net of direct taxes, revalued at 2016 using the resident household consumption deflator applied by Istat to the national accounts and made comparable with the OECD modified equivalence scale (this scale assigns a coefficient of 1 to the head of household, 0.5 to household members age 14 and over and 0.3 to members under the age of 14). The observations are weighted by the number of persons in a household to obtain the average equivalized income for each household member. – (2) The employment status is that of the head of household, who is the person with the highest income from employment or from pension benefits. – (3) Country of birth. – (4) The Gini concentration index ranges from 0 (perfect equality) to 1 (maximum inequality). – (5) Changes over two years calculated as percentage differences. – (6) Ratio between the equivalized disposable income of the richest 20 per cent of the population and that of the poorest 20 per cent. Inequality measurement used by Eurostat.

According to Istat's household budget survey, 7.9 per cent of the population (about 4.7 million people) were living in absolute poverty[6] in 2016, the highest figure recorded in the last ten years, albeit essentially stable compared with 2015. The share was greater among large households, among couples with at least three

[6] Persons living in absolute poverty are members of households whose expenditure is less than that needed to buy a basket of goods and services.

children, in households consisting entirely of non-Italian citizens and in those with younger heads of household (those headed by someone between the ages of 35 and 44 were more than twice as likely to live in absolute poverty than those headed by someone over the age of 64). For 2017, Istat predicted a slight increase in the number of individuals in absolute poverty, which would rise to 8.3 per cent of the population, almost three times the figure for 2006.[7]

The main factor contributing to the overall income inequality was the growth in that between the different age classes (see the box 'Inequality and poverty: comparison across age classes before and after the Great Recession') and within different areas of Italy (see the box 'Income disparity between the Centre-North and the South').

INEQUALITY AND POVERTY: COMPARISON ACROSS AGE CLASSES BEFORE AND AFTER THE GREAT RECESSION

The economic crisis has left a crippling legacy for Italian households, with vastly different effects on each age class. Between 2006 and 2016, real equivalized income fell by 20.9 per cent for persons living in 'young' households, i.e. those headed by someone under 40 years of age. By contrast, persons in 'old' households (those with heads of household over 65 years old) saw their income rise by 1.6 per cent (panel (a) of the figure). In 2006 this latter group received the lowest equivalized income of all the age classes, while in 2016 it had one of the highest incomes. The risk of poverty, which was at a similar level for people living in these two types of households in 2006, rose in that decade for persons belonging to young households to about double that for those living in old households in 2016 (at 32.5 and 15.7 per cent respectively; see panel (b) of the figure).

These developments reflect the higher cyclicality of employment income than pension income and the growing percentage of young households comprising foreign-born persons, whose levels of income are lower on average.[1] The characteristics of the Italian welfare system, historically more generous when it comes to pensions and less so in support of households in financial distress, may have played a part as well. Only recently has discussion turned to the introduction of income supplements for households: an initial measure for the minimum income scheme (*reddito di inclusione*) was provided for by Legislative Decree 147/2017 and has been in effect since January 2018.

Within each age class, the dispersion of equivalized incomes increased, especially between young households. It is possible to measure how the different mean income and dispersion dynamics of the age categories affected the overall

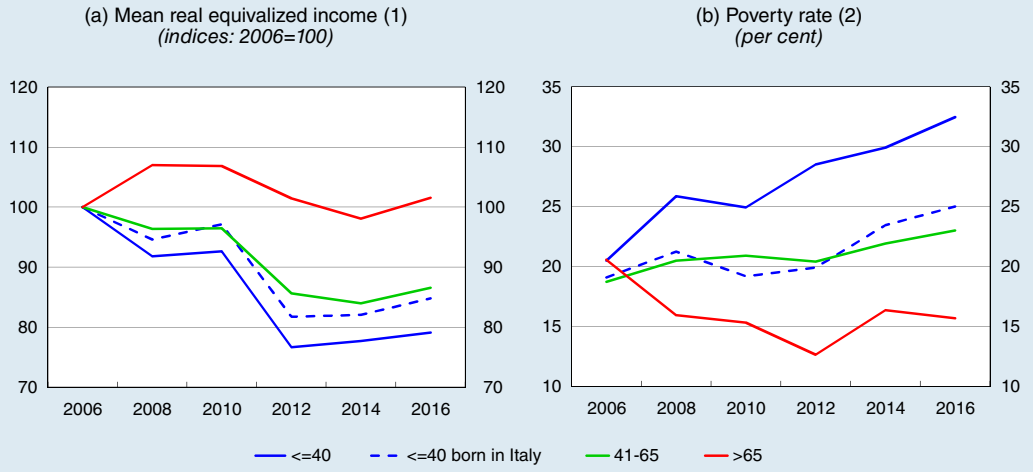
[1] By narrowing the focus to young households headed by someone born in Italy, both the fall in equivalized income (equal to 15.2 per cent between 2006 and 2016) and the increase in the poverty rate (from 19.1 to 25.0 per cent for the same period) are reduced.

[7] Testimony on the 2018 Economic and Financial Document, Giorgio Alleva, President of the National Institute of Statistics, Joint Committees (Special Committees of the Senate of the Republic and the Chamber of Deputies tasked with the examination of urgent government measures), Rome, 9 May 2018.

inequality trend. For this purpose, it is possible to decompose the mean log deviation[2] of income into two parts: one attributable to the difference in the dispersion of mean income between young and old households, the other linked to the internal variance of each group. This latter component explains a large part of the overall increase in inequality, which in the ten years 2006-16 rose by 22.0 per cent.

The rise in inequality was partly mitigated by changes that occurred during the same period in the population's age structure. In the ten years considered, the share of individuals living in young households fell by 10 percentage points, while those belonging to old households rose by around 5 percentage points. These developments reflect the ageing of the population and the decision by young persons to postpone setting up new households, probably due in part to the economic crisis.[3] If these changes were to be cancelled out – that is, if the ratio of the different age cohorts to the total population is held steady at its 2006 level – the rise in inequality would have been greater (25.0 per cent).[4]

Mean income and risk of poverty by age of head of household



Sources: Bank of Italy, Survey on Household Income and Wealth, Historical Database (Version 10.0, March 2018).
(1) Equivalized income is equal to the ratio of total household income to the number of equivalized adults. We adopt the OECD-modified equivalence scale to calculate this; it assigns a value of 1 to the household head, a value of 0.5 to each member aged 14 or over, and a value of 0.3 to each member under age 14. The unit of reference is the person. All estimates are weighted with survey weights and adjusted to 2016 values using the consumer households consumption deflator applied by Istat to the national accounts. – (2) Persons at risk of poverty are those who receive an equivalized income that is less than 60 per cent of the national median.

[2] A synthetic index of inequality that is decomposable between groups; its trends are similar to those of the better known Gini index (see Survey on Household Income and Wealth, Banca d'Italia, Statistics Series, 2018).

[3] The average age of the head of household has risen more than the overall average age of the population; the probability of a young person aged 18 to 40 being head of household fell by 3 percentage points.

[4] The increase is slightly lower if the focus is limited to households headed by someone born in Italy.

INCOME INEQUALITY BETWEEN THE CENTRE-NORTH AND THE SOUTH

Starting from the economic crisis, the inequality of equivalised household incomes – calculated using the mean log deviation as the synthetic indicator[1] – grew both in the Centre-North and in the South where it is structurally higher (panel (a) of the figure). The increase at national level is due to the increments observed within each of the two geographical areas, while the contribution of the average income gap between the two areas remained relatively constant (panel (b) of the figure).

In 2016, there was a difference of about 40 per cent in the mean equivalised income between the Centre-North and the South (panel (c) of the figure) which accounted for about a tenth of overall inequality at national level. However, this gap did not change significantly compared with the pre-crisis years, despite the fact that the macroeconomic climate was worse in the South. In the Centre-North, capital income (including imputed rent) contracted more sharply between 2006 and 2016, while pension transfers increased (they fell slightly in the South). Instead, the decline in employment income was of a similar scale in both areas: though the fall in the average number of people in employment was relatively greater in the South, the decline in the average income level was less than in the rest of Italy.

However, the geographical differences increased among persons with greater financial difficulties. Between 2006 and 2016, average household earnings of residents in the lowest income decile fell by 7.9 per cent on an annualized basis in the South, against 4.0 per cent in the Centre-North. The share of individuals living in absolute poverty, calculated by Istat on the basis of consumption expenditure, grew by 6.0 percentage points in the South (to 9.8 per cent) and by 4.5 points in the North (to 6.7 per cent). In the Centre the share grew by 4.7 points to 7.3 per cent.

The higher income dispersion in the South is compounded by the lower employment rate, which is reflected in the smaller number of both households with more than one labour income recipient and elderly people with seniority and age-related pensions anchored to past employment.[2] If the composition of households in the South was the same as in the Centre-North with respect to these characteristics, the difference in internal inequality levels between these two areas would decline by 70 per cent (panel (d) of the figure). Moreover, the average income gap would narrow by about a third and overall income inequality in Italy by approximately a tenth.

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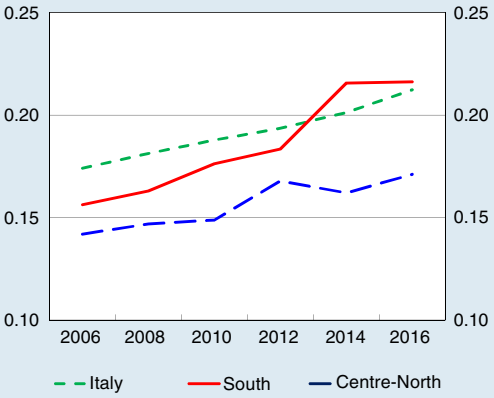
[1] This synthetic inequality index can be broken down by group; its trends are similar to those in the Gini index (see Survey on Household Income and Wealth, Banca d'Italia, Statistics Series, 2018).

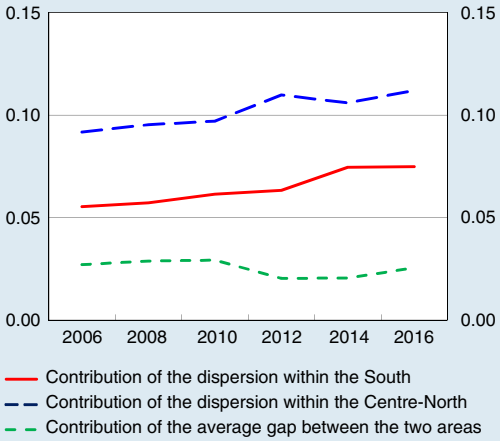
[2] E. Ciani and R. Torrini, 'Income distribution between the Centre-North and the South', Banca d'Italia, Questioni di Economia e Finanza (Occasional Papers), forthcoming.

Distribution of equivalised household income (1)

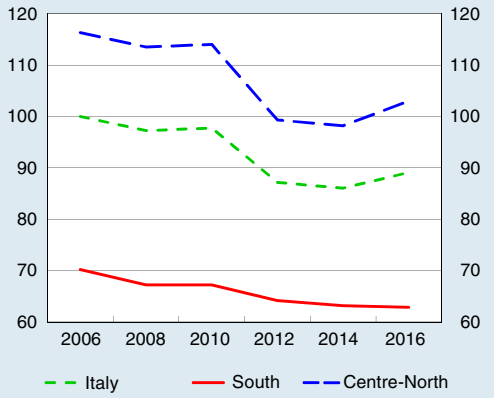
(a) Mean log deviation (2)
(values)



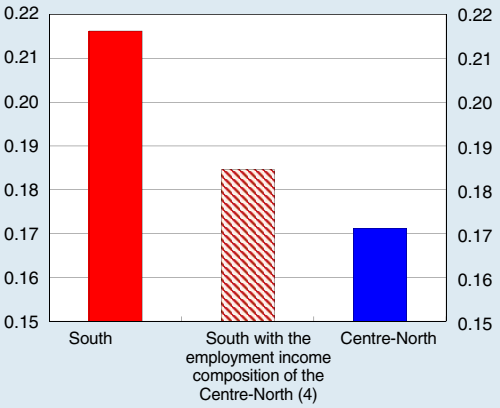
(b) Decomposition of domestic mean log deviation (2)
(values)



(c) Average equivalised income
(Italy: 2006=100)



(d) Mean log deviation in the South and composition of employment income (3)
(values)



Sources: Bank of Italy, Survey on Household Income and Wealth and Historical Database (Version 10.0, March 2018).
(1) Equivalent income is the ratio between total household income and the number of equivalent adults. The latter is calculated using the OECD-modified equivalence scale which assigns a value of 1 to the head of household, of 0.5 to each additional member over the age of 14 and of 0.3 to each child below that age. The unit of reference is the individual. Estimates are calculated using sample weights; values are revalued as at 2016 using the consumption deflator for resident households published by Istat in the national accounts. – (2) Incomes below the second percentile of the distribution were moved up to that percentile (bottom-coding), separately for each year, to prevent extremely low values from skewing the results. (3) For 2016. – (4) The mean log deviation was recalculated by breaking down the population distribution of the Centre-North into three classes: no adult in the household earning an income or receiving an income from an employment-related pension; the share of such adults in the household between 0 and 0.5; the share of such adults in the household above 0.5. The dispersion within these classes and the differences in average income between them were kept at the levels observed in the South. Only seniority and age-related pensions are included in employment-related pensions.

According to the Ministry of Economy and Finance's 2018 report on measurements of equitable and sustainable well-being (BES), inequality is expected to decline in the years 2017-19, benefiting from the performance of the labour market (see Chapter 8, 'The labour market'). These assessments are consistent with the evidence for 2017 from Istat's labour force survey that shows a decline in the dispersion of the income of full-time payroll employees.

Legislative Decree 147/2017 introduced inclusion income (ReI), a universal welfare measure to combat poverty that is financed by the national fund for combating poverty and social exclusion, whose resources should go up from around €2 billion in 2018 to €3 billion in 2020. The measure targets all households in difficulty: for a transitional period until 30 June 2018, the ReI will only supplement the incomes of households with minors or disabled members, pregnant women or unemployed people over the age of 55; once it is fully operational, the number of households that would potentially benefit would increase from 500,000 to 700,000. During the initial phase, the maximum amounts paid range from €188 to €540 a month for households with one and with at least six members respectively.

Consumption

In 2017 spending by Italian resident households in real terms rose by 1.4 per cent, as in the previous year (Table 5.3). Despite a cumulative growth of 5.0 per cent compared with 2013, consumption still remained 3.0 per cent below the peak reached in spring 2007, before the onset of the global crisis. Goods purchases slowed down, significantly so in the non-durable goods sector, especially food products, the prices of which had risen sharply at the start of the year (see Chapter 9, 'Prices, costs and competitiveness'). Growth in the consumption of durable goods remained slightly below that recorded in the previous year, also reflecting the decline in new car registrations, after the marked increase in 2016. Expenditure on services, which accounted for just over half of households' overall spending, accelerated to 1.7 per cent, the main contributory factor being the continued increase in spending on hotels and restaurants, boosted by the increase in tourist flows.

Table 5.3

Households' expenditure
(chain-linked values, unless otherwise indicated; percentage changes)

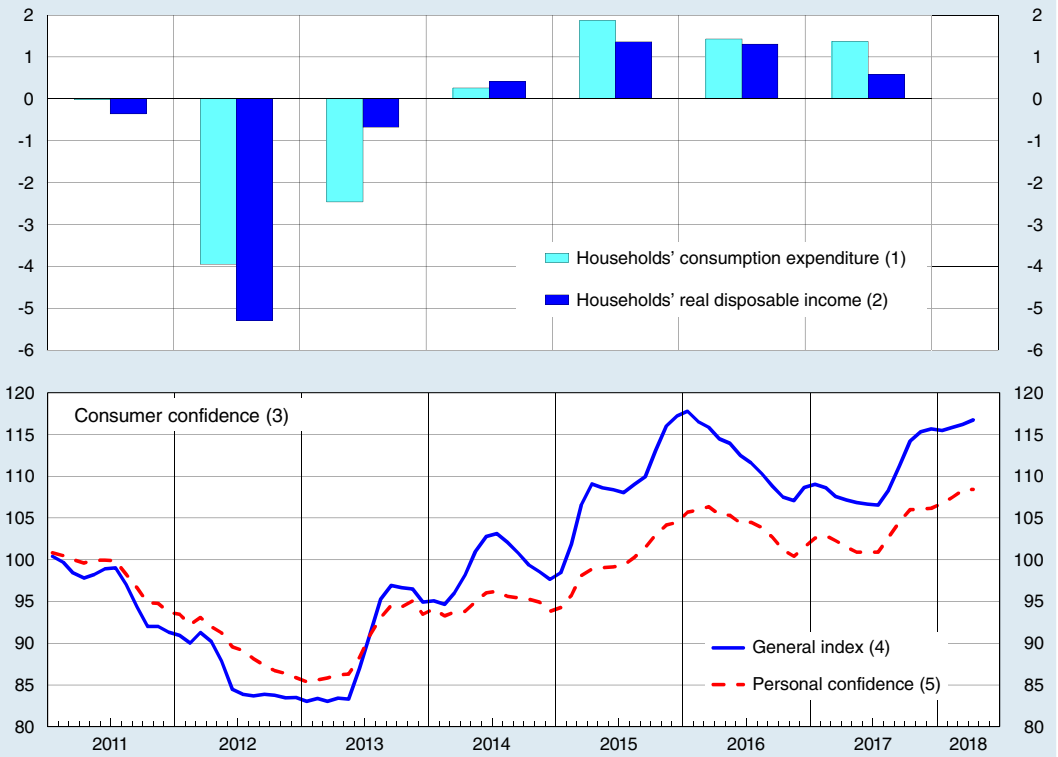
	% in 2017 *(volumes at previous year's prices)*	2014	2015	2016	2017
Goods	47.0	-0.3	2.7	1.7	1.2
Non-durable goods	30.3	-1.5	1.4	1.2	0.3
of which: food and non-alcoholic beverages	14.1	0.0	1.2	1.1	0.6
Semi-durable goods	8.9	0.9	2.9	0.4	1.1
of which: clothing and footwear	6.1	1.6	1.8	0.5	0.1
Durable goods	7.9	4.0	8.8	5.2	4.9
Services	53.0	0.8	1.5	1.2	1.7
of which: hotels and restaurants	10.3	1.1	2.4	2.4	3.6
education	1.0	-1.1	-0.4	1.0	3.0
Total domestic expenditure	**100.0**	**0.3**	**2.1**	**1.4**	**1.5**
Spending abroad by Italian residents	(1)	5.4	-4.3	3.6	6.3
Spending in Italy by non-residents	(1)	3.3	3.8	2.4	6.2
Total national expenditure	**–**	**0.3**	**1.9**	**1.4**	**1.4**
Memorandum item:					
National consumption deflator	–	0.2	0.2	0.2	1.2

Source: Istat, national accounts.
(1) In 2017, spending abroad by Italian residents and that in Italy by non-residents came to 1.8 per cent and 3.7 per cent of national expenditure respectively.

Spending was driven by the increase in disposable income and to a lesser extent by the rise in total wealth; it also benefited from lending standards for consumer loans remaining very relaxed (see Chapter 7, 'The financial conditions of households and firms') and, starting from the summer, from the improvement in household confidence (Figure 5.1). The expectations for the labour market only became more favourable in the last part of the year, especially among young people, presumably in connection with the new three-year tax cuts introduced by the 2018 Budget Law (see Chapter 8, 'The labour market').

Figure 5.1

Consumption, real income and consumer confidence
(growth rates and indices)



Source: Based on Istat data.
(1) Consumption expenditure of households and non-profit institutions serving households; chain-linked values; percentage changes on the previous year. – (2) Disposable income of consumer households and non-profit institutions serving households, deflated using the consumption expenditure deflator for resident households. – (3) Indices: 2010=100; seasonally adjusted data; moving averages for the 3 months ending in the reference month. – (4) Obtained by calculating the average of the balances between the percentages of replies indicating a situation that is improving or worsening in response to questions on: the general economic situation in (a) the past 12 months and (b) over the next 12 months; the respondent's personal situation in (c) the past 12 months and (d) over the next 12 months; (e) the advisability of durable goods purchases; (f) expected unemployment; (g) the possibility and (h) advisability of saving; (i) households' financial situation. – (5) Average of the balances between the percentages of replies to (c), (d), (e), (g), (h) and (i).

Confidence indicators remained high in the early months of 2018 and were not greatly influenced by the uncertainty linked to the upcoming elections. However, past evidence indicates that heightened uncertainty with regard to economic policies could lead to greater caution in household expenditure (see the box 'Uncertainty about economic policies and household consumption').

UNCERTAINTY ABOUT ECONOMIC POLICIES AND HOUSEHOLD CONSUMPTION

The availability of large volumes of largely unstructured but immediately available information based on digital technologies (known as 'big data') is maximizing opportunities to analyse, monitor and predict economic and financial phenomena. Central banks are making increasing use of tools designed to create from these data innovative indicators of economic activity, which can underpin economic policy decisions.[1]

These new sources of data can make it easier to investigate phenomena which are difficult to observe and quantify, such as market participants' perception of risks. One such risk is economic policy uncertainty; to measure this, an EPU index was developed (Baker et al, 2016)[2] based on the frequency with which certain key words, such as, for example, 'tax', 'spending', 'uncertainty', 'economy', 'budget', and 'central bank', appear in the press.

A study on Italy, carried out using big data techniques, has created an EPU index based on the methodology proposed by the three authors and uses, in addition to newspaper articles, other information sources such as news websites and messages on social media (Bloomberg's Twitter feed).[3] The uncertainty index produced by the study is based on the same key words used by Baker et al and analyses the impact of that uncertainty on spending with debit cards (via POS terminals).[4] Debit cards are the most widely used payment instrument for Italian consumers; in addition, data on POS transactions, available at high frequency, are closely correlated with the consumption of non-durable goods recorded in the quarterly national accounts. Unlike analyses carried out in previous studies, which used data with a monthly frequency or less, the research is based on a daily dataset, adjusted as needed to take account of strong seasonal effects, and focuses on consumer purchases.

The EPU index for Italy (panel (a) of the figure) spiked during the most acute stage of the sovereign debt crisis and during some electoral polls and referendums, such as the Brexit referendum on the United Kingdom's withdrawal from the European Union. The results show that uncertainty measured in this way does have an impact on consumer spending, at least in the short term. An increase in the index in the course of a day points to a significant reduction in purchases via the POS system, with statistically significant effects coming into play after approximately one month (panel (b) of the figure); the response of consumers was most negative during the first part of the study (2007-12), a period marked by a severe economic crisis.

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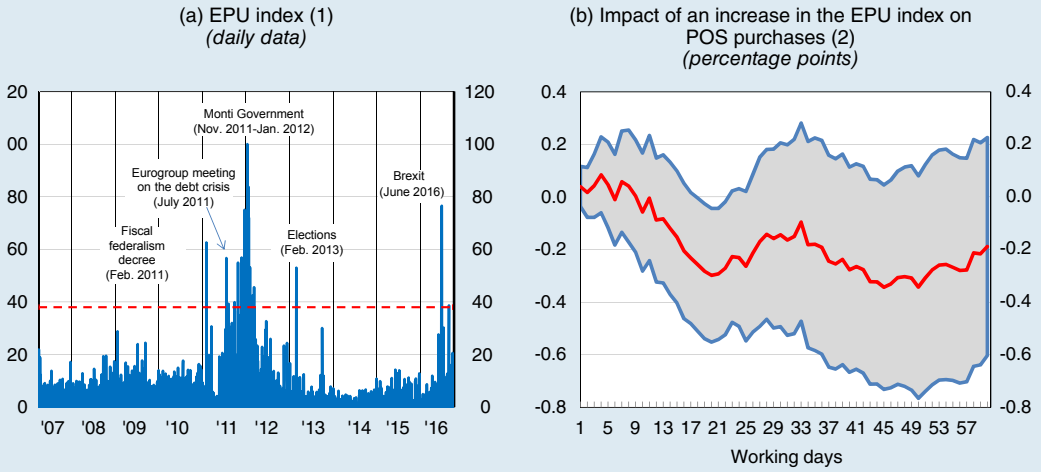
[1] Opening remarks by the Deputy Governor of the Bank of Italy, Fabio Panetta, at the workshop 'Harnessing big data & Machine Learning Technologies for Central Banks', held at the Bank of Italy, Rome, on 26 March 2018.

[2] S. R. Baker, N. Bloom and S. J. Davis, 'Measuring economic policy uncertainty,' *The Quarterly Journal of Economics*, 131, 4, 2016, 1593-1636.

[3] G. Ardizzi, S. Emiliozzi, J. Marcucci and L. Monteforte, 'News and consumer card payments', Banca d'Italia, Temi di Discussione (Working Papers), forthcoming.

[4] Based on daily data on debit card transactions settled using the BI-Comp clearing system managed by the Bank of Italy (see the Bank of Italy's website: BI-Comp).

Economic policy uncertainty (EPU) index and effects on POS purchases (1)

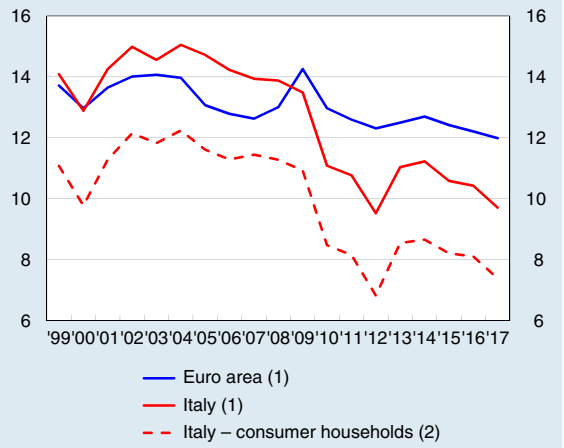


Sources: Based on data from Bloomberg and the Bank of Italy.
(1) An indicator of uncertainty about economic policies in Italy, based on the methodology developed by Baker et al. (2016), which uses newspaper articles, news websites and messages on social media (Bloomberg's Twitter feed). The dotted red line represents the value of the 99th percentile of distribution of the EPU index. – (2) The red line indicates the median response of the percentage change in POS purchases to one standard deviation increase of the EPU index. The grey-shaded area represents a 95 per cent confidence interval.

According to the national accounts for 2017, the consumer household saving rate fell by 0.7 per cent to 7.4 per cent (Figure 5.2). Using Eurostat's harmonized definition – which also includes producer households – shows a similar fall, dropping to 9.7 per cent and remaining below the average of the other main euro-area countries. The decline in the propensity to save could signal an attempt to restore consumption levels which had contracted during the economic downturn. However, according to households' assessments, the capacity to save increased slightly: during the most serious phases of the crisis only 30 per cent[8] of households were able to save; this share reached 40 per cent in 2017.

Figure 5.2

Households' saving ratio
(annual data; per cent)



Sources: Eurostat and Istat.
(1) Includes consumer and producer households and non-profit institutions serving households. – (2) Savings are calculated gross of amortization and depreciation and net of changes in pension fund reserves.

[8] A. Bassanetti and C. Rondinelli, 'Le difficoltà di risparmio nelle valutazioni delle famiglie italiane', Banca d'Italia, Questioni di Economia e Finanza (Occasional Papers), 147, 2013.

Property wealth and the housing market

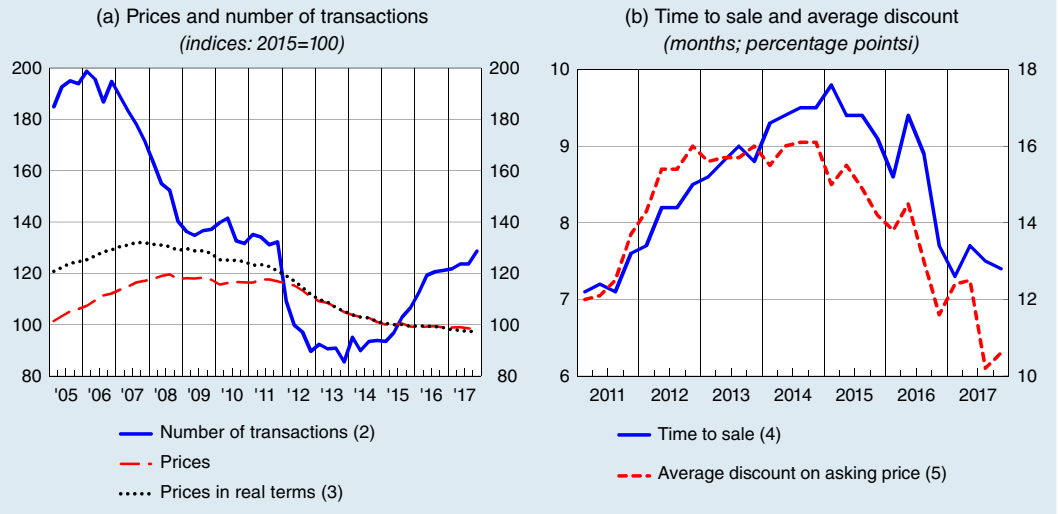
Based on the national accounts, in 2016 the nominal value of the stock of homes owned by consumer households decreased by 1.0 per cent (-1.6 per cent in 2015), an overall reduction of 6.0 per cent against 2012, due to the dip in prices; according to our estimates this decline came to a halt last year. At the same time, the financial assets of consumer and producer households increased by 4.1 per cent (see Chapter 7, 'The financial conditions of households and firms'). Total household wealth, which remained equal to 9.3 times disposable income, grew by 1.8 per cent.

In 2017 the signs of recovery in the demand for houses firmed up, consistent with the improvement in household income. Based on data from the Revenue Agency's property market observatory (OMI), house sales grew by 5.1 per cent, though they were still far below the historically high levels reached prior to the global financial crisis (panel (a) of Figure 5.3). This recovery has not yet transferred to house prices which continued to fall, albeit more slowly than in the previous year (-0.4 per cent, from -0.8 in 2016). This new fall only affected existing houses, given that the prices of new-build houses went up by 0.1 per cent (from -0.8 per cent), displaying a gradual improvement over the year.

According to the quarterly Housing Market Survey conducted by the Bank of Italy with Tecnoborsa and OMI, time to sale and the discount on the initial price continued to decrease overall in 2017 (see panel (b) of Figure 5.3), returning to 2009 levels (when the survey was started). The expectations of estate agents for the short and medium term improved.

Figure 5.3

Residential property market (1)



Sources: Based on data from Agenzia delle Entrate, Bank of Italy, Istat, *Consulente Immobiliare* and the Italian Housing Market Survey.
(1) Quarterly data. – (2) Adjusted for seasonal and calendar effects. – (3) House prices deflated using the consumer price index. – (4) Time to sale is measured in months. – (5) Right-hand scale.

6. FIRMS

In 2017 activity strengthened across all sectors of the economy except for agriculture. Value added accelerated in manufacturing and in services and increased significantly in construction for the first time since 2006.

Firm demographics have improved: the number of active firms rose by 50,000 thanks to a drop in mortality. While the business birth rate remained below pre-crisis levels, for the third consecutive year there was an improvement in young firms' ability to survive and in their contribution to both value added and capital investment, especially in intangible assets.

Investment picked up, particularly in plant, machinery and transport equipment, owing to tax incentives, broadly favourable monetary and financial conditions, reduced uncertainty and greater business confidence about the prospects for expansion in demand. As a share of GDP, investment remains low.

Innovation and the propensity to adopt new technologies, still rather limited by international standards, also intensified, fostered by support policies introduced in recent years. Labour productivity returned to pre-crisis levels: in industry the increase under way over the last ten years continued, albeit at a lower rate than the euro-area average, while in services and in the private sector as a whole it returned to growth.

Economic developments

Value added and production. – In 2017 value added in the Italian economy as a whole grew by 1.4 per cent, double the rate of the previous year. The recovery strengthened across almost all sectors: activity accelerated in manufacturing (to 2.1 per cent) and in services, and it increased significantly in construction for the first time since 2006; only in agriculture did it record a decline.

Industrial production rose by 3.1 per cent (from 1.4 per cent in 2016). Growth was driven by robust increases in the investment and durable consumer goods sectors and has spread to an increasing number of sectors. The expansion in manufacturing is attributable primarily to the machinery sector and to the metal and metal products sector. There was an especially pronounced increase in the manufacture of transport equipment (which in 2017 enjoyed tax benefits if purchased as capital goods) and of pharmaceuticals. The growth in pharmaceuticals was partly driven by the sharp rise in sales abroad, reflecting the heightening integration of Italian productions in the global value chains that dominate the sector. The textiles and clothing sector, which represents just under 10 per cent of manufacturing activity, continued to reposition itself towards

production with higher per unit value added: the recent, slight decline in production (-0.5 per cent) was matched with a further moderate rise in value added.

Overall the increase in Italian industrial production was slightly higher than the euro-area average but just under that of Germany and Spain (3.3 per cent). In the first quarter of 2018 the rise in output stalled just like in the other major European economies, in part owing to weakening foreign demand.

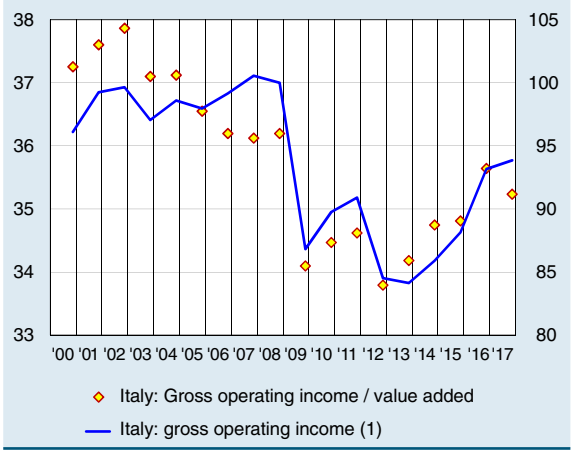
In 2017 value added in construction returned to growth (0.8 per cent) following a protracted decline from 2008 to 2015. The fall in house prices eased greatly; housing sales continued to recover (see Chapter 5, 'Households'). The Bank of Italy's surveys of construction firms and real estate agents indicate that demand for housing continued to rise into the first quarter of 2018. The non-residential sector, which is still struggling to recover, was once again hindered by cuts in public investment.

The value added for private services accelerated to 1.7 per cent (1.0 per cent in 2016), thanks mainly to the substantial increase in retail and wholesale trade, in transport and in hotels and restaurants. The latter segments benefitted from the sharp rise in spending tied to tourism flows (see Chapter 10, 'Foreign demand and the balance of payments'). The value added for financial and insurance intermediation services returned to growth after contracting during the years of the sovereign debt crisis.

Profitability. – Gross operating income rose on average in 2017, driven by the cyclical recovery (see Chapter 7, 'Financial situation of households and firms'). Operating profitability, equal to the ratio of gross operating income to value added, fell off slightly after four straight years of growth (Figure 6.1). The improvement over the last five years reflects a strengthening of the operating income net of capital costs, which progressively declined in the early 2000s, in contrast with the other advanced countries on average.[1]

Figure 6.1

Italian firms' profitability
(per cent; index numbers)



Sources: Based on nominal Istat data, national accounts for the non-financial corporations sector.
(1) Right-hand scale; indices: 2008=100. Data deflated using the value added deflator at base prices referring to the non-financial private sector.

According to the Survey of Industrial and Service Firms, conducted by the Bank of Italy's branches in the early months of 2018 on a sample of more than 4,000 private non-financial corporations with at least 20 employees, the proportion of firms posting a profit, which has been rising since 2013, continued to grow (from 73 to 75 per cent).

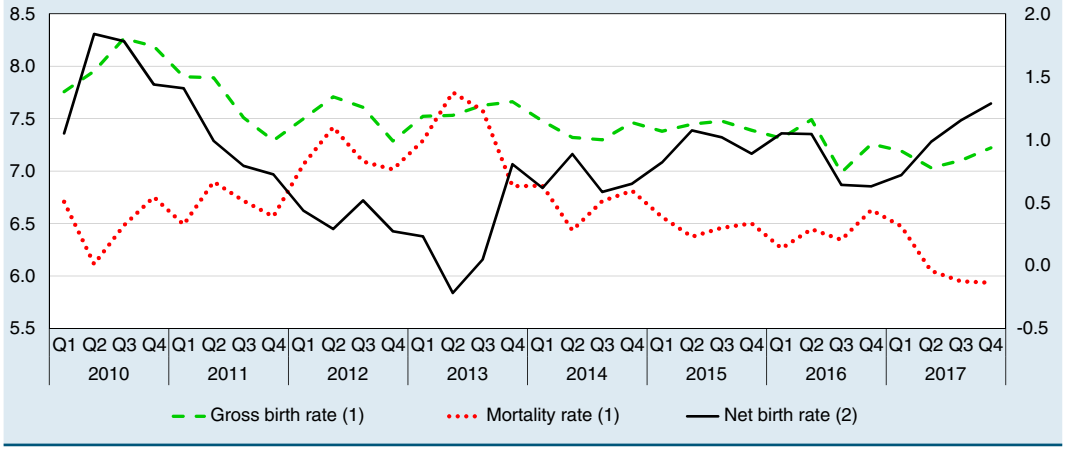
[1] M. Amici, E. Bobbio and R. Torrini, 'Patterns of convergence (divergence) in the euro area: profitability versus cost and price indicators', Banca d'Italia, Questioni di Economia e Finanza (Occasional Papers), 415, 2017.

Small firms contributed to this increase for the first time since the cyclical recovery began, in part owing to their growing propensity to export.

Firm demographics. – In 2017 the net birth rate of firms rose for the third year in a row, growing by 0.9 per cent (around 50,000 firms). The decrease in the firm mortality rate, which has been falling since the second half of 2013 with the end of the recession, more than offset the slight decline in the gross birth rate, which is still below the levels recorded before the global financial crisis (Figure 6.2).

Figure 6.2

Firm birth and mortality
(per cent; seasonally adjusted data)



Source: Based on Infocamere data.
(1) As a percentage of firms active at the start of the quarter. – (2) Difference between the gross birth rate and the mortality rate.

The drop in mortality was particularly acute in construction, but also extended to the private services sector. This development is primarily attributable to young firms that have been active for fewer than five years, a group whose survival rate rose for the third consecutive year to return to its pre-crisis level (around 60 per cent). According to balance sheet data for the universe of limited companies, since 2015 the contribution of young firms to the rise in value added and capital accumulation has increased.

The gross birth rate is still moderate in construction and trade, while industry excluding construction and the restaurant sector are experiencing a recovery. There have been sharp increases among limited companies, the legal form mostly closely linked to complex organizational structures with easier access to external sources of funding.

Investment. – In 2017 capital accumulation grew by 3.8 per cent (Table 6.1), a faster rate than in the preceding year, thanks to the renewed, robust increase in purchases of plant, machinery and transport equipment and to the rise in spending on intellectual property. Investment in construction grew more modestly, still hampered by stagnation in the non-residential sector. In line with the trend in 2016, the expansion in investment was less rapid in Italy than in Spain, but somewhat faster than in Germany and in France. Investment as a share of GDP, amounting to 17.5 per cent, while rising, is still more than 2 percentage points lower than the average for the last 20 years.

Table 6.1

Fixed investment in Italy
(chain-linked values unless otherwise indicated; per cent)

	% composition in 2017 (1) *(volumes at previous year's prices)*	Changes			% of GDP (1) *(volumes at previous year's prices)*	
		2015	2016	2017	2000	2017
Construction	45.8	-0.7	1.2	1.1	9.8	8.0
Housing (2)	25.3	-1.3	2.6	1.9	4.7	4.4
Other (2)	20.5	0.1	-0.4	0.2	5.1	3.6
Cost of change of ownership	4.5	9.1	22.5	5.8	0.8	0.8
Plant, machinery, arms and cultivated biological resources	38.0	4.6	7.4	8.2	7.9	6.7
of which: transport equipment	8.8	25.4	30.0	35.6	1.6	1.5
Intellectual property	16.2	5.3	0.0	1.4	2.5	2.8
Total gross fixed investment	**100.0**	**2.1**	**3.2**	**3.8**	**20.2**	**17.5**
Total excluding housing	–	3.4	3.4	4.4	15.4	13.1
Total excluding construction	–	4.8	5.0	6.1	10.4	9.5

Source: Istat, national accounts.
(1) Rounding may cause discrepencies in totals. – (2) Includes costs of change of ownership.

Expenditure on capital accumulation benefitted from the extension of a large portion of the temporary tax incentives for capital goods (super-amortization scheme) and from the introduction of incentives for spending on innovation in connection with the 'Industry 4.0' national development plan (hyper-amortization scheme). The impact of the incentives was particularly significant for purchases of transport equipment, which is the only component among tangible capital goods to have exceeded pre-crisis levels. Highly favourable credit conditions, which can be traced to the expansionary monetary policy stance (see Chapter 3, 'Monetary policy in the euro area'), contributed to the growth in investment. The strengthening recovery and the gradual reduction in the margins of idle production capacity also bolstered capital accumulation.

Uncertainty diminished, contributing to the creation of a pro-investment climate (see the box 'Uncertainty indicators for Italian firms'). Business confidence gradually rose over the year, reaching its highest point since 2007 in the final quarter; it then fell slightly in early 2018, although it remained at high levels in historical comparison.

UNCERTAINTY INDICATORS FOR ITALIAN FIRMS

Uncertainty about future economic developments is one of the factors that most influences firms' investment choices. Economic theory and empirical studies indicate that the more irreversible the spending decisions for capital goods and the higher the costs of unlocking new capital, the more an increase in uncertainty leads to the postponement of investment plans.

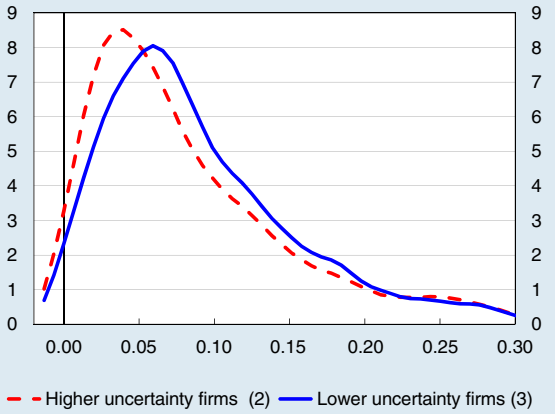
The most significant source of uncertainty for companies can vary over time. Depending on circumstances it may come from: the expected trend in demand for its goods and services; the performance of prices, wages, productivity and technological innovation; or economic policy decisions. Assessing the level of uncertainty is therefore not an easy task, chiefly because it is often necessary to use indicators that do not directly measure the phenomenon to be estimated.[1] Studies based on macroeconomic variables found that some measures of uncertainty play an important role in explaining the fluctuations in investment in Italy in recent years (see the box 'The trend in investment and the cyclical recovery', in Chapter 6; *Annual Report on 2016*, 2017).

A recent contribution, based on individual business data, uses as the main measure of uncertainty the distance between the maximum and the minimum of the expected change in turnover in a given year compared with the previous one.[2] This measure has the advantage of being available for a large sample of companies, some of which have been part of the Survey of Industrial and Service Firms conducted by the Bank of Italy since 1996.

The analysis shows that, taking into account some observable characteristics of a firm (including the sector of activity, size and export propensity) and the expected average change in turnover, a higher level of uncertainty is associated with lower planned investment (see the figure). This result reflects the greater probability that firms experiencing a higher level of uncertainty may adopt a 'wait and see' approach and may not plan any spending on capital goods that year. The study also shows that firms with the highest levels of uncertainty are those whose past expectations for their own turnover proved to be the most inaccurate. Therefore, even a measure of uncertainty based on the scale of past forecasting errors is negatively and significantly correlated with investment plans.

Planned investment spending by level of uncertainty (1)

(kernel density estimation of the probability distribution of the ratio of planned investment to fixed capital)



Sources: Based on data from the Bank of Italy, Centrale dei bilanci (Company Accounts Data Service) and Istat.
(1) Uncertainty at individual firm level is measured as a function of the distance between the maximum and minimum expected change in own turnover in the current year compared with the previous one, as recorded in the second quarter of each year by the Bank of Italy's Survey of Industrial and Service Firms. The figure shows the distribution of planned investment spending in relation to own fixed capital. Includes years from 2007 on and firms with at least 100 employees. – (2) Firms with a level of uncertainty above the 66th percentile of each year's distribution. – (3) Firms with a level of uncertainty below the 33rd percentile of each year's distribution.

[1] This is the case as regards the implied volatility of share prices, measurable only for listed companies, or the dispersion of the responses provided by firms in economic surveys. Asking the firms themselves to provide probabilistic distributions on a series of possible future outcomes of the phenomenon of interest is more recent (see C.F. Manski, 'Survey measurement of probabilistic macroeconomic expectations: progress and promise', *NBER Macroeconomics Annual*, 2017 and, for Italian firms, L. Guiso and G. Parigi, 'Investment and demand uncertainty', *Quarterly Journal of Economics*, 114, 1, 1999, 185-227.

[2] G. Veronese and G. Zevi, 'Common and idiosyncratic uncertainty', Banca d'Italia, Temi di Discussione (Working Papers), forthcoming.

The moderate recovery in investment in construction continued, although it was almost entirely concentrated in the residential sector. The decline in investment in 'other construction', which fell from 5.9 to 3.6 per cent of GDP over the last 15 years, came to a halt. Among 'other construction', the private works component was again stalled by weak demand, which translated into a renewed decline in non-residential real estate prices; the public works component was affected by new cuts in investment by central and local governments, despite the increase in 2017 in contract amounts to be awarded (see Chapter 11, 'The public finances' and Chapter 12, 'Business activity regulation and the institutional environment'). The survey conducted by the Bank of Italy on a sample of around 600 construction companies confirms that there was a reduction in public sector construction in 2017; an initial, minimal recovery is expected for 2018.

The stock of net capital returned to growth, albeit only marginally; for the first time in five years the capital goods component contributed, driven by transport equipment.

Investment according to the Survey of Industrial and Service Firms. – As in the previous year, the Bank of Italy's Survey of industrial and Service Firms (the 'Survey') in 2017 found that investment increased, especially among small and medium-sized manufacturing firms, the category that made the greatest use of incentives to purchase capital goods (Table 6.2). Actual spending exceeded that planned for smaller companies and those that rely heavily on exports, indicating more favourable demand expectations for 2018.

Table 6.2

Gross fixed investment of firms according to Bank of Italy surveys by size class, capacity utilization and change in turnover (1)
(percentage changes at 2017 prices unless otherwise specified)

	Total	Number of employees				Capacity utilization (2) (3)		Change in turnover (2)	
		20 to 49	50 to 199	200 to 499	500 & over	Low	High	Low	High
Industry excluding construction									
Outturn for 2017	2.7	3.3	4.9	-1.2	2.4	2.0	3.1	-1.1	5.9
Realization rate (4)	99.5	108.7	103.5	94.5	95.6	99.5	99.5	97.1	101.6
Planned investment for 2018	7.9	-2.9	1.3	13.5	14.9	-1.6	13.8	8.6	7.0
of which: manufacturing									
outturn for 2017	2.8	3.5	5.9	1.0	0.6	2.5	3.1	0.1	4.8
realization rate (4)	100.8	109.5	103.9	96.9	94.6	100.1	101.4	98.4	102.6
planned for 2018	4.0	-3.2	-0.5	12.4	9.8	-2.5	9.7	1.2	6.4
Service sector (5)									
Outturn for 2017	1.2	9.0	-2.3	15.9	-2.8	....	....	-3.4	5.7
Realization rate (4)	102.4	116.0	112.9	101.6	94.3	....	....	100.0	104.8
Planned investment for 2018	4.6	-5.4	10.2	9.5	6.8	....	....	6.5	3.2
Total									
Outturn for 2017	1.9	5.9	1.7	4.9	-0.5	....	....	-2.3	5.8
Planned investment for 2018	6.2	-4.3	5.2	11.7	10.5	....	....	7.6	4.8

Source: Bank of Italy, Survey of Industrial and Service Firms.
(1) Robust means (Winsorized) of the distribution of annual changes in investment. Investment is deflated using the individual deflators provided by the firms. – (2) Firms are divided according to whether they fall below (low) or above (high) the median, calculated separately for industry and services, relating to 2017 for the outturn and realization rate and relating to projections for 2018 for planned investment. – (3) Industrial firms only. – (4) Percentage ratio, at current prices, of realized investment to planned investment (recorded in last year's survey) for 2017. – (5) Private non-financial services.

The share of firms that took advantage of at least one investment incentive increased in 2017 to around 50 per cent from just over 40 per cent the year before. Almost one third of the beneficiary companies stated that the incentives prompted them to increase their investment, compared with about one fifth in 2016. The use of 'Industry 4.0' incentives was more widespread among large firms, among those active in the metal and engineering, chemical, rubber and plastics sectors, and among those that in the past had reported significant investment in advanced digital technologies.

The plans for 2018 envisage a new acceleration in capital spending, more intensely so among larger companies; in industry excluding construction, firms report a marked improvement in the use of their production capacity both in 2017 and in expectations for the current year.

Innovation. – Investment in intellectual property returned to growth (1.4 per cent) after stagnating the year before. As in 2015-16, the main support for investment in intangible assets came from spending on research and development, which rose by 7.4 per cent in 2017 (almost 20 per cent overall since 2014), benefitting for the third year in a row from tax incentives. According to our calculations based on the Survey, these incentives, which have only reduced the variable cost of R&D spending, have encouraged greater spending mainly by firms that have already incurred the high fixed start-up costs for innovation.

New innovative businesses ramped up their contribution to investment in intangible assets, driven in part by regulations introduced since 2012 (see the box 'Innovative start-ups in Italy: some findings on recent support measures') in order to ease the borrowing constraints on new firms, connected with limited collateral and with Italy's lagging development of a venture capital industry (see Chapter 7, 'The financial situation of households and firms').

INNOVATIVE START-UPS IN ITALY: SOME FINDINGS ON RECENT SUPPORT MEASURES

The start up and development of new business initiatives, which encourage the introduction of innovations and fuel competition, can improve the allocation of resources and the growth potential of an economy. In Italy, new businesses which have traditionally been affected by a series of unfavourable contextual factors by international comparison,[1] have suffered greatly as a result of the long crisis, as indicated by the fall in the business birth rate and the lower rate of growth for younger companies during the double-dip recession (see the box 'Firm demographics during the crisis and impact on growth', Chapter 6, *Annual Report for 2015*, 2016).

A number of regulatory measures were introduced to stimulate the growth of new businesses, especially those considered to have high innovative potential. For the benefit of the innovative start-ups registered in the special section of the business register, Decree Law 179/2012 (the 'Growth 2.0' decree) introduced

[1] M. Bugamelli and F. Lotti (eds.), 'Productivity growth in Italy: a tale of a slow-motion change', Banca d'Italia, Questioni di Economia e Finanza (Occasional Papers), 422, 2018.

measures to reduce red tape costs and administrative fees, provide more streamlined company and labour law, simplify procedures for access to Italy's Guarantee Fund, and offer tax incentives for venture capital investment. The innovative nature of the beneficiary companies, which must have been set up in the last five years, can be identified on the basis of the corporate purpose and the meeting of at least one of the following three criteria: (a) high R&D intensity; (b) a highly qualified workforce; and (c) possession of (or license to use) a registered patent.[2]

At 31 December 2017 there were 8,391 innovative start-ups entered in the special section of the business register, 77 per cent of which working in services and 20 per cent in non-construction industry. Overall they accounted for about 35,000 owners and 11,000 employees under the age of 34 on average, most of whom on permanent contracts.

A survey conducted by the Ministry for Economic Development in 2016,[3] indicated that most of these innovative start-ups involved product or service innovations, mainly of an incremental nature, with R&D expenses accounting for 47 per cent of annual expenses on average. A good 58 per cent of these companies have their own resources as their only source of funding, 25 per cent also make use of bank loans, and 11 per cent have also received funding from venture capital funds. One fifth of the entrepreneurs interviewed said they were dissatisfied with the financial resources available to them, while most of them had never sought funding from venture capital companies or other institutions, nor had they tried to raise funds via online equity crowdfunding portals. The survival rate of these companies (97 per cent after one year and 90 per cent after five years) was higher than that recorded on average for all new companies.

The effects of the innovative start-up support policy were evaluated in a recent study[4] comparing changes in the performance of start-ups benefiting from the incentives with those of other companies that were similar in terms of characteristics (age, turnover, asset value and liquidity) but which have never been registered in the special section of the business resister, or have been entered only subsequently. The incentives are estimated to have fostered an increase in turnover of 8 per cent and in added value of 12 per cent overall for the first three years of a start-up's life. These effects can be linked to more intense capital accumulation (15 per cent), especially in intangible assets (with an increase in patents filed), and to higher labour productivity (11 per cent) with wages and employment remaining the same.

Given their easier access to the Central Guarantee Fund, innovative start-ups had, on average, a greater probability of banks' accepting their first application for funding compared with companies of the same age and with similar characteristics.

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[2] R&D spending must be at least 15 per cent of turnover or of annual expenses - whichever is the higher. At least one third of the total workforce must be made up of PhD students, PhD graduates or researchers; alternatively, at least two thirds must be owners or collaborators with a Master's degree. The business must be an unlisted company and must never have distributed any profits; it must not be the result of a merger, sale of business or sale of line of business; it must have its head office in an EU country but at least one production site or branch in Italy; and its annual production value must be under €5 million.

[3] Ministry for Economic Development and Istat, 'Startup Survey 2016: The first survey on innovative startups in Italy', Rome, 2018.

[4] T. De Stefano, F. Manaresi, C. Menon, P. Santoleri and G. Soggia, 'Economic and social implications of the Italian "Start up Act"', OECD Science Technology and Industry Policy Papers, forthcoming.

They also enjoyed a higher amount of credit granted (8 per cent) and a lower interest rate on maturing loans (-1 percentage point). The use of incentives for equity investments was reflected in an increase in net assets. When compared with other innovative Italian and foreign companies seeking external funding, the beneficiary companies had more than double the chance of obtaining venture capital funds.[5] This is an encouraging result for Italy, where the venture capital market currently mobilizes a significantly lower amount of resources than the EU average (0.006 per cent of GDP in 2016, against 0.027 per cent).

[5] The analysis made use of the Crunchbase database regarding around 450,000 start-ups active in 190 countries.

The number of patents filed with the European Patent Office (EPO) continued to rise, returning to pre-crisis levels this year, although it remains low by international standards. Among other things, patent filings are hampered by the high degree of fragmentation of the Italian production system and the difficulties encountered in financing innovation (even more so during the recent double-dip recession; see the box 'Patent development and the financial structure of innovative Italian firms').

PATENT DEVELOPMENT AND THE FINANCIAL STRUCTURE OF INNOVATIVE ITALIAN FIRMS

The low capacity of Italian firms for innovation is one of the main reasons for the lacklustre trend in productivity, which in turn represents the biggest obstacle to long-term economic growth, including at international level (see Chapter 15, 'Productivity in Italy: performance and determinants' in *Annual Report for 2016*, 2017).

According to the Global Innovation Index (GII),[1] in 2017 Italy was ranked 29 out of 129 countries, lagging behind almost all the other European countries.[2] Several factors contributed to Italy's ranking: the small size of its firms, the lack of human capital, the public sector's difficulty in creating an institutional context that encourages innovation, and financial constraints (see Chapter 11, 'Innovation' in *Annual Report for 2012*, 2013). Due to the existence of these constraints, innovative firms make ample use of self-financing and are lowly leveraged.

A recent study[3] describes the patent production of Italian firms in the five years 2008-12 in relation to their financial structure and other business characteristics. The study finds that patent development is largely clustered in the manufacturing sector (four out of five patents are held in this sector), specifically in the medium-high technology industries (chemicals, machinery, motor vehicles and electrical components). In manufacturing, patent activity is negligible for small firms and

[1] The GII is calculated annually by Cornell University, INSEAD and the United Nation's World Intellectual Property Organization and is published in *The Global Innovation Index*.

[2] The European countries that ranked below Italy are Portugal, Greece and nine small countries in Central and Eastern Europe.

[3] D. Pianeselli, 'Upwind sailors. Financial profile of innovative and non-innovative Italian firms during the double-dip recession', Banca d'Italia, Temi di Discussione (Working Papers), forthcoming.

highly concentrated among medium-sized and large firms. Even among the latter, just one out of seven firms filed at least one patent application within the reference period. A third of the patents in the manufacturing sector are held by a very limited number of 'big innovators' that account for 0.1 per cent of total firms and that file an average of more than six patents per year.

In addition to being larger, firms with greater patent activity have higher average turnover growth and larger and relatively stable cash flows, which strengthen their ability to make use of self-financing; they are also characterized by lower leverage (about half that of non-innovative firms) partly on account of their broader capital base. During the recession, these firms experienced a smaller reduction in turnover growth than non-innovative firms and demonstrated their ability to pursue innovative projects even during difficult economic times.

The adoption of new digital technologies in Italy continued to increase, although it remained below the euro-area average; going forward, it will benefit from the support measures contained in the 'Industry 4.0' plan. In 2017 just 9 per cent of firms had introduced supply chain management processes, compared with 17 per cent in Germany and 15 per cent in France. There are also similar lags for applications to optimize marketing and sales and for technologies connected with the 'internet of things'.

Robot density in industrial production processes in Italy is high by international standards: according to International Federation of Robotics data for 2016, Italy ranks 8th in the world for the number of robots per worker (18 robots for every 1,000 workers) and in the euro area it is second only to Germany (31 robots per 1,000 workers). According to our calculations, the gap with Germany is attributable in large part to the differences in the sectors in which the two countries specialize; more specifically, the manufacture of transport equipment and of rubber and plastic products make up a smaller percentage of production in Italy.

Labour demand. – Last year total hours worked by payroll employees in the non-farm private sector rose by 2.8 per cent, in line with the number of persons in employment. After two years of growth, the number of hours worked per employee has remained stationary at levels still below those preceding the global financial crisis (see Chapter 8, 'The labour market').

The increase in labour input, more robust in private services, also encompassed the construction sector. According to our business surveys, the increase in hours worked in the construction and manufacturing sectors was concentrated among the largest and most productive firms, while in services it was spread across firms of all sizes.

Productivity. – Hourly productivity in the non-farm private sector returned to growth (0.7 per cent) after falling slightly in 2016. The upward trend since 2010 stimulated growth in potential output (see the box 'Growth potential and productivity according to firm-level data').

GROWTH POTENTIAL AND PRODUCTIVITY ACCORDING TO FIRM-LEVEL DATA

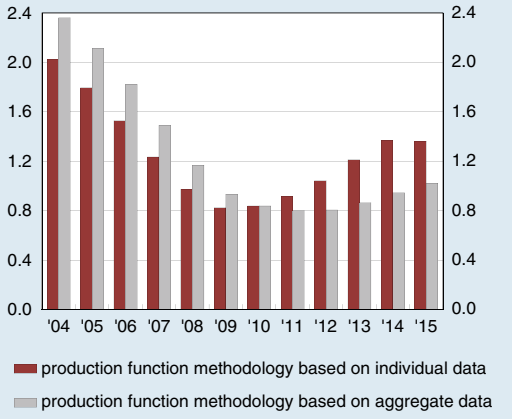
Potential output is the level of activity that can be sustained by an economy in the long term without generating inflationary pressures on prices and wages. This level, which is unobservable, reflects the availability of factors of production (capital and labour) and the dynamics of total factor productivity (TFP). Estimating potential output is steeped in uncertainty, since it is based on several simplifying assumptions; the various empirical methods developed in the economic literature do not always provide congruent results. The Bank of Italy traditionally estimates the potential output of the Italian economy (and, consequently, the output gap, which is the difference between actual GDP and potential output) by using a combination of different methodologies: autoregressive models, latent variable models and models based on an aggregate production function.[1] These approaches all use macroeconomic data deriving from the national accounts.

In contrast, a recent study[2] uses firm-level disaggregated data, applying the production function methodology to the balance sheet data of a sample of 40,000 Italian firms. These firms' growth in sales correlates with that of the private sector as a whole by more than 95 per cent. The results suggest that this approach makes it possible to refine productivity estimates by using detailed information on the evolution and distribution of supply factors across the various sectors according to the characteristics of firms. Overall, compared with what can be inferred by using an aggregate production function for the same sample of companies, the estimates based on individual firm data show more limited growth in potential output before the global financial crisis, but a more marked recovery in subsequent years (Figure A).

Figure A

Growth of potential output in a sample of private sector companies (1)

(annual data; percentage changes)



Sources: Based on Cerved and INPS data.
(1) The estimate based on individual data is obtained by applying the production function methodology to data from a balanced sample of Italian companies surveyed by Cerved.

The trend also varies greatly across sectors, especially in the post-crisis period (see the table). The potential growth rate in manufacturing is higher than before the recession while, for services, it has been much slower to recover and for construction it has continued to contract.

Business demographics made a negative contribution to potential growth between 2008 and 2012, but turned positive more recently in conjunction with the start of the

[1] A. Bassanetti, M. Caivano and A. Locarno, 'Modelling Italian potential output and the output gap', Banca d'Italia, Temi di Discussione (Working Papers), 771, 2010.

[2] D. Fantino, 'Potential output and microeconomic heterogeneity', Banca d'Italia, Temi di Discussione (Working Papers), forthcoming.

Growth of potential output in a sample of companies from the main sectors (1)
(annual data; percentage changes)

	2004-2007	2008-2012	2013-2015
Manufacturing	1.3	1.0	1.7
Construction	1.3	-0.1	-0.6
Services	2.5	1.1	1.2

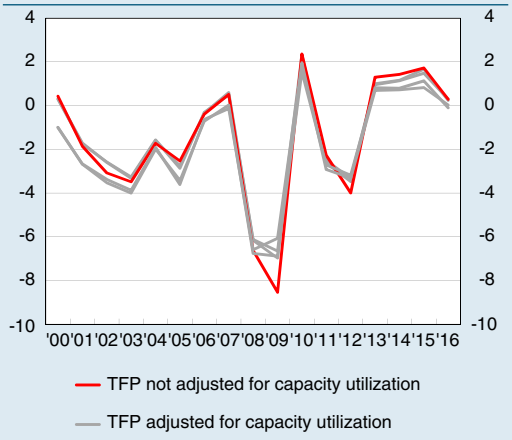
Sources: Based on Cerved and INPS data.
(1) Average annual percentage changes per period. Potential output is estimated on the basis of individual firm data by applying the production function methodology to data from a balanced sample of Italian companies surveyed by Cerved.

recovery. Estimates also indicate a steady increase in the contribution of TFP to potential growth from 2010 onwards, consistent with the signs of restructuring in the production system in more recent years (see Chapter 15, 'Productivity in Italy: performance and determinants', *Annual Report for 2015*, 2016).

A second study compares TFP dynamics, estimated on the basis of individual data from a sample of manufacturing firms between 2000 and 2016, taking account of the changes in capital intensity and, partially, in labour intensity.[3] The procyclical performance of TFP inferred from national accounts data is generally considered an indicator of the difficulty in isolating productivity changes from demand fluctuations, which in turn influence the use of the production factors.[4] The study shows that excluding the variability over time of the level of factor utilization from the TFP estimates,[5] which declines during recessions, reduces the correlation between productivity and the economic cycle, especially when the reduction in GDP is more marked (in 2009 the fall was more than one quarter less than when not considering factor utilization; see Figure B). The impact of the adjustment is greater for exporting firms and for those firms working in the most innovative sectors; the decrease in these firms' productivity during the global financial crisis, when they were affected by a strong and unexpected demand shock, was therefore overestimated by the traditional measurement methods.

Figure B

TFP and the degree of capacity utilization of manufacturing firms (1)
(annual data; percentage changes)



Sources: Based on data from the Bank of Italy, Centrale dei bilanci (Company Accounts Data Service), Infocamere and INPS.
(1) Four alternative estimates of TFP are shown in grey, adjusted for capacity utilization, and which differ according to the specification of the production function.

[3] A. Mistretta, L. Monteforte and G. Zevi, 'TFP and business cycle: results from Italian firms' data', Banca d'Italia, Temi di Discussione (Working papers), forthcoming.

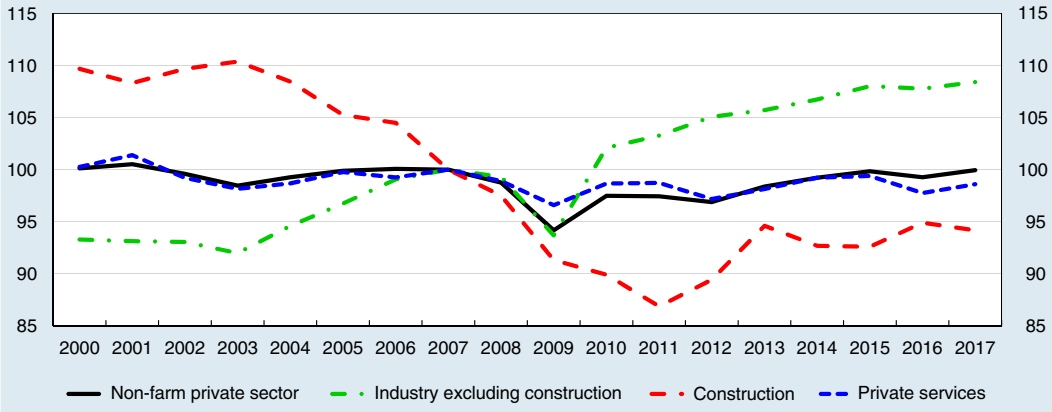
[4] S. Basu and J. Fernald, 'Why is productivity pro-cyclical? Why do we care?', in C.R. Hulten, E.R. Dean and M.J. Harper (eds.), *New developments in productivity analysis,* University of Chicago Press, 2001 (NBER Book Series Studies in Income and Wealth), 225-302.

[5] G. Cette, N. Dromel, R. Lecat and A.C. Paret, 'Production factor returns: the role of factor utilization', *The Review of Economics and Statistics*, 97, 1, 2015, 134-143 and for Italy, see A. Pozzi and F. Schivardi, 'Demand or productivity: what determines firm growth?', *The RAND Journal of Economics*, 47, 3, 2016, 608-630.

The productivity trend was positive in industry excluding construction where the cumulative growth over the last ten years amounted to 8 per cent (Figure 6.3), about half that recorded for the euro area as a whole. Productivity rose to a small degree in private services (0.7 per cent), returning to levels last seen before the 2008 global financial crisis; it has instead stabilized in construction where it remains below pre-crisis levels.

Figure 6.3

Hourly labour productivity in Italy (1)
(index numbers)



Source: Istat, national accounts.
(1) Indices: 2007=100.

According to the Survey, labour productivity growth was once again driven by exporters and by the most innovative firms, which reported a more limited decline during the crisis and which have sustained the recovery since 2014.

Another contributing factor in the economic productivity trend is the degree of efficiency with which resources are distributed between sectors and firms, a factor that relies heavily on banking sector intermediation (see Chapter 15, 'Productivity in Italy: performance and determinants', *Annual Report for 2016*, 2017, and the box 'The efficiency of production factor allocation in Italy and credit conditions').

THE EFFICIENCY OF PRODUCTION FACTOR ALLOCATION IN ITALY AND CREDIT CONDITIONS

The capacity of an economic and institutional system to channel productive resources towards the most efficient sectors and firms (allocative efficiency) is among the key determinants of trends in aggregate productivity. According to a comparative study conducted by the OECD, in 2005 Italy displayed low allocative efficiency by comparison with the other main advanced economies.[1]

[1] D. Andrews and F. Cingano, 'Public policy and resource allocation: evidence from firms in OECD countries', *Economic Policy*, 29, 78, 2014, 253-296.

However, evidence about subsequent developments in our country is mixed. Using the dispersion of marginal returns or of total factor productivity as indicators of an inefficient allocation of resources, a number of studies based on a sample of non-financial corporations have estimated that allocative efficiency deteriorated in the decade leading up to the global financial crisis and improved thereafter.[2] A later study, which is based on the universe of Italian firms and approximates allocative efficiency with the covariance between firm size and productivity, instead found an improvement both before and during the crisis.[3]

The obstacles in the way of an efficient allocation of resources can take various forms and can stem, for example, from distortive taxes, inadequate labour market and product regulations, inefficiencies in general government and civil justice, and the financial sector's inability to select the best business projects and promote their development. In Italy's case, where many of these factors are jointly responsible for curbing growth potential,[4] numerous studies have devoted special attention to the role of credit.

The rapid growth recorded in lending to firms with large physical capital endowments, which make them more likely to repay loans but not necessarily more productive, may have impaired allocative efficiency in the decade preceding the crisis.[5] The restrictions on lending that characterized those years appeared to have different effects, of opposite sign, on allocative efficiency:[6] on the one hand, they may have limited the expansion of the most efficient firms; on the other, it is possible that they induced the downsizing of the least efficient ones.[7]

The pronounced deterioration of corporate balance sheets since 2008 has stimulated analyses by many observers of an extreme form of inefficient allocation of resources: the survival in the market of an excessive number of firms that are structurally incapable of generating profits after paying all the factors of production (known as 'zombie' firms from studies on what happened in Japan after the crisis in the early 1990s). Some have argued that the survival of these firms could be facilitated by the propensity of the least capitalized banks

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2 S. Calligaris, 'Misallocation and total factor productivity in Italy: evidence from firm-level data', *Labour*, 29, 4, 2015, 367-393; S. Calligaris, M. Del Gatto, F. Hassan, G.I.P. Ottaviano and F. Schivardi, 'Italy's productivity conundrum. A study on resource misallocation in Italy', European Commission, European Economy Discussion Papers, 30, 2016; E. Gamberoni, C. Giordano and P. Lopez-Garcia, 'Capital and labour (mis)allocation in the euro area: some stylized facts and determinants', Banca d'Italia, Questioni di Economia e Finanza (Occasional Papers), 349, 2016.

3 A. Linarello and A. Petrella, 'Productivity and reallocation: evidence from the universe of Italian firms', *International Productivity Monitor*, 32, 2017, 116-136.

4 M. Bugamelli and F. Lotti (eds.), 'Productivity growth in Italy: a tale of a slow-motion change', Banca d'Italia, Questioni di Economia e Finanza (Occasional Papers), 422, 2018.

5 G. Gopinath, S. Kalemli-Ozcan, L. Karabarbounis and C. Villegas-Sanchez, 'Capital allocation and productivity in south Europe', *The Quarterly Journal of Economics*, 132, 4, 2017, 1915-1967.

6 S. Lenzu and F. Manaresi, 'Do marginal products differ from user costs? Micro-level evidence from Italian firms', Banca d'Italia, Questioni di Economia e Finanza (Occasional Papers), forthcoming.

7 A. Linarello, A. Petrella and E. Sette, 'Allocative efficiency and finance', Banca d'Italia, Questioni di Economia e Finanza (Occasional Papers), forthcoming.

to continue financing them to ward off a failure that would further impair the banks' own capital.

One OECD study argues that the share of capital held by zombie firms in Italy is especially high by international standards.[8] The results, however, are closely linked to the method of identification used in the study to compare firms in different countries and at different times, based on their operating profitability net of capital amortization and depreciation. The outcomes using this method can be distorted by economic policy measures that prompt companies to amortize capital more swiftly or to make investments that are bound to lead to greater amortization and write-downs in subsequent years.

Using a measure of profitability gross of depreciation and amortization, which is not subject to such distortions and above all is better able to predict a firm's failure, the capital held by zombie firms in Italy amounts to less than half that estimated by the OECD;[9] a reallocation of resources from these firms to other, more efficient, ones would therefore also have fewer aggregate benefits.

In keeping with this outcome, an analysis based on a broad sample of companies monitored between 2008 and 2013 found that the survival of firms that were incapable of generating profits (which was due to the ease of access to credit) has negligible effects on allocative efficiency (see the box 'Credit allocation and firms' characteristics', Chapter 6, *Annual Report for 2016*, 2017).[10]

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[8] M. Adalet McGowan, D. Andrews and V. Millot, 'The walking dead? Zombie firms and productivity performance in OECD countries', OECD, Economics Department Working Papers, 1372, 2017.

[9] G. Rodano and E. Sette, 'Zombie firms in Italy: a critical assessment', Banca d'Italia, Questioni di Economia e Finanza (Occasional Papers), forthcoming.

[10] F. Schivardi, E. Sette and G. Tabellini, 'Credit misallocation during the European financial crisis', Banca d'Italia, Temi di Discussione (Working Papers), 1139, 2017.

7. THE FINANCIAL SITUATION OF HOUSEHOLDS AND FIRMS

Italian households' financial situation continued to improve in 2017. Their financial assets increased in value, contributing to their total wealth, and the share invested in asset management products rose, thus spreading their portfolio risk. Borrowing from banks and other financial intermediaries accelerated.

Corporate profits continue to grow. Leverage diminished further, mainly owing to the increase in net equity. The level of debt owed to banks was stable, with signs of an upturn only emerging in the early months of this year. Recourse to the capital market increased, even among medium-sized firms.

HOUSEHOLDS

Financial wealth and investment

We estimate that total household wealth increased by 1.8 per cent in 2017, remaining unchanged at 9.3 times disposable income (8.5 times net of liabilities). The financial component continued to grow, reaching 41 per cent against 35 per cent in 2011 (see Chapter 5, 'Households'). Financial assets grew steadily (4.1 per cent), about three quarters of the increase being due to price rises and the remainder to new investments, which reached their highest level since 2008.

Purchases of investment fund units boomed (Table 7.1), mainly following the introduction of individual savings plans (*piani individuali di risparmio*, PIRs) at the end of 2016, and insurance policies continued to increase. The share of government securities and bank bonds in total assets fell to 4.8 per cent, less than a third of the peak value recorded in 2008. According to the latest Survey of Household Income and Wealth (SHIW), the share of households that had direct holdings of government securities or bonds in 2016 fell to 10 per cent, the lowest level since 1989, when questions on portfolio composition were asked for the first time. Most of the households that reduced their investments in these switched to asset management products and the majority of portfolio restructuring occurred among households with income above the median level (Figure 7.1).

Almost one third of households' financial assets were invested in asset management products, a share that has been increasing steadily for the past ten years. Investment funds and insurance products account for 28 per cent of total financial wealth, in line with the Eurozone average. Instead, pension funds are some 10 percentage points below average, partly owing to the greater role of public pensions in Italy.

Table 7.1

Financial assets and liabilities of households (1)
(millions of euros and per cent)

	End-of-period stocks			Flows	
	2017	Percentage composition		2016	2017
		2016	2017		
ASSETS (2)					
Bank deposits (3)	1,167,926	27.0	26.5	43,874	21,577
Italian	1,137,398	26.3	25.8	44,033	22,336
Sight deposits	687,452	15.3	15.6	62,694	35,699
Other deposits	449,946	10.9	10.2	-18,662	-13,363
Foreign	30,528	0.7	0.7	-159	-759
Debt securities	304,947	8.6	6.9	-61,871	-41,774
Italian	220,705	6.5	5.0	-59,883	-38,456
of which: issued by the public sector	122,171	3.1	2.8	-8,673	2,622
issued by banks	88,600	3.2	2.0	-47,154	-42,448
Foreign	84,242	2.1	1.9	-1,988	-3,318
Investment fund units	537,059	11.2	12.2	12,295	57,047
Italian	261,246	5.7	5.9	-2,665	21,245
Foreign	275,813	5.5	6.3	14,960	35,802
Shares and other equity	1,062,409	23.3	24.1	-15,011	-41,276
Italian	991,050	21.7	22.5	-14,683	-41,743
Foreign	71,360	1.6	1.6	-328	467
Insurance, pension funds and severance pay entitlements	996,174	22.2	22.6	41,626	32,733
of which: life insurance reserves	677,669	14.7	15.4	36,173	25,349
Other assets issued by residents (4)	338,178	7.7	7.7	16,240	13,097
Total assets	**4,406,694**	**100.0**	**100.0**	**37,153**	**41,404**
LIABILITIES					
Short-term debt	51,273	5.9	5.5	-2,049	-751
of which: to banks	49,094	5.8	5.3	-2,153	-1,845
Medium- and long-term debt	658,077	70.4	70.9	10,521	18,642
of which: to banks	580,322	62.5	62.6	9,755	12,011
Other liabilities (5)	218,372	23.6	23.5	3,611	3,081
Total liabilities	**927,722**	**100.0**	**100.0**	**12,083**	**20,972**
BALANCE	**3,478,972**			**25,070**	**20,432**

Source: Bank of Italy, financial accounts.
(1) Consumer households, producer households and non-profit institutions serving households. Rounding may cause discrepancies in totals. – (2) Individually managed portfolios are not shown; their assets are included under the individual types of investment. – (3) Includes liabilities of Cassa depositi e prestiti SpA. – (4) Accounts receivable, BancoPosta current accounts, banknotes, coins and other minor items. – (5) Accounts payable, severance pay and pension provisions and some minor items.

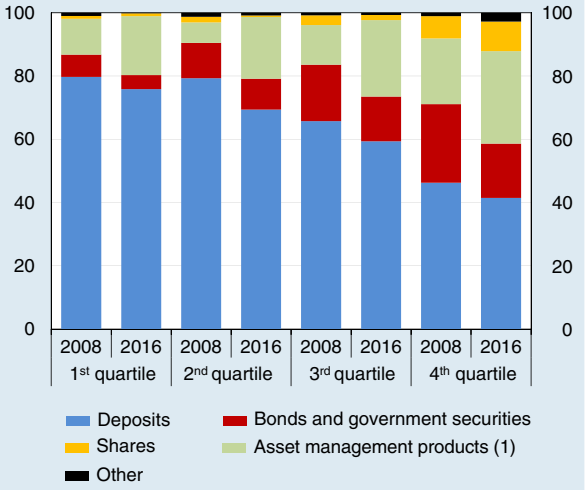
Borrowing

Lending to households by banks and financial companies accelerated in 2017 (Table 7.2). The ratio of debt to disposable income was 61.3 per cent in December, which is low by international standards (see *Financial Stability Report*, 1, 2018).

Demand for mortgage loans was buoyed by the increase in disposable income and extremely low interest rates. Supply conditions remained accommodating. The average loan-to-value ratio rose to 65 per cent, the same level as in 2008 but still low by international comparison. The spreads on loans continued to narrow, especially for new fixed rate mortgages, and households took advantage by choosing mainly this type of loan.

Figure 7.1

Composition of Italian households' financial portfolio by equivalised income quartile
(per cent)



Source: Based on data from the Bank of Italy's Survey of Household Income and Wealth.
(1) Asset management products include units of investment funds, life insurance policies, managed portfolios, personal retirement plans and supplementary pension funds.

Table 7.2

Lending to consumer households (1)
(end-of-period data; millions of euros and per cent)

	12-month percentage changes					Stocks at March 2018 (2)
	2014	2015	2016	2017	March 2018	
			Loans for house purchase			
Banks	-0.6	0.4	2.0	2.3	2.2	358,644
			Consumer credit			
Banks	-0.7	5.2	8.6	9.3	9.1	97,925
Financial companies	0.3	-2.0	1.2	3.1	3.9	33,957
Total banks and financial companies	**-0.2**	**2.1**	**6.4**	**7.6**	**7.7**	**131,882**
			Other loans (3)			
Banks	1.5	1.3	-0.5	1.0	1.8	103,976
			Total loans			
Total banks and financial companies	**-0.2**	**0.9**	**2.4**	**3.2**	**3.3**	**594,502**

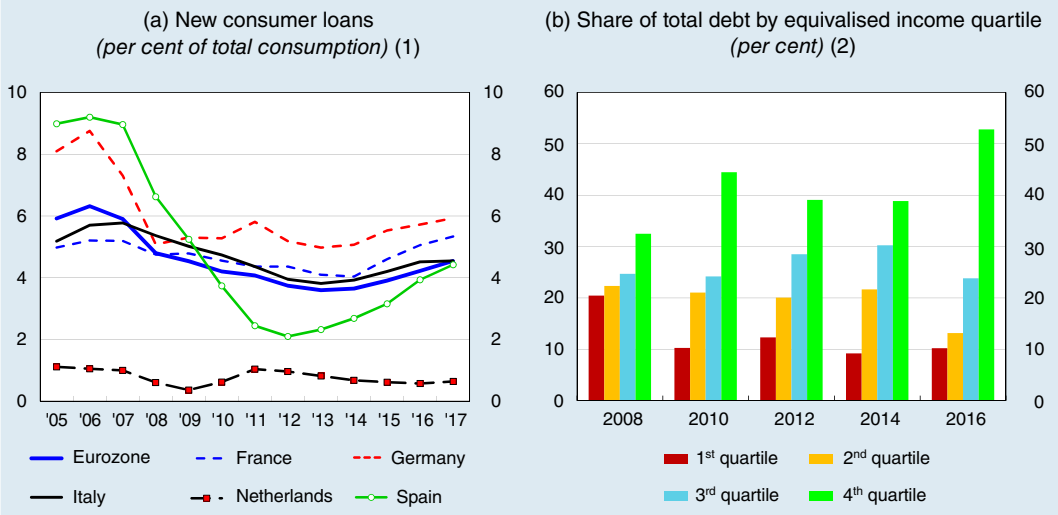
Source: Supervisory reports.
(1) Loans include repos and bad debts. For March 2018, provisional data. – (2) Includes securitized loans. – (3) Mainly current account overdrafts and mortgages other than those for the purchase, construction or restructuring of residential properties.

Consumer credit grew at an extremely fast pace, with the largest increase occurring in loans for vehicle purchases. The share of households' annual expenditure financed with new consumer loans was unchanged at 4.5 per cent of the total, which is less than just before the financial crisis and close to the Eurozone average (Figure 7.2.a). The annual percentage rate of charge (APRC) on new loan disbursements began to rise again in the second half of 2017, reaching 8.4 per cent in March, well above the Eurozone average of 6.1 per cent.

According to SHIW data, compared with 2008 there was an increase in the concentration of debt among households in the highest income quartile (Figure 7.2.b) and those with a head aged 45 to 64. This is the result of the careful selection process carried out by banks and financial companies, as well as of an increase in credit demand by the most financially sound households in recent years.

Figure 7.2

Households' debt



Sources: For panel (a), supervisory reports, ECB and Eurostat; for panel (b), based on data from the Bank of Italy's Survey of Household Income and Wealth.
(1) Consumer and producer households and non-profit institutions serving households. – (2) Shares based on the amount of debt reported by interviewees.

FIRMS

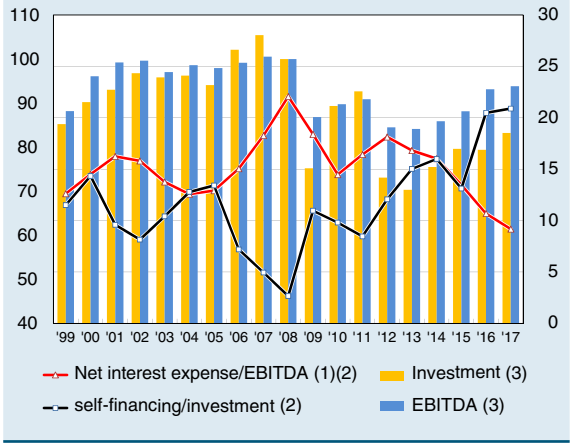
Profitability and financial balance

Gross operating profit (EBITDA) continued to increase in 2017 (Figure 7.3). Net interest expense diminished further with the reduction of interest rates, and the ratio to EIBTDA hit the lowest point of the last twenty years. According to the Bank of Italy's Survey of Industrial and Service Firms, the share of businesses posting a profit rose to three quarters of the total (see Chapter 6, 'Firms').

The ratio of self-financing to investment was again high, despite the upturn in capital accumulation; although the financial balance diminished, it remained positive (0.8 per cent of GDP). Liquid assets increased further, to one fifth of GDP and to 9 per cent of the total value of liabilities. According to the Survey, the balance between firms that increased their liquid assets and those that reduced them widened, especially in manufacturing where profitability was greater. Large firms are prompted to keep ample holdings of liquid assets by expectations of making larger investments; small and medium-sized firms do so because low interest rates make investments in alternative financial assets unattractive.

Figure 7.3

Profitability and coverage of investment
(per cent; indices)



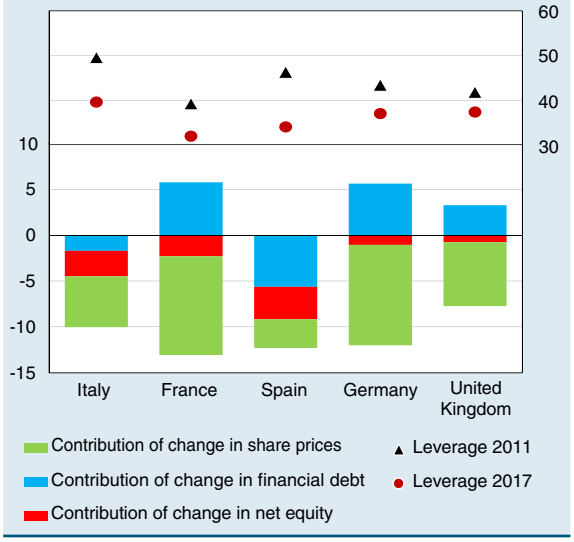
Source: Based on nominal Istat data: national accounts for the non-financial corporations sector.
(1) Right-hand scale. – (2) Net interest expense and self-financing are estimated on the basis of Istat data. – (3) Indices, 2008=100. EBITDA is deflated using the value added deflator at base prices and investment using the investment deflator; both deflators relate to the non-financial private sector.

Sources of funding

Financial structure. – Leverage fell by almost 2 percentage points in 2017, to 40 per cent, i.e. 10 points less than the peak recorded in 2011. The decrease of recent years has been due to the smaller volume of debts and especially to the contribution of equity increases. The shift in the composition of funding sources towards a larger share of own funds was particularly marked even compared with the main European countries (Figure 7.4). The financial debt of businesses in France, Germany and the United Kingdom grew and the decrease in leverage was almost entirely due to the rise in share prices.

Figure 7.4

Corporate leverage and contributions to its change 2011-17 (1)
(per cent)



Sources: Bank of Italy and ECB.
(1) The data refer to the non-financial corporations sector. Leverage is calculated as the ratio of financial debt to the sum of financial debt and shareholders' equity at market prices.

The share of bank debt in the total liabilities of Italian firms fell from 25 per cent in 2011 to 19 per cent in 2017 (Table 7.3), which was still some 6 percentage points higher than the Eurozone average.

Table 7.3

Financial assets and liabilities of firms (1)
(millions of euros and per cent)

	End-of-period stocks			Flows	
	2017	Percentage composition		2016	2017
		2016	2017		
ASSETS					
Cash and deposits	349,310	19.4	19.2	22,979	27,711
Securities	65,571	3.9	3.6	5,014	-2,446
of which: Italian public sector	52,811	3.1	2.9	4,660	1,526
Shares and other equity	687,560	36.1	37.9	31,550	33,424
Trade receivables	584,971	32.6	32.2	-26,716	50,020
Other assets (2)	128,835	8.1	7.1	11,055	-3,122
Total assets	**1,816,246**	**100.0**	**100.0**	**43,882**	**105,587**
of which: external	486,930	28.7	26.8	12,068	8,746
LIABILITIES					
Financial debt	1,246,929	33.7	32.1	-6,344	16,697
Bank loans	726,612	21.1	18.7	-11,283	-34,668
Other loans (3)	354,477	8.7	9.1	7,072	30,252
Securities	165,839	3.9	4.3	-2,133	21,113
Shares and other equity	1,904,081	47.8	49.0	38,757	22,070
Trade payables	537,681	13.2	13.8	-18,267	50,618
Other liabilities (4)	197,309	5.3	5.1	4,404	4,111
Total liabilities	**3,885,999**	**100.0**	**100.0**	**18,551**	**93,496**
of which: external	671,007	17.1	17.3	12,987	23,508
BALANCE	**-2,069,753**			**25,331**	**12,091**

Source: Bank of Italy, financial accounts.
(1) The data refer to the non-financial corporations sector. Rounding may cause discrepancies in totals. – (2) Short-term foreign claims, intra-group claims, insurance technical provisions, domestic derivatives and other minor items. – (3) Includes financing provided by leasing and factoring companies, intra-group loans and securitized loans. – (4) Postal current accounts, severance pay and pension provisions, domestic derivatives and other minor items.

Credit. – Borrowing from banks began to increase at a moderate pace in the early months of 2018, some five years after the end of the recession (Table 7.4; see the box 'The economic recovery and business lending'). This was mainly due to the growth in investment and to the still accommodating lending terms. Difficulties accessing credit diminished considerably with respect to the 2012 peak, but continued to be much greater than in the leading Eurozone countries, particularly for SMEs (Figure 7.5.a).

Table 7.4

Lending to firms (1)
(end-of-period data; per cent)

	12-month percentage changes					Percentage composition March 2018 (2)
	2014	2015	2016	2017	march 2018	
			Banks			
Branch of activity						
Manufacturing	-0.3	1.7	-0.7	2.7	3.1	22.3
Construction	-3.1	-2.9	-5.2	-3.6	-3.1	13.2
Services	-2.3	0.2	3.3	1.8	3.9	35.7
Real estate	-3.2	-1.9	1.0	-3.2	-4.4	11.1
Other	-2.2	-4.4	-1.8	-0.5	-0.4	9.1
Size of firm						
Small (3)	-2.4	-2.3	-2.2	-0.9	-0.9	16.7
Medium-sized and large	-2.0	-0.3	0.7	0.5	1.6	74.7
Total	**-2.1**	**-0.7**	**0.1**	**0.3**	**1.1**	**91.4**
			Financial companies			
Leasing	-2.8	-3.8	-2.7	-4.0	-3.9	5.6
Factoring	-4.1	4.0	11.0	4.3	0.4	2.2
Other financing	-0.4	-8.9	-1.8	16.9	15.4	0.8
Total	**-3.1**	**-2.7**	**0.6**	**-0.2**	**-1.3**	**8.6**
			Banks and financial companies			
Total	**-2.3**	**-0.9**	**0.2**	**0.3**	**0.9**	**100.0**

Source: Supervisory reports.
(1) The data refer to non-financial corporations and producer households. The data for March 2018 are provisional. – (2) Includes securitized loans. – (3) Limited partnerships, general partnerships, informal partnerships, de facto companies and sole proprietorships with fewer than 20 workers.

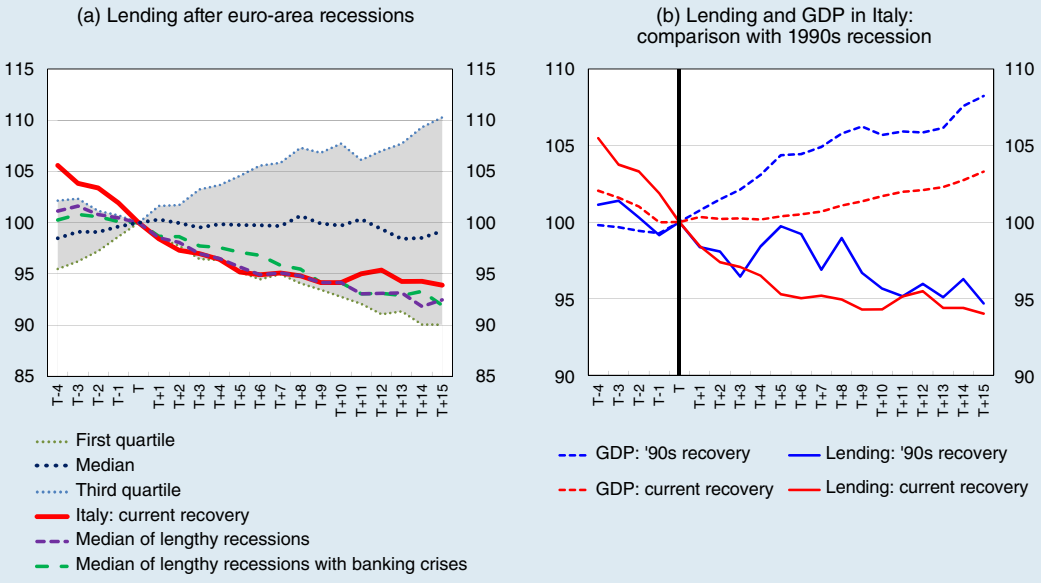
THE ECONOMIC RECOVERY AND BUSINESS LENDING

In Italy, it was not until the beginning of this year that bank lending to non-financial corporations began to increase once more at a moderate pace, even though the economic recovery had been under way for five years. Total lending is currently 8 per cent lower, in real terms, than when the recession ended in the first quarter of 2013, while GDP has grown by 5 per cent. The gap between economic growth and credit growth is evident in firms of all sizes, though it is especially wide in the case of micro-businesses. Lending has reflected weak demand, and particularly the modest resumption of investment and firms' high self-financing capacity. However, supply-side constraints have also contributed, especially in the case of small businesses.

Comparing periods of economic recovery observed in thirteen euro-area countries from 1980 to 2017 (see panel (a) of the figure), the growth in business lending in the present phase of the cycle is very slow in Italy.[1] Nevertheless, the difference with respect to other periods becomes far less marked when only the periods following particularly lengthy recessions or recessions combined with banking crises are analysed. The contraction in lending in Italy in the current expansionary phase is comparable to the one that occurred at the beginning of the 1990s (see panel (b) of the figure).

[1] G. Eramo, R. Felici, P. Finaldi Russo and F.M. Signoretti, 'The slow dynamics of loans to firms in Italy in the current economic recovery', Banca d'Italia, Questioni di Economia e Finanza (Occasional Papers), forthcoming.

Business lending and real GDP (1)
(quarterly data; index: T=100)



Sources: Bank of Italy and calculations based on ECB and OECD data.
(1) Quarter T is the one in which the recovery begins in each of the periods analysed; in Italy, T=June 2013 for the current recovery and T=December 1993 for the recovery in the 1990s. The sample in panel (a) comprises 81 periods of recovery in 13 euro-area countries from 1980 to 2017. The sub-sample 'lengthy recessions' relates to 31 periods of post-recession recovery in which GDP contracted during four or more quarters; the 17 periods of recession associated with banking crises are determined using the European Systemic Risk Board's European Financial Crises Database. Business lending is deflated using the non-harmonized consumer price index.

The heterogeneity of bank lending by firms' risk class increased (see *Financial Stability Report*, 1, 2018). Lending to the most financially sound firms accelerated, while credit granted to risky firms contracted further. In the middle risk classes, there was a renewed expansion in loans to medium-sized and large firms, but those to micro-businesses and small firms continued to decrease. Lending to the latter group as a whole diminished, most of their debt being held by the firms with the weakest balance sheets.

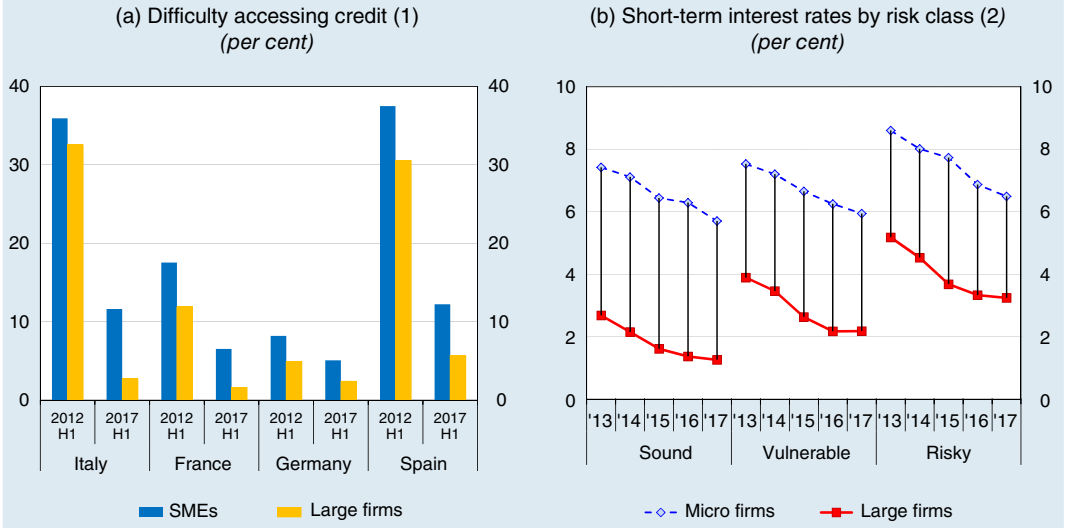
Bank interest rates on business loans decreased further, falling to 2.2 per cent in March 2018. The spread between the interest rates applied to micro-businesses and those offered to large companies was again wide for all risk classes (Figure 7.5.b) and about 1 percentage point higher than before the crisis, confirming the difficulty of accessing credit experienced by small firms.

Other funding sources. – Firms' access to the capital markets improved significantly in 2017. More than 220 Italian companies and groups issued bonds totalling over €46 billion, well above the values observed before the crisis (about 190 issuers and €18 billion on average in 2005-07). The number of companies issuing mini-bonds for the first time also increased, to more than 30; about half of them were SMEs.

There were more initial public offerings (IPOs) by non-financial companies than in the period leading up to the crisis (28 against an average of 20 from 2005

Figure 7.5

Firms' access to credit



Sources: ECB Survey on the access to finance of enterprises (SAFE); Bank of Italy and Cerved data.
(1) Share of firms reporting that they had obtained less than 75 per cent of the amount requested over the total of firms that had applied for bank loans . – (2) Average interest rate on outstanding bank loans.

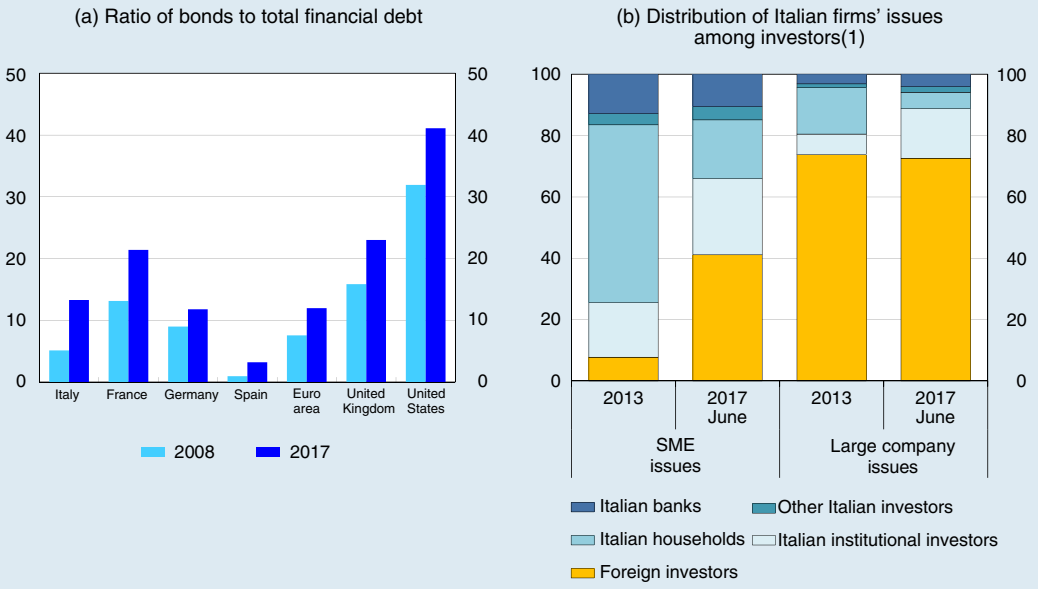
to 2007). About a third of listings were via Special Purpose Acquisition Companies (SPACs), listed investment vehicles that raise funds on the market to buy or incorporate unlisted companies. SPACs allow quicker access to the market and are apparently less costly than traditional IPOs.

Going forward, firms raising funds on the capital market will benefit from the tax credit introduced in the 2018 budget law for SMEs applying for listing and from the spread of PIRs. At the end of last year, funds complying with the rules on PIRs had invested about €7 billion in securities issued by Italian companies, or 56 per cent of their total assets. These investments concern mainly large listed companies, even though their average size is smaller than that of the firms in which other funds invest (see the box 'Investments of open-end Italian investment funds that comply with the rules on individual savings plans (PIR)', *Financial Stability Report*, 1, 2018). If there were more investors specializing in the valuation of SMEs, it would boost Italy's capital market, which is still small by international standards (see the box 'Institutional investors and the Italian corporate bond market').

INSTITUTIONAL INVESTORS AND THE ITALIAN CORPORATE BOND MARKET

Italian firms greatly increased their recourse to bond funding during the economic crisis; from 2008 to 2017 the share of bonds in total financial debt rose from 5 to 13 per cent, which is in line with the euro-area average (see panel (a) of the figure). The use of this form of financing is nonetheless more limited than in countries with better developed capital markets, such as France, the United Kingdom and the United States.

Bond market indicators
(per cent)



Sources: Bank of Italy, ECB and Federal Reserve.
(1) Data based on the nominal value of more than 500 issues representing about half of the total value of the bonds of Italian non-financial corporations at the date indicated.

The small size of Italy's bond market is chiefly due to the high financial leverage on average and to the fairly limited number of large listed companies, characteristics that tend to discourage investors from underwriting bond issues.[1]

There are impediments to the development of the supply side of the market as well. The analysis of a broad sample of issues[2] indicates that large companies place more than 70 per cent of their bonds with foreign investors. For small and medium-sized enterprises, which have greater difficulty gaining access to foreign markets, the percentage is about 30 points lower (see panel (b) of the figure).

In recent years, institutional investors have shown a growing interest in bonds issued by Italian SMEs. From 2013 to mid-2017, foreign and Italian institutional investors increased their shares of these bonds from 8 to 41 per cent and from 18 to 25 per cent respectively, while households reduced theirs from 58 to 19 per cent.

In Italy, domestic institutional investors hold a much smaller proportion of bond issues than in economies where market finance plays a significant role. They are also less likely than foreign institutional investors to purchase bonds issued by companies classified as risky, controlling for other firms' characteristics.

[1] M. Accornero, P. Finaldi Russo, G. Guazzarotti and V. Nigro, 'First-time corporate bond issuers in Italy', Banca d'Italia, Questioni di Economia e Finanza (Occasional Papers), 269, 2015.

[2] M. Accornero, P. Finaldi Russo, G. Guazzarotti and V. Nigro, 'Missing investors in the Italian corporate bond market', Banca d'Italia, Questioni di Economia e Finanza (Occasional Papers), forthcoming.

These findings suggest that the development of the bond market could benefit from the presence of more specialized investors, such as credit funds or funds complying with the rules on individual saving plans. These could make the market more accessible to SMEs that do not have the levels of transparency and financial soundness required for international markets.

Invest Europe/EDC data indicate that investment in Italian venture capital funds (amounting to about €130 million) doubled with respect to the average for the four preceding years, although the amount is still low by comparison with other countries. Venture capital is a form of funding well suited to supporting the activity and investments of new firms, which are hampered in accessing bank loans by significant information asymmetries (see the box 'The financial structure of new firms').

THE FINANCIAL STRUCTURE OF NEW FIRMS

In the first few years of a firm's operations, which are often marked by substantial investments and insufficient revenues to cover costs, the availability of external sources of funding can prove vital to business growth. The financing of start-ups by non-shareholders can, however, be hindered by large information asymmetries mainly linked to the difficulty of gauging the quality of the business project but also to the lack of information on activities previously carried out by the company owners.

An analysis based on more than 360,000 companies that commenced operations between 2003 and 2010 shows that at the end of the first year, on average almost one third of their funding came from internal resources (capital and loans from

Financing sources for start-ups at 1 year of age relative to total assets (1)
(per cent)

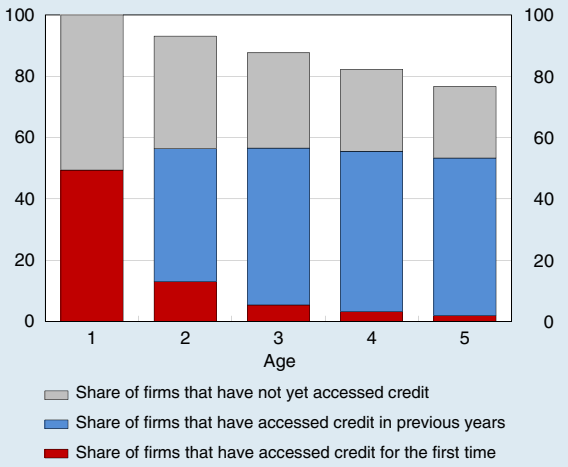
	Asset size classes				Total firms	Share of firms with positive values
	1st quartile	2nd quartile	3rd quartile	4th quartile		
Equity	22.2	15.4	11.0	10.3	14.5	85.5
Loans from shareholders	14.8	13.8	14.4	13.9	14.2	41.0
External financial debts	10.3	15.3	21.0	30.7	19.7	54.8
Loans from banks	7.2	11.9	17.4	26.4	16.1	47.7
Loans from other financial intermediaries	2.8	2.9	2.8	2.5	2.8	12.0
Bonds	0.0	0.0	0.0	0.0	0.0	0.1
Other financial debts (2)	0.4	0.5	0.8	1.8	0.9	3.7
Trade debts	27.1	33.2	34.8	29.3	31.2	90.7
Other non-financial debts (3)	12.7	12.6	11.5	11.0	11.9	72.4

Source: Based on Cerved data.
(1) The data refer to 364,149 limited companies registered between 2003 and 2010 at 1 year of age and with assets below €10 million; the size classes correspond to the quartiles of the distribution of total assets (below €62,000, from €62,000 to €175,000, from €175,000 to €479,000, more than €479,000). – (2) Includes intra-group loans, commercial paper held by non-banks and other minor financial debts. – (3) Includes trade debts expiring after the end of the fiscal year, debts towards employees and other short-term non-financial debts.

shareholders) and another third via trade debts;[1] financial debts vis-à-vis intermediaries and non-shareholders contributed almost one fifth (see the table). Roughly half of the firms in the sample had taken out a bank loan, accounting on average for 16 per cent of their assets. The share of bank debt tended to rise with the initial size of the firms.

In each year after the first one, the proportion of firms granted bank loans for the first time was found to rise very gradually (see the figure); in the fifth year of business, 70 per cent of the start-ups still in the sample had borrowed from a bank at least once.

Access to bank loans by firm age (1)
(per cent)



Sources: Based on Cerved and Central Credit Register data; sample of firms established between 2003 and 2008.
(1) The horizontal axis shows the firm's age in years. The firms have received loans if they have bank loans in their balance sheets or credit (drawn or undrawn) in the Central Credit Register. At each age the share of firms in the three categories is calculated as a proportion of the total number of firms observed at 1 year of age; in the years after year 1, the proportion is lower than 100 owing to the exit of firms from the sample.

Econometric analyses show that, numerous other business conditions being equal (i.e. the sector of economic activity, geographical location and start-up size), the likelihood of a firm taking out a bank loan within its first year is positively correlated with the availability of both tangible fixed assets, which are often used as collateral, and of intangible assets, such as patents or brands, which reflect firms' capacity to innovate.

For businesses established between 2008 and 2010, recourse to external funding diminished significantly compared with that of firms established during the period before the crisis. All other firm characteristics being equal, the probability of turning to external sources of funding within the first year of operations has fallen as has the share of assets funded by these loans, by 6 and 4 percentage points respectively. The gap is mainly attributable to the contraction in bank lending and remains unchanged in the subsequent five years of activity.

[1] E. Bonaccorsi di Patti and V. Nigro, 'The financial structure of start-ups in good and bad times', Banca d'Italia, Questioni di Economia e Finanza (Occasional Papers), forthcoming.

8. THE LABOUR MARKET

Employment continued to increase in 2017 in all the main sectors of the economy, in tandem with the cyclical recovery. However, ample margins of spare labour capacity remain: the number of hours worked per worker is still about 5 per cent below the pre-crisis level, and more than 60 per cent of part-time workers would rather have a full-time job (against about 40 per cent in 2008).

As in the preceding years, the number of self-employed workers diminished and the number of payroll employees increased. In the last three years, self-employed workers (who include quasi-subordinate workers) have fallen by about 160,000 in number and payroll employees have risen by more than 900,000, of which 460,000 in permanent jobs and 440,000 on fixed-term contracts. The increase in payroll employment in 2017 concerned exclusively fixed-term contracts; permanent employment was affected by the termination of the social security contribution relief granted on new hirings in 2015-16 and, towards the end of the year, by the decision of firms to wait for the new relief measures on hirings of young workers due to be passed in 2018.

The activity rate continued to increase, especially among older workers. On the other hand, the labour supply of young workers decreased as a result of higher participation in education. The unemployment rate diminished only very slightly, remaining high by historical standards; there was a larger decline in youth unemployment, although it is still three times higher than the average rate for the population.

Contractual earnings increased modestly in 2017, as in the year before. The national contracts signed in the second half of the year and in early 2018 suggest that wage dynamics are improving owing to the closer anchoring of pay rises to expected price developments as well as to firms' expectations of higher inflation compared with a year earlier.

Employment and hours worked

The number of persons in employment rose by 1.1 per cent in 2017, slightly more slowly than in the previous year (Table 8.1). The expansion observed in 2015-17 (3.1 per cent overall) was in line with GDP growth: numerous measures introduced since 2014 have reduced the monetary and non-monetary components of labour costs and contributed to the increase in the elasticity of total employment to GDP; it is now close to the estimated elasticity in other leading Eurozone countries, such as France, but much lower than in Spain.[1]

[1] G. Bovini and E. Viviano, 'The Italian "employment-rich" recovery: a closer look', Banca d'Italia, Questioni di Economia e Finanza (Occasional Papers), forthcoming.

Table 8.1

Labour input in the Italian economy by sector
(annual percentage changes)

SECTORS AND TYPE OF EMPLOYMENT	Persons employed				Hours worked			
	2008-14	2014-15	2015-16	2016-17	2008-14	2014-15	2015-16	2016-17
Agriculture, forestry, fisheries	-1.3	1.0	3.1	-0.8	-1.6	1.2	2.5	-1.7
Industry excluding construction	-2.5	-0.8	0.7	0.7	-3.6	0.0	1.7	1.5
of which: manufacturing	-2.7	-0.9	0.6	0.7	-3.8	-0.1	1.6	1.6
Construction	-3.6	-1.2	-3.1	0.3	-4.9	-0.7	-2.4	1.5
Services	0.1	1.1	1.8	1.4	-0.6	1.0	2.0	1.1
of which: mainly public (1)	-0.3	0.6	1.1	0.9	-0.5	0.3	1.0	0.9
Total	**-0.7**	**0.7**	**1.3**	**1.1**	**-1.5**	**0.7**	**1.7**	**1.0**
Payroll employees	-0.6	1.1	2.0	2.1	-1.5	1.3	2.4	2.2
Self-employed workers	-0.9	-0.5	-0.5	-1.9	-1.6	-0.6	0.2	-1.5

Source: Based on Istat, national accounts data.
(1) Defence, compulsory social insurance, education, health and welfare.

Employment increased in all sectors of the economy including construction, for the first time since 2008, though not in agriculture. As in previous years, the largest growth occurred in private services, particularly hotels and catering, in transport and in trade, with labour demand further shifting towards the least qualified jobs (see the box 'Changes in the occupational structure in Italy in the last ten years').

CHANGES IN THE OCCUPATIONAL STRUCTURE IN ITALY IN THE LAST TEN YEARS

According to the OECD, profound changes took place in the occupational structure in Italy between 1995 and 2015. Ranking jobs by qualification, the share of medium qualification jobs decreased by 9.3 percentage points, while the shares of low-qualified and high-qualified jobs rose by 4.6 and 4.8 points respectively.[1]

In other advanced countries, this phenomenon, known as labour market polarization, has been put down to the spread of automation technologies.[2] These technologies, which reduce the need for routine-based activities, complementing them in manual activities and in jobs requiring high analytical skills, have increased the demand for highly qualified and low-skilled workers, who now account for a larger share of total employment and command relatively higher pay, to the detriment of medium-qualified jobs.

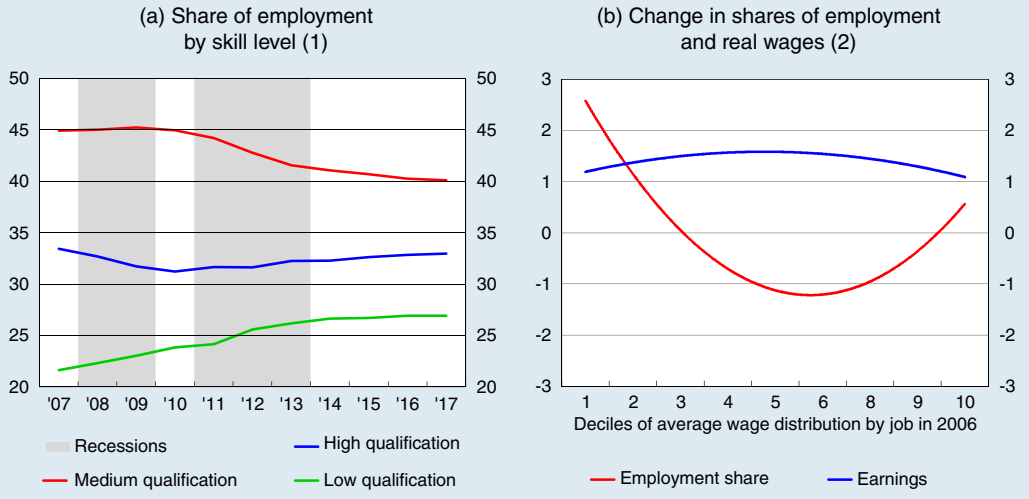
[1] OECD, *OECD Employment Outlook 2017*, 2017. Low qualification jobs are those performed by unqualified workers in services and other basic jobs, medium qualification jobs are done by specialized workers in manufacturing and construction, assembly workers and service workers, and high qualification jobs are performed by professionals, entrepreneurs and managers, and workers in specialist technical jobs.

[2] M. Goos, A. Manning and A. Salomons, 'Explaining job polarization: routine-biased technological change and offshoring', *American Economic Review*, 104, 8, 2014, 2509-2526; OECD, 2017, op. cit.

In Italy, however, no single tendency towards polarization appears to have resulted from technological development. The changes in the structure of employment have not come about continuously over the last twenty years, as would have been expected had they only been brought about by a steady spread of new technology, which has been adopted on a fairly limited scale in Italy so far (see Chapter 6, 'Firms'). Until about 2005, employment grew mainly in highly-paid jobs requiring greater analytical skills.[3] Then, from 2007 to 2017, the share of low-qualified jobs rose by 5.3 percentage points, while that of medium-qualified jobs fell by 4.8 points and of high-qualified jobs by 0.5 points (see panel (a) of the figure).[4]

Moreover, the trend in relative wages in Italy has not mirrored the growth in employment shares as it has in the United States, where the spread of advanced technologies has increased not only the demand for qualifications at the two ends of wage distribution but also the related earnings. Ranking jobs by average wage, it appears that in the last eight years real average wages in Italy have changed fairly equally among all the job categories, including the ones with workers performing mainly routine tasks, who represent a diminishing share of employment (see panel (b) of the figure).

Change in the occupational structure in Italy in the last decade
(percentage points)



Source: Based on Istat, labour force survey.
(1) Employment shares of three groups of job qualification according to the OECD's definition in footnote 1. – (2) Quadratic interpolation of employment shares from 2007 to 2017 and of annualized percentage changes in average real hourly earnings from 2009 to 2017 by decile of the distribution of average wages by skill level. The average hourly earnings by qualification are calculated based on Istat's wage structure survey for 2006.

The evolution of employment and wages by qualification level might therefore be due to the interaction of several demand factors, including some not resulting from

[3] E. Olivieri, 'Il cambiamento delle opportunità lavorative', Banca d'Italia, Questioni di Economia e Finanza (Occasional Papers), 117, 2012.

[4] G. Basso, 'The evolution of occupational structure in Italy in the last decade', Banca d'Italia, Questioni di Economia e Finanza (Occasional Papers), forthcoming.

technological changes, and supply factors. With no significant change in the related wages, the increase in the employment share of low-qualified jobs is consistent with the growth in the supply of immigrant labour[5] and with the shift of consumer demand towards low-value services, a tendency that has sharpened since the economic crisis. By the same token, medium-qualified jobs may have been affected by the sharp drop in activity in the construction industry and in some manufacturing sectors where they predominate, with the composition of employment in the various branches shifting in favour of the most productive firms.[6] The increase in wages reflects not only this shift but also the results of national collective bargaining. While labour demand at the high end of the qualification distribution grew only moderately, the rise in graduate numbers probably offset part of the contraction in employment in the high-skill occupations.[7]

[5] As has been observed in the United States as well, see G. Basso, G. Peri and A. Rahman, 'Computerization and immigration: theory and evidence from the United States', NBER Working Paper, 23935, 2017.

[6] M. Bugamelli, S. Fabiani, S. Federico, A. Felettigh, C. Giordano and A. Linarello, 'Back on track? A macro-micro narrative of Italian exports', Banca d'Italia, Questioni di Economia e Finanza (Occasional Papers), 399, 2017; M. Bugamelli and F. Lotti (eds), 'Productivity growth in Italy: a tale of a slow-motion change', Banca d'Italia, Questioni di Economia e Finanza (Occasional Papers), 422, 2018.

[7] R. Ballatore, F. Colonna, D. Depalo and S. Pereda-Fernández, 'Educational mismatch in Italy: an appraisal', Banca d'Italia, Questioni di Economia e Finanza (Occasional Papers), forthcoming.

The supply of unutilized labour is still abundant, however: the number of hours worked per worker rose in manufacturing, but stagnated in the private sector as a whole, remaining more than 5 percentage points below the pre-crisis level. The share of part-time workers that would have preferred full-time employment diminished only slightly in 2017 (-1.6 percentage points, to 61.0 per cent of the total of part-time workers) and was still 20 points above the 2008 level.

The decrease in the number of self-employed workers (-1.9 per cent) and the rise in payroll employees continued in 2017, both gaining pace with respect to previous years. The rise in payroll employment was driven exclusively by the fixed-term component, which grew by 12.3 per cent, while permanent employment remained virtually stable. The share of fixed-term employees in total payroll employment rose by 1.4 percentage points, to 15.5 per cent, the highest level since the beginning of the time series but still slightly below the Eurozone average (16.0 per cent).

The trend in the various components of employment in recent years has also reflected the adoption of new legislation. Law 92/2012 (the Fornero reform) and Enabling Act 183/2014 (the Jobs Act) placed limits on the use of self-employed workers in quasi-subordinate employment (e.g. 'project-based contracts'). The outcome has been a significant shift towards payroll employment: according to Istat's labour force survey, in the last three years the number of own-account workers has fallen by about 160,000, mainly employees on collaboration contracts and self-employed workers; the number of payroll workers has risen by 900,000.

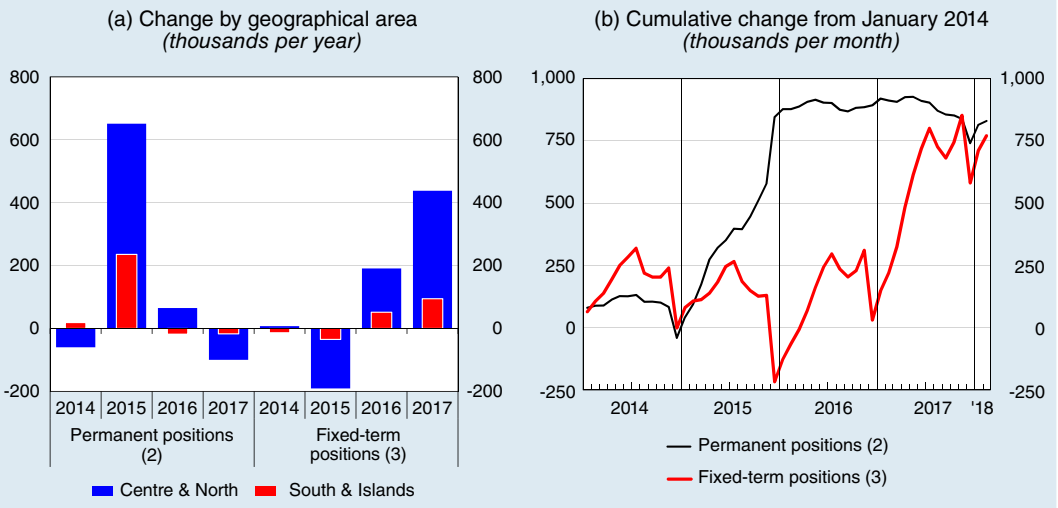
As employment shifted progressively towards payroll jobs during the period 2015-17, with fixed-term positions rising by 440,000 and permanent ones by 460,000, the

predominance of the one or the other form depended on which benefited more from the successive legislative measures.

Decree Law 34/2014, converted by Law 78/2014 (the Poletti Decree, see Chapter 10, 'The labour market', *Annual Report for 2013*, 2014), simplified and liberalized the use of temporary work, while from 2015 several policies were enacted to encourage permanent employment. The new rules on dismissals in firms with more than 15 employees introduced by the Jobs Act (see Chapter 8, 'The labour market', *Annual Report for 2014*, 2015) granted incentives to employers to recruit workers on permanent contracts, including workers without any previous work experience in the company.[2] In the two years 2015-16, the main boost to permanent hiring came from the generalized social security contribution relief granted to all firms in 2015 and, for smaller amounts, in 2016. In 2017, when the duration of the contribution relief was cut short and the eligible categories were limited to young people and employed workers in the South and Islands, there was a marked shift in the composition of new recruitment in favour of temporary contracts, especially in the Centre and North of the country (Figure 8.1.a). This trend sharpened towards the end of the year as firms decided to postpone some of their permanent hiring until 2018 in order to take advantage of the new Budget Law's longer-term social contribution relief for new recruitment of under-35s. The increase in the number of permanent hirings (net of separations) observed in the early months of this year offset the decrease at the end of 2017 (Figure 8.1.b).

Figure 8.1

Net change in permanent and fixed-term positions (1)



Source: Based on data from INPS, Osservatorio sul precariato.
(1) In the non-farm private sector. – (2) The net change in permanent contracts is calculated as the sum of new contracts and conversions of temporary contracts and pre-existing apprenticeships, net of separations. – (3) The net change in fixed-term contracts is calculated as the difference between new contracts and separations; the latter include temporary contracts converted into permanent ones.

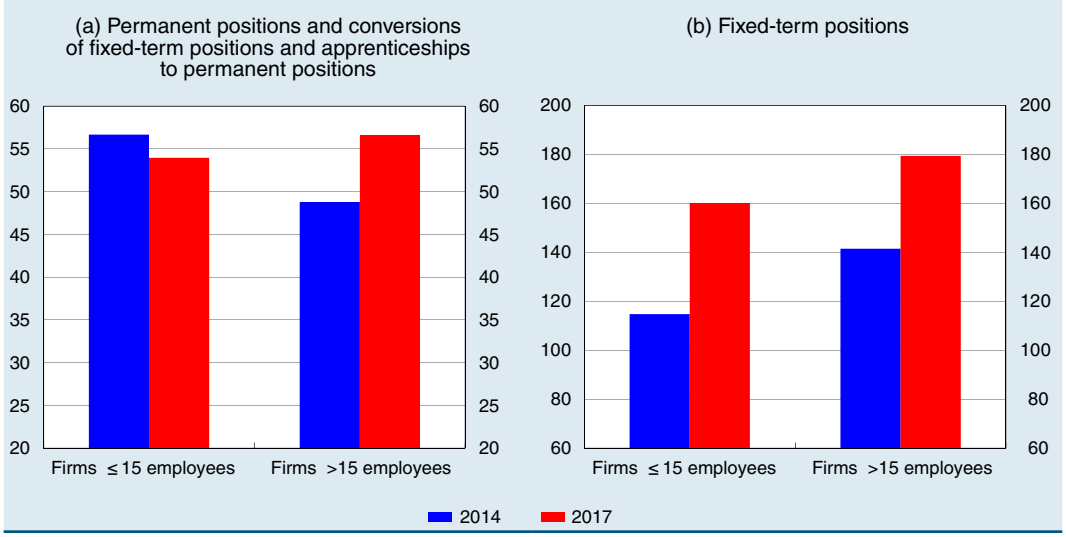
With no generalized relief in place in 2017, data for the Veneto region, the only one for which detailed information is available, indicate that the flow of

[2] P. Sestito and E. Viviano, 'Firing costs and firm hiring: evidence from an Italian reform', *Economic Policy*, 33, 93, 2018, 101-130.

new permanent hirings and conversions of temporary contracts to permanent ones was greater in firms with more than 15 employees than in smaller firms that were not covered by the Jobs Act. This trend is the opposite of the one observed in 2014, when the new law on dismissals was not yet in force (Figure 8.2.a). Instead, temporary employment increased sharply in all size classes of firm, though proportionally more in firms with fewer than 15 employees (Figure 8.2.b).[3]

Figure 8.2

New contracts in the Veneto region (1)
(thousands per year)



Source: Based on compulsory reports of Veneto Lavoro.
(1) The data refer to private sector firms located in the Veneto region, excluding agricultural workers and domestic workers.

Permanent employment was also slowed by demographic factors. It is estimated that the decline in the share of the population made up of 35-44 year olds, among whom the flow of new permanent hirings is concentrated, led to a decrease of more than 1 per cent in the number of workers on permanent contracts between 2015 and 2017.[4]

Unemployment and labour supply

The growth in the number of employed workers led to a further decline in the unemployment rate in 2017, to 11.2 per cent for the population as a whole (about 2.9 million people) and 34.7 per cent for under-24 year olds (Table 8.2). The gap with respect to the pre-crisis level remains nevertheless wide for all age groups and all geographical areas: it is largest for young people (their unemployment rate in 2008 was 21.2 per cent) and in the South and Islands, where it is 19.4 per cent (against 12.0 per cent in 2008).

[3] G. Bovini and E. Viviano, forthcoming, op. cit.

[4] G. Bovini and E. Viviano, forthcoming, op. cit.

Table 8.2

Participation, employment and unemployment rates in 2017
(percentage points)

	Ages 15-24		Ages 25-54		Ages 55-64		Total (1)	
	Rate (2)	Change 2016-17 (3)	Rate (2)	Change 2016-17 (3)	Rate (2)	Change 2016-17 (3)	Rate (2)	Change 2016-17 (3)
Participation rate	**26.6**	**0.4**	**77.5**	**0.7**	**53.4**	**2.3**	**64.9**	**0.9**
Men	30.2	-0.2	88.2	0.5	65.9	2.6	74.8	0.7
Women	22.8	1.1	66.8	0.9	41.7	2.1	55.2	1.1
Employment rate	**16.6**	**0.9**	**68.8**	**0.7**	**50.3**	**2.1**	**57.2**	**0.9**
Men	19.2	0.6	79.3	0.7	61.7	2.4	66.5	0.9
Women	13.7	1.3	58.5	0.6	39.7	1.8	48.1	0.9
Unemployment rate	**37.8**	**-2.6**	**11.2**	**-0.1**	**5.7**	**0.2**	**11.7**	**-0.2**
Men	36.5	-2.3	10.1	-0.3	6.4	0.0	10.9	-0.4
Women	39.6	-3.0	12.5	0.3	4.8	0.5	12.8	0.1

Source: Based on data from Istat's labour force survey.
(1) The total refers to the age groups between 15 and 64 years for participation and employment rates, and to the group 15 and over for unemployment rates. – (2) Per cent. – (3) Percentage change.

According to INPS data, in 2017 nearly 1.2 million people (about half of those without jobs following dismissal or contract expiry) received unemployment benefits under Legislative Decree 22/2015 (implementing the Jobs Act), which significantly increased the number of potential beneficiaries (see the box 'Changes in unemployment benefits in Italy').

CHANGES IN UNEMPLOYMENT BENEFITS IN ITALY

Italy's system of income support for job losers has been completely revised since 2012. The aim has been to increase its universality, to link entitlement more closely to the beneficiary's work and contribution record and to tie the receipt of benefits to job-search efforts.

Law 92/2012 (known as the Fornero reform) introduced unemployment insurance (*assicurazione sociale per l'impiego* – ASpI) to replace ordinary unemployment benefits for non-farm workers. It included a further safeguard for workers with shorter spells of employment, the mini-ASpI, which is available regardless of the number of years of unemployment insurance, unlike the previous system of reduced requirements. The Law also abolished the more generous 'mobility allowance',[1] which was reserved to only a few categories of workers.

With a view to further reorganizing and simplifying the process, Legislative Decree 22/2015, implementing the Jobs Act, combined the two systems into the new unemployment insurance scheme (*nuova assicurazione sociale per l'impiego* – NASpI). The qualifying period (which in 2012 had been left at two years for the ASpI) has been eliminated; the minimum contribution

[1] During the transitional period, mobility benefits could be paid until 31 December 2016.

requirement has been reduced to 13 weeks in the previous four years, including at least 30 days in the last year; and the theoretical duration of benefits is now proportionate to the length of time that contributions have been paid in the previous four years up to a maximum of 24 months,[2] but their amount decreases progressively by 3 per cent per month starting from the fourth month. Under the new law, a National Agency for Active Labour Policies (*Agenzia nazionale per le politiche attive del lavoro* – ANPAL) has been set up to enforce the principle that entitlement to benefits is dependent on job-search efforts and acceptance of a suitable job offer.

Apart from the economic situation, which naturally has had a bearing on the number of workers claiming unemployment benefits and on the related cost (amounting to 0.7 per cent of GDP in 2016; see Figure A), the new schemes have improved the system's ability to provide job losers with income support. We estimate[3] that the share of job losers owing to dismissal or contract termination who are eligible for income support has increased by 25 percentage points (from 61 to 86 per cent), almost entirely as a result of the Fornero reform and above all of the introduction of the mini-ASpI, whose fairly short-term benefits have since been extended by the NASpI.[4] The workers who have gained the most are those who have been in work for the shortest time and have the most irregular employment record: apprentices, women, young people, service workers and employees of small and medium-sized enterprises.

Although the new law emphasizes the conditionality principle, there has been virtually no change over the period in the percentage of workers receiving income support who are not actually willing to work (Figure B);[5] the outlay for these workers amounts to an estimated 15 per cent of the total. According to Istat's labour force survey, they account for a smaller proportion of workers on unemployment benefits (11 per cent) than those in receipt of the mobility allowance (27 per cent). The reason why the latter group were less interested in the labour market may have been connected with their older age (according to the median value for 2016, 11 years older) and the fact that they had been unemployed for longer (21 months against 4).

Presumably, the number of 'inactive recipients' is still high because of the difficulty of putting in place effective worker activation policies, which are not common in Italy. It was not until 17 January this year that ANPAL and the regional

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[2] The duration of the ASpI was based on the age of the unemployed worker and in 2015 was staggered as follows: 10 months up to 50 years of age, 12 months from 51 to 54 years, and 16 months over 54 years.

[3] F. Giorgi, 'La recente evoluzione dell'indennità di disoccupazione in Italia', Banca d'Italia, Questioni di Economia e Finanza (Occasional Papers), forthcoming.

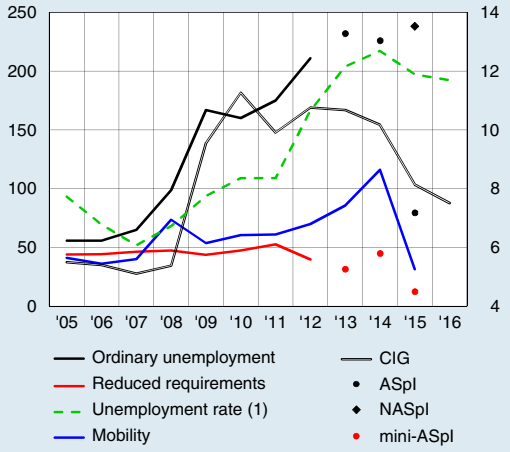
[4] Eligibility for income support does not mean that it is actually received. There may be a number of reasons why no application is made: the amount of the benefit is considered to be negligible; the worker expects to find another job soon and does not think it worthwhile to go through the red tape involved in obtaining income support; or the worker is not aware of the existence of unemployment benefits. It would appear that these factors have not changed much since the reform measures were introduced.

[5] Workers who report, in Istat's labour force survey, that they have not looked for work in the last month and are not available to start a new job for the next 15 days.

authorities, which issue secondary legislation in this field, signed a number of agreements to improve the coordinated management of active labour policies.[6]

Figure A

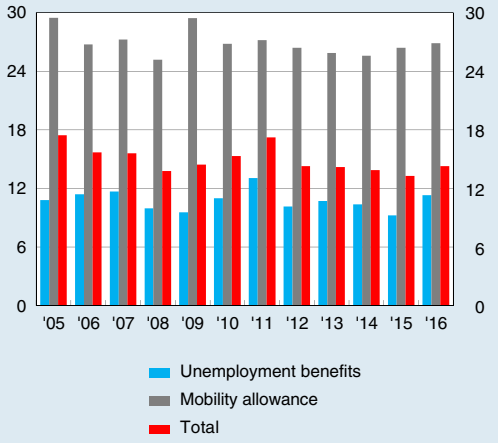
Social buffers and unemployment rate
(millions of days and per cent)



Sources: Based on data from INPS, *Osservatorio sulle ore autorizzate di Cassa Integrazione Guadagni* and sample of payroll workers, and Istat, labour force survey.
(1) Right-hand scale.

Figure B

Workers on benefits unwilling to work (1)
(per cent of total recipients)



Source: Based on data from Istat, labour market survey.
(1) For a definition of workers unwilling to work, see footnote 5.

[6] For the employment centres the transfer of competencies from the provincial to the regional level was only completed at the end of last year (Law 205/2017).

The drop in the unemployment rate was accompanied by a further increase in the overall labour supply: the activity rate rose to 65.4 per cent in 2017, the highest value since the start of the time series. The increase in labour market participation, by about 160,000 individuals, was partly due to the raising of the pension age for the over-55s (see the box 'The lengthening of working life and the labour market', Chapter 8, *Annual Report for 2016*, 2017) and partly to the reduction in the number of discouraged job-seekers, given the favourable cyclical phase. Participation diminished instead among the youngest age groups, mainly owing to increased enrolment in educational programmes: the number of undergraduates was up by 4.5 per cent in the 2016-17 academic year, compared with the decline recorded during the crisis years.[5]

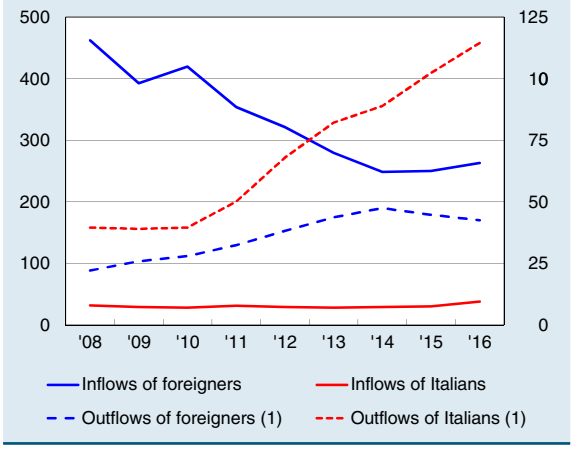
The labour force also evolves in response to migrant flows, given their high participation rate. Since the start of the financial crisis in 2008, net immigration, while still positive, has diminished, partly owing to a drop in arrivals from abroad and partly to the doubling of outflows (Figure 8.3). The increase in outflows

[5] I. De Angelis, V. Mariani, F. Modena and P. Montanaro, 'Immatricolazioni, percorsi accademici e mobilità degli studenti italiani', Banca d'Italia, Questioni di Economia e Finanza (Occasional Papers), 354, 2016.

of foreigners halted in 2015 with the improvement in labour market conditions. However, the number of Italians leaving the country, who tend to have higher educational qualifications than the rest of the population, has continued to rise rapidly – they totalled about 115,000 in 2016, the latest available figure, almost three times as much as before the crisis – presumably owing to the large mismatch between their level of qualification and the skills sought by firms (see the box 'The mismatch between labour demand and educational level').

Figure 8.3

Migrant flows
(annual data; thousands of people)



Source: Based on Istat data.
(1) Right-hand scale.

THE MISMATCH BETWEEN LABOUR DEMAND AND EDUCATIONAL LEVEL

Several observers[1] are of the opinion that productivity growth in Italy is held down not only by the low level of adult competencies, as highlighted in the survey Programme for the International Assessment of Adult Competencies (PIAAC),[2] but also by the mismatch with respect to the requirements of businesses. However, it is not easy to assess either the absolute size of the gap or how it has evolved, partly owing to the small size of the sample and partly because the available surveys of adult skills (such as literacy, numeracy or aptitude) cover too short a time span.

Instead, taking the highest educational level attained (upper secondary school diploma, university degree, etc.) as a proxy of the level of adult skills, a recent study[3] uses European Union statistics on income and living conditions (EU-SILC) to look at the mismatch in greater detail and over a longer time horizon. On average in the period 2005-2015, the level of education of 40.0 per cent of Italian workers differed significantly from the level required for their job (see panel (a) of the figure); this is higher than in France and Germany and above the EU average, but lower than in Spain.

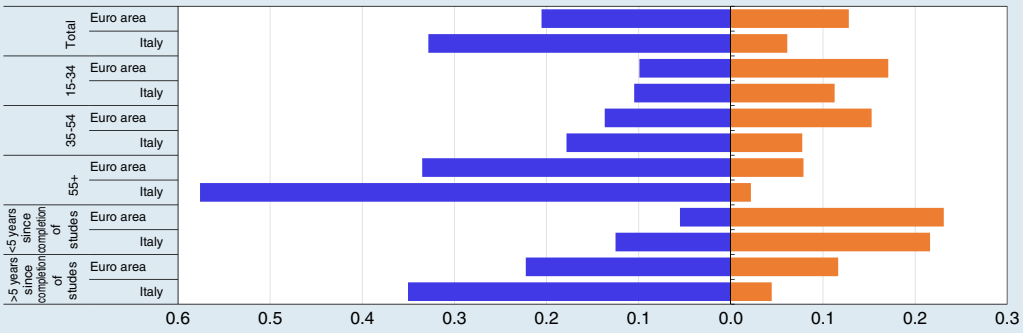
[1] OECD, 'Getting Skills Right: Italy, 2017'; S. Flisi, V. Goglio, E. Meroni, M. Rodrigues and E. Vera-Toscano, 'Occupational mismatch in Europe: understanding overeducation and overskilling for policy making', European Commission, 2017.

[2] The PIAAC survey conducted by the OECD in over 40 countries assesses the cognitive competencies (literacy, numeracy and complex problem solving ability) of adults aged from 16 to 65. The results show Italy in last place, among the 23 OECD countries taking part in the 2011 to 2012 survey, for literacy and second to last for numeracy.

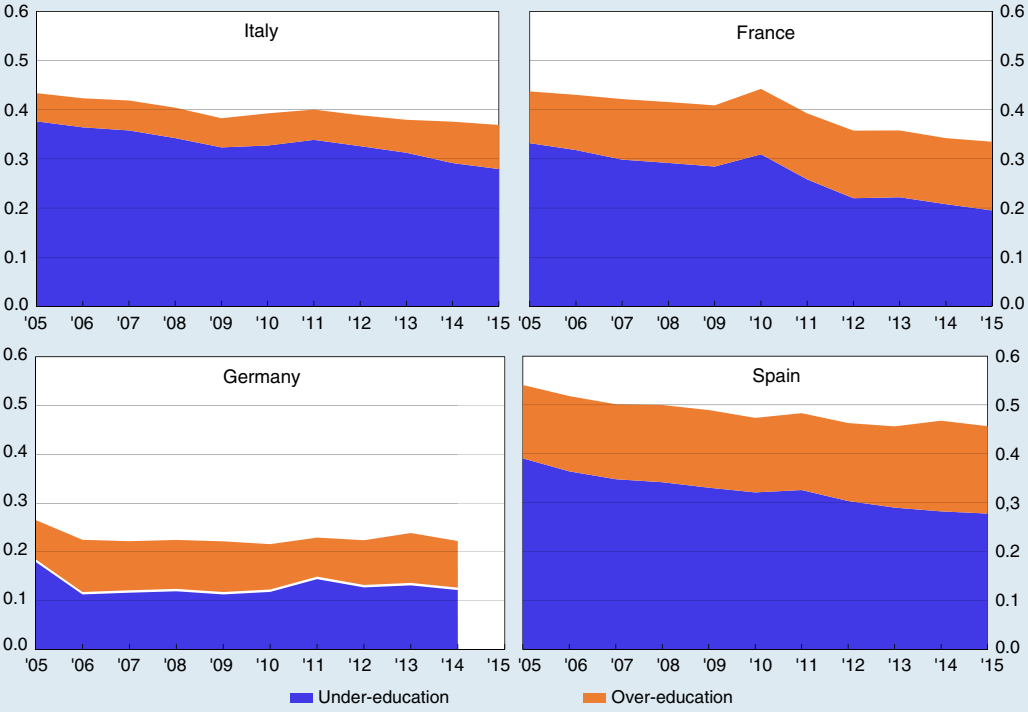
[3] R. Ballatore, F. Colonna, D. Depalo and S. Pereda-Fernández, 'Educational mismatch in Italy: an appraisal', Banca d'Italia, Questioni di Economia e Finanza (Occasional Papers), forthcoming.

Mismatching of competencies in Italy and the euro area, 2005-2015 (1)
(per cent)

(a) By age and by time since completion of studies



(b) Evolution over time



Sources: Based on data from EU-SILC and ESS.
(1) With the ESS, the level of education required is calculated for each professional category in the ISCO two-digit classification. The over-education and under-education indices give the percentage of workers whose educational attainment is higher or lower than that required.

In Italy, the mismatch is caused above all by under-education, a reflection of the large share of people, particularly in the older generations, who never

obtained an upper secondary school diploma.[4] This phenomenon has gradually diminished with the progressive rise in educational levels (see panel (b) of the figure).

The opposite situation, that of over-education, has less effect on the skills mismatch in Italy because the number of people with a very high level of education is extremely low. Although Italian graduates are relatively few in number, nearly half of them are in jobs that do not require a high educational qualification, more than the EU-wide average. This is due to grave problems with the market mechanisms for allocating qualified workers, and especially the low signalling value of academic marks and the complex transition from study to work.[5] In the first five years of work, the share of over-educated workers is close to 60 per cent. Over-education was constant until 2013, but it has increased slightly in recent years: while the educational level of the population has risen, the increase in employment has benefited less qualified jobs.[6]

The existence of a widespread mismatch between workers' educational levels and the skills demanded by the labour market tends to put pressure on the return on education, which is lower in Italy than in the other leading advanced countries. Compared with their peers whose educational attainment is in line with their job – and given the same other characteristics of workers and firms – over-educated Italian graduates earn about 15 per cent less and, conversely, under-educated diploma-holders earn 10 per cent more. The combined effect of these two phenomena accounts for about a quarter of the gap in the return on education between Italy and the euro-area average.

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[4] In 2014, some 41.1 per cent of Italy's working age population did not have an upper secondary school diploma (against a euro-area average of 26.2). The gap widens among the older sections of the population (50.6 against 30.3 among the over 55s) and narrows dramatically among younger people (18.4 against 16.8 for the 20 to 24 year olds).

[5] The importance of these processes has been assessed by estimating the extent of the mismatch in the extreme case of random job assignment of workers, i.e. regardless of their actual educational level. The difference between the mismatch observed and the mismatch in this extreme counter-factual scenario, which by definition depends solely on an overall balancing of jobs and workers by qualification, is used to measure allocative efficiency, which is fairly low in Italy.

[6] G. Basso, 'The evolution of occupational structure in Italy in the last decade', Banca d'Italia, Questioni di Economia e Finanza (Occasional Papers), forthcoming.

Collective bargaining and industrial relations

Actual earnings in the non-farm private sector stagnated in 2017 (see Chapter 9, 'Prices, costs and competitiveness'), while contractual earnings rose by 0.6 per cent (0.8 per cent in 2016). Several factors contributed to holding down wage dynamics: still low labour utilization, the non-renewal of about a quarter of payroll employees' contracts, and the introduction of wage indexation mechanisms based on past inflation in some of the agreements signed in 2015-16. In the metalworking sector in particular – which accounts for about a fifth of the total private sector wage bill – wages barely increased last year, reflecting the weak performance of the HICP, net of energy imports, in 2016.

Signs of a progressive strengthening of wage dynamics emerged over the year. In the chemical industry, where a specific clause recouping any deviations between projected and actual inflation was introduced in 2015, the reduction in the part of the pay rise attributable to such a deviation was offset, at least until June 2018, by an equivalent increase in an extraordinary component. In the retail and wholesale trade, which represents about a fifth of the private sector wage bill and where a part of the pay rise had been frozen in 2016, the increase due in August was in fact paid. Contracts signed in the closing months of the year (telecommunications, postal service, freighting and logistics) and at the beginning of 2018 (hotels and catering), which combined cover about 7 per cent of the wage bill, herald faster wage growth in 2018 as they incorporate larger pay rises, in line with the HICP forecasts published by Istat in 2017 and with the rise in firms' inflation expectations compared with a year earlier.

A new agreement was signed by unions and employers' associations on 9 March 2018, establishing a framework for bargaining at sector level. The social partners confirmed that the projected increase in the HICP, net of energy imports, would be the reference parameter for pay rises, and granted the separate sectors broad freedom to decide on the methods of recuperating deviations with respect to actual inflation, effectively ratifying the various practices adopted in recent years. Generally, such practices established a more automatic link between current nominal wage growth and past increases in actual prices (see the box 'Private sector contract renewals in 2016', *Economic Bulletin*, 1, 2017). The new agreement does not fix the duration of contracts, which many of the latest renewals have already extended beyond the three years of the 2009 agreement, de facto introducing another element of potential wage inertia. Firm level contracts can still only derogate from national contracts if they expressly envisage this possibility; matters of pay continue to be outside the bounds of firm level negotiation.

9. PRICES, COSTS AND COMPETITIVENESS

In 2017 consumer prices in Italy returned to growth, driven by the most volatile components. Core inflation, while recovering slowly, remained lower by historical standards, more than in the euro area, mostly on account of the still ample margins of idle capacity.

Wage dynamics were also sluggish, held back by a still moderate level of labour utilization and the introduction in some contracts between the end of 2015 and the start of 2016 of clauses that indexed wage increments to the weak inflation rate observed in the previous year. Signs of a recovery were seen in the second half of 2017 with the gradual improvement in the labour market and the uptick in inflation from the lows recorded in 2016.

Following an increase in producer prices that was lower than that of the main trade partners, the appreciation of the euro did not affect the overall price competitiveness of Italian firms, which remained substantially unchanged on average in 2017. The gain in comparison with the other euro-area countries offset the loss vis-à-vis foreign competitors.

Consumer prices

In 2017 inflation, as measured by the harmonized index of consumer prices (HICP), turned positive in Italy, rising to 1.3 per cent from -0.1 per cent in 2016 (Table 9.1), mainly as a result of the increases in unprocessed food and energy prices in the first half of

Table 9.1

Prices Indices

	Percentage changes on previous year		Percentage weights
	2016	2017	2017
Harmonized index of consumer prices (HICP)	**-0.1**	**1.3**	**100.0**
Unprocessed food	0.5	3.2	9.2
Processed food	0.4	0.6	11.7
Energy products	-5.5	4.5	9.0
Non-food and non-energy products	0.5	0.3	26.3
Services	0.6	1.1	43.8
Regulated goods and services	-1.4	2.1	10.1
Overall index excluding food, energy and tobacco	0.5	0.8	70.1
GDP deflator	**0.8**	**0.6**	**100.0**
Index of producer prices of industrial goods sold on the domestic market	**-2.2**	**2.6**	**100.0**

Source: Based on Istat data.

the year. Although core inflation net of food and energy products increased slightly (0.8 per cent), it remained low, hampered by weak wage dynamics and still ample margins of idle capacity. Since the third quarter of 2014, Italy's core inflation has almost always stood below that of the euro area on account of both the different cyclical conditions and transient effects (see the box 'Labour market conditions and weak core inflation'). The slight decrease in unit labour costs (ULC) helped to contain domestic inflation; the growth in the GDP deflator declined slightly to 0.6 per cent.

LABOUR MARKET CONDITIONS AND WEAK CORE INFLATION

In Italy, as in the rest of the Eurozone, consumer price inflation was held down in 2017 chiefly by the slow growth in its core components, as measured by the harmonized index of consumer prices excluding food and energy products (0.8 per cent over the year in Italy and 1.0 per cent in the Eurozone, both broadly in line with the average levels of the last five years). Aside from factors with a temporary impact,[1] the weakness of core inflation was also due to slack wage growth. The slow speed at which earnings and prices have been reacting to the economic cycle has been the subject of scientific and policy debate for several years.[2] One explanation could be that the standard indicators of resource underutilization are proving insufficiently representative in the present cyclical situation. Broader measures that incorporate spare capacity are instead more closely and stably linked to wage and price dynamics. For example, it has been documented that the link between wages and unemployment in the Eurozone and its main member countries does not remain constant throughout the business cycle; in a situation like the present one, in which the number of hours worked is still fairly low, a fall in unemployment has a limited impact on wage growth (see the box 'Wage growth in the euro area during the double-dip recession' in Chapter 2).[3]

A recent study of the role that labour market conditions have played in core inflation in Italy between the first quarter of 1999 and the same period of 2017 follows similar lines.[4] Synthetic indicators of the labour market are developed using a large number of quantitative and qualitative variables (employment and unemployment rate divided by age and gender; participation rate; number of hours worked and hourly earnings in different sectors; hours authorized by wage supplementation; development of the population; expectations of households and firms regarding unemployment and labour shortage), assuming that the performance of these variables is driven by a small number of unobservable, common factors. The study then assesses to what extent the synthetic indicators can be used to more accurately estimate core inflation in Italy; from 2012 to 2017 it was in fact systematically and significantly over-predicted

[1] The main factors with a temporary impact were the negative base effect observed in 2016 in accommodation services (associated with the closure of Expo 2015 in Milan) and the sharp drop in October 2017 in the prices of university education following the introduction of new rules on student contributions, the effects of which on inflation will begin to disappear in October 2018.

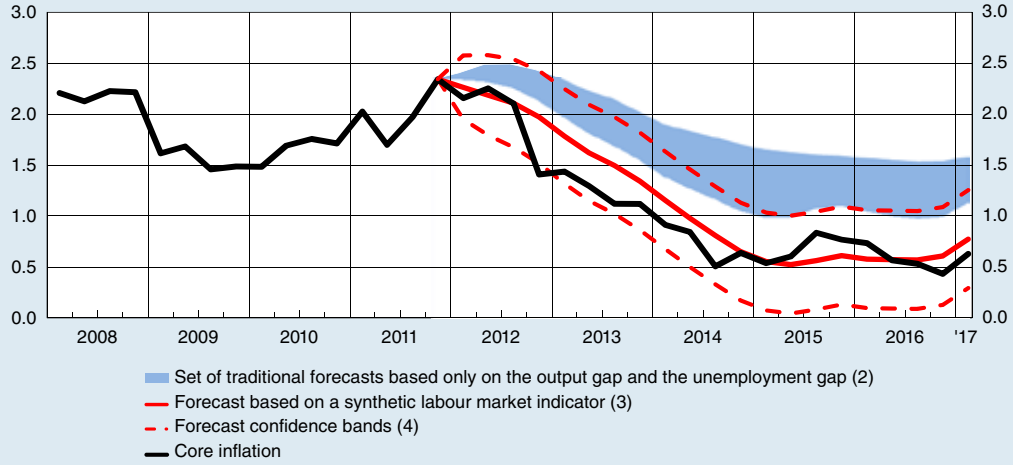
[2] See also M. Ciccarelli and C. Osbat (eds.), 'Low inflation in the euro area: causes and consequences', European Central Bank, Occasional Paper Series, 181, 2017.

[3] See also G. Bulligan, E. Guglielminetti and E. Viviano, 'Wage growth in the euro area: where do we stand?', Banca d'Italia, Questioni di Economia e Finanza (Occasional Papers), 413, 2017.

[4] A.M. Conti and C. Gigante, 'Weakness in Italy core inflation and the Phillips curve: the role of labour and financial indicators', Banca d'Italia, Questioni di Economia e Finanza (Occasional Papers), forthcoming.

Conditional forecasts of core inflation in Italy (1)

(year-on-year percentage changes; seasonally adjusted quarterly data)



Sources: Based on data from Istat, INPS, Eurostat, Consensus Economics, ECB and IMF.
(1) Core inflation forecasts conditional on the actual performance of different measures of excess capacity, unutilized labour market resources and inflation expectations. – (2) The output gap is the difference in GDP with respect to its potential level and the unemployment gap is the difference in the unemployment rate with respect to its natural level. – (3) Forecasts of core inflation conditional on the actual performance of a measure of idle capacity based on a synthetic indicator of the labour market and of inflation expectations. – (4) 90 per cent confidence level of the forecast based on a synthetic labour market indicator.

when based on the measures of spare capacity traditionally used in such exercises (such as the output gap and the unemployment gap).[5] The results indicate that projections based on synthetic labour market indicators developed using parameters estimated from the sample for 1999-2011, just before the sharp drop in core inflation, instead would have offered a satisfactory prediction of performance in the period 2012-17 (see the figure).

The study therefore confirms that, in Italy too, the link between capacity underutilization and core inflation is most accurately captured by monitoring a large number of variables relating to labour market conditions. A generalized improvement in the latter is therefore essential in order to achieve a long-term increase in core inflation.

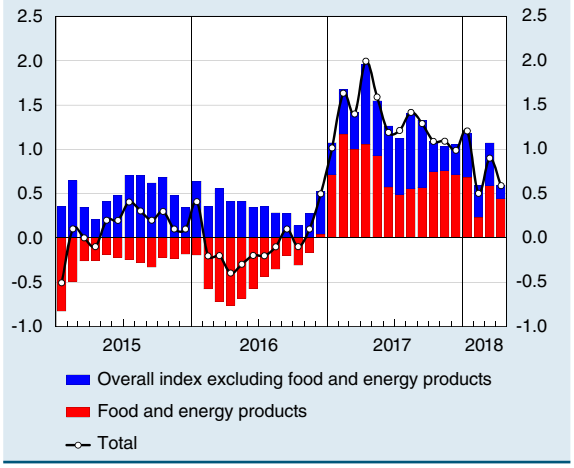
[5] In detail, a Phillips curve is estimated for the period 1999-2011, i.e. a relation linking core inflation to its own past values, to a measure of short-term inflation expectations and to an indicator of capacity underutilization in the economy. The model is then dynamically simulated assuming the future trend in the exogenous variables to be known: the forecasts of core inflation thus obtained make it possible to assess whether the historical regularities valid until 2011 could have correctly anticipated core inflation in the following years.

After rising at the beginning of 2017, twelve-month inflation again declined in the summer. It continued to fall in the last part of the year and in the early months of 2018, as a result of the reduction in tuition fees in October as provided for in the 2017 Budget Law as well as of a statistical base effect caused by comparison with the very high prices of unprocessed food products recorded in 2016 (Figure 9.1). In April inflation dropped to 0.6 per cent, reflecting the fall in core inflation (to 0.2 per cent), partly due to calendar effects associated with the distribution of public holidays.

Inflation expectations showed uncertain signs of recovery. For 2018, the expectations of analysts surveyed by Consensus Economics were on the uptick until the middle of 2017 only to then fall to just over 1 per cent. The expectations of firms over longer horizons rose to almost 2 per cent in mid-2017, then declined over the following months, reflecting the trend in real inflation. The firms interviewed in March for the quarterly survey conducted by the Bank of Italy together with *Il Sole 24 Ore* expected prices to rise by 1.6 per cent between three and five years ahead (see 'Survey on Inflation and Growth Expectations', Banca d'Italia, Statistics Series, 9 April 2018). These expectations were affected by the still modest salary increments contained in collective bargaining agreements (see box 'The inflation expectations of Italian firms and the labour market').

Figure 9.1

Inflation in Italy and contributions of the main components (1)
(monthly data; 12-month percentage changes and percentage points)



Source: Based on Eurostat data.
(1) HICP.

THE INFLATION EXPECTATIONS OF ITALIAN FIRMS AND THE LABOUR MARKET

Inflation expectations are a fundamental determinant of the economic decisions taken by households and firms. Reliable measures of inflation expectations are notoriously difficult to obtain: the most widely used ones are derived from the prices of financial assets or from surveys of professional forecasters and households. At international level, business surveys are less common, especially those of a quantitative nature, notwithstanding the fact that firms' expectations play a direct role in setting the prices of goods and services.[1]

A recent study[2] examines the determinants of inflation expectations of Italian firms. The study uses individual data for the period 2009-17 contained in the quarterly survey on inflation and growth expectations carried out by the Bank of Italy and *Il Sole 24 Ore* on approximately one thousand industrial and service firms.[3]

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[1] For Italy, there is evidence that expectations of changes in firms' selling prices are closely related to firms' expectations of the trend in general price levels; see T. Ropele, 'Inflation expectations and price setting behavior: evidence from business survey data', Banca d'Italia, Questioni di Economia e Finanza (Occasional Papers), forthcoming.

[2] C. Conflitti and R. Zizza, 'What's behind firms' inflation forecasts', Banca d'Italia, Questioni di Economia e Finanza (Occasional Papers), forthcoming.

[3] For an analysis of the long-term dynamics of inflation expectations and of the determinants of their dispersion among firms see L. Bartiloro, M. Bottone and A. Rosolia, 'What does the heterogeneity of the inflation expectations of Italian firms tell us?', Banca d'Italia, Questioni di Economia e Finanza (Occasional Papers), 414, 2017, and the box 'Inflation expectations of Italian firms according to the Bank of Italy-*Il Sole 24 Ore* Survey' in Chapter 9, *Annual Report for 2016*, 2017. For the methodology and the most recent results of the survey see 'Survey on Inflation and Growth Expectations', Banca d'Italia, Statistics Series, 9 April 2018.

The inflation expectations, reported in quantitative terms, refer to the short- and long-term trends in the harmonized index of consumer prices (HICP).

The literature has identified various factors that may contribute to the formation of firms' inflation expectations, such as information obtained from media outlets, the projections of professional forecasters, supplier price dynamics, the outcome of wage negotiations, and managers' personal experience as consumers.[4]

The study focuses on the role of wage increases negotiated at the sectoral level as part of collective bargaining agreements, the main source of wage increases for payroll employees in Italy. These increases, which are defined by sector at national level and take as a reference aggregate inflation projections, are unlikely to be influenced by the expectations of individual firms (see Chapter 9, 'The labour market', *Annual Report for 2008*, 2009), which makes it possible to obtain indications on an important channel through which wage dynamics influence prices.

The survey data are combined with data from other sources to derive measures of the factors that may play a role in forming expectations: managers' assessments of the importance of raw materials costs in setting their selling prices, which are included in the survey and which are assumed to be closely related to the prices charged by suppliers; personal shopping experience, proxied by the trend in fuel prices; news from media outlets, measured with the latest official data on consumer inflation available at the time of the interview; and the most recent projections of professional forecasters, drawn from the Consensus Economics survey. Wage increases are drawn from Istat's hourly negotiated wage index. The analysis takes into account both individual firm characteristics and developments in selected macroeconomic variables.

The estimates demonstrate that wage increases in collective bargaining agreements have a positive and statistically significant effect on inflation expectations across all time horizons. Even the cost of raw materials has a positive impact on expectations, as do the dynamics of fuel prices, possibly because the latter are linked to frequently-purchased products and as such influence interviewees' perception of inflation. The results are confirmed even when the estimates take account of the variables relating to the release of official inflation data and to the expectations of professional forecasters. Exploiting more detailed information on the different types of wage increase granted in the main private-sector collective bargaining agreements,[5] the analysis suggests that short-term expectations respond to the lump sum payments that are often made after delayed contract renewals, while long-term expectations are only affected by permanent increases.

These findings confirm the importance of wage dynamics and labour market conditions in shaping inflation expectations and, hence, consumer prices. Since aggregate inflation expectations are in turn used as a reference in wage negotiations, these interactions may generate a virtuous or a vicious circle, one that can only be kept under control with credible and vigilant monetary policy.

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[4] S. Kumar, H. Afrouzi, O. Coibion and Y. Gorodnichenko, 'Inflation targeting does not anchor inflation expectations. Evidence from firms in New Zealand', NBER Working Paper, 21814, 2015.

[5] E. Adamopoulou and R. Zizza, 'Regular versus lump-sum payments in union contracts and household consumption', European Central Bank, Working Paper Series, 2013, 2017.

Producer and import prices

After falling in 2016, producer prices of industrial goods sold in the domestic market returned to growth (2.6 per cent) in 2017, especially those of energy goods (4.0 per cent) and intermediate goods (2.8 per cent). Producer prices of non-food consumer goods, which provide forward guidance on the corresponding component of the CPI, increased only marginally (0.1 per cent).

Despite the appreciation of the euro, price pressures from abroad turned positive again: the import deflator, which declined in 2016, rose by 3.1 per cent in 2017. Upward pressure on business costs was triggered by producer prices both of energy goods and of other imported intermediate inputs, which increased by an average of 18.6 and 3.6 per cent respectively in 2017; the prices of these goods had fallen in previous years.

Labour costs

In 2017, hourly earnings remained virtually stable: they stagnated in the private sector and increased slightly in the public sector, where the wage freeze under way since 2010 was lifted for military and law enforcement employees (see Chapter 11, 'The public finances').

After long delays, partly on account of firms' request to recover part of the increments in real wages caused by the unexpected drop in inflation over the last three years (see Chapter 8, 'The labour market', *Annual Report for 2016*, 2017), many contracts were renewed between the end of 2016 and the beginning of 2017. The negotiated wage increases were modest and were generally explicitly anchored to the low inflation rate recorded the previous year. In the second part of 2017, the gradual improvement in cyclical conditions prompted a slight recovery in negotiated wages and the signing of contract renewals which contain higher wage increases that are consistent with the inflation expectations of the HICP. These signs of recovery are expected to strengthen in 2018.

In 2017, the permanent employment contracts entered into in 2015 and 2016 continued to benefit from the generous social security contribution relief; however, the gradual reduction in their share of total jobs (see Chapter 8, 'The labour market') mitigated the effects of this relief on labour costs, which increased by a tenth in 2017, both in manufacturing and in private services, despite the stability of wages.

The exceptionally moderate growth in labour costs and the favourable trend in productivity reduced unit labour costs, which declined by 0.2 per cent in industry (see Chapter 6, 'Firms'). Even in private services, after the substantial stability of the previous ten years, productivity increased significantly (0.7 per cent), resulting in a corresponding decrease in unit labour costs.

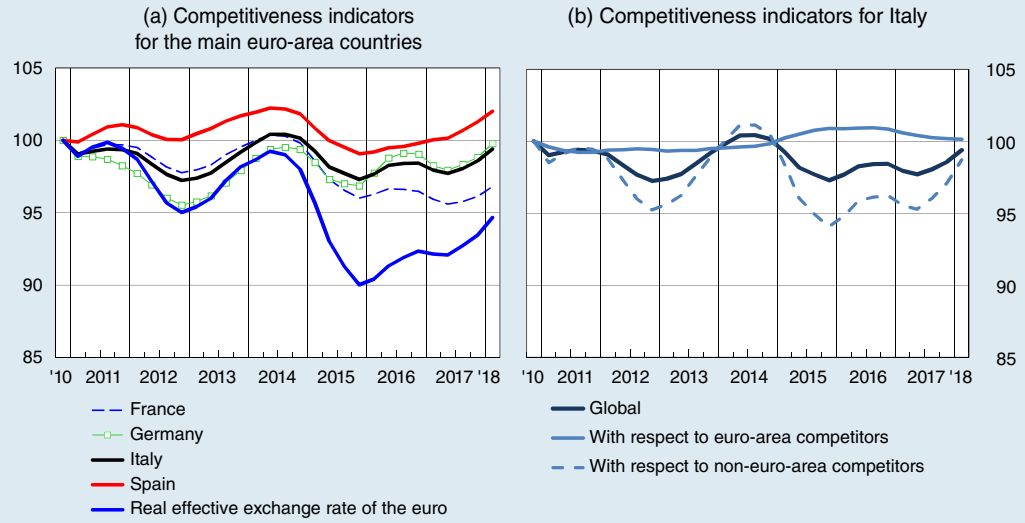
Price competitiveness

The growth in producer prices was significantly lower than that of Italy's trade partners as a whole. The considerable appreciation of the nominal effective exchange

rate during the year did not therefore affect the overall competitiveness of Italian firms, which remained virtually unchanged on average compared with 2016 according to the indicator of producer prices of manufactures. However, there was a by no means small loss compared with countries outside the euro area (Figure 9.2). Even the ECB's overall indicators, which are based on price and cost indices for the whole economy, showed slight variations compared with the previous year.

Figure 9.2

Price competitiveness indicators for the main euro-area countries and real effective exchange rate of the euro (1)
(indices: Q4 2010=100; 4-quarter moving average)



Sources: Bank of Italy and, for the real effective exchange rate of the euro, ECB.
(1) Based on producer prices of manufactures. The global competitiveness indicators are calculated for each economy with respect to 60 competitor countries (including the members of the euro area); the figure for the last quarter is partly estimated. The indicator for Italy in relation to its euro-area competitors is calculated with respect to 18 euro-area competitors; the indicator relating to the non-euro-area competitors is calculated with respect to the remaining 42 competitors. The real effective exchange rate of the euro is calculated by the ECB with respect to 19 competitor countries outside the euro area. An increase indicates a loss of competitiveness.

Based on an average of five different indicators of cost and price competitiveness, it is estimated that the appreciation of the euro under way since spring 2017 contributed to the slight overvaluation of the real effective exchange rate (about 2 percentage points on average in the year) relative to the level consistent with the euro area's macro-economic conditions; for Italy the misalignment of the average competitiveness indicator was slightly lower.[1]

The further nominal appreciation of the euro in the first few months of 2018 caused a slight worsening of price competitiveness in Italy and in the other main euro-area countries.

[1] For the estimation methodology, see M. Fidora, C Giordano and M. Schmitz, 'Real exchange rate misalignments in the euro area', Banca d'Italia, Temi di Discussione (Working Papers), 1162, 2018.

10. FOREIGN DEMAND AND THE BALANCE OF PAYMENTS

The current account surplus widened further in 2017. Exports accelerated, buoyed by the growth in demand in response to the favourable international economic situation. In the service sector, tourism revenues continued to increase, as they had for the previous eight years. Italy's income balance moved back into surplus.

Non-residents resumed investing in Italian securities and Italian investors continued to buy foreign portfolio securities, mostly investment fund units, for an even larger amount than in the previous three years. The Bank of Italy's negative balance in the TARGET2 payment system, which had increased steadily with the injections of liquidity since the launch of the expanded asset purchase programme (APP), was unchanged in the second half of 2017.

Thanks to its accumulated current account surpluses, Italy's net foreign debtor position diminished significantly, falling from the peak of 24.6 per cent of GDP recorded in March 2014 to 6.7 per cent at the end of 2017, close to the value recorded almost two decades earlier. According to the International Monetary Fund's projections for the current account balance, Italy's net foreign debtor position could reach zero in about 2020, while the other leading Eurozone countries would continue to record substantial imbalances.

Exports and imports

Exports. – Exports of goods and services increased by 5.4 per cent in volume in 2017, more than double the result for 2016. The acceleration was driven by the growth in world trade.

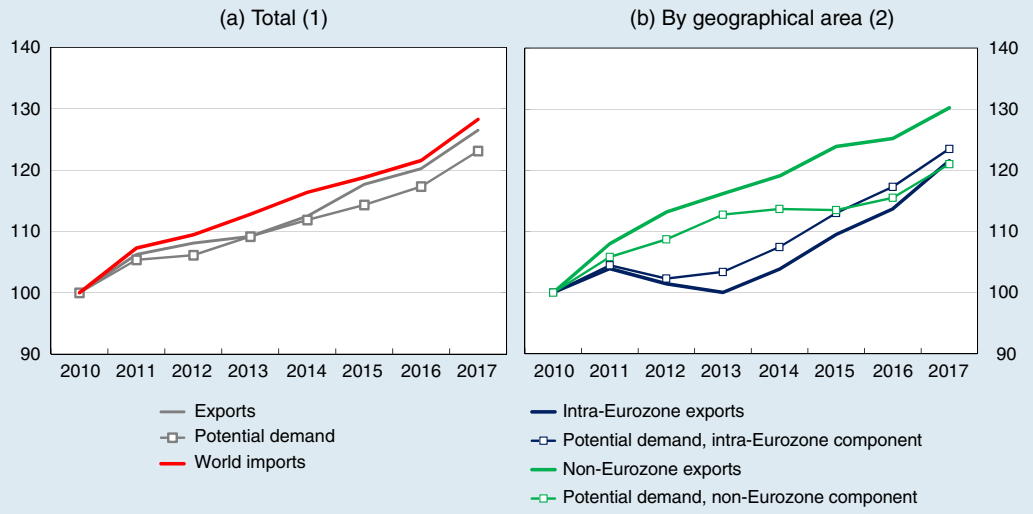
Goods exports (up by 5.2 per cent) grew slightly more than potential demand from Italy's outlet markets (Figure 10.1). As in the previous three years, sales to Eurozone countries were the most dynamic. Sales outside the area, which had stagnated in 2016, also saw a sharp recovery.

The appreciation of the euro during the year was offset by a smaller increase in producer prices than that recorded by Italy's trade partners as a whole. As a result, the price competitiveness of Italian exports was virtually unchanged on average for the year (see Chapter 9, 'Prices, costs and competitiveness').

Italy's share of global goods imports (3.1 per cent at 2005 prices and exchange rates; 2.9 per cent in value) has held virtually stable since 2010, when the long period of decline came to a halt (see Chapter 15, 'Italy's goods exports in the last twenty years: trends and determinants').

Figure 10.1

Goods export volumes, potential foreign demand and world goods imports
(annual averages; indices: 2010=100)



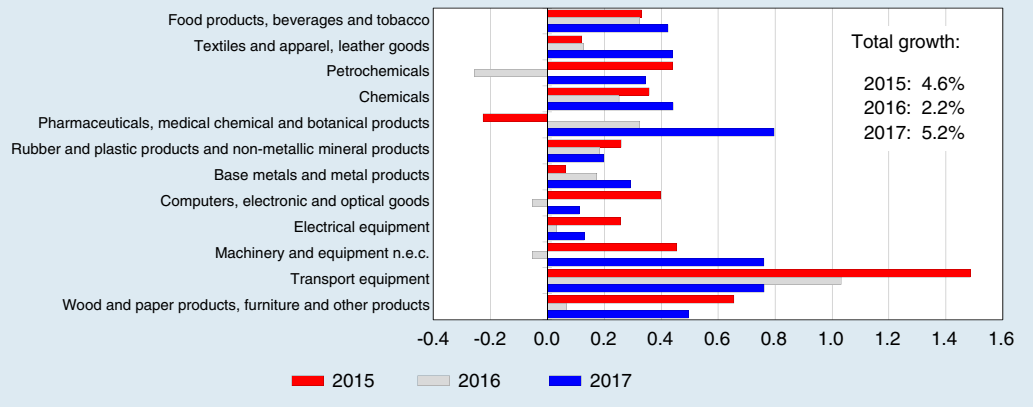
Sources: Based on IMF and Istat data.
(1) Goods exports, national accounts. Potential demand is calculated as the weighted average of the imports by volume of Italy's trading partners, weighted by their shares of Italian exports by value. – (2) The breakdown of goods exports into intra-Eurozone and non-Eurozone is estimated, beginning with the aggregate national accounts figure, on the basis of foreign trade data and the prices of industrial products sold abroad.

Goods exports rose in all the main sectors in 2017 (Figure 10.2) and above all in pharmaceuticals and transport equipment (motor vehicles in particular). Sales picked up in the mechanical engineering industry after stagnating in 2016.

The growth in goods exports was fostered by the strong performance of world trade, with the largest rise occurring in sales to EU countries (6.3 per cent in volume, compared with 3.5 in 2016), notably Germany and Spain. Sales to non-EU countries also picked up sharply (3.9 per cent; the increase was just 0.6 per cent in 2016), driven by exports to East Asia, the United States and Russia. Instead, exports to the OPEC countries continued to diminish.

Figure 10.2

Sectoral contributions to the growth of goods exports in volumes
(percentage points)



Source: Based on Istat data.

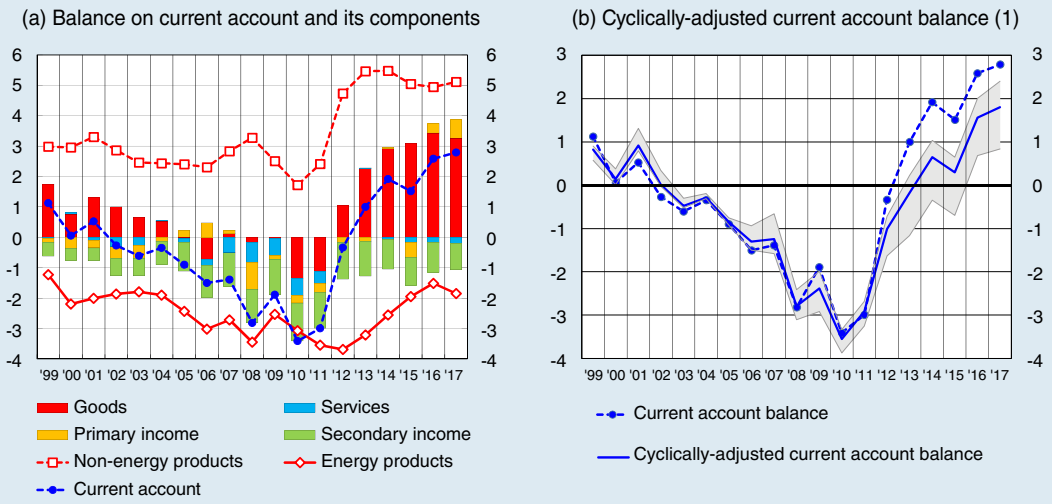
Imports. – The growth in imports of goods and services strengthened in 2017 compared with the previous year (5.3 per cent in volume, compared with 3.5 in 2016). The particularly lively performances of investment in plant and machinery (see Chapter 6, 'Firms') and of exports, the main demand components underpinning imports of intermediate goods, helped to drive the upturn in goods imports, mainly provisioning of energy commodities and purchases of metal products and electrical machinery. Imports of transport equipment slowed overall after three years of strong growth had brought their level back to that observed before the global financial crisis. Imports of motor vehicles again rose at a rapid pace, though without completely regaining their pre-crisis level.

The current account and the capital account

The current account surplus continued to widen in 2017, reaching 2.8 per cent of GDP (€47.8 billion; Figure 10.3.a and Table 10.1). The balance remains in surplus even when adjusted for the effects of the business cycle: according to our estimates, based on a model that takes account of the size of the output gap in Italy and its partners and of the elasticity of exports and imports to the various demand components, the cyclically adjusted surplus was around 1.8 per cent of GDP[1] (Figure 10.3.b).

Figure 10.3

Current account balance
(per cent of GDP)



Sources: For GDP, Istat; for panel (a), the breakdown between energy and non-energy products is based on Istat foreign trade data; for panel (b), based on data from the Bank of Italy, European Commission, Istat, IMF and OECD.
(1) For the methodology, see S. Fabiani, S. Federico and A. Felettigh, op. cit., 2016. The grey area indicates the range of values obtained with alternative estimation models.

[1] For the methodology used to estimate the cyclically adjusted current account balance, see S. Fabiani, S. Federico and A. Felettigh, 'Adjusting the external adjustment: cyclical factors and the Italian current account', Banca d'Italia, Questioni di Economia e Finanza (Occasional Papers), 346, 2016; for the methodology used for the output gap, see A. Bassanetti, M. Caivano and A. Locarno, 'Modelling Italian potential output and the output gap', Banca d'Italia, Temi di Discussione (Working Papers), 771, 2010.

Table 10.1

Balance of payments
(balances in billions of euros except as indicated)

	2013	2014	2015	2016	2017
Current account	**16.0**	**31.1**	**25.0**	**43.5**	**47.8**
per cent of GDP	1.0	1.9	1.5	2.6	2.8
Goods	36.1	47.4	51.1	57.7	56.0
Non-energy products (1)	87.6	88.9	83.3	83.1	87.8
Energy products (1)	-51.5	-41.4	-32.2	-25.5	-31.8
Services	0.4	-1.0	-2.6	-2.7	-3.7
of which: transport	-7.9	-8.3	-8.4	-8.0	-9.3
travel	12.8	12.5	13.5	13.8	14.6
Primary income	-2.4	0.6	-8.2	5.2	10.3
Secondary income	-18.1	-15.9	-15.3	-16.7	-14.7
Capital account	**-0.7**	**2.7**	**3.9**	**-3.1**	**-0.9**
Financial account (2)	**21.9**	**51.5**	**35.2**	**65.4**	**47.2**
Direct investment	0.6	2.3	2.4	-4.1	-11.2
Outward	15.3	15.3	14.4	13.7	6.5
Inward	14.6	12.9	12.0	17.8	17.8
Portfolio investment	-4.1	4.1	97.5	159.5	98.4
Assets: equity and investment funds (3)	57.3	78.5	84.3	53.6	97.4
Assets: debt securities (3)	-26.2	23.3	36.5	30.7	29.7
Liabilities: equity and investment funds (3)	13.0	19.3	11.6	-2.9	15.5
Liabilities: debt securities (3)	22.2	78.4	11.8	-72.3	13.1
Financial derivatives	3.0	-3.6	2.3	-3.0	-5.7
Other investment	20.7	49.6	-67.6	-85.9	-36.9
Change in official reserves	1.5	-1.0	0.5	-1.2	2.7
Errors and omissions	**6.6**	**17.7**	**6.3**	**25.0**	**0.2**

Source: For GDP, Istat.
(1) Based on Istat foreign trade data. – (2) The sign convention traditionally used for the financial account was abandoned with the adoption of the Balance of Payments and International Investment Position Manual, 6 ed., 2009 (BPM6): as is the practice for liabilities, positive values for external assets now indicate an increase and negative values a reduction. – (3) Assets: a positive balance indicates net acquisitions by residents of securities issued by non-residents, a negative balance indicates net sales. Liabilities: a positive balance indicates net acquisitions by non-residents of securities issued by residents, a negative balance indicates net sales.

The growth in the current account surplus in 2017 was partly due to the larger primary income surplus; on the other hand, the trade surplus diminished slightly (€56.0 billion, down from €57.7 billion in 2016) owing to the higher energy bill.

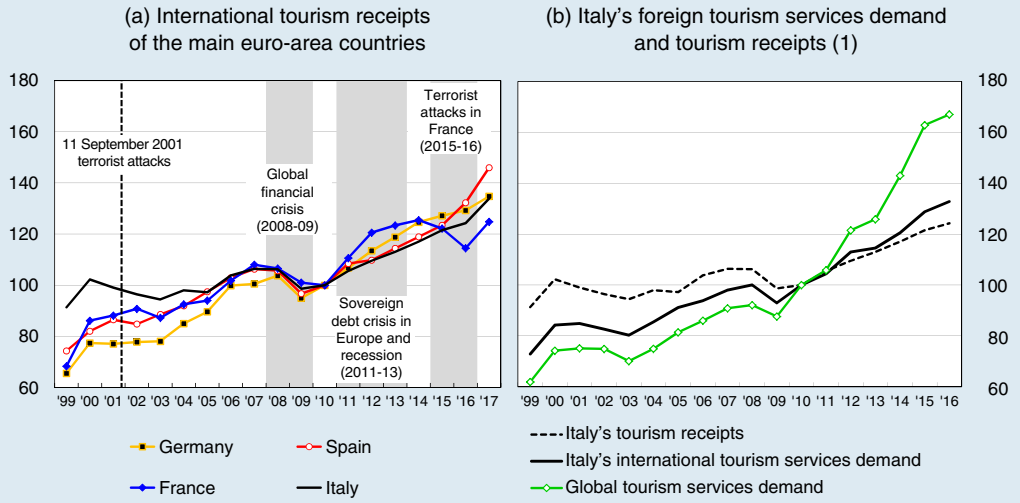
The deficit on services worsened slightly, mainly owing to the increase in the deficit on transport services caused by a further drop in the share of resident carriers in passenger air transport, as well as to the higher deficit on IT, information and telecommunication services. The tourism surplus continued to improve (€14.6 billion, up from €13.8 billion) thanks to the sharp increase in spending by foreign holidaymakers in Italy. The good performance of tourism revenues confirmed a trend under way since 2010 after ten years of stagnation (see the box 'Spending by foreign tourists in Italy'). Moreover, the persistent deficit on charges for the use of intellectual property was almost wiped out by the rise in income, mostly among a few large groups in the fashion and luxury goods sector.

SPENDING BY FOREIGN TOURISTS IN ITALY

Italy's tourism services exports, i.e. spending by foreign tourists in Italy, were about one third higher in 2017 than in 2010 (see panel (a) of Figure A). After a decade of stagnation that ended with the 2008-09 financial crisis, growth resumed at a faster pace than in France and at about the same rate as in Germany, where the supply of tourism services, mainly involving business travel, benefited from flourishing economic and commercial exchanges with Asia and Central and Eastern Europe. However, growth was slower than in Spain, which gained more than Italy from the geopolitical instability affecting many Southern Mediterranean countries and the Middle East, especially in the seaside tourism sector.

Figure A

Italy's international tourism
(current prices; indices: 2010=100)



Sources: Based on data from Bank of Italy, Eurostat, Banque de France and World Trade Organization.
(1) Italy's foreign tourism services demand is based on the average of annual changes in total imports (in euros) of tourism services of the first 44 partner countries weighted by the share of Italian exports of tourism services to those countries.

Since 2010 Italy's tourism exports have risen at virtually the same rate as demand from the traditional source markets (see panel (b) of Figure A),[1] confirming that the country continues to attract travellers from these areas. The trend follows different patterns in the main areas of the country, with stronger growth in the South and Islands and the North-West and slower growth in the Centre and the North East. Although tourism receipts have increased more than demand, in the South of Italy the sector is still underdeveloped and accounts for a smaller percentage of total tourism receipts than the area's share of GDP.

[1] Italy's foreign demand for tourism services is the potential amount of tourism receipts from abroad assuming, for each country of origin, that the growth in tourism expenditure in Italy is the same as the country's total expenditure on foreign travel; see E. Breda, R. Cappariello and V. Romano, 'Il turismo internazionale dell'Italia: recenti tendenze, domanda potenziale e confronto con i principali concorrenti europei', Banca d'Italia, Questioni di Economia e Finanza (Occasional Papers), forthcoming.

The increase in tourism services exports in the last ten years is almost entirely due to holiday travel. Italy continues to be one of the world's leading destinations for holidaymakers; it is third in Europe by number of international arrivals after Spain and France and fourth in the world immediately behind the United States. Receipts from other travel for personal reasons have risen only slightly and receipts from business travel have declined.

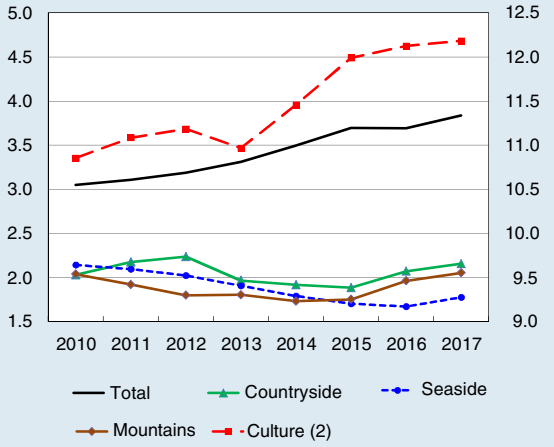
A model of specialized tourism based around the country's artistic and cultural heritage is gaining ground.[2] Overnight stays on culture trips or in cities of art continued to increase in 2017 and accounted for just over half of nights spent in Italy by foreign holidaymakers and 60 per cent of their spending.

These tourism flows are structurally concentrated in a number of specific destinations, often entailing a risk of congestion (Figure B), but new destinations have emerged recently, particularly in the North-West and the South. While still representing only a small percentage, tourist visits to less urbanized areas – those with a UNESCO site or picturesque village (Touring Club Italiano orange flag) – have increased at a faster than average rate.

Figure B

Concentration index of overnight stays of foreign tourists in Italian municipalities (1)

(per cent)



(1) Herfindhal concentration index of overnight stays of foreign tourists in Italian municipalities based on the type of holiday. Three-year moving average. – (2) Right-hand scale.

Culture holidays are the most popular trip among non-European tourists (who are still in the minority) and younger age groups. Both categories vacation mainly in cities of art, particularly when visiting Italy for the first time. The growth in secondary destinations is due above all to an increase in European tourists returning to vacation in Italy.

[2] A. Filippone, M. Gallo, P. Passiglia and V. Romano, 'Gli stranieri in vacanza in Italia: prodotti turistici, destinazioni e caratteristiche dei viaggiatori', Banca d'Italia, Questioni di Economia e Finanza (Occasional Papers), forthcoming

The positive balance on primary income (€10.3 billion) almost doubled with respect to 2016 as a result of the increase in investment income, particularly the portfolio investment component, which had always shown a deficit in the past but has since moved close to balance. The large change in this item (about €18 billion in the last three years) was due, in equal amount, to lower interest expense on Italian debt securities held by foreign investors and to increased income from residents' holdings of foreign shares and investment fund units, which have grown significantly in recent years (see the section, 'The financial account').

The deficit on secondary income (€14.7 billion) was about €2 billion lower than in 2016 owing to the decrease in net public transfers to EU institutions, which still represent the largest component of the overall deficit. Immigrant workers' remittances were unchanged.

The current account balance has undergone a very significant adjustment in recent years: more than 6 percentage points of GDP with respect to the peak deficit recorded in 2010, and 5.4 points net of the effects of Italy's cyclical position compared with that of its trade partners. Up to 2015 the improvement was almost entirely due to the goods component, thanks to the strong performance of exports and the drop in energy commodities prices. Instead, in the following two years it was mainly due to the balance on investment income, which benefited from the reduction in the net foreign debtor position and the change in the composition by instrument of financial holdings, leading to a more favourable spread between yields on assets and liabilities.

The financial account

Residents increased their investment in foreign portfolio securities in 2017 (€127.1 billion, compared with €84.4 billion in 2016). More specifically, purchases of investment fund units rose (€91.5 billion), especially among households: these assets, which had already been increasing rapidly as a component of Italian investors' portfolios in previous years (see the box 'Investments in foreign mutual fund shares and the asset composition of residents' portfolios'), are increasingly becoming one of the main alternative forms of saving to public sector securities and bank bonds. Just under a quarter of portfolio investments were in debt securities, consisting for the most part, as in 2016, in public and private sector bonds issued outside the Eurozone as part of investors' search for higher yields. Although purchases of equity securities picked up, they were still modest.

INVESTMENTS IN FOREIGN MUTUAL FUND SHARES AND THE ASSET COMPOSITION OF RESIDENTS' PORTFOLIOS

Over the past five years, Italian investors (mainly households, insurance companies and non-bank financial intermediaries) have purchased large amounts of foreign investment fund shares (about €70 billion on average per year), altering the composition of their portfolios in favour of assets other than Italian government securities and bank bonds (see the box 'Italy's portfolio investment abroad', in *Economic Bulletin*, 1, 2017). At the end of 2017 the amount invested in foreign investment funds totalled €776 billion, or 29 per cent of Italy's foreign assets, a markedly higher share than that of the other EU countries. Though the proportion is declining, half of foreign investment fund shares are still distributed by Italian banking or financial groups.

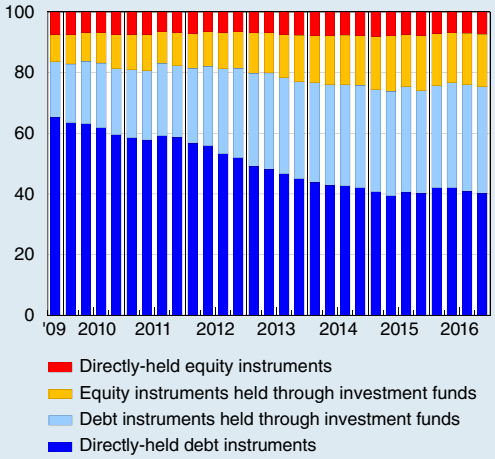
The weight of foreign investment funds may reduce the information content of the balance of payments statistics with regard to the composition of resident portfolios, both by instrument (insofar as the final allocation between equity and debt instruments depends on the individual funds' investment strategies) and by issuer

country (nearly 90 per cent of funds are domiciled in Luxembourg or Ireland for fiscal and legal purposes, but their assets are actually invested in other countries).[1] To avoid this problem, the composition of residents' portfolio of foreign funds has been estimated based on data from Assogestioni, the IMF and national central banks.[2]

These estimates indicate that, at the end of 2016, almost two thirds of the assets of foreign investment funds was invested in debt instruments, with the remainder almost entirely in equity instruments. Taking account of the assets held through foreign investment funds, the share of debt instruments in Italy's total foreign portfolio assets was 75 per cent (compared with 40 per cent when taking into account directly-held instruments only). Since the end of 2009, this share has fallen by almost 10 percentage points in favour of equity instruments, especially those held through foreign investment funds (see panel (a) of the figure).

Residents' foreign portfolio assets
(percentage points)

(a) By instrument



(b) By issuer country (1)

data unadjusted for positions intermediated by foreign investment funds		data adjusted for positions intermediated by foreign investment funds	
Luxembourg	40.5	United States	20.7
France	11.6	France	12.2
Ireland	8.2	Germany	9.2
United States	7.8	United Kingdom	8.3
Germany	5.9	Spain	7.3
Spain	5.9	Netherlands	6.7
United Kingdom	5.0	Luxembourg	3.8
Netherlands	4.0	Italy (3)	2.9
Int'l org. (2)	2.6	Int'l org. (2)	2.8
Belgium	0.8	Ireland	2.0
Other countries	7.8	Other countries	24.0
Total	**100.0**	**Total**	**100.0**

Sources: Based on data from Assogestioni, Bank of Italy, Banque Centrale du Luxembourg, ECB, Central Bank of Ireland and IMF.
(1) Data at the end of 2016. – (2) Includes investments in instruments issued by international organizations and institutions. – (3) Includes investments in Italian portfolio instruments through foreign investment funds (round-trip investments).

Adjusting for the intermediation of foreign investment funds, the composition by issuer country of foreign portfolio assets held by Italians changes radically. The United States becomes the main destination country for Italian residents with a share of just over 20 per cent; the share increases for France, Germany, the United Kingdom and Spain but falls for Luxembourg (from more than 40 per cent to less than 4 per cent; see panel (b) of the figure). Part of the investments formally directed overseas (about 3 per cent) is actually redirected towards Italian assets. Overall, there is a greater degree of geographical diversification of residents' foreign portfolio investments.

[1] A. Felettigh and P. Monti, 'How to interpret the CPIS data on the distribution of foreign portfolio assets in the presence of sizeable cross-border positions in mutual funds: Evidence for Italy and the main euro-area countries', Banca d'Italia, Questioni di Economia e Finanza (Occasional Papers), 16, 2008.

[2] V. Della Corte, S. Federico and A. Felettigh, 'Looking through cross-border positions in investment funds: evidence from Italy', Banca d'Italia, Questioni di Economia e Finanza (Occasional Papers), forthcoming.

Residents' direct investment abroad totalled €6.5 billion (provisional data), about half the value recorded in 2016. This was the result of large-scale disposals, notably by UniCredit SpA, and of the reimbursement of intra-company loans.

On the liability side, non-residents resumed investing in Italian portfolio securities in 2017 (€28.7 billion). More than half of the purchases concerned shares, particularly in connection with the recapitalizations of banks that took place in the first half of the year. The remaining investments were mainly in bonds issued by non-financial firms (€8.4 billion), which picked up sharply (see Chapter 14, 'The money and financial markets') and, to a smaller extent public sector securities and bank bonds (respectively €3.6 billion and €3.2 billion; investments had been negative by €24.6 billion and €28.7 billion in 2016). Non-residents' purchases of Italian public sector securities did not follow a uniform trend throughout the year: disposals in the first quarter gave way to renewed interest on the part of foreign investors, probably sparked in part by an easing of uncertainty regarding the outlook for the monetary union following the French elections, by more solid growth, and by the strengthening of Italy's banking system. The average residual maturity of the part of Italy's public debt held by foreign investors was unchanged at around 6 years, interrupting the steady decrease observed since the outbreak of the global financial crisis.

Direct investment in Italy by non-residents totalled €17.8 billion on provisional data, in line with the previous year. Decreased investment in shares was offset by an increase in intra-company loans to Italian subsidiaries by foreign parent companies. Inward direct investment has averaged just under 1 per cent of GDP in the last five years, which is less than in the other leading Eurozone countries. From 2013 to 2016, the majority of investment concerned service providers, particularly financial and insurance companies and transport and communications firms. At the end of 2016 about a quarter of the stock of inward direct investment related to manufacturing firms, similar to the value recorded for France and Spain and higher than in Germany.

Italian banks' net funding on the international interbank market, including funding handled by resident central counterparties, fell by €40.6 billion in 2017. The decrease was considerably larger than in the previous year and reflected reduced funding requirements (see Chapter 13, 'Banks and institutional investors'). The Bank of Italy's debtor position in the European payment system TARGET2 widened by €82.5 billion. The increase was concentrated in the early months of the year, however, and from spring the negative balance held virtually stable, reaching €439 billion at the end of December (see the box 'Recent trends in the Bank of Italy's TARGET2 balance').

RECENT TRENDS IN THE BANK OF ITALY'S TARGET2 BALANCE

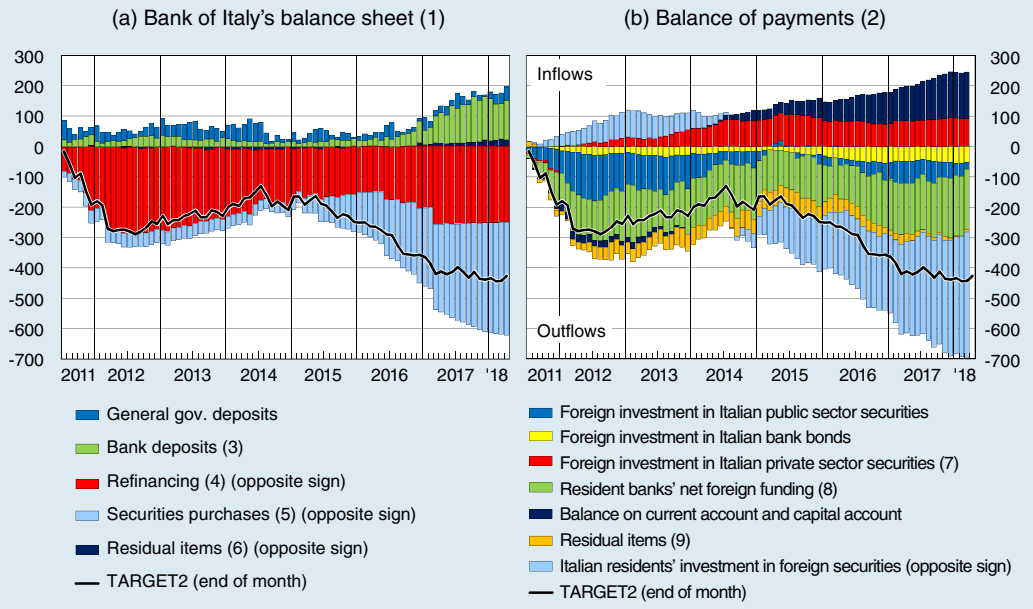
Since the Eurosystem's expanded asset purchase programme (APP) was launched in March 2015, the Bank of Italy's TARGET2 net negative balance has risen by €262 billion, reaching €426 billion at the end of April 2018.

Until spring 2017, on the Bank of Italy's balance sheet side (see panel (a) of Figure A; see panel (A) of the table), its rate of growth was comparable to that of

the liquidity injected under the APP, in line with what was observed in Spain and Portugal (Figure B).

Figure A

Main factors influencing the TARGET2 balance
(billions of euros)



(1) Breakdown based on the Bank of Italy's balance sheet accounting identity. Monthly stocks (data available up to April 2018). – (2) Breakdown based on the balance of payments accounting identity. Cumulative flows from July 2011 (data available up to March 2018). – (3) Liabilities vis-à-vis EMU credit institutions for monetary policy purposes. – (4) Loans to EMU credit institutions for monetary policy purposes. – (5) Securities held for monetary policy purposes. – (6) Difference between banknotes in circulation and 'other net assets'. – (7) Excluding bank bonds. – (8) Net bank funding in the form of loans, deposits and other investments (including that intermediated by resident central counterparties); excludes bank bonds. – (9) Direct investment, derivatives, official reserves, other investment, errors and omissions.

During this period, the excess liquidity injected by the APP into the banking systems of various euro-area countries substantially improved private sector financing conditions, though it subsequently flowed mainly into the German, French and Dutch systems. The yields on overnight repo rates were probably also a contributory factor; the yields on repos backed by Italian government securities, in contrast to those with German, French and Dutch collateral, were on average higher than the deposit facility rate. This made the use of liquidity reserves in the international interbank market more convenient for Italian banks, while it was more advantageous for German, French and Dutch banks to deposit them with the Eurosystem.

On the balance of payments side, the increase in Italy's TARGET2 debtor position in the first two years of the APP was mainly offset by the foreign securities purchases by Italian residents (€208 billion up to March 2017; see panel (b) of Figure A; see panel (B) of the table). This reflects a portfolio shift from government securities and bank bonds towards domestic and foreign asset management and insurance products, displaying greater international diversification. The APP contributed to the rebalancing of residents' portfolios, which reduced the availability and yields of government securities, as probably

did the second series of the four targeted longer-term refinancing operations (TLTRO2), carried out from June 2016 to March 2017, which encouraged banks to continue making net bond redemptions.[1]

TARGET2 balance: accounting identity in relation to the Bank of Italy's balance sheet and the balance of payments (1)

(billions of euros)

			(A) *Bank of Italy's balance sheet accounting identity*						(B) *Balance of payments accounting identity*						
			TARGET2 change = (a)+(b)+(c)-(d)-(e)-(f)						TARGET2 change = (g)+(h)+(i)+(l)+(m)+(n)-(o)						
			more:			less:			more:						less:
	Balance at end of period	Change in balance	General gov. deposits	Bank-notes in circul.	Bank deposits (2)	Refinan-cing (3)	Securi-ties purch-ases (4)	Other net assets	Foreign inv. in Italian public sector securities	Foreign inv. in Italian private sector securities (5)	Foreign inv. in Italian bank bonds	Resi-dent banks net foreign funding	Current account and capital account	Residual items (6)	Italian resi-dents inv. in foreign securi-ties
			(a)	(b)	(c)	(d)	(e)	(f)	(g)	(h)	(i)	(l)	(m)	(n)	(o)
			Changes in stocks						Flows						
Mar.'15 - Mar.'17	-420	-255	6	8	77	116	242	-12	-55	-4	-36	-56	77	27	208
Apr.'17 - Dec.'17	-439	-19	-11	7	55	-6	78	-1	20	10	-3	-26	42	23	84
Jan.'18 - Mar.'18	-442	-3	28	-4	-25	-1	11	-7	31	-3	-1	-1	2	1	32
Total since launch of APP															
Mar.'15 - Mar.'18	-442	-278	23	11	107	109	330	-21	-4	3	-41	-84	121	51	324

(1) Breakdown based on the Bank of Italy's balance sheet accounting identity (panel A) and on the balance of payments accounting identity (panel B). – (2) Liabilities vis-à-vis EMU credit institutions for monetary policy purposes. – (3) Loans to EMU credit institutions for monetary policy purposes. – (4) Securities held for monetary policy purposes. – (5) Excluding bank bonds. – (6) Direct investment, derivatives, official reserves, other investment, errors and omissions.

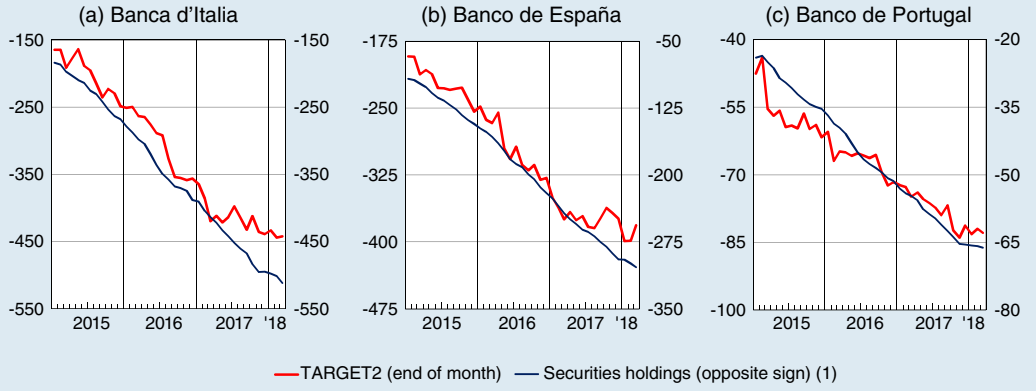
The other main factors also associated with the widening of the TARGET2 negative balance, including the fall in Italian banks' funding abroad and the sale of Italian government securities by non-residents, can mostly be traced to monetary policy operations, in line with what was observed for government bonds issued by the other euro-area countries; the outflows were only partially offset by the growing current account surplus.

From the spring of 2017 to the end of that year, the TARGET2 debtor position more or less stabilized, increasing overall by just €19 billion (while the Bank of Italy's purchases of securities for monetary policy purposes came to €78 billion). On the balance of payments side, the outflows associated with purchases of foreign securities by residents and with the further reduction in banks' funding on the international

[1] Factors contributing to the decline in bank bonds in Italian households' portfolios included the change in banks' credit supply policies, as well as the end of the favourable tax regime and presumably the uncertainties raised by the coming into force of Directive 2014/59/EU on the recovery and resolution of banks; see M. Coletta and R. Santioni, 'Le obbligazioni bancarie nel portafoglio delle famiglie italiane', Banca d'Italia, Questioni di Economia e Finanza (Occasional Papers), 359, 2016.

Figure B

TARGET2 balance and securities portfolios of the NCBs of Italy, Spain and Portugal
(billions of euros)



Source: ECB.
(1) End-of-month stocks of debt securities issued by euro-area residents and held by the NCB; right-hand scale.

markets were almost entirely offset by the inflows connected with foreign investment in Italian securities and the current account surplus.

The broad stabilization of the TARGET2 balance in 2017, observed in Spain as well, was accompanied by a more balanced distribution of excess liquidity among the banking systems of the various countries. The main reason for the increase in the reserves held by Italian banks (from virtually nil when the APP was launched to nearly €130 billion at the end of 2017) was the decrease in the market rates on overnight Italian government bond repos, which, as in other countries, fell below the deposit facility rate; this fall reduced the opportunity cost of holding excess liquidity for Italian banks too.

The marked improvement in the outlook for Italy's banking system and in the conditions under which it is able to raise funds on the market presumably influenced these developments, especially after the recapitalizations and resolutions of Italian banks' crises (see Chapter 13, 'Banks and institutional investors').

The international investment position

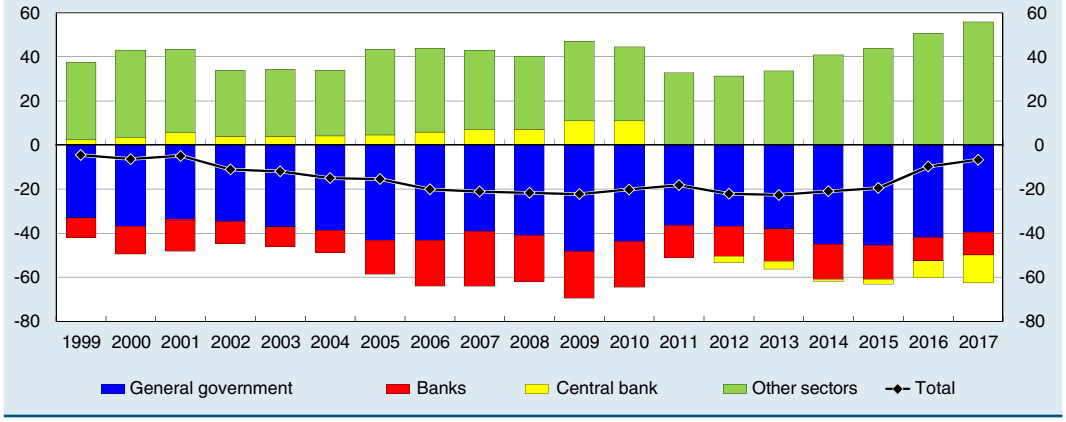
Italy's net foreign investment position amounted to €114.7 billion in December 2017, equal to 6.7 per cent of GDP. The improvement of more than 3 percentage points of GDP since the end of last year was entirely due to the surplus on current account. Value adjustments had a negligible net effect: the negative impact of the appreciation of the euro was offset by the rise in market prices of residents' holdings of foreign assets.

The main driver of the reduction in the net foreign debtor position for the fourth consecutive year was the combination of surpluses on both current and capital accounts (see the box 'The improvement in the net international investment position'). The reduction led to a decrease in resident banks' net liabilities and above all to an increase in the net assets of households, insurance companies and other non-bank financial intermediaries as a result of their large-scale purchases of foreign securities.

At the same time, the Bank of Italy's debtor position, which is linked to changes in the balance in TARGET2, progressively widened and net general government liabilities stayed at the level recorded at the end of 2013 (Figure 10.4).

Figure 10.4

Italy's net external investment position by institutional sector
(per cent of GDP)



Source: For GDP, Istat.

THE IMPROVEMENT IN THE NET INTERNATIONAL INVESTMENT POSITION

Italy's net international investment position (NIIP) has recorded a very significant improvement over the last four years: its debtor balance went from -€364 billion at the end of 2013 to -€115 billion at the end of 2017 (from 22.7 to 6.7 per cent of GDP). This reduction was caused above all by the current account and capital account surpluses, with a cumulative effect over the four years that reduced net foreign liabilities by 60 per cent, i.e. by €150 billion (see panel (a) of Figure A).[1]

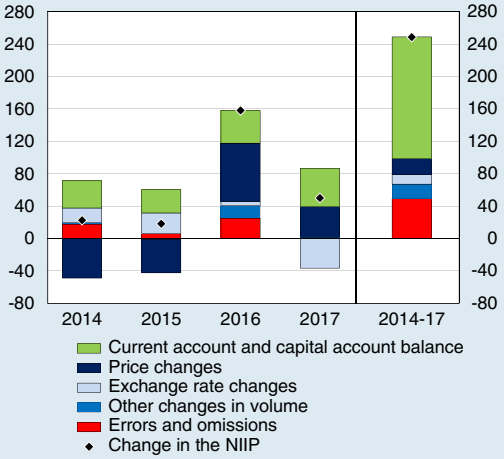
Given a large amount of foreign assets and liabilities, valuation adjustments due to movements in prices and exchange rates, together with errors and omissions, may create a significant gap between the change in the NIIP and the cumulative current and capital account balance (see panel (b) of Figure A): from 1999 to 2007 the decline in the NIIP was greater than could be explained by the current account deficit, while in the following period up to 2013, it was not affected by the widening of the deficit. Between 2014 and 2017, the valuation adjustments contributed around 20 per cent as a whole to the improvement in the NIIP, despite causing significant annual fluctuations: in 2016 the adjustments reduced the debtor position by €93 billion, thanks above all to the fall in the prices of Italian shares and bonds held by foreign investors.

[1] The recent revisions made to the estimates for some components of foreign financial assets did not influence the extent of the improvement. Instead, these revisions affected the levels, improving the NIIP balance over the entire time series for: (a) the issuance and import/export of euro banknotes; (b) the emergence, under the first voluntary disclosure procedure, of capital that had previously been held abroad illegally by Italian residents; and (c) the revision of the estimate of foreign mutual funds held by residents and directly deposited abroad. For further details, see 'International investment position and external debt' on the Bank of Italy's website.

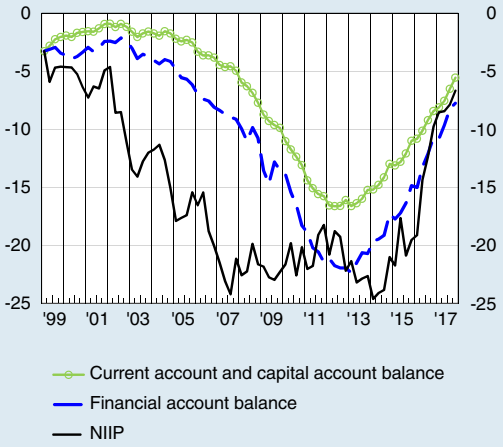
Figure A

Italy's net international investment position (NIIP)

(a) Changes in the NIIP and its decomposition (2014-17)
(annual data, billions of euros)



(b) NIIP and cumulative balances of the current and capital account and of the financial account (1)
(quarterly data, percentage of GDP)



Source: For GDP, Istat.
(1) The cumulative balances of the current account and the capital account and of the financial account starting from the first quarter of 1999, with an initial value equal to the corresponding NIIP value.

Based on the IMF's forecasts for the current account balance and nominal GDP growth, it can be estimated that Italy's NIIP will reach zero in 2020 and achieve a positive balance of around 4 per cent of GDP in 2023. Similar projections seem to indicate further growth in Germany's net creditor position (over 90 per cent of GDP in 2023), a reduction in Spain's negative position, although it would still remain high, at -55 per cent, while France's net position would remain essentially stable, at around -20 per cent.

These projections assume that the valuation adjustments will have no impact. Three different scenarios were considered in a stress test, which includes possible adverse effects on Italy's NIIP, for example those resulting from unexpected shocks involving exchange rates, share prices and interest rates.[2]

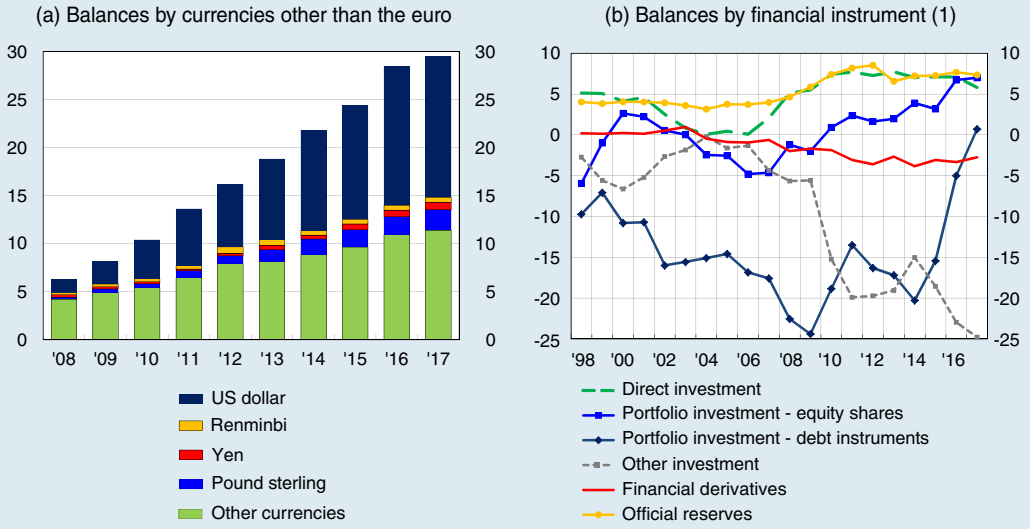
In the first scenario, which assumes that the euro appreciates against all the other currencies by around 20 per cent, the valuation adjustments would cause the NIIP to worsen by nearly 6 percentage points of GDP; this reflects the currency exposure on the asset side which has grown considerably over the last few years, especially against the US dollar (see panel (a) of Figure B). In the second scenario, if international equity prices fall by 30 per cent, the NIIP worsens by about 2 percentage points of GDP;[3] Italy actually has a net creditor position in equity, direct

[2] V. Della Corte, S. Federico and E. Tosti, 'Unwinding external stock imbalances? The case of Italy's net international investment position', Banca d'Italia, Questioni di Economia e Finanza (Occasional Papers), forthcoming.

[3] In contrast, if the shock only affected Italian securities, the NIIP would improve by almost 5 percentage points of GDP, thanks to the reduction in the value of foreign liabilities.

Figure B

Italy's net external debtor position
(end-of-year values as a percentage of GDP)



Source: Istat (for GDP).
(1) Assets held through foreign mutual funds were divided into equity shares (one third) and debt securities (two thirds); see the box 'Investments in foreign mutual fund shares and the asset composition of residents' portfolios'.

and portfolio instruments (including those held through foreign-based funds; see panel (b) of Figure B). Finally, if a global interest rate hike of 100 basis points along the entire yield curve is assumed, the effect on the NIIP is practically nil, since the net position in debt securities (including those held by foreign-based funds) is essentially balanced, also in terms of duration.[4]

This analysis only considers the direct effects on the valuation of assets and liabilities and excludes any possible retroactive effects on the balance of payments. However, the limited size of these effects in the various scenarios (even when combined) means they do not seem able to substantially modify the situation delineated by the current macroeconomic projections; specifically, Italy's NIIP is likely to remain a long way from the threshold alert of -35 per cent envisaged by the European Commission's macroeconomic imbalance procedure.

[4] However, if the increase in interest rates only concerned securities issued by euro-area residents or only Italian securities, it would have a positive effect on the NIIP of around 1 and 3 percentage points of GDP respectively.

11. THE PUBLIC FINANCES

The fiscal stance remained moderately expansionary in 2017, consistent with the goal of not hindering the strengthening of the economic recovery. According to European Commission estimates, the cyclically-adjusted primary surplus fell by 0.6 percentage points of GDP. Following the cyclical recovery, the primary surplus was unchanged in nominal terms, at 1.5 per cent of GDP. Thanks to the further reduction in interest expenditure, net borrowing continued to contract, declining from 2.5 to 2.3 per cent. The public debt fell marginally, to 131.8 per cent.

In 2018 the fiscal stance is expected to remain essentially neutral. The current legislation scenario in the Economic and Financial Document (DEF) presented at the end of April confirmed that net borrowing is projected to fall to 1.6 per cent in 2018 and a balanced budget is expected in 2020. The debt-to-GDP ratio is projected to narrow by about 1 percentage point in 2018; the reduction should continue at a faster pace in subsequent years, reaching 122 per cent in 2021.

In May the European Commission judged that the public accounts in 2017 were broadly consistent with European fiscal rules; for 2018 it noted the risk of a significant deviation which will be assessed in spring 2019 in light of final budget data.

The public finances in 2017

Fiscal policy. – During the 2016 autumn budget session, the Government decided to postpone the fiscal adjustment and to revise upwards its net borrowing objective for 2017 with respect to what it had indicated in the spring: the Draft Budgetary Plan (DPB) indicated that the deficit for 2017 would be 2.3 per cent of GDP (Table 11.1), while the structural deficit was expected to deteriorate by around 0.4 percentage points of GDP (to 1.6 per cent) compared with the previous year. The increase in indirect taxes envisaged under the safeguard clauses was postponed to 2018.[1]

In April, along with the presentation of the DEF and also in light of the European Commission's indications,[2] the Government adopted a series of corrective measures (see the section 'The outlook' in Chapter 11, *Annual Report on 2016*, 2017), enabling the deficit objective for 2017 to be reduced from 2.3 to 2.1 per cent of GDP; in structural terms, the increase in the deficit compared to 2016 was capped at 0.3 percentage

[1] See *Audizione preliminare all'esame della manovra economica per il triennio 2017-19*, testimony by L.F. Signorini, Deputy Governor of the Bank of Italy, before the Chamber of Deputies, Rome, 7 November 2016 (only in Italian).

[2] The European Commission had highlighted the risk of a significant deviation both in November when it assessed the DPB and in early 2017 in its report on compliance with the debt rule, and had requested an adjustment of at least 0.2 per cent of GDP in February 2017.

points (at 1.5 per cent). The public debt was broadly unchanged at 132.5 per cent of GDP. Starting in 2018, most of the resources identified in the corrective measures were channelled towards adjusting the effects of the safeguard clauses, including by rescheduling the planned VAT increases (Figure 11.1).[3]

Table 11.1

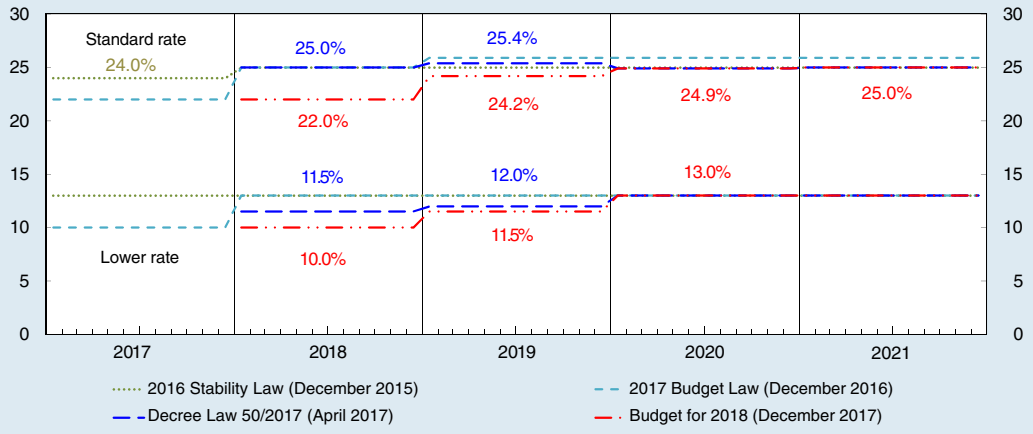
Public finance objectives, estimates and outturns for the year 2017
(per cent of GDP)

	General government				Memorandum items:			
	Net borrowing	Primary surplus	Change in structural deficit	Debt	Real GDP growth rate 2017	Privatization receipts 2017	Net borrowing 2016	Structural deficit 2016
Current-programmes projection								
April 2016 (1)	1.4	2.4	-0.5	130.3	1.2	0.5	2.3	1.3
Objectives								
April 2016 (1)	1.8	2.0	-0.1	130.9	1.4	0.5	2.3	1.2
September 2016 (2)	2.0	1.7	0.0	132.5	1.0	0.5	2.4	1.2
October 2016 (3)	2.3	1.4	0.4	132.6	1.0	0.5	2.4	1.2
April 2017 (4)	2.1	1.7	0.3	132.5	1.1	0.3	2.4	1.2
Estimates								
April 2017 (4)	2.3	1.5	0.5	132.7	1.1	0.3	2.4	1.1
September 2017 (5)	2.1	1.7	0.4	131.6	1.5	0.2	2.5	1.0
Outturns (6)	2.3	1.5	0.3	131.8	1.5	0.0	2.5	1.4

(1) Economic and Financial Document (DEF) 2016. – (2) DEF Update 2016. – (3) Italy's Draft Budgetary Plan 2017. – (4) DEF 2017. – (5) DEF Update 2017. – (6) Net borrowing, primary surplus and GDP growth based on Istat data; the changes in the structural deficit in 2017 and the structural deficit in 2016 are from the European Commission's Spring 2018 Economic Forecast published in May 2018.

Figure 11.1

Planned profile of VAT rates
(per cent)



[3] The increased revenue expected from the activation of the safeguard clauses was reduced by €3.8 billion in 2018, €4.4 billion in 2019 and €4.1 billion in 2020 (to €15.7 billion in 2018, €18.9 billion in 2019 and €19.2 billion from 2020). The budget also provided that the increase from 10 to 13 per cent in the lower rate, previously scheduled for 2018, would be distributed over three years (i.e. 1.5 points in 2018, 0.5 points in 2019, and 1 point in 2020); for the standard rate of 22 per cent, it confirmed an increase of 3 percentage points for 2018, while it was expected to reach 25.4 per cent in 2019, 24.9 per cent in 2020 and 25 per cent from 2021. Finally, the rise in excise duties scheduled for 2018 was postponed to 2019. With the budget legislation approved at the end of 2017 the tax increases slated for 2018 were eliminated (see the section, 'The outlook', below).

In its Update to the DEF published in September the Government confirmed its estimate for net borrowing in 2017 at 2.1 per cent of GDP, despite the fact that in the meantime Istat had revised upwards its final figures for the deficit in 2016 from 2.4 to 2.5 per cent. According to the Update, the debt-to-GDP ratio in 2017 would narrow from 132.0 per cent in 2016 (revised downwards as a result of Istat's upward revision of GDP) to 131.6 per cent: the reduction deriving from new estimates of the stock-flow adjustments compared with what was estimated in April's DEF.

The results. – In 2017 net borrowing came down to 2.3 per cent of GDP from 2.5 per cent in 2016 (Figure 11.2.a and Table 11.2) owing to the decline in interest expenditure (from 4.0 to 3.8 per cent of GDP); the primary surplus was essentially unchanged at 1.5 per cent. The measures adopted to support the banking system added approximately 0.3 percentage points of GDP to net borrowing;[4] without this item, the deficit would have been largely consistent with the Government's target indicated in its budgetary plans for 2017. The ratios of revenue and primary spending to GDP fell by the same amount (0.3 percentage points, to 46.6 and 45.1 per cent of GDP respectively, see the sections, 'Revenue' and 'Expenditure', below).

Table 11.2

Consolidated accounts of general government (1)
(billions of euros and per cent of GDP)

	2012	2013	2014	2015	2016	2017
Current revenue	766.3	763.7	770.5	781.8	781.0	795.1
of which: social contributions	215.8	215.3	214.3	219.1	220.6	226.2
direct taxes	239.8	240.9	238.0	243.3	248.3	250.5
indirect taxes	246.7	239.8	248.8	250.2	243.1	249.9
Capital revenue	5.9	8.8	6.7	6.9	6.8	4.8
Total revenue	**772.3**	**772.5**	**777.1**	**788.6**	**787.8**	**799.9**
per cent of GDP	47.9	48.1	47.9	47.7	46.9	46.6
Current primary expenditure	671.4	683.7	691.0	693.9	705.5	708.3
Interest payments	83.6	77.6	74.4	68.0	66.4	65.6
Capital account expenditure (2)	64.3	58.1	60.2	69.3	57.5	65.7
of which: gross fixed investment	41.4	38.6	36.9	37.3	35.7	33.7
Total expenditure	**819.3**	**819.4**	**825.5**	**831.2**	**829.5**	**839.6**
per cent of GDP	50.8	51.1	50.9	50.3	49.3	48.9
Primary balance	**36.5**	**30.7**	**26.0**	**25.5**	**24.8**	**26.0**
per cent of GDP	2.3	1.9	1.6	1.5	1.5	1.5
Net borrowing	**47.1**	**46.9**	**48.4**	**42.6**	**41.6**	**39.7**
per cent of GDP	2.9	2.9	3.0	2.6	2.5	2.3

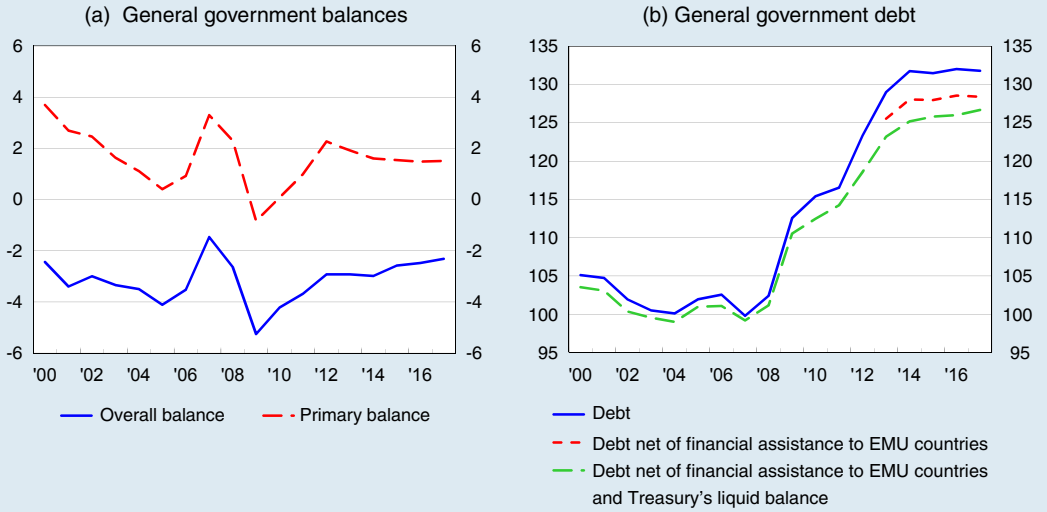
Source: Istat.
(1) Rounding may cause discrepancies in totals. – (2) This item includes (with a negative sign) the proceeds deriving from property disposals.

[4] The disbursements to support the financial system (amounting to around 0.4 percentage points of GDP) were partially offset by the revenue from the National Resolution Fund equal to around 0.1 per cent of GDP, which was included within the general government perimeter and paid out by the banking system as part of the resolution of the four banks – Banca delle Marche, Banca Popolare dell'Etruria e del Lazio, Cassa di Risparmio di Ferrara and Cassa di Risparmio di Chieti. These revenues were entered in the accounts under indirect taxes.

The debt-to-GDP ratio fell slightly, to 131.8 per cent (Figure 11.2.b: see the section, 'General government debt', below). The contraction was a little smaller than that forecasted by the Government last autumn. The measures to support the financial sector increased public debt by almost 1 percentage point of GDP (see the box 'The impact on the public accounts of the financial sector support measures'); the reduction in the Treasury's liquid balance lowered the ratio to GDP by 0.8 points.

Figure 11.2

Public finance indicators
(per cent of GDP)



Source: For net borrowing and primary surplus, Istat.

THE IMPACT ON THE PUBLIC ACCOUNTS OF THE FINANCIAL SECTOR SUPPORT MEASURES

In Italy, public support to the financial sector has been modest since the start of the global crisis. Up until 2016 it was altogether marginal, while in 2017 several banking crises that had a substantial impact on the public accounts were addressed. Despite recent measures, public support for the financial sector in Italy is still considerably below the average for the other euro-area countries. Compared with the main economies, Italian public support has been much lower than that provided in Germany and Spain and only slightly higher than that in France. Support in the form of guarantees granted to banks and other financial institutions, which in the most acute phases of the crisis reached sizeable levels in Italy, has also been more subdued than the average for other euro-area economies.

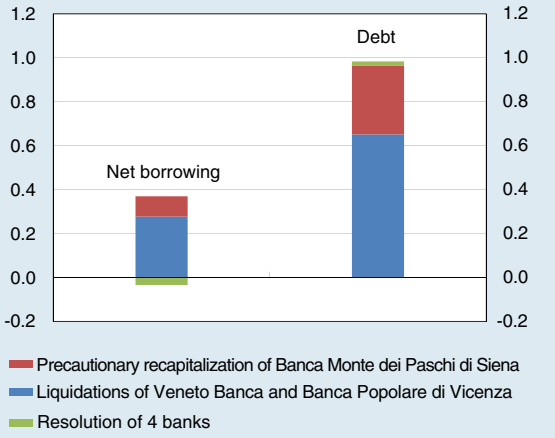
Italian measures. – In 2017 the financial sector support measures regarded: (a) the liquidation of Veneto Banca and Banca Popolare di Vicenza;[1] (b) the precautionary recapitalization of Banca Monte dei Paschi di Siena; and (c) the completion of the sale to private parties of the four bridge banks resulting from the

[1] The operation received the accounting treatment indicated in Eurostat's methodological guidelines.

2015 resolution actions.[2] Overall, these measures increased general government net borrowing by around 0.3 percentage points of GDP and government debt by nearly 1 percentage point (Figure A).[3] Faced with this debt increase, the general government purchased financial assets (mainly equity and non-performing loans)[4] to be sold or recovered over time; this will contribute in the coming years to cutting the net cost of the transactions in the State budget and to reducing government debt.

Figure A

Public support to the Italian financial sector in 2017 (1)
(per cent of GDP)



Source: Based on Eurostat, *Supplementary tables for reporting government interventions to support financial institutions*, April 2018.
(1) The effect on net borrowing includes the contribution (equal to around 0.1 per cent of GDP) made by the banking system as part of the resolution of the four banks to the National Resolution Fund which, according to European rules, is considered part of the general government.

Previous measures (from the start of the crisis to 2016) had a cumulative impact on the general government deficit of approximately 0.2 per cent of GDP. At the end of 2016 the portion of government debt linked to these operations was of an analogous amount, attributable to the resolution of the four banks undertaken at the end of 2015.

International comparison. – Since the start of the crisis, public support to the financial sector in Italy has been more limited than in the other euro-area economies on average (Figure B). Based on Eurostat data, the cumulative effect on net borrowing in the ten years 2008-17 was equal to just over half a percentage point for Italy, compared with an average of around 2.5 percentage points for the other euro-area countries (the corresponding values for Germany and Spain are 1.6 and 4.6 percentage points; for France, the effect was practically nil).

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[2] The resolutions of Banca delle Marche, Banca Popolare dell'Etruria e del Lazio, Cassa di Risparmio di Ferrara and Cassa di Risparmio di Chieti were overseen by the National Resolution Fund (NRF) which, according to European statistical rules, is considered part of the general government. The bad loans of the banks put into resolution are handled by the special-purpose vehicle REV Gestione Crediti SpA controlled by the NRF. In 2017, before their sale, the bridge banks were recapitalized by the NRF in the amount of €0.9 billion; the outlay was financed from a total contribution of just over €1.5 billion by the banking system to the NRF. Therefore the overall operation slightly reduced net borrowing in 2017.

[3] The difference between the impact on net borrowing and that on the debt can be mainly put down to: (a) the reclassification to the government debt of the liabilities pertaining to the liquidations of Veneto Banca and Banca Popolare di Vicenza (€6.4 billion), in line with the Eurostat guidelines; (b) the recording under net borrowing of only a portion (€1.6 billion out of a total of €5.4 billion) of the financial support provided to Banca Monte dei Paschi di Siena (the remaining part was treated as a financial operation affecting only the debt).

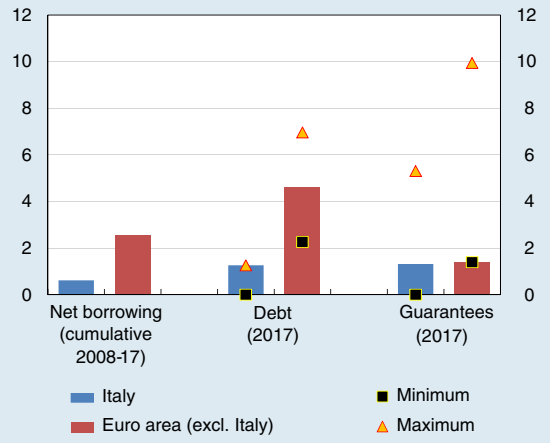
[4] The value of the financial assets acquired in 2017, measured using a prudential approach consistent with the Eurostat guidelines, amounts to around 0.7 per cent of GDP. If the NPLs were to be valued in a manner consistent with the recovery rates observed over the previous ten years, the value of the assets acquired in 2017 would be equal to around 1 percentage point of GDP.

At the end of 2017, the impact of financial-sector support measures on government debt equalled 1.3 percentage points of GDP while in the other euro-area countries, it averaged 4.6 percentage points of GDP (5.9, 4.4 and 0.1 percentage points in Germany, Spain and France respectively).

Figure B

Public support to the financial sector in 2008-2017: an international comparison (1)

(per cent of GDP)



Source: Based on Eurostat, *Supplementary tables for reporting government interventions to support financial institutions*, April 2018.
(1) For net borrowing, the cumulative value of the ratio of financial support to GDP from 2008 to 2017 is reported. For the debt and guarantees, the coloured bars show the figures for 2017; the minimum and maximum values for the 2008-17 period are also indicated. The euro area comprises the 19 countries that as of the end of 2017 had adopted the single currency.

Guarantees. – Public support was also provided in the form of State guarantees granted to banks and other financial institutions, without impacting the deficit and the debt at issuance.[5] During the most acute phases of the crisis, these guarantees reached very high amounts, peaking at 5.3 per cent of GDP in Italy, compared with a nearly 10 per cent average for the other euro-area countries (6.5, 10.1 and 5.2 per cent in Germany, Spain and France respectively).

In recent years, with the improvement in financial system conditions, the amount of the guarantees has fallen. At the end of 2017, they amounted to 1.3 percentage points of GDP in Italy, compared with an average of 1.4 points for the other euro-area countries (0.3, 3.4 and 1.6 percentage points in Germany, Spain and France respectively).

[5] These guarantees, in that they are only potential liabilities, are not included in net borrowing or in government debt unless and until they are actually called. In the case of Italy, action has mainly taken the form of guarantees on bank bond issues; these guarantees have not been called as of yet.

According to the European Commission's estimates, in 2017 the fiscal stance remained expansionary for the fourth consecutive year; the cyclically-adjusted primary surplus fell by 0.6 percentage points. Since 2014, expansionary stimulus has amounted to 2.3 per cent of GDP. In structural terms (i.e. after adjusting for the effects of the economic cycle and of temporary measures) the deterioration in the public accounts was less pronounced (one fourth of a percentage point of GDP): the primary surplus decreased by 0.4 percentage points but the decline in interest expenditure (as a share of potential GDP) limited the increase in the deficit.

Revenue

In 2017 revenue grew by 1.5 per cent (to €799.9 billion or 46.6 per cent of GDP; Table 11.2), reflecting the largely cyclical increase in social contributions and tax

receipts. The upward trend in these two items was nonetheless below that of GDP: as a result the fiscal burden declined for the fourth consecutive year (to 42.5 per cent of GDP, from 42.7 per cent in 2016).

Social security contributions, which increased by 2.5 per cent (to €226.2 billion), were driven upwards by receipts deriving from the redefinition of tax settlement procedures and above all by the performance of private-sector employment (see Chapter 8, 'The labour market'). In 2017 the temporary relief on social security contributions for new permanent hires legislated by the 2015 and 2016 Stability Laws continued to produce effects.[5]

Tax revenue, which grew by 1.2 per cent (to €502.6 billion), also benefited from the new settlement procedures. Both indirect and, to a lesser extent, direct taxes increased (by 2.8 per cent to €249.9 billion, and by 0.9 per cent to €250.5 billion respectively); capital taxes instead were more than halved (from €5.4 billion to €2.2 billion).

Among indirect taxes, VAT proceeds rose markedly (by 5.7 per cent, to €108.8 billion): the domestic trade component was strengthened by the broader application of the split payment mechanism, while the imports component was bolstered by higher oil prices compared with 2016. Receipts from the regional tax on productive activities (IRAP) turned upwards again (rising by 8.9 per cent, to €22.4 billion) after four years of uninterrupted decline (owing to the unfavourable economic situation and above all to the exclusion of labour costs from the tax base). Finally, local property taxes fell slightly (by 0.6 per cent, to €20.6 billion) as did, though more markedly, lottery and gaming receipts (by 3.4 per cent, to €9.1 billion).

Growth in direct tax revenue was driven by personal income tax proceeds (IRPEF), which rose by 1.7 per cent to €169.9 billion, benefiting from the cyclical recovery and the improvement in the labour market. Corporate tax receipts (IRES) instead remained basically unchanged at around €34.2 billion: as a result of tax payment mechanisms, the decrease in the rate from 27.5 to 24.0 per cent – applied from 2017 – had a limited impact on 2017's tax revenue; further effects should be apparent in 2018.[6] Substitute taxes on financial income instead fell by 5.3 per cent, to €12.9 billion, in connection with lower yields.

The significant reduction in capital tax revenue was essentially linked to the decline in one-off proceeds from voluntary disclosure procedures, which fell from €4.1 billion to around €1 billion.

Italy's fiscal burden in the international context. – Though falling slightly, Italy's fiscal burden is still 1.2 percentage points higher than in the other euro-area countries;[7]

[5] According to official assessments, these measures led to a reduction in social security contributions of around €5.2 billion in 2016 and €6.3 billion in 2017.

[6] The lower rate had no tangible effect on credit and financial institutions, or on the Bank of Italy, since starting from 2017 they have been subject to a surtax of 3.5 percentage points.

[7] Based on European accounting rules, the tax credit for mid-to-low-income workers (€9.2 billion per year according to official estimates) and that for firms for deferred tax assets (€2.4 billion in 2016 and €5.9 billion in 2017) are classified as additional expenditure. If both these credits are accounted for as a reduction in revenue, the tax burden would stand at 41.6 per cent of GDP in 2017 and the gap with respect to the other euro-area countries would equal 0.3 percentage points.

the gap nevertheless was at its narrowest for a decade. Comparing Italy with the main euro-area countries, at 48.6 per cent the tax burden is higher in France while it is lower in Germany and Spain (40.5 per cent and 34.6 per cent, respectively).

In Italy the tax wedge on labour income is high. The implicit tax rate on labour is the highest in the euro area (unlike the implicit rate on consumption, which is among the lowest; see the box 'The effects on incentives and income redistribution of a recomposition of the taxes levied on households').[8] Also with reference to the main categories of employees, the evidence points to a higher tax wedge in Italy compared with the other euro-area countries; the introduction in 2014 of tax relief for mid-to-low income workers has nonetheless significantly reduced the wedge for these standard categories with below average wages (see the section, 'Revenue', in Chapter 11 of the *Annual Report for 2016,* 2017).[9]

THE EFFECTS ON INCENTIVES AND INCOME REDISTRIBUTION OF A RECOMPOSITION OF THE TAXES LEVIED ON HOUSEHOLDS

Though it has declined in recent years, the tax wedge on labour in Italy is still large, including by international standards. International organizations[1] have often suggested that a further reduction could be obtained by shifting some of the tax burden away from direct taxation (such as personal income taxation, i.e. IRPEF) to indirect taxation (such as VAT) in a budgetary neutral way.

Doing so could mitigate the distortive effects that taxation has on labour supply. Moreover, raising taxes on imports and cutting them on exports could lead to a de facto fiscal devaluation and, as a result, improve Italy's competitive position. However, raising a tax such as VAT, which is generally considered regressive with respect to income, could impair the tax system's redistributive function.

The effects of a recomposition of the taxes levied on households on labour supply incentives and on income redistribution can be assessed using the Bank of Italy Microsimulation (BIMic) model for taxes and social benefits.[2] The analysis is based on two synthetic indicators whose use is well-established in the literature. The first indicator assesses the impact on incentives and is defined as the complement to unity of the average of the marginal effective tax rates:[3] this is a measure of the additional resources that remain available to a household following a marginal

[1] For example, the European Commission recently issued its 'Recommendation for a Council Recommendation on the 2018 National Reform Programme of Italy and delivering a Council opinion on the 2018 Stability Programme of Italy', COM(2018) 411 final, 2018.

[2] N. Curci and M. Savegnago, 'Shifting taxes from labour to consumption: the efficiency equity trade-off', Banca d'Italia, Temi di Discussione (Working Papers), forthcoming.

[3] The VAT paid on the portion of additional disposable income allocated to consumption is also taken into account in calculating the marginal effective tax rates.

[8] Taken from the database Data on taxation compiled by the European Commission; the most recent data refer to 2016. The implicit tax rate on labour is calculated by adding the sum of social security contributions and taxes on payroll labour income to gross earnings; the implicit rate of tax on consumption is defined as the ratio of income from all taxes on consumption to the final expenditure on consumption by households.

[9] OECD, *Taxing Wages 2018*, 2018; the most recent estimates are for 2017. The OECD dataset does not include Cyprus, Lithuania and Malta.

increase in employment income after taxes are paid and social benefits received. The second indicator, which assesses the redistributive effect of the tax and social benefits system, is the change in inequality (measured by the Gini index) between the distribution of gross income and that of net income.[4]

Under the current fiscal and welfare legislation, the first indicator equals 60.1 per cent (i.e. a €100 increase in employment income results in an increase of approximately €60 in net income), while the second is equal to 5.5 percentage points (in fact, the tax and social benefit system lowers the Gini index from 41.4 for gross income to 35.9 for net income).

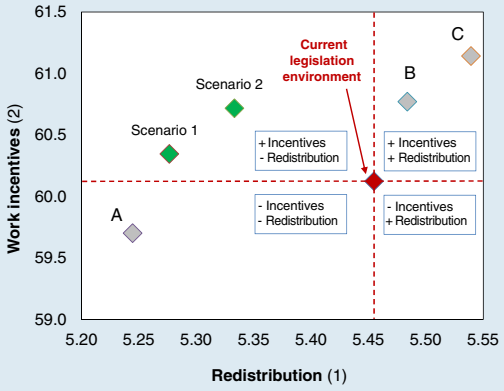
To provide an example of how the tax system might be restructured, two counterfactual scenarios were considered in which additional revenue from higher indirect taxes fund cuts to personal income tax, using different but consistently budget-neutral approaches (see panel (a) of the figure). Specifically, both scenarios assume that the reduced VAT rate increases from 10 to 11.5 per cent and the standard rate from 22 to 25 per cent.[5] In Scenario 1 it is also assumed that the lowest personal income tax rate is reduced from 23 to 21 per cent, while in Scenario 2 it is assumed that tax credits for employment income increase by one fourth, while preserving their decreasing trend with respect to income.

Personal income tax reform: effects on incentives and income redistribution

(a) Description of the two scenarios (*changes compared with the current legislation environment*)

	VAT	Personal income tax: lowest rate	Personal income tax: tax credits on employment income	General government budgetary balance
Scenario 1 (A + B)	↑	↓	=	=
Scenario 2 (A + C)	↑	=	↑	=
A	↑	=	=	↑
B	=	↓	=	↓
C	=	=	↑	↓

(b) Work incentives and income redistribution (*per cent*)



Source: Based on the BIMic microsimulation model.
(1) Difference between the Gini index of gross income and that of net income. – (2) Complement to unity of the average of the marginal effective tax rates.

In both scenarios work incentives improve relative to current legislation, whereas the system's redistributive function deteriorates (see panel (b) of the figure). Increasing tax credits for employment income (Scenario 2) results in more favourable

[4] Gross income is defined as the sum of market income and social security benefits; net income is derived from gross income plus other monetary transfers (including, for example, family allowances) minus the main taxes (personal income tax, withholding taxes on financial assets, property taxes, VAT). An increase in the Gini index indicates a rise in inequality.

[5] These are the same increases that were envisaged for 2018 by the safeguard clauses prior to the approval of the latest budget.

indicator values than those achieved by lowering the lowest personal income tax rate (Scenario 1): the impact on incentives is explained by the fact that in Scenario 2, the tax relief applies solely to employment income whereas in Scenario 1 it applies to all sources of income; the redistribution result basically reflects the fact that, while the relief under Scenario 1 benefits all taxpayers, that in Scenario 2 is concentrated among taxpayers with income of up to nearly €70,000.

As to levies on companies, in 2017 the top tax bracket applied to the overall taxation of business income was 27.8 per cent in Italy (down from 31.3 per cent in 2016),[10] lower than in France and Germany (34.4 and 30.2 per cent respectively) but higher than in Spain (25.0 per cent).[11] The reduction observed in Italy reflects the abovementioned reduction in the corporate income tax (IRES) rate.

Expenditure

General government expenditure increased by 1.2 per cent in 2017 (reaching €839.6 billion or 48.9 per cent of GDP). While current primary expenditure rose slightly (by 0.4 per cent, to €708.3 billion), capital expenditure increased at a strong pace (14.2 per cent, to €65.7 billion).

Primary current expenditure was driven upwards by social benefits in cash, which nevertheless grew at a modest rate of 1.7 per cent, reaching €342.1 billion. The pension segment, which expanded by 1.2 per cent, was held back by trends in prices, to which pensions in payment are indexed, though the number of new pension positions increased.

Outlays on intermediate consumption and social benefits in kind also increased, by 2.3 per cent overall (to €140.2 billion); this was partly the result of spending on new pharmaceutical drugs.

Compensation of payroll employees was basically stable at around €164 billion: growth of 0.8 per cent in earnings per capita was offset by the fall in public-sector employment. The number of persons in employment in 2017 reached 3.3 million, almost 10 percentage points below the peak of 2003.[12] At the end of last year, the process for the renewal of public-sector contracts recommenced, after the wage freeze in force since 2010; pay increases and back payments will increase disbursements in 2018.[13]

The other current expenditure items fell sharply (by 9.1 per cent, to €62 billion), mainly as a result of the lowering of contributions to production and of transfers to

[10] This had no effect on credit and financial institutions or on the Bank of Italy (see Footnote 7).

[11] Drawn from the database 'Data on taxation' compiled by the European Commission.

[12] Public-sector employment has been declining almost uninterruptedly since 2003; in 2016 it had increased as a result of the school reform and the inclusion of the public broadcasting corporation RAI within the general government perimeter.

[13] According to official estimates, higher outlays on contract renewals in the State sector in 2018 will amount to around €4 billion, of which €1.2 billion in back payments. To these will be added the resources for renewing the contracts of local government employees.

the EU, which came down by 10.1 and 19.0 per cent respectively, to €26.4 billion and €12.1 billion.

The significant growth recorded in capital spending is almost entirely attributable to transfers to firms, which all but tripled compared with 2016, reaching €16.9 billion, owing to the measures to support the financial sector (see the box 'The impact on the public accounts of the financial sector support measures') and higher tax credits for deferred tax assets. Investment instead diminished further, falling by 6.3 per cent net of property disposals; investment has fallen practically without interruption since 2010[14] and as a share of GDP has reached its lowest level in over two decades (2.0 per cent of GDP).

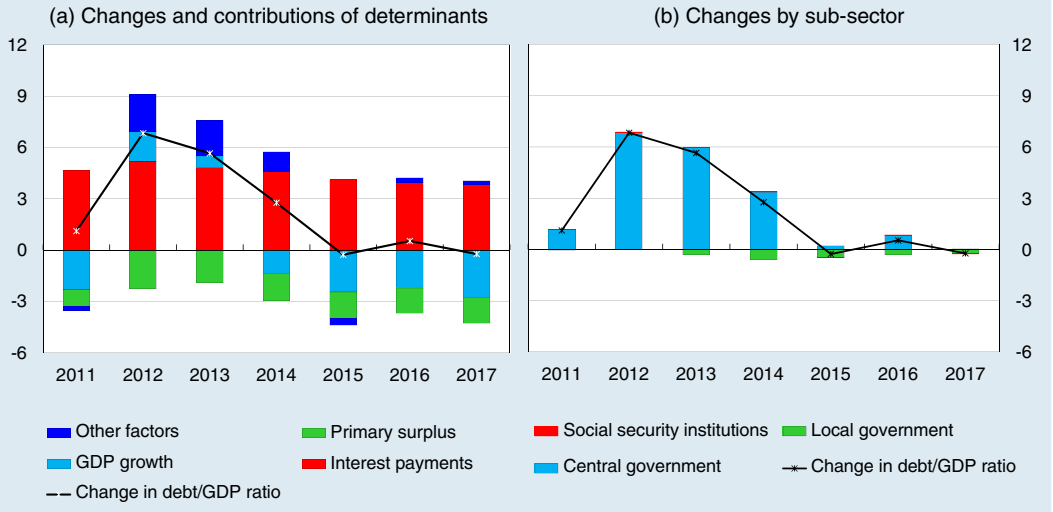
Interest expense continued to decline (by 1.2 per cent, to €65.6 billion), though the fall was much slower than the average pace observed in the previous four years. The impact of the increase in liabilities was more than offset by the decline in the average cost of the debt, from 3.1 per cent in 2016 to 3.0 per cent, which benefited from continued low yields at issue; overall, in the last five years the average cost of the debt fell by almost one third (in 2012 it had been 4.4 per cent). Interest expense as a share of GDP, which has been in decline since 2013, came to 3.8 per cent (from 4.0 per cent in 2016), the lowest level since the launch of the Economic and Monetary Union.

General government debt

The ratio of general government debt to GDP came to 131.8 per cent, down by 0.2 percentage points from 2016. The primary surplus reduced the ratio by 1.5 points, while the spread between the average cost of the debt and the nominal growth of GDP increased it by 1.1 points; a set of other factors, which affect debt but not net borrowing, increased the ratio by 0.2 percentage points (Figure 11.3).

Figure 11.3

General government debt
(per cent of GDP)



[14] In 2015 investment expenditure accelerated owing to the component jointly financed with European resources and, in particular, to outlays relative to the closure of the planning cycle for 2007-13.

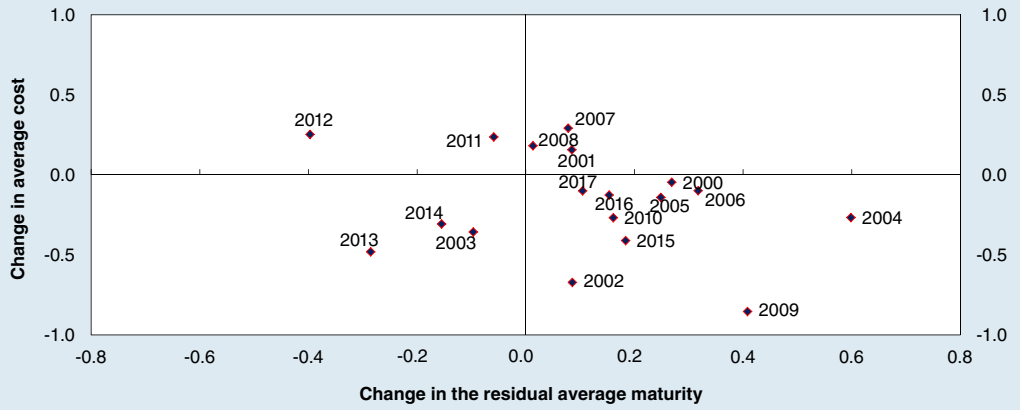
Among these other factors, the decrease in the Treasury's liquid balance kept the debt down (by 0.8 points of GDP); the measures to support the financial sector had the opposite effect (see the box 'The impact on the public accounts of the financial sector support measures') as did the flows deriving from financial derivatives (totalling 0.6 and 0.3 points, respectively).

The average residual maturity of the debt increased for the third consecutive year, reaching 7.4 years. Since the launch of the Economic and Monetary Union, public debt management has primarily been oriented towards extending the maturities to limit sensitivity to interest rate fluctuations (see the box 'The normalization of financial conditions and the Italian economy' in Chapter 4); in some years this strategy was also pursued by bearing the costs connected with an increase in the average cost of the public debt (Figure 11.4).

Figure 11.4

Changes in the average residual maturity and average cost of the public debt since the launch of EMU

(for the average duration, years; for the average cost of the debt, percentage points)



The share of the debt held by the Bank of Italy increased further (to 16.3 per cent, from 12.3 per cent in 2016); since 2015, the year in which the public sector purchase programme (PSPP) was launched, it has more than tripled. The share of the debt held by other residents diminished, from 55.0 per cent in 2016 to 51.5 per cent, and marginally, that held by non-residents, which fell from 32.7 per cent in 2016 to 32.3 per cent.

Other liabilities and guarantees. – The Italian public debt as calculated according to European rules does not take account of certain types of liability. The most important of these are the guarantees issued by general government – insofar as they are contingent liabilities – in favour of third parties, liabilities in derivatives and commercial liabilities (except for claims transferred to financial intermediaries without recourse).

In 2017, guarantees issued by general government to other entities increased significantly, from 2.4 to 3.7 per cent of GDP; the increase was mostly confined to the financial sector and attributable to interventions to support ailing banks.

Net liabilities in derivative instruments, at market values, diminished from 1.8 to 1.4 per cent of GDP; while market rates remained basically unchanged, the fall mainly reflects the expiry of some contracts and the effect of the net Treasury payments on outstanding contracts.

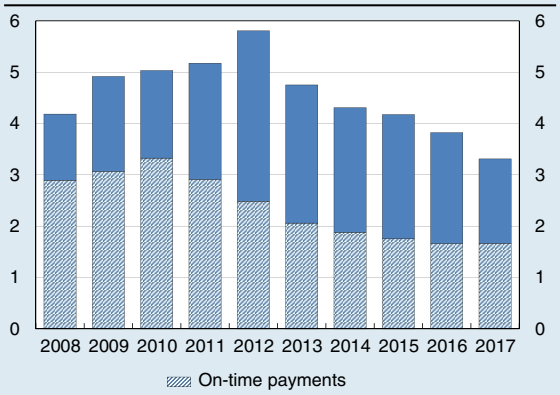
According to Bank of Italy estimates, between 2016 and 2017 commercial debts declined further, from 3.8 per cent of GDP to 3.3 per cent (see the box 'General government commercial debts').

GENERAL GOVERNMENT COMMERCIAL DEBTS

In 2017 the general government sector continued to reduce its commercial debts, although they remain high by international standards. Over the next few years the further development of the general government transactions information system (Siope+) should help cut payment times.

Estimate of commercial debts. – Once fully operational, Siope+ should permit a more accurate assessment of the volume of commercial debts (and payment times). In the absence of comprehensive official data, the Bank of Italy has prepared the estimates presented here,[1] which are based on supervisory reports and its statistical surveys of firms. Given that some of the data are obtained through sample surveys, these estimates are subject to a significant degree of uncertainty. Between 2016 and 2017 Italy's general government sector commercial debts fell from 3.8 to 3.3 per cent of GDP (or from about €64 billion to €57 billion; figure).[2] This is still above the level consistent with contractual payment schedules (on-time component of the debt).

Estimates of general government commercial debts (1)
(per cent of GDP)



(1) On-time payments are those made in accordance with the payment schedule defined in the contract between the parties.

[1] Obtained by adding two components: (a) credits still on firms' balance sheets, estimated on the basis of sample surveys conducted by the Bank of Italy; and (b) claims transferred by firms to financial intermediaries without recourse, drawn from supervisory reports (€9.2 billion at the end of 2016 and of 2017). For details on the methodology, see L. D'Aurizio, D. Depalo, S. Momigliano and E. Vadalà, 'I debiti commerciali delle amministrazioni pubbliche italiane: un problema ancora irrisolto', *Politica economica – Journal of Economic Policy*, 3 (2015), 421-458.

[2] According to the data provided to Eurostat as part of the excessive deficit procedure, between 2016 and 2017 the ratio of the stock of commercial debts to GDP fell from 2.9 to 2.8 per cent, the second highest ratio among EU countries (the highest in 2016). Note that the data do not include claims transferred to financial intermediaries without recourse and, for Italy, practically all the debts relative to capital expenditure. For more information, see Eurostat, 'Note on stock of liabilities of trade credits and advances', April 2018.

Estimated average payment times. – Based on the business surveys mentioned above, average payment times fell slightly in 2017 compared with 2016 (to around 95 days). According to the 2018 European Payment Report, however, they remain longer than those of the other countries surveyed.

On 7 December 2017, the European Commission decided to refer Italy to the EU Court of Justice for late payments by general government.[3]

The requirement to transmit payment orders through Siope+ will be extended to all government entities in 2018 (an experimental phase was launched in July 2017). Once fully up and running, this system should make it possible to quantify the volume of commercial debts and carry out real-time monitoring of payment times for debtor government entities,[4] while encouraging compliance with the deadlines indicated in the Late Payment Directive.

[3] Since 2013, following the transposition into Italian law of the Late Payment Directive (Directive 2011/7/EU), as a rule payment times cannot exceed 30 days in Italy (60 for some types of provisions, specifically healthcare supplies). While acknowledging the efforts made by Italy to reduce payment times, the European Commission stated that 'the Italian public authorities still take on average 100 days to settle their invoices, with peaks which can considerably exceed this figure'; see European Commission, 'Late payment: Commission refers Italy to Court of Justice for failing to ensure suppliers are paid on time', press release of 7 December 2017.

[4] For more information, see the dedicated section of the website of the Ministry of Economy and Finance.

The outlook

The planning documents approved in 2016 and in the early months of 2017 all indicated a resumption of fiscal consolidation in 2018 and, for 2019, the attainment of broad budgetary balance in nominal and structural terms. In particular, the April 2017 DEF set the net borrowing objective for 2018 at 1.2 per cent of GDP, almost one percentage point below the 2.1 per cent then expected for 2017 and largely in line with the current-legislation projections. The main contribution to the structural adjustment in the years 2018-19 (0.8 percentage points in each year) came from the tax increases envisaged under the safeguard clauses.

At the end of May 2017, in a letter sent to the European Commission the Government nevertheless informed the European institutions of its intention to cap the structural adjustment in 2018 at 0.3 percentage points of GDP, half a percentage point below what it had indicated one month earlier in the DEF. The decision was motivated by the objective of preventing a larger adjustment from jeopardizing the still fragile economic recovery. In July 2017, at the end of the European Semester, the EU Council recommended that Italy reconcile this goal with the pursuit of a significant budgetary adjustment in 2018.

In the September update to the DEF the projections for net borrowing in the three years 2018-20 were revised downwards by 0.3 percentage points of GDP, reflecting both higher GDP growth expectations and lower interest expense. Despite this improvement, the Government projected a deficit in 2018 equal to 1.6 per cent of GDP, more than half a percentage point above its current-legislation projections. As anticipated in its letter to the Commission, the planned structural deficit was limited to

just 0.3 percentage points; the attainment of the objective of broad structural balance was postponed to 2020.

In October the European Commission warned of a risk of non-compliance with the Stability and Growth Pact. Based on the methodologies agreed on at European level, it estimated a structural reduction of net borrowing of 0.2 per cent of GDP in 2018, below the percentage envisaged under the preventive arm of the Pact and below what had been announced by the Government in its letter of the previous May (which it later confirmed in September). In its response to the findings of the European Commission, the Government underlined the differing assessments of the cyclical situation of the country. It ascribed the smaller adjustment estimated by the Commission compared with the Government's programmes to methodological aspects linked primarily to assessments of the economy's cyclical conditions, about which Italy had long ago advanced reservations in the appropriate European forums.

At the end of November, in its assessment of the DPB for 2018, the European Commission acknowledged the need to support the still fragile economic recovery and deemed sufficient a structural adjustment in the budgetary balance in 2018 of at least 0.3 percentage points of GDP (below what the rules required), without admitting any additional deviations. The Commission nevertheless confirmed the risk of significant deviations and called on Italy to adopt measures to ensure compliance with the preventive arm of the Pact, a precondition for making sure that in its assessment of compliance with the debt rule other potentially relevant factors would be taken account of.

The budgetary package approved by Parliament at the end of December 2017 implemented the Government's planning framework.[15] The measures it contained increase planned net borrowing for 2018 by 0.6 per cent of GDP (€10.8 billion), with interventions broadly in line with the budgetary policies adopted in recent years. The main expansionary measure consisted in a further deferral of the tax increases envisaged under the safeguard clauses (with an officially estimated impact of €15.7 billion in 2018). Other noteworthy measures were the allocation of resources to public employment and in favour of local government. Finally, incentives were introduced for private investment and youth employment, with limited costs in 2018 and higher costs in subsequent years, as well as resources for public investment and for combating poverty.

Partial coverage for these measures was mostly found in the intensification of the fight against tax evasion, the rescheduling of some capital expenditure and the postponement by one year of the introduction of the optional tax regime for certain types of firms (corporate tax on business income or IRI).

At the end of April 2018, the caretaker Government presented a DEF containing only the update of the forecasts based on current legislation.[16] Compared to its plans

[15] *Audizione preliminare all'esame della manovra economica per il triennio 2018-2020*, testimony by L.F. Signorini, Deputy Governor of the Bank of Italy, before the Senate of the Republic, Rome, 7 November 2017 (only in Italian).

[16] *Audizione preliminare all'esame del Documento di economia e finanza 2018*, testimony by L.F. Signorini, Deputy Governor of the Bank of Italy, before the Chamber of Deputies, Rome, 9 May 2018 (only in Italian).

in the autumn, the new estimates basically confirm net borrowing trends in 2018-20, while the estimate of the structural adjustment in 2018 is lower (by 0.1 percentage points of GDP, against the 0.3 points previously indicated).

In May, the European Commission deemed that the public accounts were broadly consistent with the Stability and Growth Pact in 2017. For 2018, given that its estimated structural variation of the deficit would be null against a requested adjustment of at least 0.3 percentage points of GDP, the Commission confirmed the risk of significant deviations that will be assessed in the spring of next year in the light of final budgetary data.

12. BUSINESS ACTIVITY REGULATION AND THE INSTITUTIONAL ENVIRONMENT

There was little progress in the area of competition. While limited achievements were seen with the coming into force of the first annual law on the market and competition (Law 124/2017), the situation worsened in some sectors.

An enabling law was approved reforming the regulations on corporate crises. It leaves space for a broad overhaul of the liquidation process, and may serve to reduce the time and cost of debt recovery proceedings. The reform introduces procedures for business crisis early warning and settlement, which could help to overcome debtor inertia. There is, however, the risk that the mechanisms that trigger the start of these procedures may be excessively automatic, resulting in premature liquidations and causing an overload for the bodies responsible for managing them.

In the civil justice system the stock of pending court cases continued to decrease due to a lower propensity to litigate. However, progress on reducing the length of proceedings was still limited, except for mortgage foreclosures which took less time owing to the measures introduced in 2015-16.

Many provisions of the new Public Procurement Code have still not come into effect, including those that require that contracting authorities be suitably qualified. These measures are needed to improve the efficiency of the system, especially since the new rules give public purchasers greater discretion.

Competition and market regulation

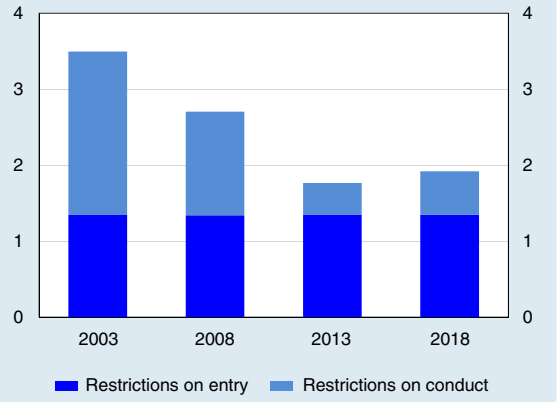
Measures were adopted in 2017 to enhance the transparency and the comparability of offers in some sectors, such as banking, mobile telephony and energy (Law 124/2017). Incentives were introduced to encourage the use of tenders to award local public transport service contracts (Decree Law 50/2017) and assign the Italian Regulatory Authority for Energy, Networks and the Environment the task of regulating and supervising the waste sector (Law 205/2017).

In other sectors, the opening up of markets has been delayed: the transition to the free market in the energy sector has been postponed to 2019 (Law 124/2017) and the entry into force of the requirement that tender procedures be used to issue licences for the use of public land (Law 205/2017), as envisaged by the Bolkestein Directive (Directive 2006/123/EC), has been put off until 2020.

There were conflicting developments with regard to professional services. On one hand, some restrictions on the ownership structure of pharmacies and law offices were lifted (Law 124/2017); on the other, rules were introduced on fair compensation in dealings with general government, banks, insurance companies and large firms that make the remuneration of these professionals subject to a fairness assessment by the courts, which takes account of the parameters established at ministerial level in setting compensation (Decree Law 148/2017). These rules restrict the free determination of prices, a principle that the repeal of the fee schedule system was intended to encourage. Regulatory restrictions on competition, which were reduced sharply between 2003 and 2013, have now risen slightly (Figure 12.1).

Figure 12.1

Regulation of professional services (1)
(index)



Source: S. Mocetti, G. Roma and E. Rubolino, 'Knocking on parents' doors: regulation and intergenerational mobility', Banca d'Italia, Temi di Discussione (Working Papers), 1182, 2018.
(1) Degree of regulation of 14 occupations requiring membership in a professional order derived using an OECD-style approach; the index applies values of between 0 (least restrictive regulation) and 6 (most restrictive).

Regulated occupations – which include all occupations that require specific training and work experience in order to be practiced – represent a significant and growing share of total employment. According to Istat's labour force survey, it is estimated that about 5.4 million persons are employed in these occupations (Figure 12.2.a), almost

Figure 12.2

Employment in regulated occupations and employment mobility

(a) Persons employed in regulated occupations
(thousands of persons)

(b) Entry rate by occupation (1)
(per cent)

Source: Based on Istat's labour force survey data.
(1) Probability of entering an occupation from a state of unemployment or from another occupation. Occupations are defined as different if they have been assigned different 4-digit occupation classification codes by Istat; if the occupation is the same, it is still treated as different if the person switches from payroll employment to self-employment or vice versa.

24 per cent of total persons in employment, and that 52 per cent of them hold a university degree. The number of persons employed in regulated occupations rose by more than 30 per cent compared with the mid 1990s, more than double the rate for total employment; just a small portion of this growth is attributable to the expansion in the number of regulated occupations.[1]

Unjustified restrictions on the entry into and the conduct of a profession may limit supply, generating rents, and reduce worker mobility between different occupations. Given equal education levels and other observable factors, income from employment in regulated occupations is almost 8 per cent higher than that of employment in the other sectors; the rate of entry into regulated occupations by persons who were formerly unemployed or are switching from another occupation is more modest (Figure 12.2.b). The existence of measures that impede competition can also distort talent allocation (see the box 'The regulation of professional activities and intergenerational mobility').

THE REGULATION OF PROFESSIONAL ACTIVITIES AND INTERGENERATIONAL MOBILITY

It is not uncommon for children to choose the same occupation as one of their parents. This is due in part to the intergenerational transmission of skills and knowledge that are important in a given trade. Those who inherit a going concern can benefit from the privileges of position afforded by professional regulation, which positively affects their parents' longevity in the profession but reduces the quality of talent allocation.

The risks of possible distortions arising from professional regulation are underscored by the fact that the EU countries with more restrictive rules are also those with higher intergenerational persistence. Similar indications are obtained by comparing different occupations within a given country. Looking at the average of 14 professional orders in Italy,[1] more than one quarter of the children of self-employed professionals are enrolled in a university degree programme that will lead them down the same career path as one of their parents, as opposed to 12 per cent for the children of payroll professionals and 7 per cent for those whose parents are employed in similar but unregulated occupations.[2]

A more accurate estimate of the effects of regulation was obtained by considering how it has changed over time. Special attention was given to the liberalization measures introduced in 2006 and in 2011-12, whose effects on the 14 regulated occupations considered were measured using a regulation intensity indicator similar to the one developed by the OECD, though more highly aggregated. The indicator takes account of the fact that each profession can have specific characteristics

[1] Namely: accountants, agronomists, architects, biologists, chemists, doctors, engineers, geologists, lawyers, notaries, pharmacists, psychologists, social workers, and veterinarians.

[2] S. Mocetti, G. Roma and E. Rubolino, 'Knocking on parents' doors: regulation and intergenerational mobility', Banca d'Italia, Temi di Discussione (Working Papers), forthcoming.

[1] S. Mocetti, L. Rizzica and G. Roma, 'Regulated occupations in Italy: extent and labor market effects', Banca d'Italia, Questioni di Economia e Finanza (Occasional Papers), forthcoming.

which encourage the acquisition at family level of important skills and competencies and isolates the effects solely linked to changes over time in the advantageous positions created by regulation.

Assuming the same patterns of enrolment in the various degree programmes, the combined effect of the two liberalization packages produced a fall of about one quarter in the degree of intergenerational persistence in the occupation chosen by the children of self-employed professionals, as opposed to little or no change for the children of payroll professionals and of those whose parents are employed in similar but unregulated occupations (see the figure). This outcome reflects in particular the easing of some of the constraints on professional conduct (namely, the repeal of statutory fees and the lifting of the ban on advertising). The impact of liberalization was strongest in the provinces where the demand for professional services is high and where the supply constraints previously created by regulation used to generate the most significant privileges of position.

Intergenerational persistence by cohort (1)
(per cent)

Source: Based on data from Istat's labour force survey.
(1) Intergenerational persistence is measured as the probability that children choose a degree programme that will lead them to pursue the same occupation as one of their parents. Cohorts refer to the year of enrolment in a university degree programme. The three groups considered are: children whose parents are self-employed professionals, children whose parents are payroll professionals, and children of professionals operating in a similar but unregulated trade.

The regulation of business activity

The enabling law reforming the regulations on corporate crises and insolvency (Law 155/2017), was recently approved and is expected to be implemented by the end of November 2018. It seeks to make the current framework more effective by, among other things, extensively overhauling the liquidation procedure, redistributing the competencies of judicial offices, and introducing measures to encourage the timely disclosure and management of crises.

Partly as a result of the decision to restrict the use of composition with creditors for liquidation purposes, the enabling law outlines a structure that would strengthen the role of the liquidation procedure as a tool for winding up insolvent companies. The evidence available on the foreclosure process, which is analogous in many ways to the liquidation process, shows that, while the sale stage varies based on cyclical factors, it accounts for less than half of the total length of the process on average.[2] Therefore simplifying the different stages of the procedure and reinforcing the incentives

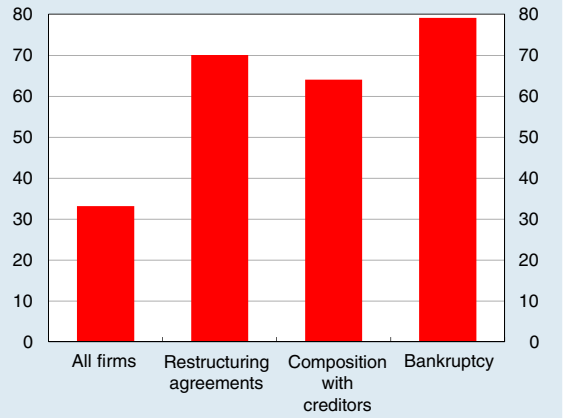
[2] S. Giacomelli, T. Orlando and G. Rodano, 'Real estate foreclosures: how the process works and the effect of recent reforms', Banca d'Italia, Questioni di Economia e Finanza (Occasional Papers), 448, 2018.

for the parties involved (e.g. the bankruptcy trustee) would contribute greatly to reducing the duration.

The redistribution of the competencies of judicial offices in the context of bankruptcy proceedings is designed to increase the level of specialization of judges, which is particularly important in view of the highly complex subject matter and the very technical and specialized knowledge required.

Figure 12.3

Firms at high risk of insolvency (1)
(per cent)



Source: A. Danovi, S. Giacomelli, P. Riva and G. Rodano, 'Bargaining tools for the resolution of distressed firms: judicial composition with creditors', Banca d'Italia, Questioni di Economia e Finanza (Occasional Papers), 430, 2018.
(1) A firm is considered at high risk for insolvency if it has a Cerved score above 6 (CeBi-Score3). For firms that have initiated procedures, the score is calculated based on the balance sheets for the two years prior to filing. Includes firms that initiated procedures in 2010-14; for all firms the balance sheets for 2010-14 were used.

The majority of companies that entered into a restructuring agreement or composition with creditors from 2010 to 2014 demonstrated signs that they were at a high risk of insolvency as early as two years prior to the start of the procedure (Figure 12.3). Analyses of composition with creditors agreements show that the sooner the procedure is begun, the greater the likelihood of court approval of the plan and the higher the recovery rates for creditors.[3]

To encourage timely disclosure and management of a crisis situation and to offer tools to aid debtors, the enabling law introduces measures to strengthen corporate governance – increasing the accountability of the owner or the management and control bodies – and sets out three new procedures for the early warning and assisted settlement of crises. The law also envisages the development of economic and financial indices capable of promptly detecting when a company is in difficulty. However, automatically linking crisis status to surpassing certain thresholds, especially if they are not well calibrated, may result in excessive recourse to the new procedures, thereby overtaxing the institutions responsible for their management and triggering premature liquidations.[4]

The institutional environment

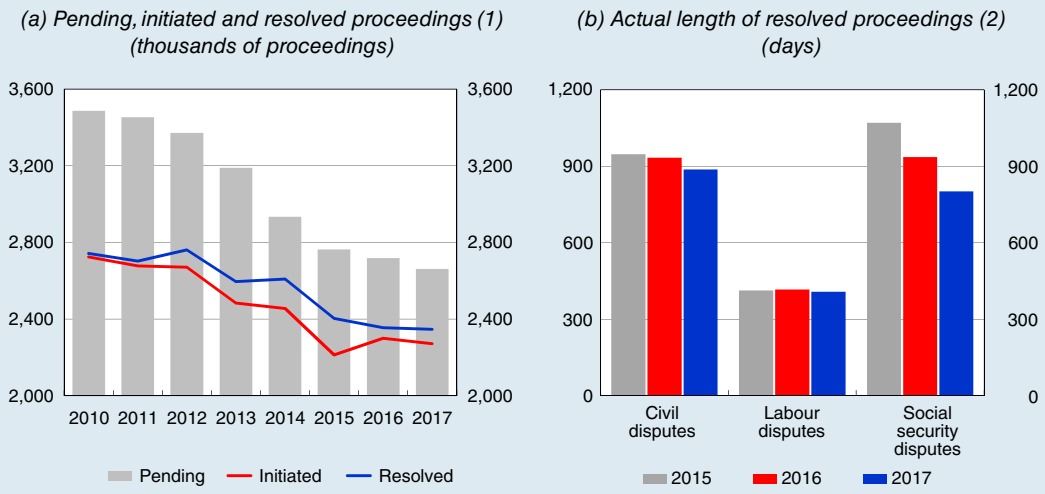
Civil justice. – The number of pending court proceedings continued to fall (Figure 12.4.a). This solely reflected a lower propensity to litigate and was countered by a further decrease in the number of resolved cases. The smaller backlog has started to have an impact on the length of proceedings, which fell slightly, though it remains long (Figure 12.4.b). Social security cases saw the most significant

[3] A. Danovi, S. Giacomelli, P. Riva and G. Rodano, 'Bargaining tools for the resolution of distressed firms: judicial composition with creditors', Banca d'Italia, Questioni di Economia e Finanza (Occasional Papers), 430, 2018.

[4] E. Brodi, 'Dealing with corporate crises in a timely way. Notes on the optimal design of an "Early warning and composition system"', Banca d'Italia, Questioni di Economia e Finanza (Occasional Papers), 440; 2018.

Figure 12.4

Justice demand and supply



Source: Based on Ministry of Justice data.
(1) The data refer to total proceedings before the trial courts (with the exception of preliminary technical assessments on social security disputes). – (2) Actual average length of resolved proceedings before the trial courts, by subject matter.

decline, however they accounted for less than 10 per cent of total disputes. Partly on account of recent measures to reduce the backlog of cases, the percentage of proceedings pending for more than three years fell further last year, dropping to just under 21 per cent. These measures have somewhat slowed the decline in the duration of proceedings.

As for foreclosure proceedings, preliminary evidence shows that targeted legislation adopted in 2015-16 is helping to shorten their duration (see the box 'The effects of some recent reforms on the length of foreclosure proceedings'). Additional benefits should be seen once the measures contained therein are fully implemented. Work is being completed on the development of the IT infrastructure needed to digitalize judicial auctions and to circulate information on the status of the proceedings (see the box 'Italian measures to facilitate the recovery of non-performing loans secured by real property', in *Financial Stability Report*, 1, 2018). The length of foreclosure proceedings nonetheless remains very long: over four and a half years on average in 2017 and much longer in Southern Italy.

THE EFFECTS OF SOME RECENT REFORMS ON THE LENGTH OF FORECLOSURE PROCEEDINGS

In the two years 2015-16, significant changes were made to the rules governing foreclosure proceedings in order to shorten their duration.[1] Specifically, in 2015 certain procedural deadlines were brought forward and sale methods were modified to lend greater flexibility to the price-setting mechanism; additional changes to the mechanism were made in 2016.

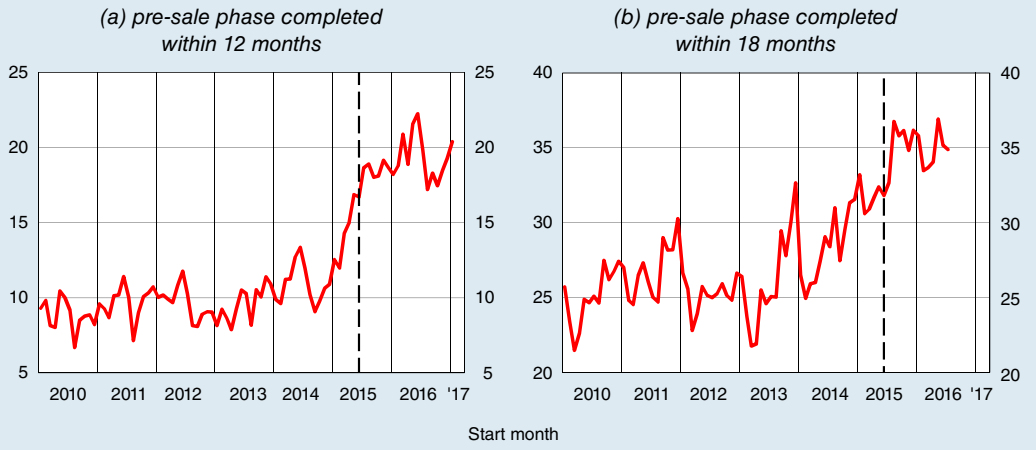
[1] Decree Law 83/2015, converted into law as amended by Law 132/2015, and Decree Law 59/2016, converted into law as amended by Law 119/2016.

The efficacy of these measures was assessed using data drawn from the online portal of the Ministry of Justice, which can be sorted according to the three main phases of foreclosure proceedings (pre-sale, sale and post-sale).[2] Since most of the proceedings subject to the new rules are currently under way, the assessment focused on the first two phases, using as a proxy for their length the share of proceedings for which each of these phases was completed within a certain period of time.

The measures are helping to reduce the duration of the pre-sale and sale phases. The share of proceedings in which the pre-sale phase was completed within 1 year rose from 10 to 19 per cent (panel (a) of Figure A), while the share completed within 18 months increased from 27 to 35 per cent (panel (b) of Figure A). It is estimated that the median duration of pre-sales has decreased by about a tenth.[3]

Figure A

Pre-sale phase: completion time (1)
(share of total; per cent)



Sources: Based on data from the Roundtable on Italian Foreclosures (Tavolo di Studio sulle Esecuzioni Italiane, T6) and Datasinc Srl.
(1) The solid red line shows, per start month, the percentage of proceedings in which the pre-sale phase was completed within the time frame considered (12 months in panel (a), 18 months in panel (b)), compared with the total number of new proceedings, excluding those that were interrupted during that time frame before having completed the pre-sale phase. The dotted black line indicates the month in which Decree Law 83/2015 entered into effect.

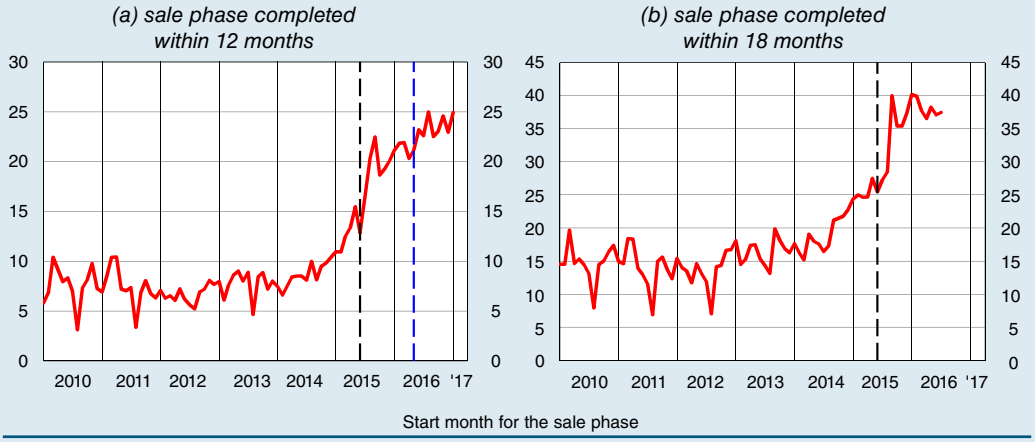
The effects of the new rules were even greater for sales: the share of proceedings in which the sale phase was completed within 1 year rose from 8 to 21 per cent (panel (a) of Figure B) while those completed within 18 months increased from 17 to 36 per cent (panel (b) of Figure B). It is estimated that the median duration of sales has been almost cut in half.

[2] S. Giacomelli, T. Orlando and G. Rodano, 'Real estate foreclosures: how the process works and the effect of recent reforms', Banca d'Italia, Questioni di Economia e Finanza (Occasional Papers), forthcoming.

[3] In these estimates, the median duration is the length of time within which 50 per cent of the proceedings initiated in the phase in question were completed, excluding those that were interrupted during that time without the phase having been completed (e.g. the parties rescinded).

Figure B

Sale phase: completion time (1)
(share of total; per cent)



Sources: Based on data from the Roundtable on Italian Foreclosures (Tavolo di Studio sulle Esecuzioni Italiane, T6) and Datasinc Srl.
(1) The solid red line shows, per start month for the sale phase, the percentage of proceedings in which the sale phase was completed within the time frame considered (12 months in panel (a), 18 months in panel (b)), compared with the total number of proceedings entering the sale phase, excluding those that were interrupted during that time frame before having completed the sale phase. The dotted black line indicates the month in which Decree Law 83/2015 entered into effect. The dotted blue line indicates the month in which Decree Law 59/2016 entered into effect (owing to the longer time horizon, any effects of the 2016 reform cannot be assessed in respect of panel (b)).

The estimated reduction in pre-sales is consistent with the preliminary assessment made when the reforms[4] entered into force, while the estimated reduction in sales falls just short of expectations.

[4] M. Marcucci, A. Pischedda and V. Profeta, 'The changes of the Italian insolvency and foreclosure regulation adopted in 2015', Banca d'Italia, *Notes on Financial Stability and Supervision*, 2, 2015.

Econometric estimates show that the length of foreclosure proceedings varies greatly among the courts, which may in part reflect organizational and management factors.[5] The guidelines approved by the Superior Council of the Judiciary in October 2017 could encourage the spread of the best practices followed by the most efficient courts. Data on the various phases of foreclosure proceedings show a significant difference between their actual duration and their duration according to the law (Table 12.1). A thorough analysis of the underlying factors (e.g. lack of appropriate incentives, insufficient resources) can help to identify additional solutions to make the proceedings more efficient.

The use of out-of-court credit recovery methods remains limited. A survey carried out by the Bank of Italy in April 2018 on 290 banks reveals that only a few of them intend to seek recourse to the Marciano Pact (Decree Law 59/2016) in newly-entered contracts while most banks (61 per cent) are still studying its utility. In February 2018, an agreement was entered into by the Italian Banking Association and Confindustria to encourage its use.

[5] S. Giacomelli, T. Orlando and G. Rodano, 'Real estate foreclosures: how the process works and the effect of recent reforms', Banca d'Italia, Questioni di Economia e Finanza (Occasional Papers), 448, 2018.

Table 12.1

Lengths of foreclosure phases (pre-2015 reform)

PHASE	Legal time limit (1) *(days)*	Median length (2) *(days)*	% completed within the time limit (2)
Filing of documentation (3)	120	127	46
Appointment of appraiser (4)	30	109	27
Submission of the appraisal (5)	120	161	30

Sources: Based on data from the Roundtable on Italian Foreclosures (Tavolo di Studio sulle Esecuzioni Italiane, T6) and Datasinc Srl. The original source consisted of data from the public-access section of the Ministry of Justice's online services portal (PST) (see S. Giacomelli, T. Orlando and G. Rodano, 'Real estate foreclosures: how the process works and the effect of recent reforms', Banca d'Italia, Questioni di Economia e Finanza (Occasional Papers), 448, 2018.
(1) The legal time limit indicated is the one that was in effect prior to the 2015 reform (Decree Law 83/2015). The time limits for the filing of documentation and the submission of the appraisal were extended to 240 and 120 days respectively. – (2) Does not include foreclosures for which an event indicating an extension is recorded in the PST. – (3) The length of the documentation filing phase is equal to the time that elapses between 'entry in cause list' and 'filing of property title report/notary's report', for all foreclosures for which both events are recorded in the PST. – (4) The length of the property appraiser appointment phase is equal to the time that elapses between the 'filing of property title report/notary's report' and 'appointment of the property appraiser' for all foreclosures for which both events are recorded in the PST. – (5) The length of the property appraisal submission phase is equal to the time that elapses between the 'appointment of the property appraiser' and the 'submission of the property appraisal' for all foreclosures for which both events are recorded in the PST.

Corruption. – Istat recently published the results of the first survey on the prevalence of corruption in Italy. According to its data, around 8 per cent of households have engaged in at least one act of corruption. Among entrepreneurs and the self-employed, around one-third state that, in the sector in which they operate, kickbacks to obtain licences, concessions or contracts with general government are common. The high degree of pervasiveness of this phenomenon, particularly in the region of Lazio and in Southern Italy, adversely affects private businesses and limits the advantages of using public resources.[6]

Transparency International's corruption perception index has recorded a gradual improvement since the beginning of the decade, probably reflecting enforcement actions undertaken during the period. Over the last year, partly in response to pressure from international bodies, the statutes of limitations were moderately lengthened and the protection afforded to informants (whistleblowers) was extended to private sector employees.

Public contracts. – The procurement system affects the economy through the quality and cost of the goods and services it provides and through the efficient allocation of public funds to businesses. Based on data from the National Anti-Corruption Authority, in 2017 the overall amount of calls for tenders relating to public contracts for works, services and supplies was around €150 billion (almost 9 per cent of GDP), up compared with the previous year, which may have reflected the difficulties encountered in adapting the system to the new rules. Around two-thirds of contracts were awarded through negotiated procedures and direct awards, mechanisms that provide contracting authorities with more discretion in selecting a bidder compared with open procedures. Greater autonomy can be of help in selecting the best bidder, but may also lead to

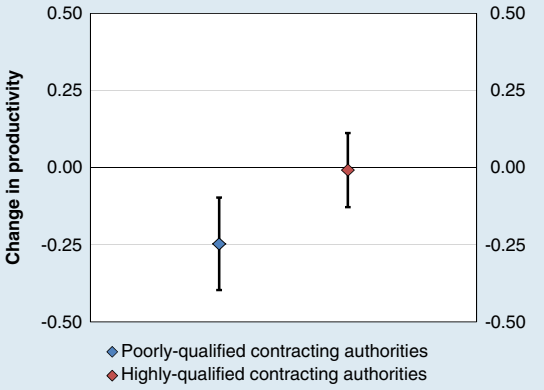
[6] I. De Angelis, G. de Blasio and L. Rizzica, 'On the unintended effects of public transfers. Evidence from EU funding to Southern Italy', Banca d'Italia, Temi di Discussione (Working Papers), 1180, 2018.

inefficiencies and favouritism, especially where government entities are less qualified (see the box 'The regulation of tenders: the possible costs of discretion').

THE REGULATION OF TENDERS: THE POSSIBLE COSTS OF DISCRETION

Negotiated procedures give contracting authorities greater discretion in awarding a contract, enabling them to consult with one or more economic operators and negotiate the terms of the tenders with them. We analyse the effects of this greater flexibility by comparing the characteristics of successful bidders before and after the change in legislation in 2011,[1] which made it easier to use negotiated procedures for the execution of public works.[2]

The effect of greater discretion on the productivity of successful bidders (1)
(index)



Sources: Based on data from Telemat, Cerved Group and the Ministry of the Interior.
(1) The figure shows the point estimates of the effect of the greater discretion introduced in 2011 (see footnote 1 of the box) and the corresponding confidence interval (90 per cent). These are shown separately for contracting authorities with a qualification index (see footnote 3 of the box) below and above the median (left- and right-hand side respectively). Productivity is measured as the ratio of value added to labour costs in the year prior to the awarding of the contract.

Using data on calls for tenders by Italian municipalities in the period 2009-13, the analysis shows that greater discretion was associated with a reduction in the average productivity of successful bidders (measured in the year prior to the awarding of the contract). This has negative effects on allocative efficiency as it directs public funds to firms that are structurally weaker. The worst allocations are all observed among the 'least qualified' contracting authorities (see the figure),[3] for which greater discretion was also accompanied by an increase in tenders awarded to firms with a local politician among its shareholders or directors.

More broadly, the analysis shows that the increase in discretion was associated with a decrease in the transparency of the procurement system: there was a reduction in the share of tenders for which firms complied with the reporting obligations relating to the execution phase of the contract (e.g. the final costs of the project).

[1] Article 4 of Decree Law 70/2011, converted by Law 106/2011.

[2] A. Baltrunaite, C. Giorgiantonio, S. Mocetti and T. Orlando, 'Discretion and supplier selection in public procurement', Banca d'Italia, Temi di Discussione (Working Papers), 1178, 2018.

[3] Qualification levels were measured by aggregating the following indicators: educational attainment of the local officials and staff; degree of specialization of the offices in charge of procurement, approximated by the size of the municipality; transparency of information reporting, defined as the share of tenders awarded prior to the reform for which the information relating to the execution of the contract was sent to the competent authority; and corruption risk, estimated by combining measures of the frequency of offences against the public administration, of perceived corruption, and of trust in local government institutions.

To reduce the risks associated with greater discretion, the new Public Procurement Code (Legislative Decree 50/2016) provides for a variety of tools, including a qualification system for contracting authorities which takes account of both their organizational features and their past performance, rewarding for good behaviour. Although the Code took effect more than two years ago, most of the measures have yet to be implemented.

For the system to be effective, adequate information on all the stages of the tender process is required, however data on the performance of public works contracts tendered by Italian municipalities, for example, are transmitted to the competent authority only in a minority of cases.[7]

[7] A. Baltrunaite, C. Giorgiantonio, S. Mocetti and T. Orlando, '*Discretion and supplier selection in public procurement*', Banca d'Italia, Temi di Discussione (Working Papers), 1178, 2018.

13. BANKS AND INSTITUTIONAL INVESTORS

In 2017 banks strengthened their economic and financial situation. The stock of non-performing loans (NPLs) was considerably reduced, both as a result of numerous bad-loan sales and the drop in new defaults which, as a proportion of total loans, returned to the levels recorded before the global financial crisis.

Expansionary monetary conditions contributed to reduced funding costs, which fell to very low levels in historical terms. The increase in customer deposits almost completely offset the fall in retail bond issuance; the favourable terms of the Eurosystem refinancing operations facilitated a move away from inter-bank funding.

There was a strong growth in bank profitability, thanks to the reduction in loan loss provisions and lower operating costs. The return to profitability and the sizeable capital increases significantly narrowed the capitalization gap between the main Italian and European banks. Capital strengthening in 2017 was at a ten-year high.

During the year the crisis situations of some banking groups were resolved. Banca Monte dei Paschi di Siena was allowed to carry out a precautionary recapitalization; Veneto Banca and Banca Popolare di Vicenza went into liquidation. The sale of the bridge banks – established after the resolution of four local banks at the end of 2015 – was completed.

The flow of resources into investment funds significantly increased thanks to the tax incentives introduced under the provisions on individual savings plans. Asset management companies' profits also grew. The profits of insurance companies remained stable despite a moderate decrease in funding.

The structure of the Italian banking industry

At the end of 2017 there were 113 banks belonging to 60 banking groups, 347 stand-alone banks and 78 subsidiaries of foreign banks operating in Italy. Eleven banking groups were classified as significant for the purposes of the European Single Supervisory Mechanism (SSM) – three fewer than in 2016 – following the merger between two large former *popolari* banks and the exit of Banca Popolare di Vicenza and Veneto Banca from the market. The significant banking groups held 74 per cent of the total assets of Italian banks.

The cooperative banks – currently undergoing reform (see the box 'The reform of cooperative banks') – still represent the largest category (280 units) of stand-alone

banks, followed by banks set up as joint stock companies (52) and the *popolari* banks (15). In March 2018, the Constitutional Court dismissed questions raised regarding the constitutionality of certain aspects of the reform of the *popolari* banks as unfounded.

THE REFORM OF COOPERATIVE BANKS

Following the reform of the cooperative banking sector introduced by Law 49/2016, Iccrea Banca, Cassa Centrale Banca and Cassa Centrale Raiffeisen each applied to establish a cooperative banking group and to serve as its parent company.[1] Once the supervisory authority approves the application, the independent cooperative credit banks (banche di credito cooperativo, BCC) have 90 days to decide whether to join one of the cooperative banking groups and to execute the 'cohesion' contract (*contratto di coesione*).

Thus far, 144 BCCs have expressed an interest in joining Iccrea, 95 in joining Cassa Centrale Banca and 39 in joining Cassa Centrale Raiffeisen. Once the process of creating the banking groups is complete, the structure of the Italian banking system will be significantly changed: it will consist of 52 groups (including the 3 cooperative groups) and 67 banks not belonging to a group (compared with 60 groups and 347 independent banks at the end of 2017). Cassa Centrale Banca will have more than €30 billion in total balance sheet assets and together with Iccrea, which has already exceeded this threshold, will be classified as a bank that is directly supervised by the ECB; Cassa Centrale Raiffeisen will be supervised by the Bank of Italy.

Based on data from the end of 2017, Iccrea and Cassa Centrale Banca, which will operate throughout Italy, will become the sixth and tenth largest Italian banking groups by loan market share (5.3 and 2.7 per cent respectively). The regional cooperative banking group Cassa Centrale Raffeisen, which holds 0.6 per cent of the market share of loans, will be one of the largest banks in the Trentino-Alto Adige region (22 per cent of loans).

The reform of the cooperative banking sector will make it possible for the individual BCCs to grow their capital to the level and at the rate required by the regulations and by market conditions while retaining the cooperative features that define the sector. Between 2007 and 2017, BCCs' capital adequacy was affected by low levels of self-financing and by their inability to access the capital market.

The joint guarantee systems provided for in the cohesion contracts and access to the capital that the parent company will be able to raise on the market will make it possible to manage any potential crisis situations. Without group membership and the guarantee system, a BCC facing a crisis would have to be liquidated, which could result in losses for its unprotected depositors. In addition, the creation of these groups will make it possible to respond to the challenges arising from technological advances, heightened competition, and changes in the European supervisory framework more effectively.

[1] For a description of the reforms to the cooperative banking sector, see the box 'The recent reform of Italian mutual banks', in *Financial Stability Report*, 1, 2016.

In Italy, banks hold just under 70 per cent of the assets of the financial sector, a share comparable with that of the other main euro-area countries. The size of the Italian banking sector relative to the economy is more modest, however: at the end of 2017, banks' assets equalled 2.2 times GDP, compared with 2.7 in the euro area, 2.4 in Germany and 3.7 in France.

Italian banks continued to reorganize their retail distribution channels. In 2017 the number of bank branches was downsized by 5.7 per cent to around 27,300 (a 19.9 per cent reduction since 2008). According to data from their business plans, the significant groups expect to make similar cuts in 2018. The number of bank branches per 10,000 inhabitants, which was 4.8 in 2016, is higher than the euro-area average of 4.4, but lower than in France (5.6) and Spain (6.2).[1]

The top five banking groups have continued to rationalize their geographical coverage by eliminating the duplication of branches that resulted from the mergers carried out in the period just before the financial crisis. Between 2009 and 2013, approximately 88 per cent of branch closures were carried out in municipalities in which the same group had other branches; between 2014 and 2017, this share decreased to 67 per cent. The other banks only began to close branches in 2013. This later start was probably due in part to a lower incidence of multiple branches in the same location; fewer than half the closures carried out by these banks were in municipalities in which they had at least one other branch.

The use of on-line banking continued to spread; 65.9 per cent of households were able to access their deposit accounts on line, of which almost 90 per cent were able to use home banking services. A recent survey by the Bank of Italy showed that there is widespread interest among banks in adopting new digital technologies (especially for instant payments and the online conclusion of contracts and transactions), which are seen as crucial for improving the quality of services offered and reaching a younger customer base.[2] A significant number of projects were surveyed (235), but the amounts earmarked were low (around €131 million) and mostly concentrated among significant banks. Responses to the regional bank lending survey conducted by the Bank of Italy's branches at the beginning of 2018 indicate that for smaller banks the main obstacle to launching projects aimed at harnessing new digital technologies is a lack of technological, human and financial resources.

Solution to the crisis situations of some banking groups

During 2017 the crisis situations of some banking groups were resolved.

In July 2017 the European Commission approved the precautionary capitalization of Banca Monte dei Paschi di Siena, calculating the maximum State intervention at €5.4 billion, including compensation for retail investors under the framework of the burden-sharing measures applied with respect to shareholders and subordinate creditors.

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[1] Based on ECB data, 'Report on financial structures', 2017.

[2] Bank of Italy, 'FinTech in Italia: Indagine conoscitiva sull'adozione delle innovazioni tecnologiche applicate ai servizi finanziari', December 2017.

In June the Supervisory Board of the SSM declared that Veneto Banca and Banca Popolare di Vicenza were 'failing or likely to fail'. Once the Single Resolution Board (SRB) had determined that resolution action was not necessary in the public interest, the banks were placed under compulsory administrative liquidation and public support measures were put in place for their orderly exit from the market. Intesa Sanpaolo bought part of the assets of the two banking groups.

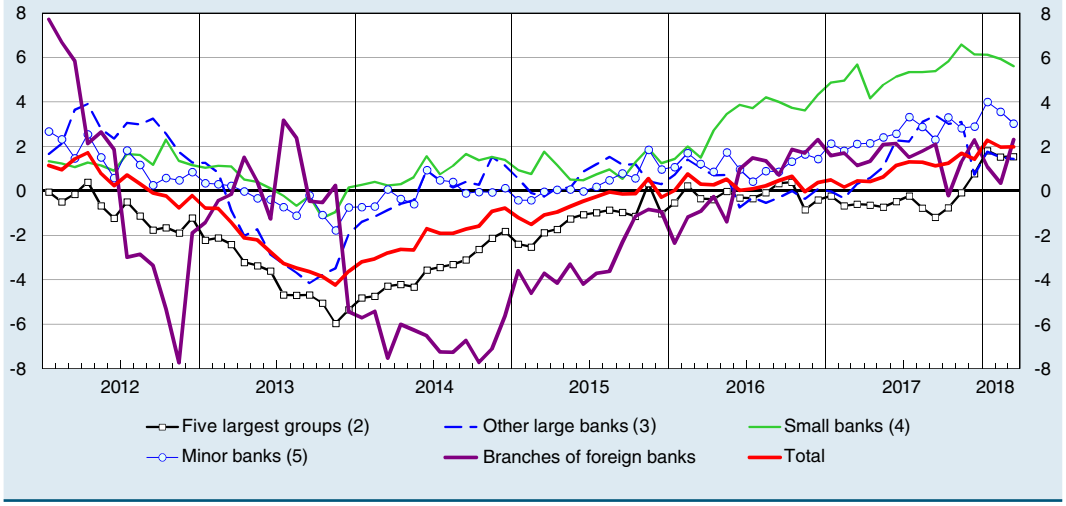
The sale of the four bridge banks – established after the resolution of four local banks at the end of 2015 – was completed. Nuova Banca delle Marche, Nuova Banca dell'Etruria e del Lazio and Nuova Cassa di Risparmio di Chieti were sold to UBI Banca, while Nuova Cassa di Risparmio di Ferrara was sold to BPER Banca.

Assets

Lending. – In 2017 lending by Italian banks increased by 1.4 per cent, one percentage point up on 2016 (Figure 13.1). The growth was observed in the private sector, whereas lending to general government declined slightly.

Figure 13.1

Lending by bank size (1)
(monthly data; 12-month percentage changes)



Source: Supervisory reports.
(1) Data for March 2018 are provisional. Loans include repos and bad debts. Banks are classified according to the composition of banking groups at March 2018 and to unconsolidated total assets at December 2008. Percentage changes are calculated net of the effects of securitizations, reclassifications, write-downs, exchange rate adjustments and other changes not due to transactions. – (2) Banks belonging to the groups Banco Popolare, Intesa Sanpaolo, Monte dei Paschi di Siena, Unione di Banche Italiane and UniCredit. – (3) Groups and stand-alone banks with total assets from €21,532 million to €182,052 million. – (4) Groups and stand-alone banks with total assets from €3,626 million to €21,531 million. – (5) Groups and stand-alone banks with total assets of less than €3,626 million.

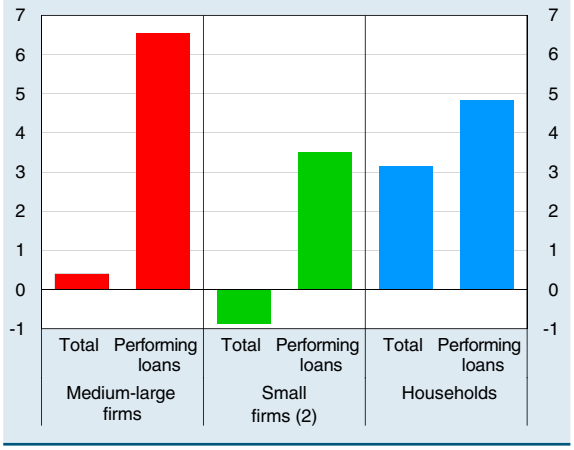
Bank loans to Italian residents, which totalled around €1,800 billion, were equal to 107 per cent of GDP, a level close to that of 2008 and 16 percentage points below the peak of 2012.

Growth in lending to households (3.2 per cent) was driven by increased demand, bolstered by low interest rates and rising disposable income; credit

supply conditions remained accommodative. There was a substantial upswing in consumer credit, following a trend which began in the second half of 2015: since then the share of consumer credit in total bank lending to the non-financial private sector has risen from 4.4 to 7.0 per cent, just above the average for the euro area (6.6 per cent) but below the average for Germany (7.7 per cent) and France (7.4 per cent).

Figure 13.2

Growth rate of total bank loans and performing loans at December 2017 (1)
(12-month percentage changes)



Sources: Supervisory reports and Central Credit Register.
(1) Performing exposures at December 2017 that showed no signs of impairment in the 12 months considered. Percentage changes are adjusted to take account of the effects of securitizations, reclassifications, write-downs, and other changes not due to transactions. The sectors are classified according to Ateco 2007. – (2) Limited partnerships and general partnerships, simple partnerships, de facto companies and sole proprietorships with fewer than 20 workers.

Business lending, on the other hand, remained largely unchanged despite the strengthening economic recovery (see the box 'The economic recovery and business lending', Chapter 7). According to the banks, credit supply conditions remained favourable; the main beneficiaries were larger and more financially robust firms (see *Financial Stability Report*, 1, 2018). Loans to companies with more than 20 employees grew by 0.5 per cent, while lending to smaller firms contracted by 0.9 per cent. The gap persists even when insolvent borrowers, who by their very nature obtain less credit, are excluded (Figure 13.2).

Business lending picked up in the early months of 2018. The increase was more marked for larger manufacturing and service firms owing to higher investment; credit supply incentives provided by the Eurosystem's longer-term refinancing operations (see *Economic Bulletin*, 2, 2018) may also have played a role.

Holdings of securities. – At the end of 2017, banks' holdings of non-bank securities stood at just under €540 billion, down 6.2 per cent compared with the end of the previous year. This reduction was accounted for entirely by Italian government securities, totalling €331.7 billion, down by 12.5 per cent compared with December 2016 and by 22.4 per cent compared with the spike in the first quarter of 2015.

In December the share of public-sector securities in total assets was 9.1 per cent; for small banks, which structurally hold a larger share, it stood at 20.5 per cent. The average residual maturity of securities on banks' balance sheets – 4.8 years at the end of 2017 – remained largely unchanged over the course of the year.

Banks are gradually reducing Italian securities as a proportion of all government securities on their balance sheets, with the share dropping from 98 to 88 per cent between 2013 and 2017. This trend is the same for all euro-area banks, for which the share of public sector securities issued by the country of residence has fallen

from 78 to 72 per cent. There have been decreases of more than 10 percentage points in the countries most affected by the sovereign debt crisis (Spain, Portugal, Ireland and Greece).

The amount of complex financial instruments on the balance sheets of Italy's significant banks is low: at the end of 2017, assets classified as Level 2 and Level 3 – whose value is not based on deep and liquid market prices (see the box 'The complex financial instruments on the balance sheets of significant banks in the SSM') – together made up 6 per cent of total assets, less than half the average amount observed among the sample of banks included in the European Banking Authority's (EBA) Risk Dashboard.[3]

THE COMPLEX FINANCIAL INSTRUMENTS ON THE BALANCE SHEETS OF SIGNIFICANT BANKS IN THE SSM

The International Financial Reporting Standards (IFRS) require banks to classify their financial assets and liabilities at fair value based on a hierarchy that takes account of the greater or lesser availability of market information. The financial instruments classified as Level 2 and Level 3 (L2 and L3) are not listed on active markets. Examples include some credit and interest rate derivatives, and structured bonds. Their balance-sheet values are defined by the banks on the basis of either the prices recorded on less liquid markets, or the prices of similar instruments listed on active markets, or using valuation models.[1] Valuation uncertainty is especially marked for L3 instruments: while the valuation of L2 instruments is based on parameters inferable from market transactions, that of L3 assets uses non-observable parameters.

At the end of 2016, the total volume of L2 and L3 instruments on the balance sheets of banks in the Single Supervisory Mechanism (SSM) was extremely large, amounting to some €6.8 trillion, of which €3.6 trillion assets and €3.2 trillion liabilities; assets alone made up 16 per cent of the total assets of the significant banks in the SSM. Moreover, holdings of these instruments were concentrated in a relatively small number of banks. The Italian banking system held a somewhat modest share of total L2 and L3 instruments (around 5 and 6 per cent of assets and liabilities, respectively).

Our recent analyses[2] underscore how the accounting principles leave banks ample margins of discretion with regard to valuation but envisage stricter treatment for L3 instruments;[3] it follows that banks have incentives to broaden the category of L2 instruments and consequently a share of these can de facto

[1] For a more detailed description of L1, L2 and L3 assets, see the box 'The composition of assets measured at fair value in banks' balance sheets', in *Financial Stability Report*, 1, 2017.

[2] R. Roca and F. Potente (eds.), 'Risks and challenges of complex financial instruments: an analysis of SSM banks', Questioni di Economia e Finanza (Occasional Papers), 417, 2017.

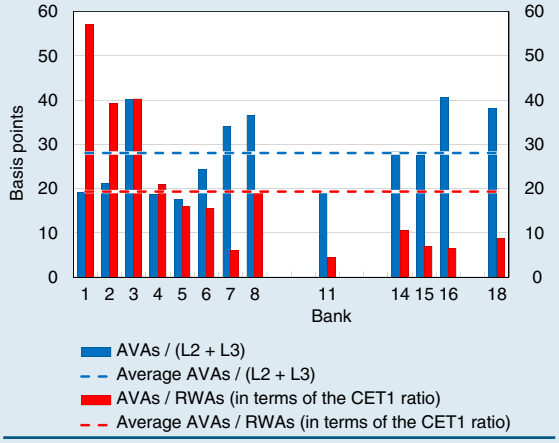
[3] For L3 instruments, in particular, the gains arising from the difference between the transaction price and the fair value measured at trade inception ('day-1 profit') must be covered by corresponding reserves.

[3] The sample covers 190 European banks (see the EBA's website: 'Risk analysis and data').

display a degree of valuation uncertainty not dissimilar to that for L3 instruments. However, the L2 category is in any case very broad, as it includes both relatively simple products, such as swaps, and products with characteristics similar to those of L3 instruments. It is not easy to quantify the two components.

Banks also tend to adopt hedging strategies. For the most complex L2 instruments and for L3, it is nevertheless rare to achieve a perfect hedge; for these instruments there is therefore often a share of unhedged risk (basis risk). An assessment of the actual magnitude of this risk requires in-depth analyses by the supervisory authority, also through targeted inspections.

Additional valuation adjustments on a sample of SSM banks (1)
(basis points; December 2016)



Sources: SNL Financial and banks' financial statements.
(1) The sample comprises 18 banks: Banco Santander; Bayerische Landesbank; BBVA; BNP Paribas; Commerzbank; Crédit Agricole Group; Crédit Mutuel Group; Deutsche Bank; DZ BANK AG; Groupe BPCE; HSBC France; ING Groep; Intesa Sanpaolo; Landesbank Baden-Württemberg; Nordea Pankki Suomi Oyj; Rabobank; Société Générale; and UniCredit. The banks are listed in alphabetical order here but not in the graph. The missing data refer to banks for which it was not possible to identify prudential deductions ascribable to AVAs based on financial statements.

Some simulations show that in extreme scenarios (no risk offsetting among assets and liabilities or no benefits of diversification), the potential losses on selected L2 and L3 instruments in stressed market conditions range from 10 to 50 per cent of their value, depending on the complexity of the specific instrument.

To mitigate the effects of valuation uncertainty, the accounting and prudential rules envisage the use by banks of valuation adjustments (respectively, Fair Value Adjustments and Additional Valuation Adjustments). These adjustments, however, are often calculated not in reference to the risk of an individual instrument, but at portfolio level: risk offsetting is therefore possible between assets and liabilities, which might result in an underestimation of the overall risk. For SSM banks holding the largest shares of L2 and L3 assets, the value of AVAs amount on average to 0.3 per cent of the balance-sheet value of L2 and L3 assets, and to 0.2 per cent of risk-weighted assets (see the figure). That amount could turn out to be low compared with the potential swings in value in stressed market conditions.

The SSM undertook several initiatives to assess specific aspects of L2 and L3 books, or focused on L3 instruments (e.g. the 2014 Asset Quality Review). Supervisory action could be further enriched by broadening the information available off-site. Information on the main valuation models employed could be useful for detecting outlier techniques; turnover indicators could help in the assessment of the actual degree of liquidity of the financial instruments; the analysis of 'day-1 profit' could, finally, improve the identification of the most complex products.

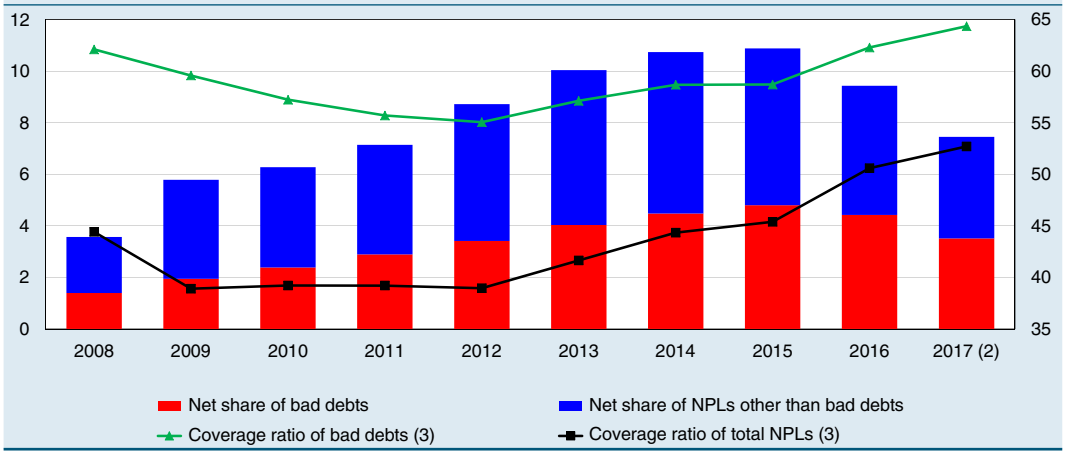
Non-performing loans

In 2017 the flow of new non-performing loans in proportion to total loans fell by half a percentage point to 2.1 per cent, returning to pre-crisis levels. The downward trend continued in the first quarter of 2018, with the flow falling to 1.7 per cent as a result of the drop in business loan defaults.

The stock of non-performing loans (net of write-downs) on banks' balance sheets decreased by €38 billion to €135 billion; including write-downs, it decreased by €65 billion to €285 billion. At the end of the year the ratio of non-performing loans to total loans granted by banks fell to 14.5 per cent including write-downs and to 7.5 per cent net of write-downs (17.3 and 9.4 per cent respectively in 2016). The net non-performing loans ratio dropped by over three percentage points with respect to the peak in December 2015 (Figure 13.3).

Figure 13.3

Credit quality of Italian banks and groups: shares and coverage ratios of non-performing loans and bad debts (1)
(per cent)



Sources: Consolidated supervisory reports for banking groups, individual supervisory reports for stand-alone banks.
(1) Loans to customers. Includes banking groups and subsidiaries of foreign banks. Does not include branches of foreign banks. The shares are calculated based on banks' exposures net of loan loss provisions. The coverage ratio is the ratio of loan loss provisions to the corresponding gross exposures. – (2) Provisional data. – (3) Right-hand scale.

In 2017 banks sold or removed from their balance sheets €35 billion of gross non-performing loans (€8 billion in 2016), around 10 per cent of the existing stock at the end of 2016; almost two-thirds were sold in securitized form, mostly under the State guarantee scheme for the securitization of non-performing loans. Another €18 billion were transferred to a company controlled by the Ministry of Economy and Finance following the liquidation of Banca Popolare di Vicenza and Veneto Banca. A further €3 billion were disposed of as part of the acquisition of three former savings banks by the Italian branch of a foreign bank. Recoveries made under the standard workout procedure also contributed to the reduction in non-performing loans.

In 2017 the coverage ratio for non-performing loans (the ratio of loan loss provisions to total non-performing loans) rose by two percentage points to 53 per cent, far above the average for the main European banks. The coverage ratio for non-performing loans not backed by collateral went up by around half a percentage point, to 63.5 per cent.

Banks improved their ability to deal with unexpected losses deriving from non-performing loans; between 2015 and 2017 the ratio of non-performing loans to common equity tier 1 net of provisions dropped from 105 to 70 per cent (from 118 to 74 per cent in the case of the significant banks).

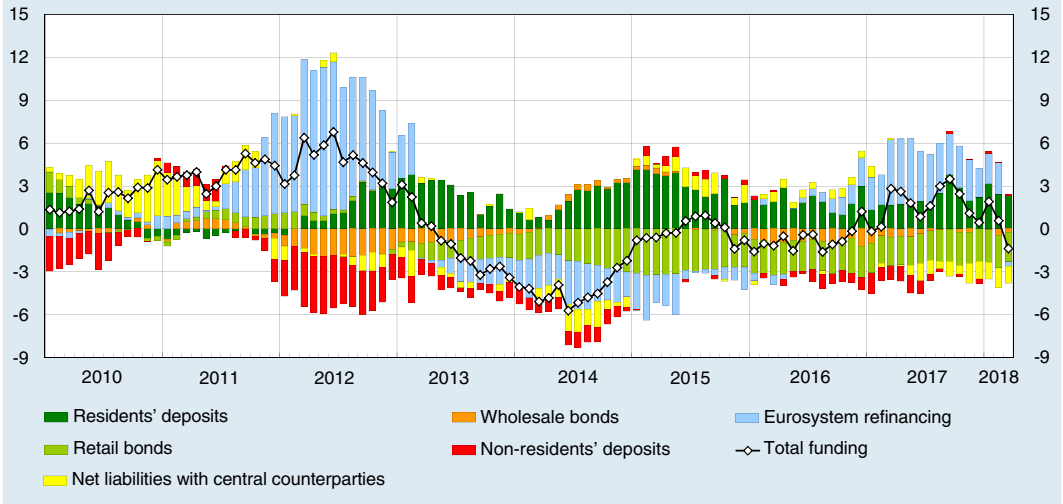
A number of measures were launched to encourage a further reduction of non-performing loans. In March 2017 the European Central Bank published non-binding guidance to significant banks, setting out best practices for managing non-performing loans; in March 2018 the guidance was supplemented with an addendum on prudential loan provisioning. In the same month, the European Commission published a legislative proposal aimed at limiting the build-up of new non-performing loans (see *Financial Stability Report*, 1, 2018). In 2018 the EBA will publish its guidelines for EU banks on the management of non-performing loans. In January 2018 the Bank of Italy issued its own guidance, in line with that recently published by the ECB, on the management of non-performing loans for Italy's less significant institutions.

Funding

Italian banks increased their funding by 0.4 per cent in 2017 (Figure 13.4). Eurosystem refinancing went up at the end of the first quarter of 2017, following the final round of the targeted longer-term refinancing operations (TLTRO2); at the end of the year it accounted for 10.7 per cent of total funding, two percentage points up with respect to the end of 2016. Italian banks cut back on wholesale funding, especially interbank liabilities with central counterparties (-27.2 per cent) and non-residents' deposits (-2.2 per cent).

Figure 13.4

The growth of funding in Italy: contributions of the main components (1)
(percentage points; 12-month changes)

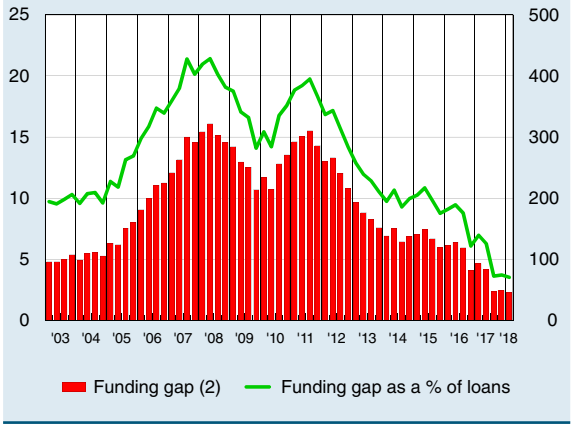


Source: Supervisory reports.
(1) The sum of the contributions is equal to the 12-month change in total funding. The percentage changes in the individual components are calculated net of the effects of reclassifications, changes in exchange rates, write-downs, and other changes not due to transactions. Does not include liabilities with resident Monetary Financial Institutions. Net liabilities with central counterparties represent repo funding with non-residents carried out through central counterparties.

The shift in funding towards Eurosystem refinancing was driven by the extended maturity of the operations and the low cost for banks which will be able to meet the objectives set by the TLTRO programme, namely to increase lending to households and firms.

Figure 13.5

Italian banks' funding gap (1)
(billions of euros and per cent)



Source: Supervisory reports. Excludes Cassa Depositi e Prestiti and the branches of foreign banks in Italy.
(1) Loans to residents minus retail funding (resident deposits plus bonds placed with households). – (2) Right-hand scale (billions).

The share of bond issues in total funding fell to 11.8 per cent, continuing its ongoing decline since it peaked at 27 per cent in the second half of 2011. In the future, this trend could be reversed owing to the need to satisfy the minimum requirement for own funds and liabilities eligible for bail-in (MREL). This could lead to a significant increase in the cost of funding if banks are forced to issue large volumes of bonds within a short timeframe (see *Financial Stability Report*, 1, 2018).

The reduction in bond holdings by households was almost entirely offset by the increase in Italian residents' deposits. The share of bonds in total retail funding fell to 6.6 per cent, continuing its decline since the end of 2011, when it peaked at 25.1 per cent. At the end of 2017, households held 21.7 per cent of the bonds issued by banks; subordinated bonds made up around 15 per cent of that amount.

The funding gap, i.e. the share of loans not covered by retail funding, stood at 3.7 per cent (Figure 13.5), 2.4 percentage points lower than at the end of 2016 and 14 percentage points lower than in 2011. Owing to weak credit growth, the narrowing of the funding gap was more pronounced for the top five banks (from 10.5 to 6.9 per cent); for the other banks the indicator stayed in very negative territory (-25.8 percentage points).

The average cost of funding during the year fell from 0.39 to 0.28 per cent, an exceptionally low value by historical standards. The reduction is attributable in equal measure to the shifting of funding towards less costly sources, in particular the increase in customer deposits and the decrease in bond issuance, and to the lower costs of the various components of bank funding. The average rate of interest on deposits was cut from 0.25 to 0.19 per cent, while that on interbank financing fell from -0.28 to -0.32 per cent.

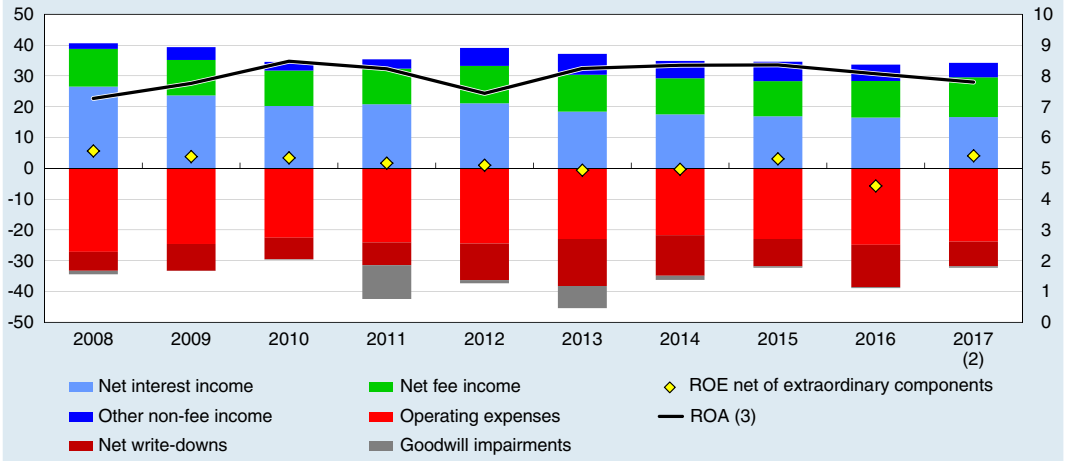
In the early months of 2018 total funding remained largely unchanged with respect to the end of 2017. Bond issues continued to diminish, which banks offset by increasing wholesale funding. The amount of Eurosystem refinancing remained stable.

Capital and profitability

Profitability. – In 2017 the profitability of Italian banks and banking groups picked up: return on equity (ROE) rose to 7.0 per cent, buoyed mainly by extraordinary components linked to mergers carried out during the year (Figure 13.6).[4] Excluding these components, ROE would have stood at 4.1 per cent, in any case its highest level since 2008. The improvement was largely due to lower loan loss provisions, which dropped by 39.6 per cent in the course of the year.

Figure 13.6

Main profit and loss items of Italian banks and groups (1)
(percentage points)



Sources: Consolidated supervisory reports for banking groups, individual supervisory reports for stand-alone banks.
(1) Relative to average equity in the year. – (2) Provisional data. – (3) Average equity for the year over end-of-year total assets, which is different from the prudential measure. Right-hand scale.

Operating profits rose by 13.8 per cent, mainly as a result of the fall in costs (-5.5 per cent); there was a drop in both staff costs (-3.8 per cent) and administrative costs (-7.8 per cent). The cost/income ratio fell by more than 4 percentage points to 69.2 per cent. For Italy's significant banks the ratio was still high by international standards: at the end of 2017 it was 69.9 per cent, 6.5 percentage points higher than the average for the sample of banks included in the EBA's Risk Dashboard.

Gross income remained broadly unchanged from 2016. The increase in fee income (6.3 per cent), largely the result of the placement of asset management products, offset the slight decline in interest income (-0.9 per cent). The gap between the average return on assets and the cost of liabilities remained very narrow, unchanged since 2016 (1.1 per cent).

Revenues stayed very low with respect to pre-financial crisis levels: compared with 2008, they fell by 26.1 per cent, excluding inflation effects, and by 0.3 percentage

[4] During the year some banking groups recorded one-off items linked to consolidations in the sector. These were related to the sale of some of the assets of the two banks liquidated last June with the support of the State, as well as to mergers and acquisitions, with a positive difference between the fair value of the assets and liabilities acquired and the amount paid.

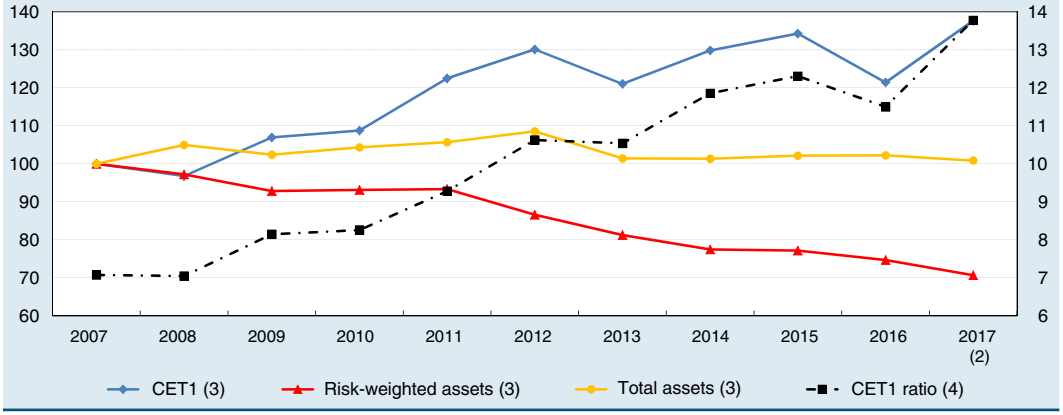
points in relation to assets. Between 2008 and 2017 Italian banks partly offset the significant reduction in interest income by increasing fee income which, as a share of total revenue, shifted upwards from 30.1 to 37.8 per cent. Revenues from the sale of insurance products, the placement of securities, and current account administration and management rose, while income from trading services went down.

Capital. – Capital strengthening in 2017 was at a ten-year high, in terms of both absolute value and the ratio of capital to risk-weighted assets (RWA). At the end of December, the Italian banking system's common equity tier 1 (CET1) stood at 13.8 per cent of total RWA, an increase of 230 basis points against the end of 2016. For the significant banks the ratio increased by 290 basis points, to 13.3 per cent. The gap between the capital adequacy of Italy's significant banks and the average for the main European banks narrowed by over 2 percentage points to 1.5 percentage points in the course of the year.[5]

The large capital increases carried out by four significant banking groups accounted for over two-thirds of the increase in the system's CET1 ratio; out of a total amount of more than €22 billion, just under €4 billion were linked to the State intervention, a contribution to the CET1 ratio of around 30 basis points. In the early months of 2018 a less significant bank successfully completed a capital increase of approximately €700 million.

Figure 13.7

Trend of CET1 and risk-weighted assets of Italian banks and banking groups (1)
(per cent)



Sources: Consolidated supervisory reports for banking groups, individual supervisory reports for stand-alone banks.
(1) Up to December 2013, CET1 stood for 'core tier 1'; from March 2014 it stands for 'common equity tier 1'. – (2) Provisional data. – (3) Index: 2007=100. – (4) Right-hand scale.

The 5 per cent reduction in RWA also helped strengthen the banking system's capital position. The decline reflected both the reduction in balance-sheet assets and the shift towards assets with a lower capital absorption.

[5] The figure for the end of 2016 includes the capital increase carried out by the Unicredit group, which was completed at the beginning of 2017.

The system-wide capital ratio, calculated based on the capital of highest quality, almost doubled (Figure 13.7) compared with the end of 2007. The capital ratio of the significant banks increased by over 7 percentage points; over half of the capital (approximately €70 billion) was raised directly on the market.

In December 2017 the Group of Governors and Heads of Supervision (GHOS) reached an agreement on the finalization of the outstanding part of the Basel III post-crisis regulatory reform package.[6] The measures, which supplement those already introduced after the financial crisis, will be phased in as of 2022 and will take full effect in 2027; they will improve the comparability of banks' capital ratios by reducing excessive variability in the calculation of risk-weighted assets.

The main aspects of the reforms include: updating the standardized approach for measuring credit risk and operational risk; limits on the use of internal models to determine capital requirements, via a more restricted scope of application and more conservative input floors; and a revised output floor that limits the regulatory capital benefits that a bank using internal models can derive relative to the standardized approaches. Under the revised output floor, banks' internal model-based calculations of risk-weighted assets must not fall below 72.5 per cent of the value determined using the standardized approach, in order to reduce excessive variability in capital requirements among banks and to promote transparency.

As in the past, the new rules were calibrated with a view to striking a balance between the goal of increasing the stability of the financial system and the need to limit potentially restrictive short-term effects on credit supply (see the box 'The changes in banking regulation and supervision, credit supply and the economy').

The new rules will have a limited impact on the capital requirements of the Italian banking system. Recent estimates using a sample of major banks indicate that, if the

THE CHANGES IN BANKING REGULATION AND SUPERVISION, CREDIT SUPPLY AND THE ECONOMY

The regulatory changes introduced in response to the financial crisis required banks to increase the quantity and quality of their capital. A stronger capital base has several benefits: it improves banks' ability to support economic growth even when adverse shocks occur, reduces the likelihood of financial crises and limits their impact on the economy, and provides further incentives for banks to manage risk effectively.

The move towards higher levels of capitalization could nevertheless be accompanied by credit supply restrictions. In particular, banks could decide to meet, at least partially, the requirements to increase their capital ratios by reducing their exposures to customers. Banks could also charge higher loan interest rates, reflecting the greater cost of equity compared with other sources of funding. In response to the deterioration in borrowing conditions, households and firms could scale down or defer their spending and investment plans.

[6] Basel Committee, Basel III: 'Finalising post-crisis reforms', December 2017.

A recent study on the Italian economy examines various increases in banks' capital ratios over the last ten years.[1] The methodology adopted enables the contribution of regulatory and supervisory measures to the increase in capital ratios to be isolated from that attributable to macroeconomic and financial developments, and allows their impacts on credit supply, economic activity and inflation to be estimated.

Each of these measures has resulted in a temporary reduction in the volumes of lending to customers and an increase, albeit moderate, in margins on loans. The tightening of credit conditions has had negative effects on the key macroeconomic aggregates, quantifiable in an average contraction of GDP of 1 per cent over a two-year horizon. In quantitative terms, these effects are of the same magnitude as those obtained by similar studies on other countries.

The results confirm that although the measures taken by the supervisory authorities are essential owing to their positive effect on the stability of the financial system, they can have short-term costs. These can be mitigated by properly calibrating the measures and applying them at the most opportune stages of the economic cycle.

[1] A.M. Conti, A. Nobili and F.M. Signoretti, 'Bank capital constraints, lending supply and the real economy: evidence from a BVAR model', Banca d'Italia, Temi di Discussione (Working Papers), forthcoming. The presence of short-term negative effects has been documented in empirical studies on various countries (see, for example: R. Meeks, 'Capital regulation and the macroeconomy: Empirical evidence and macroprudential policy', *European Economic Review*, 95, 2017, 125-141; J.-S. Mésonnier and A. Monks, 'Did the EBA capital exercise cause a credit crunch in the euro area?', *International Journal of Central Banking*, 11, 3, 2015, 75-117).

reforms entered into force today, the increase in RWA would lead to an average reduction in the CET1 ratio of 0.7 percentage points. This result can largely be attributed to the revised standards for calculating operational risk. The output floor would have a lesser impact, given the relatively high risk weight of Italian banks' assets, partly reflecting a conservative approach to internal model use.

The impact of the new rules on the capital of European banks is expected to be greater on average, leading to an average reduction in the CET1 ratio of 1.4 percentage points.[7] This reduction, concentrated among the larger banks, is mainly attributable to the revised internal ratings-based approach (IRB) for credit risk and to the introduction of the output floor.

[7] The estimates for European banks were made by the EBA (see EBA, '*Ad hoc cumulative impact assessment of the Basel reform package*', December 2017). On a global level, the effects of the reforms on capital will be very modest. According to the Basel Committee's estimates, capital requirements will decrease marginally, and capital ratios will rise accordingly. The overall effects nevertheless conceal a high degree of variability between jurisdictions and geographical areas (see Basel Committee, '*Basel III Monitoring Report: results of the cumulative quantitative impact study*', December 2017).

NON-BANK FINANCIAL INTERMEDIARIES AND LOAN GUARANTEE CONSORTIUMS

The economic recovery had positive effects on the activity of non-bank credit institutions operating mainly in the leasing, factoring and consumer credit sectors.[8] Credit quality and profitability both improved. Lending increased by 2 per cent to €116 billion, amounting to around 8 per cent of loans by the banking sector to households and non-financial corporations.

Total profitability was positive, compared with a loss recorded in 2016. This was mainly due to an increase in net fee income from leasing services concentrated among a small number of intermediaries. The total capital ratio[9] increased from 10.4 per cent in 2016 to 11.2 per cent.

At the end of 2017 the total assets of the supervised mutual loan guarantee consortiums, that is the larger consortiums which extend guarantees to ease access to credit for their member firms, amounted to €7.9 billion, down by approximately 3 per cent on 2016. The share of non-performing exposures in total assets went up, from 23 per cent in 2016 to 23.9 per cent at the end of 2017. The profitability of the sector remained negative. Losses increased by 9 per cent, although they were concentrated among fewer intermediaries than in 2016. The total capital ratio increased by 1.5 percentage points to 23.7 per cent.

INSTITUTIONAL INVESTORS

Funding. – The asset management industry continued to expand, spurred on by the shift in the composition of household portfolios (see Chapter 7, 'The financial conditions of households and firms'). Italian investment funds, insurance companies, pension funds and asset management companies raised around €50 billion in funds, slightly more than in the previous year (Table 13.1 and Figure 13.8.a).[10] Assets under management by institutional investors, amounting to around €1,500 billion, reached 88 per cent of GDP.

The slight increase was principally driven by developments in mutual funds, which more than doubled their net inflows. Contributory factors were the favourable performance of returns net of fees (see the box 'The cost of investing in mutual funds') and the introduction of individual savings plans (*piani individuali di risparmio* or PIRs), which are investment instruments eligible for tax incentives with a focus on Italian share and bond markets (see the box 'Individual savings plans', in *Financial Stability Report*, 2, 2017). Net subscriptions of investment funds meeting the requirements for classification as PIRs equalled around €9.7 billion, over half of those of Italian open-end investment funds. Net of flows to PIRs, funding raised by the sector would have been down on 2016.

[8] The analysis concerns financial intermediaries entered in the register provided for by Article 106 of the Consolidated Law on Banking, with the exception of loan guarantee consortiums, which are treated separately.

[9] The ratio of supervisory capital to total risk-weighted assets.

[10] Funding of the single sectors reported in Table 13.1 includes flows from other institutional investors. Data on consolidated funding are reported in Figure 13.8.a.

Table 13.1

Institutional investors: net flows and assets under management
(millions of euros and per cent)

	Net flows		Assets under management			
	2016	2017 (1)	2016	2017 (1)	Percentage composition	
					2016	2017 (1)
Investment funds (2)	11,798	25,090	300,865	327,764	15.6	15.9
Insurance companies (3)	50,861	39,041	680,176	715,800	35.2	34.8
Pension funds (4)	4,425	4,000	93,619	104,813	7.8	7.9
Individually managed portfolios	18,473	-836	801,119	857,563	41.4	41.4
Total	**85,557**	**67,295**	**1,933,355**	**2,058,909**	**100.0**	**100.0**
Consolidated total (5)	**48,997**	**50,191**	**1,399,620**	**1,506,985**	**–**	**–**
per cent of GDP	6.0	3.9	83.3	87.8	–	–
Memorandum item:						
Foreign investment funds (6)	26,874	56,772	687,333	775,778	–	–
of which:						
operated by Italian intermediaries	11,997	25,478	139,257	165,855	–	–

Sources: Based on Bank of Italy, IVASS, Covip and Assogestioni data.
(1) Provisional data. – (2) Italian investment funds. – (3) For assets under management, technical provisions net of reinsurance reserves. Does not include Italian branches of EU insurance companies and includes Italian branches of non-EU insurance companies. – (4) For assets under management, balance sheet assets. – (5) Net of investments in Italian collective investment undertakings by the various categories of financial intermediaries, investments of insurance companies and pension funds in portfolios managed on an individual basis by asset management companies, and the technical reserves of insurance companies associated with the management of open-end pension funds. – (6) Foreign open-end investment funds and funds of foreign banks. Assets under management and net flows are based on the value of the units held and subscribed by Italian investors respectively.

THE COST OF INVESTING IN MUTUAL FUNDS

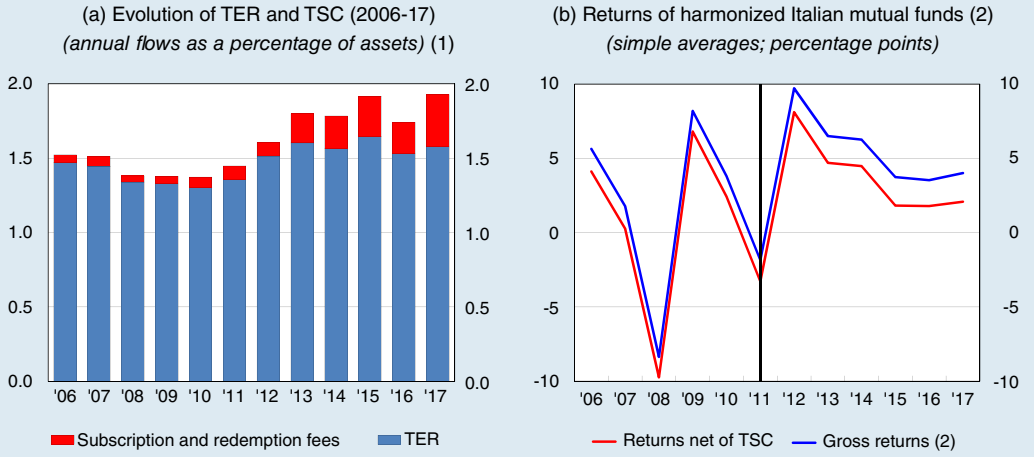
The total cost of investing in a mutual fund (total shareholder cost, TSC) is represented by the sum of the costs directly and indirectly borne by the investor as a percentage of assets under management. Indirect costs include management and incentive fees, remuneration of the custodian bank and other residual costs, which are periodically subtracted from the value of the funds' shares; as a percentage of the fund's total assets, these make up the total expense ratio (TER). Costs borne directly by investors include subscription and redemption fees.

Estimates based on the balance-sheet data of asset management companies (AMCs) show that for the period 2006-17 the TSC was on average 1.6 per cent of the total assets of Italian open-end mutual funds.[1] In 2017 the TSC stood at

[1] G. Albareto, G. Cappelletti, A. Cardillo and L. Zucchelli, 'The total cost of investing in mutual funds', Questioni di Economia e Finanza (Occasional Papers) 391, 2017. The estimates reported are based on the data on the amounts of subscription and redemption fees for each fund recorded in the balance sheets of the AMCs. The data for 2017 are provisional.

1.9 per cent, an increase with respect to the previous year (1.7 per cent, see panel (a) of the figure). The ratio of costs directly paid by investors has risen alongside the increased prevalence of target-maturity funds:[2] from 2013 to 2017 direct costs averaged over 10 per cent of total fees. On average for the period, equity, balanced and flexible funds recorded the highest TSCs; the ratio of costs directly paid by investors was higher for balanced and flexible funds.

Fees and returns of harmonized mutual funds in Italy



Source: Based on data from supervisory reports.
(1) Assets are calculated as the average of the individual funds' assets. – (2) Year-end 12-month returns. Returns are net of tax up to June 2011. Starting from July 2011, the tax regime for domestic mutual funds was changed from an accruals basis to a realization basis; the latter system had already been in force for foreign funds marketed in Italy.

The TSC makes it possible to compare returns on mutual funds with different fee structures, adjusted for risk.[3] Subtracting the costs directly and indirectly borne by investors, the average annual return on Italian open-end mutual funds for the period 2012-17 was 3.8 per cent, compared with a gross return of 5.6 per cent (see panel (b) of the figure); in the same period, the net return on each type of fund was on average positive.

[2] Target-maturity funds are open-ended funds with a predetermined investment horizon (generally between 5 to 7 years). Many of them distribute coupons and are offered over a limited placement period (not exceeding three months).

[3] R. Cesari and F. Panetta, 'The performance of Italian equity funds', *Journal of Banking & Finance*, 26, 1, 2002, 99-126; J.D. Rea and B.K. Reid, 'Total shareholder cost of bonds and money market mutual funds', *Perspective*, 5, 3, 1999; A. Khorana, H. Servaes and P. Tufano, 'Mutual fund fees around the world', *The Review of Financial Studies*, 22, 3, 2008, 1279-1310.

Insurance companies raised around €39 billion in funds, a historically high level despite having fallen somewhat with respect to 2016. The decrease particularly affected the life insurance sector, and is attributable to the low interest rates that continue to limit the capacity of companies to offer guaranteed minimum returns.

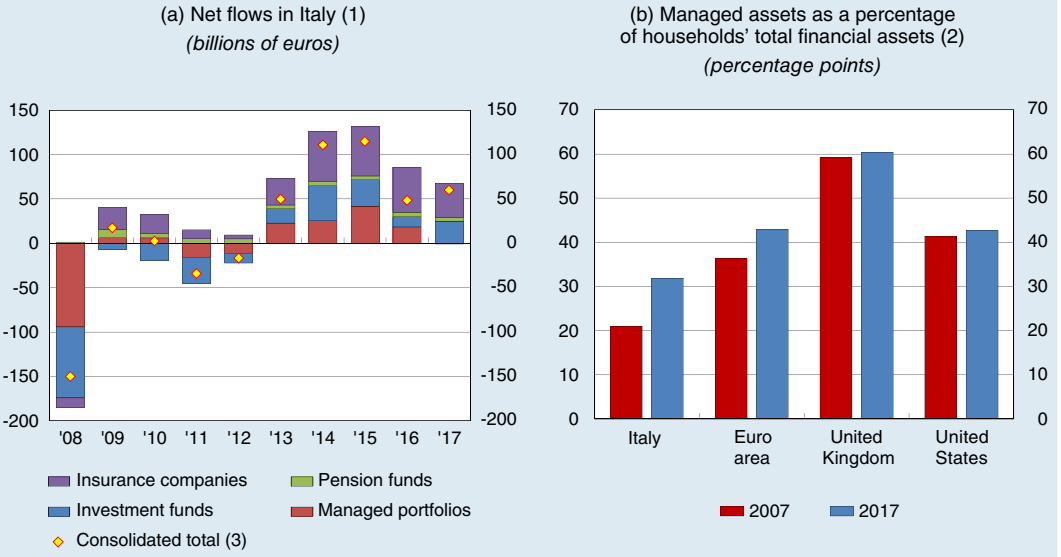
The slight outflow of resources from asset management companies is due to the decline in proceeds from insurance companies relating to policies with guaranteed

minimum returns. Inflows towards asset management companies from households, which were markedly low in 2016, remained stable.

In recent years the proportion of Italian households' total financial assets managed by institutional investors has grown, though it remains lower than the average for the euro area or for the United Kingdom and the United States on account of the fact that, in Italy, a relatively small number of pension funds are managed by institutional investors (Figure 13.8.b; see Chapter 7, 'The financial conditions of households and firms').

Figure 13.8

Net flows and assets of institutional investors



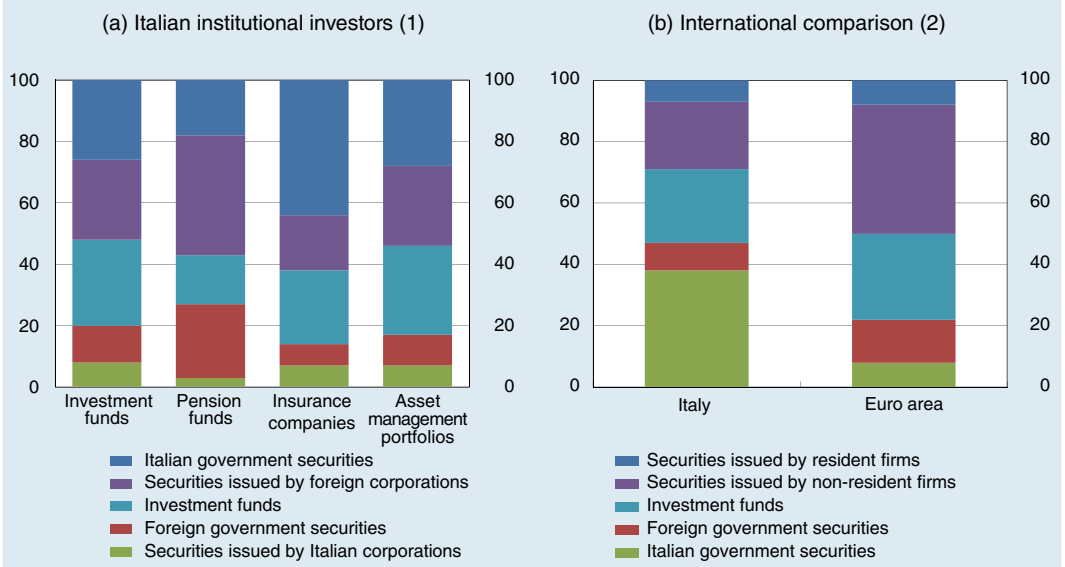
Sources: For panel (a), Bank of Italy, IVASS and Covip; for panel (b), Bank of Italy, ECB, OECD, Bureau of Economic Analysis and Federal Reserve.
(1) The flows for each sector are gross of funds raised from other institutional investors; only Italian investment funds. For 2017, provisional data. – (2) For the euro area, 19 member countries. For the United States, the pension fund aggregate refers to private, state and local funds and excludes federal retirement plans. Includes foreign funds held by residents. – (3) See the note to Table 13.1.

Investment. – The portfolio share invested in Italian government securities by investment funds, insurance companies, pension funds and asset management companies decreased slightly, while investments in corporate securities increased. The weight of corporate shares and bonds issued by resident firms held in the portfolio of Italian institutional investors amounted to about 7 per cent, similar to the share held by institutional investors in the euro area (Figure 13.9) but lower than that of Spain and France, which equalled 11 and 23 per cent respectively.

The development of individual savings plans (PIRs) may lead to a higher share of investments in Italian corporate securities. One year after their launch, the capital of open-end Italian investment funds compliant with the PIR regulatory framework amounted to about €12.8 billion, of which about half were invested in securities issued by Italian non-financial corporations, representing 5 per cent of the total stock of the sector as a whole (see the box 'Investments of open-end Italian investment funds that comply with the rules on individual savings plans', *Financial Stability Report*, 1, 2018).

Figure 13.9

Main financial assets of institutional investors
(percentage shares; 2017)



Sources: Bank of Italy, ECB, IVASS and Covip.
(1) Assets at book value. For insurance companies, investments to cover technical reserves in the non-life branch and traditional life insurance products (class C); investment funds, individually managed portfolios, and pension funds. Italian UCITS. Among pension funds instituted prior to the 1993 reform, the data include occupational, open-end, and independent funds for which data on asset composition are available. The data for 2015 are provisional. – (2) Does not include individually managed portfolios; data for the euro area do not include Italy.

In 2017 the assets managed by Italian closed-end funds specializing in real estate remained stable compared with the level recorded in 2016, though still low by international standards. The portfolio of private equity funds, which has more than tripled in value since 2010, amounted to about €17 billion. The stock of funds investing in minibonds, which have been operational for about five years, amounted to just under €2.5 billion. Three years after their introduction the assets held by credit funds amounted to about €500 million.

Profitability. – The profitability of Italian insurance companies in both the life and non-life sectors remained stable (see *Financial Stability Report*, 1, 2018).

The favourable performance of inflows towards open-end investment funds was reflected in the increase in fund managers' profitability. Net of revenue from extraordinary sales, net profits grew by 37 per cent for this category of fund. Firms specializing in private equity management continued to feel the effects of the difficulties in raising new capital. The ratio of supervisory capital to the overall capital requirement remained substantially stable (from 6.3 per cent in 2016 to 6.0 per cent).

14. THE MONEY AND FINANCIAL MARKETS

Italian financial market conditions improved in 2017 as a result of the strongly expansionary monetary policy stance in the euro area, more robust economic recovery, favourable trends in company profits and the reabsorption of a large part of the systemic risks in the banking system.

The general Italian stock market index benefited especially from the rise in Italian bank share prices, which increased more than in the other major euro-area countries. The improvement in analysts' earnings forecasts and the resolution of the crisis facing some Italian banking groups were contributing factors. During the year the yields on Italian government securities gradually increased, in line with those in other countries, following the consolidation of the economic recovery in the euro area. The yield spreads between Italian ten-year government bonds and the corresponding German bonds remained stable, despite ongoing international tensions.

In early 2018, the Italian financial markets suffered less than those of other euro-area economies from sharp bouts of volatility in international markets. The yield spread on ten-year government bonds narrowed; since mid-May it has widened again considerably on account of the re-emergence of uncertainties as to the outlook for the Italian economy. Low sovereign spreads on Italian government securities require credible prospects for consolidating the public finances and ongoing reform efforts aimed at improving the growth potential of the Italian economy over the long term.

The money market

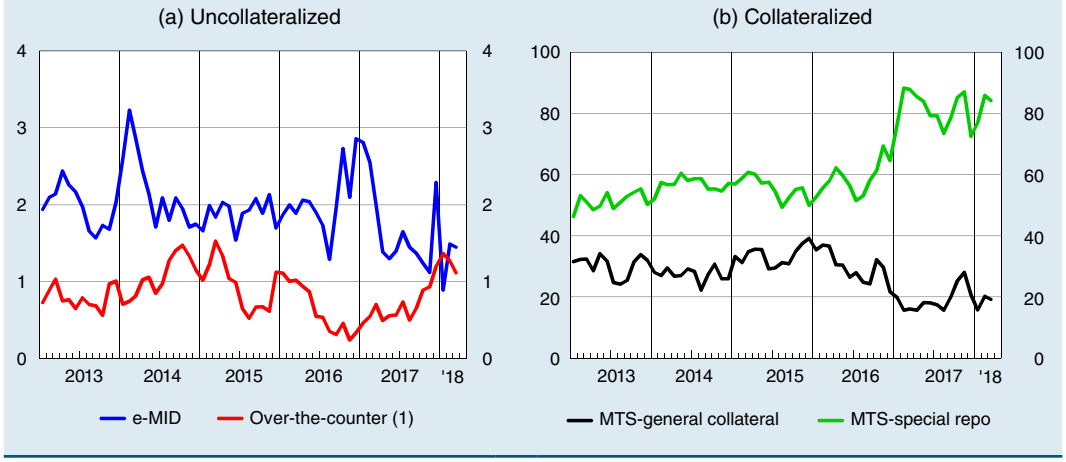
In 2017 banks continued to make very limited use of the money market given the abundant liquidity in the banking system generated by the Eurosystem's expanded asset purchase programme (APP) and targeted longer-term refinancing operations.

The volume of trading of unsecured bank deposits on the e-MID electronic market declined on average for the year, while trading on the over-the-counter market was virtually unchanged (Figure 14.1.a). Both markets recorded significantly lower volumes than they did before the 2008 financial crisis.

Most trading continues to be conducted on the repo market operated by MTS. Continuing the trend that began in the second half of 2016, the average daily trading volumes increased compared with the previous year in the special repo segment, which reached new historic highs, standing in contrast to a contraction in the general collateral segment (Figure 14.1.b; see Chapter 14, 'The money and financial markets', *Annual Report for 2016*, 2017).

Figure 14.1

Money market trades
(monthly averages of daily data; billions of euros)



Sources: Based on e-MID SIM SpA, MTS SpA and TARGET2-Banca d'Italia data.
(1) Uncollateralized money market trades with maturities of up to one week between Italian banks belonging to different groups; estimates based on TARGET2-Banca d'Italia data.

The interest rates of very short-term repos on Italian sovereign bonds have remained aligned with the Eurosystem's deposit facility rate.

Public sector securities

Supply and demand.– In 2017 net issues of Italian public sector securities declined compared with 2016 (from €56 billion to €43 billion) partly due to the Treasury's decision to reduce its liquid balance (see Chapter 11, 'The public finances'). The stock of these securities fell slightly, reaching 111.3 per cent of GDP at the end of the year. The average residual maturity of the debt remained high at around 7.4 years (see *Economic Bulletin*, 2, 2018), thereby helping to contain the sensitivity of the average cost of public debt to fluctuations in yields at issue.

During the same period the Bank of Italy's holdings of Italian government securities rose further to 19.1 per cent (from 14.4 per cent in 2016). The net purchases made by the Bank under the APP were nonetheless lower than the year before (falling from €119 billion to €106 billion) following the recalibration of monthly purchases begun in April 2017 (see Chapter 3, 'Monetary policy in the euro area').

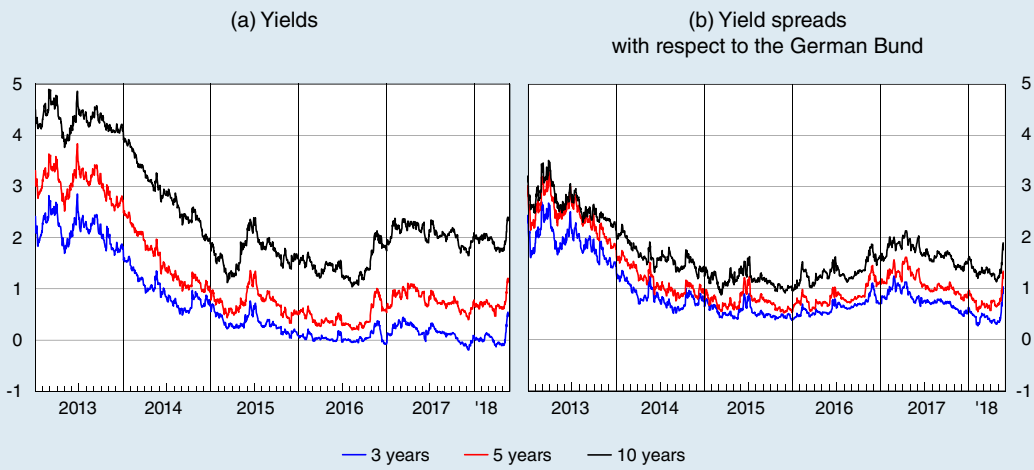
As the percentage share of securities held by the Bank of Italy increased, that of Italian resident investors decreased. Specifically, the share held by Italian banks fell dramatically (by 2.5 percentage points to 15.3 per cent); the shares held by households, insurance companies and Italian investment funds also declined, but to a lesser extent (by 0.7, 0.6 and 0.2 percentage points to 5.4, 15.2 and 2.7 per cent respectively).

Foreign investors' holdings retreated slightly (by 0.7 percentage points) to 35.4 per cent of total public securities. According to our estimates, the share held by foreign investors remained almost unchanged at 26.5 per cent net of both Eurosystem holdings (excluding the Bank of Italy) and foreign individually managed portfolios and investment funds attributable to Italian investors.

Yields. – In 2017 the yield on Italian ten-year government bonds rose by about 25 basis points to 2.1 per cent (Figure 14.2.a); short- and medium-term securities showed less pronounced increases. Yields grew owing to the improvement in cyclical conditions in both Italy and the euro area, however they continued to be contained by the Eurosystem's public sector purchase programme and were not affected by the gradual recalibration of the euro area's monetary policy stance started in the autumn. Concerns about geopolitical factors and risks associated with global trade policies did not have a significant impact on Italian or other euro-area government securities.

Figure 14.2

Yields and yield spreads on BTPs at different maturities
(daily data; percentage points)



Source: Based on Bloomberg data.

After widening in early 2017, starting in the spring the yield spreads with respect to the corresponding German Bund gradually narrowed, remaining unchanged in the year as a whole (Figure 14.2.b). The improvement was partly due to the outcome of the French presidential elections and the success of the public support measures taken for some Italian banks, in addition to the publication of macroeconomic data that were more favourable than expected.

The yield spreads narrowed significantly in early 2018, mainly thanks to improved cyclical conditions. Since the second half of May, the spreads have widened again owing to renewed uncertainty about Italy's economic outlook. Around the end of the third week of May, the yield spread for ten-year bonds was about 190 basis points.

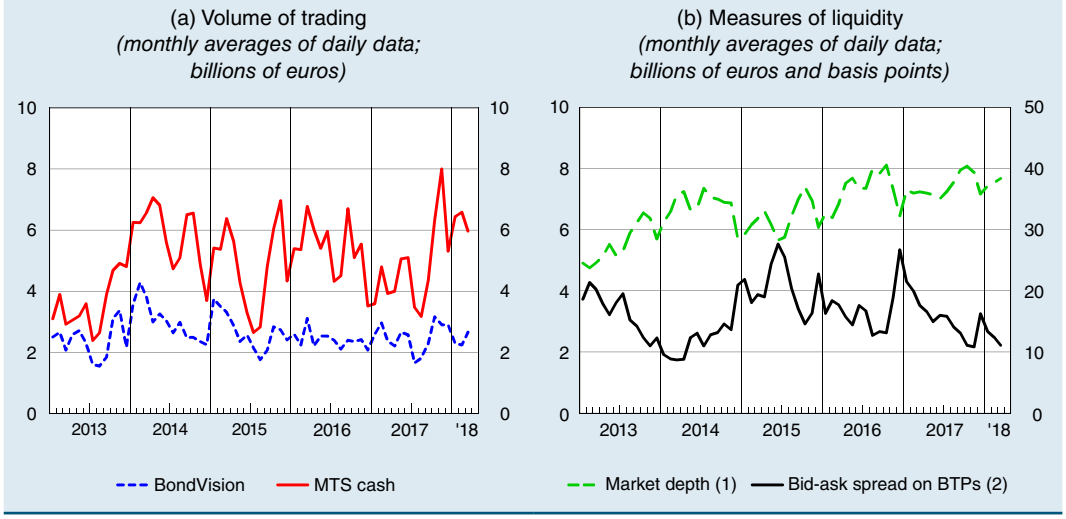
Trading in the secondary market. – In 2017 the secondary market in Italian government bonds continued to display good liquidity conditions, owing in large part to the significant improvement recorded in the second half of the year.

Compared with the previous year, average daily trading rose by 4 per cent on the BondVision platform, which is mainly used by institutional investors; volumes instead fell on the MTS Cash market, with large fluctuations in the second part of the year

(Figure 14.3.a). The quantity of securities offered for purchase or sale by market makers continued to increase, accompanied by a significant narrowing in the bid-ask spread (Figure 14.3.b).

Figure 14.3

Government securities trading in the secondary market



Source: Based on MTS SpA data.
(1) Calculated as the daily average of the semi-sum of pending orders on the buy and sell side proposed by market makers in the first 5 best quotes. – (2) Right-hand scale.

The average cost of special repo trading on the MTS Cash market, measured by the difference between the rates on general collateral repos and special repos, referred to as the specialness, increased in 2017 compared with the year prior (by 3 basis points to 9 points), to then contract in the first quarter of 2018.

Corporate bonds and bank bonds

Issuance. – In 2017 non-financial Italian corporations benefited from particularly favourable borrowing conditions, spurring greater recourse to the bond market: the balance between bond issues and redemptions was positive by over €20 billion (Table 14.1) and gross placements on international markets almost doubled (to €42 billion from €22 billion in 2016, based on Dealogic data).

Italian banks continued to make net redemptions of bonds (Table 14.1), reflecting in part the tendency to seek out less costly sources of financing, such as customer deposits and refinancing with the Eurosystem (see Chapter 13, 'Banks and institutional investors'). According to Dealogic data on gross issues, wholesale placements on international markets by the leading Italian banks returned to growth (to €31 billion, from €23 billion in 2016).

Yields. – Italian firms' funding conditions on bond markets remained highly favourable. Last year the average yield on bonds issued by non-financial corporations largely held steady at around 1 per cent (at 0.8 per cent in the euro area). In reaction to the

Table 14.1

Medium- and long-term bonds of Italian banks and firms (1)
(nominal values; millions of euros)

	Net issues (2)			Stocks			% of GDP
	2015	2016	2017	2015	2016	2017	2017
Banks	-105,663	-66,899	-64,911	619,531	554,183	481,873	28
Other financial corporations	-15,985	615	15,125	185,040	185,475	200,467	12
Non-financial corporations	-3,846	-2,085	21,340	126,472	123,346	143,847	8
Total	**-125,494**	**-68,368**	**-28,446**	**931,043**	**863,004**	**826,187**	**48**

(1) The nationality and sector refer to the issuer and not to its parent company. Refers only to securities with a maturity at issue of more than one year. – (2) Difference between the nominal values of issues and redemptions.

increase in the general level of yields on the highest-rated euro-denominated government bonds, the credit risk premiums for Italian firms fell by around 35 basis points on average to 110 points, thanks to the improvement in underlying economic conditions and to the continuation of the Eurosystem's purchases of non-bank corporate bonds.[1]

For Italian banks the decrease in risk premiums in 2017 was considerable, both in the bond market and in the credit default swap (CDS) market; it was especially pronounced in the subordinated securities sector. At the start of the year the banking sector benefited primarily from the highly successful outcome of several recapitalizations. Very significant reductions in risk premiums were observed at the end of June, too, owing to the resolution of crises at some banks (see Chapter 13, 'Banks and Institutional Investors').

In the first two months of 2018 the CDS spreads for Italian banks narrowed, despite the increase in volatility on international markets. The spreads then widened considerably as a result of tensions affecting some of the major European banks, the renewed intensification of global uncertainty and, in May, the increase in the yield spread on Italian government securities.

The equity market

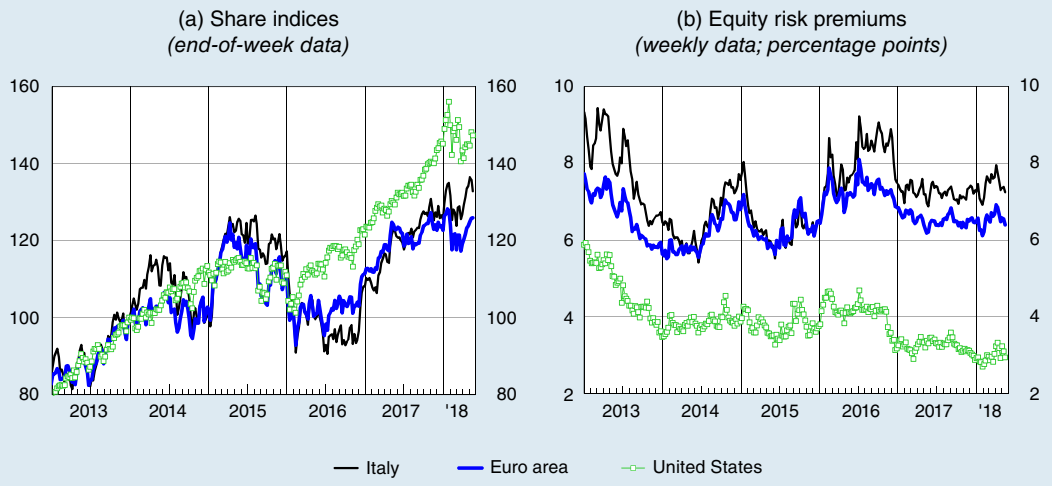
Share prices and trading. – In 2017 the Italian stock exchange rose by 14 per cent (compared with 9 per cent for the exchange that includes major euro-area companies; Figure 14.4.a). Stock prices benefited from a notable increase in expected earnings, and were only partly dampened by the rise in long-term interest rates; the risk premiums demanded by investors basically remained stable (Figure 14.4.b). As in other international markets, in Italy the correlation between the yields on shares and those on government securities, an indicator of the potential for

[1] F. Li, A. Mercatanti, T. Mäkinen and A. Silvestrini, 'Evaluating central bank purchases of corporate bonds using a regression discontinuity design', Banca d'Italia, Temi di Discussione (Working Papers), forthcoming; see also the box 'The impact of Eurosystem purchases of private sector bonds' in Chapter 14 of the *Annual Report for 2016*, 2017.

diversifying investors' portfolio risks, has remained largely unchanged (see the box 'The relationship between share prices and the prices of government securities over the business cycle').

Figure 14.4

Equity markets



Sources: Based on Bloomberg and Datastream data.

THE RELATIONSHIP BETWEEN SHARE PRICES AND THE PRICES OF GOVERNMENT SECURITIES OVER THE BUSINESS CYCLE

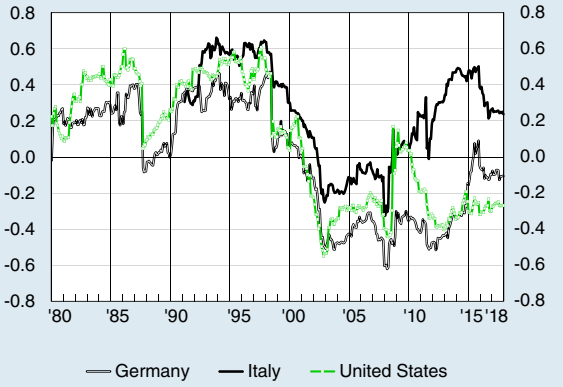
The correlation between share prices and the prices of government securities is a key variable in investors' decisions since it contributes to determining the overall risk of their portfolio of financial assets. This correlation has an effect on the term premiums of the government bond yield curve and, as a result, on the level of long-term interest rates which consequently influence macroeconomic trends. In fact, all things being equal, a negative correlation between share prices and the prices of long-term government bonds offers benefits in terms of financial risk diversification, increasing the investors' demand for government securities and driving down term premiums (see the box 'Long-term yields and term premiums', in the *Annual Report for 2016*, 2017).

In the twenty years 1980-1999, share prices and the prices of government securities were positively correlated in the main advanced countries (see the figure). Since the early 2000s, the correlation has turned negative: the downturn in stock prices was coupled with a growth in government securities prices. This has made it easier for investors to use government securities to mitigate the risks of holding equity shares, risks that are especially high during a recession or crisis.

Over the last ten years, securities purchases made by central banks as part of their monetary policy operations have helped to stabilize the prices of government securities, bringing the correlation to nil or to very low levels, as observed in the United States between 2009-13 and in Germany since 2015. In Italy the trend differed somewhat as a result of the effects that the long period of financial instability had on the yield spread between Italian and German government securities: the correlation between share

prices and the prices of government securities has been positive since the autumn of 2008, concurrently with the onset of the most serious phase of the global financial crisis, followed shortly thereafter by the sovereign debt crisis. In that period, during the generalized worsening in macroeconomic conditions, the drop in Italian share prices was accompanied by a fall in the prices of government securities because of sovereign debt's higher risk premiums.

Correlation between trends in share prices and in government securities prices (1)
(monthly data; correlation indices)



Source: Based on data from Thomson Reuters Datastream.
(1) The correlation between the monthly percentage changes in the capitalization ratio of shares and of government securities, calculated with an exponential moving average (using a decay factor of 0.96). The capitalization ratios include reinvested dividends for shares and reinvested coupons for government securities.

A recent study[1] assessed the role of macroeconomic variables in determining the correlation between equity and government securities markets.[2] Government securities prices fall in the presence of inflationary pressures and robust economic growth; in contrast, these factors help to drive up share prices. Until the end of the 1990s, inflation was countercyclical, reflecting the predominance of supply shocks. In that period the phases of contraction of the business cycle, which had a negative effect on share prices, tended to coincide with increases in inflation which in turn pushed down the prices of government securities. This contributed to the positive correlation between the prices of shares and government securities. Since the start of the 2000s, as a result of the higher incidence of demand shocks, inflation has become pro-cyclical. It follows that during declines in economic activity and in share prices, for instance, inflation also tends to fall, driving up the prices of government securities and making the correlation with share prices negative. The cyclical trend in inflation therefore influences the relationship between share prices and the prices of government securities.

[1] M. Pericoli, 'Macroeconomic determinants of bonds and stocks correlation', Banca d'Italia, Temi di Discussione (Working Papers), forthcoming.

[2] For a summary of the theoretical models, see S. d'Addona and A.H. Kind, 'International stock-bond correlations in a simple affine asset pricing model', *Journal of Banking & Finance*, 30, 2006, 2747-2765; J.Y. Campbell, A. Sunderam and L.M. Viceira, 'Inflation bets or deflation hedges? The changing risks of nominal bonds', *Critical Finance Review*, 6, 2017, 263-301.

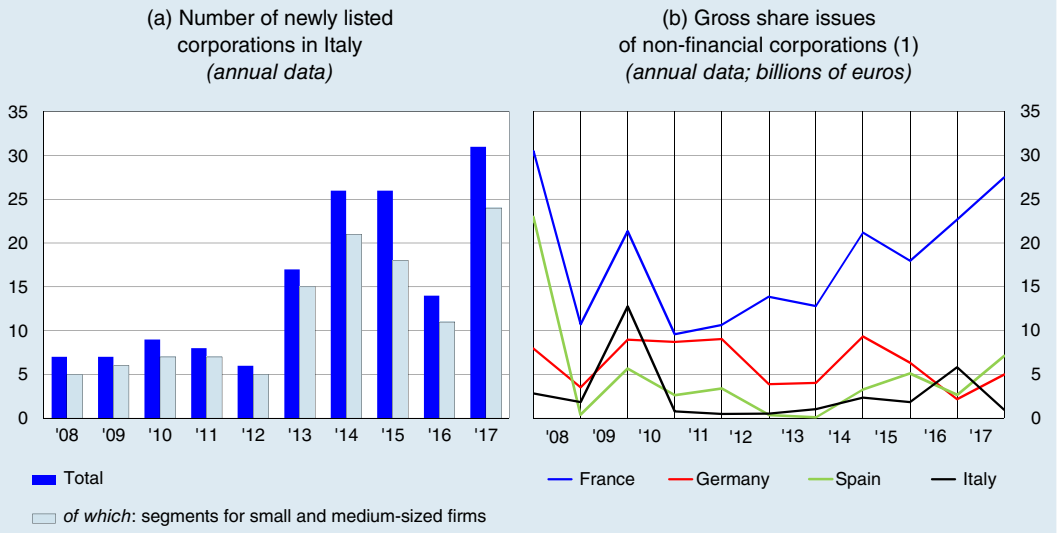
Over the year as a whole the banking sector index rose significantly (by 15 per cent, 4 percentage points more than the corresponding index for euro-area banks). The sector's good performance was partly the result of public measures to support the orderly exit of the Veneto banks from the market and the completion of the precautionary recapitalization process for Banca Monte dei Paschi di Siena. In the autumn months bank share prices fell temporarily, in part owing to the announcement by the ECB's Supervisory Board of a possible addendum to its guidance to banks on non-performing loans (see *Economic Bulletin*, 4, 2017).

In early 2018 the sharp upswing in volatility on international financial markets had only a moderate impact on the Italian stock exchange, mainly owing to the upward revision of the expected earnings of listed companies and favourable trends in the banking sector. Between the start of the year and mid-May the Italian stock exchange index rose by 8 per cent (compared with 3 per cent in the euro area) and that for bank shares increased by 13 per cent (while it fell by 1 per cent in the euro area); in the days following, the two indices fell by 5 and 11 per cent respectively (as opposed to 1 and 5 per cent in the euro area), in conjunction with the increase in the yield spreads on Italian government securities.

Supply. – In 2017 the number of initial public offerings rose significantly compared with 2016. During the year there were 31 IPOs (14 in 2016), for a total value of €5.4 billion (€1.4 billion in 2016). Most IPOs continued to be in the AIM Italia segment for small and medium-sized firms (Figure 14.5.a).

Figure 14.5

IPOs and gross share issues of non-financial corporations



Sources: Based on Borsa Italiana and ECB data.
(1) Includes both new capital raised through IPOs and capital increases by listed companies.

Capital increases by listed companies also rose significantly (for a total value of around €14 billion, from €4.6 billion in 2016), mainly due to bank recapitalizations. The total value of gross share issues by non-financial corporations fell significantly in Italy, but rose in France, Germany and Spain (Figure 14.5.b).

Market infrastructure

In 2017, the activity carried out on the new European platform, TARGET2-Securities (T2S) expanded further owing to the completion of the migration of the central securities depositories.[2]

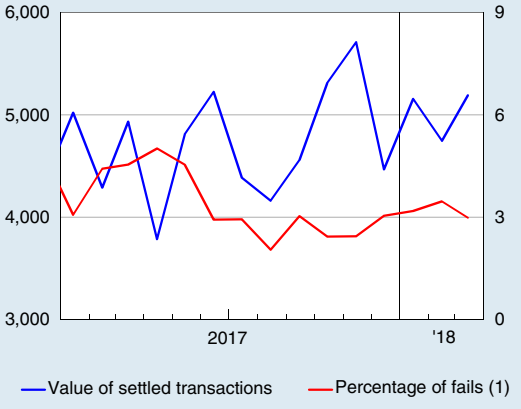
[2] See the Bank of Italy's website: 'TARGET2-Securities (T2S)'.

The volume of transactions settled in T2S through Monte Titoli remained high (€4,700 billion per month on average; Figure 14.6.a). The share of transactions not settled owing to the non-delivery of securities or cash within the allotted time frame (fails) rose slightly on average compared with 2016, remaining in line with historical averages.

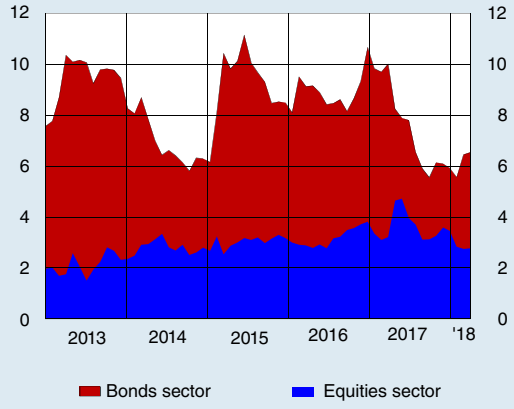
Figure 14.6

Market infrastructures

(a) Monte Titoli: value of settled transactions and percentage of fails
(monthly data; billions of euros and percentage points)



(b) CC&G: value of the initial margins deposited
(monthly averages of daily data; billions of euros)



Sources: Based on CC&G SpA and Monte Titoli SpA data.
(1) Right-hand scale.

Although the collateralized value continued to expand, the total amount of collateral demanded by the central counterparty Cassa di Compensazione e Garanzia (CC&G) fell (Figure 14.6.b), but was more than sufficient to withstand swings in volatility in the markets.

SPECIAL FEATURES

15. ITALIAN GOODS EXPORTS IN THE LAST TWENTY YEARS: TRENDS AND DETERMINANTS[1]

Italy's goods exports have more than doubled at current prices since 1999. However, the growth was less than that of world trade and below export growth in the other Eurozone economies as a whole, especially until the global financial crisis. Since 2010 the performance of Italy's exports has improved significantly by international comparison, as confirmed by the halt in the prolonged decline of the market share on world imports.

Until 2007, Italian exporters faced structural difficulties in all the main sectors, exacerbated by the loss of price and cost competitiveness caused by a sectoral specialization that is particularly vulnerable to growing competitive pressures from emerging countries and by the presence of a large number of small firms, which find it harder to adapt their product and market portfolios to changes brought about by globalization. From 2007 to 2009, Italian exports were more affected by the crisis than those of the three largest European partners: they were the first to fall, and in 2009 their decline exceeded that of the others.

Since 2010, Italy's performance in foreign markets has improved significantly: exports have increased more than foreign demand and at a pace only slightly below that of Germany. The recovery has spread across all major sectors and especially in euro-area markets, where the greatest signs of weakness had emerged in the previous decade.

The trend reversal has benefited from the improvement in competitiveness caused by the depreciation of the euro and the reduction in relative prices and labour costs, also vis-à-vis Germany. It has also stemmed from the structural changes that occurred in the interim: in 2010 the weight of the sectors less exposed to competition from countries with low labour costs had increased compared with 1999, as had the share of medium-sized and large firms, which are more resilient to external shocks and better able to seize new opportunities in international markets.

The performance of goods exports

Aggregate developments. – Between 1999 and 2017, world exports of goods in volume terms increased by an annual average of 7.6 per cent. In Italy, exports grew by 3.4 per cent, less than in Spain (5.6) and Germany (7.9) but similar to the growth in France (3.5; Table 15.1).

[1] The chapter updates the analysis and recalculates the econometric estimates contained in M. Bugamelli, S. Fabiani, S. Federico, A. Felettigh, C. Giordano and A. Linarello, '*Back on Track? A macro-micro narrative of Italian exports*', Banca d'Italia, Questioni di Economia e Finanza (Occasional Papers), 399, 2017, also published in *Italian Economic Journal*, 4, 1, 2018, 1-31.

Table 15.1

Goods exports (1)
(annualized average growth rates; percentage changes)

	Italy	France	Germany	Spain
		Chain-linked values (2)		
1999-2007	5.3	4.9	10.9	6.3
2007-2010	-3.4	-1.3	-0.6	-0.5
2010-2017	3.8	3.1	4.6	5.1
1999-2017	3.4	3.5	7.9	5.6
		Values at current prices		
1999-2007	8.2	5.4	11.6	9.6
2007-2010	-2.6	-1.2	-0.3	0.1
2010-2017	4.8	3.7	5.5	6.3
1999-2017	5.8	4.1	9.2	8.6

Sources: Based on national accounts data from Istat and Eurostat.
(1) The average growth rate is the cumulative growth rate from the start of the period to the end, divided by the number of years between the two. – (2) The reference year is 2010.

The trends differed greatly between the years preceding the global financial crisis of 2008-09 and those that followed. For Italy, most of the lag compared with Germany was amassed in the years leading up to 2007; since 2010 it has decreased, on average, to below 1 percentage point per year. In contrast, in that period it widened compared with Spain, which experienced the greatest expansion of the euro area's four largest economies. For Spain and Germany, growth since 2010 has exceeded that of world exports (4.1 per cent per year, on average).

By international comparison, Italy's lag shrinks when measured at current prices, both in terms of growth rates of exports (especially in the period up to 2007; Table 15.1) and in terms of global market shares. Between 1999 and 2017, market shares fell by just under a third at current prices and exchange rates and in volume terms, while they fell by a fifth and a tenth respectively for the other three countries as a whole. Italy's share of the value of global imports fell from 4.2 per cent in 1999 to 3.0 per cent in 2010 and remained broadly stable afterwards.

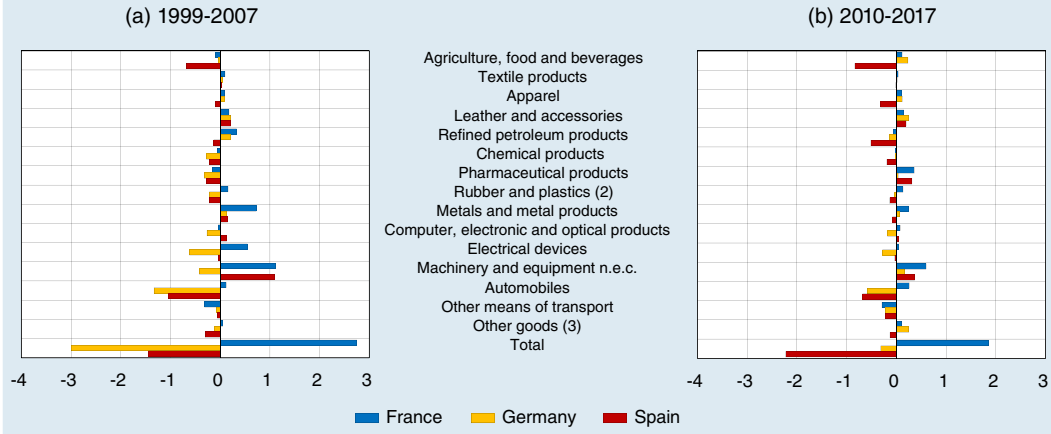
The trend in foreign sales improves further when assessed in terms of domestic value added embodied in exports. With the steady rise in global value chains comes greater use of imported goods and services in manufacturing products intended for sale in foreign markets. As a result, the real contribution of exports to a country's economic activity is less than gross export flows imply. Based on the World Input-Output Database tables currently available,[2] Italy's negative growth gap compared with Spain from 2000 to 2014 is reduced by a fifth if measured in terms of domestic value added embodied in exports rather than on the basis of gross flows; it decreases by only a twentieth against Germany. This is due to the smaller increase in Italy in the use of imported inputs.

[2] M.P. Timmer, E. Dietzenbacher, B. Los, R. Stehrer and G.J. de Vries, 'An Illustrated User Guide to the World Input-Output Database: the case of global automotive production', *Review of International Economics*, 23, 2015, 575-605.

Trends by product and destination. – Until the onset of the global financial crisis, the shortfall in Italy's export growth compared with Germany and Spain was common to all the major industrial sectors, especially motor vehicles (Figure 15.1.a); it built up mostly in EU and euro-area markets (Figure 15.2.a). The gap vis-à-vis Germany has narrowed since 2010, mainly owing to the recovery on these markets (Figure 15.2.b); the gap compared with Spain instead has continued to increase in all the major destinations. Over the last seven years the expansion in Italian sales abroad has been particularly strong compared with Germany in the motor vehicle, pharmaceutical, agri-food and mechanical sectors (Figure 15.1.b).

Figure 15.1

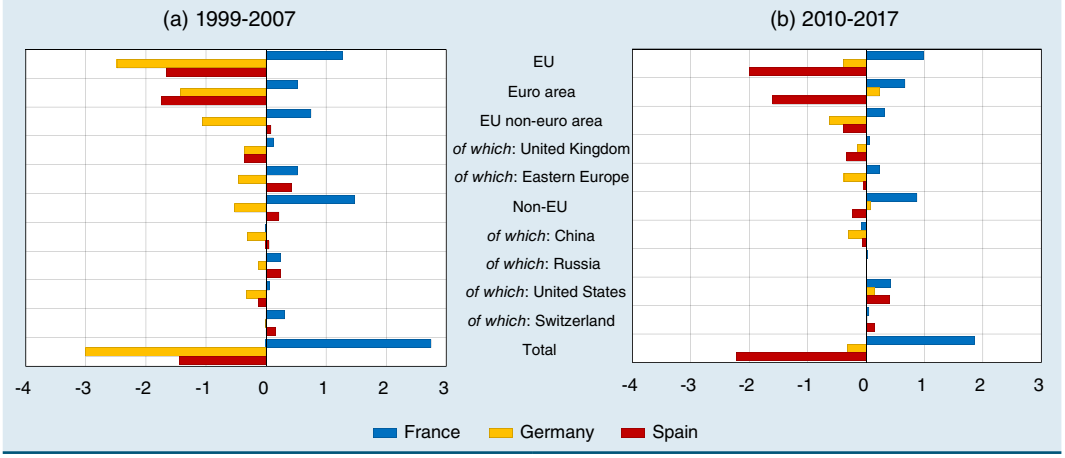
Contribution of the various sectors to the average annual gap in the growth of goods exports at current prices between Italy and the other main euro-area countries (1)
(percentage points)



Sources: Based on Eurostat and national foreign trade data.
(1) The data disaggregated according to the harmonized two-digit classification system were regrouped to approximate the representation of the sectors based on the Nace Rev. 2 classification. The data for France for 1999 are estimated. – (2) Includes other products from the processing of non-metallic minerals. – (3) For France this sector includes goods not allocated elsewhere.

Figure 15.2

Contribution of the various destination markets to the average annual gap in the growth of goods exports at current prices between Italy and the other main euro-area countries
(percentage points)

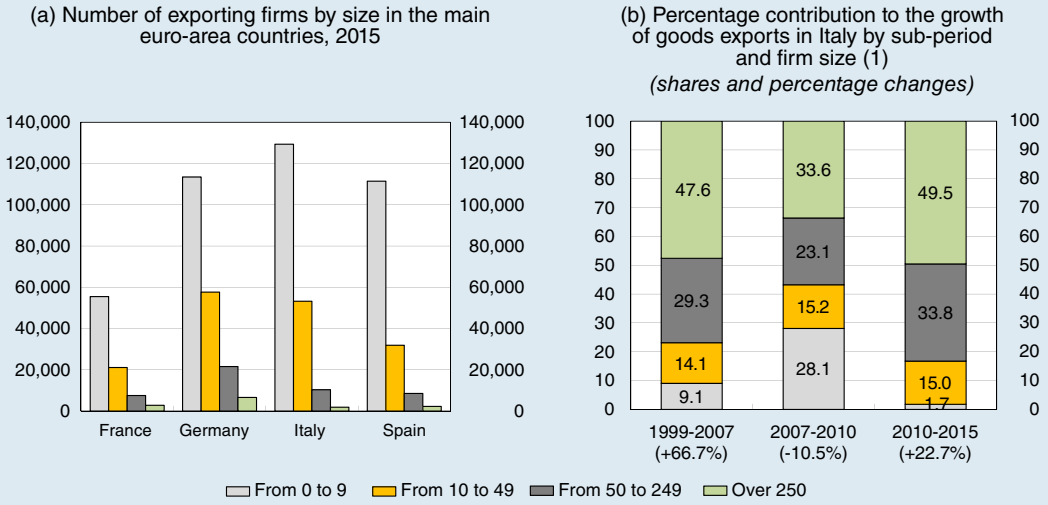


Sources: Based on Eurostat and national foreign trade data.

Exporting firms. – The total number of Italian goods exporters is the same as that of Germany (almost 200,000 in 2015, the last year for which figures are available). However, Italy has a much higher incidence of micro-firms (fewer than 10 employees) and a much lower number of large firms (more than 250 employees; Figure 15.3.a), a characteristic which essentially reflects the structure of the Italian productive system as a whole (see Chapter 15, 'Productivity in Italy: performance and determinants', *Annual Report for 2016*, 2017).

Figure 15.3

Firm size
(percentage points)



Sources: Based on Eurostat and national foreign trade data.
(1) Overall cumulative growth for each sub-period is shown in parentheses under the x-axis. Excludes exports of firms of unknown size.

Smaller businesses are less able to expand their sales in markets where they already operate, even by diversifying product lines, and to conquer new destination markets (see the box 'Business strategies and trends in Italian goods exports').

BUSINESS STRATEGIES AND TRENDS IN ITALIAN GOODS EXPORTS

The performance of a country's exports reflects the sum of the choices made by individual firms regarding whether and how much to export, what products to sell and which markets to target. By quantifying the relative importance of these different channels and how firm characteristics affect them, we can identify the determinants of changes in aggregate exports.

Utilizing Istat data on sales abroad by all Italian firms, a recent paper[1] decomposes the trends in exports – totals and by firm size – into two main components: (a) the change in exports by incumbent firms, defined as sales of a specific product in a specific market by a specific firm for amounts

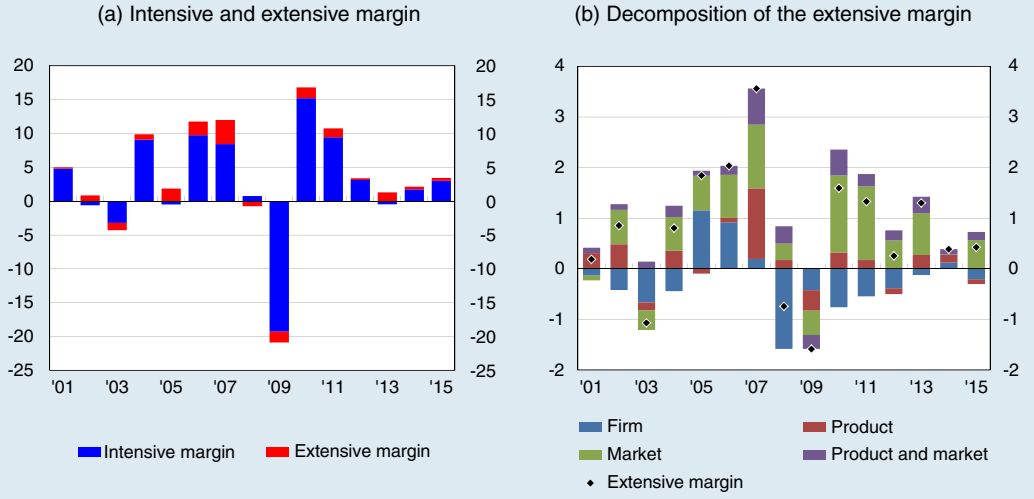
[1] M. Bugamelli, A. Linarello and R. Serafini, 'The "margin call": firm-level export dynamics in Italy', Banca d'Italia, Questioni di Economia e Finanza (Occasional Papers), forthcoming.

of more than zero for two years in a row (intensive margin); and (b) the change in exports arising from the starting up or ceasing of export activity over a span of two consecutive years (extensive margin). The extensive margin is then further broken down based on the decision of a firm to start up or cease export activity: (a) in any market and for any product (firm); (b) in a given market for products that are also sold elsewhere (market); (c) for a given product in a market where the firm is incumbent with other products (product); (d) for a specific product in a specific market, while continuing to sell other products in other markets (product and market);

Figure A

Contribution to growth in aggregate exports by margin

(annual data; per cent contribution)



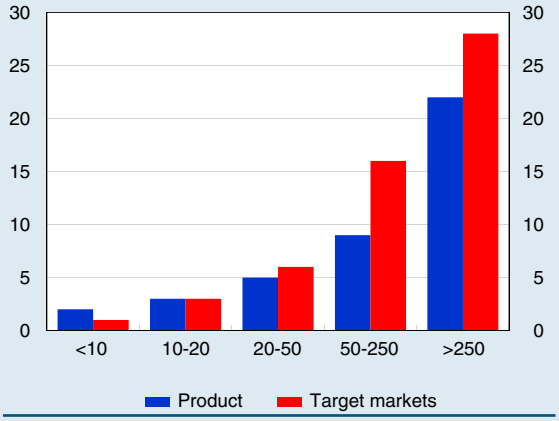
Source: Based on Istat foreign trade data.

The evolution of Italian exports primarily reflected the intensive margin – that is, the performance of exports by firms already present in a market for a given product – which explains about 80 per cent of the average annual change for the entire period 2001-15 (panel (a) of Figure A). The most significant contribution to the extensive margin came from exporting firms having entered a greater number of markets with products they already sold elsewhere. Recomposing the totality of products exported instead had a limited net effect (panel (b) of Figure A).

Figure B

Number of products and target markets by firm size in 2015

(units)



Source: Based on Istat foreign trade data.

The capacity to expand sales and to increase the number of target markets varies with firm size. Firms with more than 250 employees export on average over 20 products to about 30 markets, while those with fewer than 10 employees reach on average one market with two products (Figure B).

The intensive margin almost exclusively reflected the contribution of firms with 50 or more employees (especially the largest firms; see the table), which account for about three quarters of the increase in aggregate exports between 2001 and 2007 and again from 2010 to 2015. The extensive margin was also affected mainly by the practices of medium-sized and large firms, particularly by the capacity of firms with 20 to 249 employees to enter new markets, which was more acute during periods of growth (prior to the collapse of 2008 and during the recovery under way since 2010).

Decomposition of trends of exports by margin and firm size, 2000-2015 (1)
(annual averages; per cent contributions)

WORKFORCE SIZE	Overall growth	Intensive margin	Extensive margin	Decomposition of the extensive margin			
				Firm	Product	Market	Product and market
0 to 9	-0.1	-0.1	0.0	0.0	0.0	0.0	0.0
10 to 19	0.2	0.1	0.1	0.0	0.0	0.1	0.0
20 to 49	0.3	0.1	0.2	0.0	0.0	0.2	0.0
50 to 249	1.2	0.9	0.3	-0.1	0.1	0.3	0.1
250 and above	1.9	1.8	0.1	-0.1	0.1	0.1	0.1
Total	3.5	2.8	0.7	-0.2	0.2	0.6	0.2

Source: Based on Istat foreign trade data.
(1) Rounding of decimal points may cause discrepancies in totals.

As already observed in other countries, these results indicate that in Italy, too, export trends are mainly determined by the decisions and strategies of exporters already solidly established in many foreign markets. Greater geographical diversification by the many medium-sized firms could significantly boost sales outside of Italy even more.

Over the last twenty years, the performance of Italian firms on foreign markets has differed greatly according to firm size. Micro-exporters have increased in number but their overall sales growth has been very modest: they experienced greater difficulties in positive cycles and were more exposed to the crisis in world trade, accounting for 28.1 per cent of the drop in overall exports between 2007 and 2010 (Figure 15.3b) compared with a weight of just above 9 per cent. In contrast, sales by medium-sized and large firms grew more than average. The composition of Italian exports thus underwent a significant shift: the share of medium-sized and large firms increased gradually, from 69.3 per cent in 1999 to 74.1 per cent in 2010 and to almost 76 per cent in 2015. Their contribution to the aggregate increase in exports has reached 83 per cent in recent years.

The main determinants of goods exports

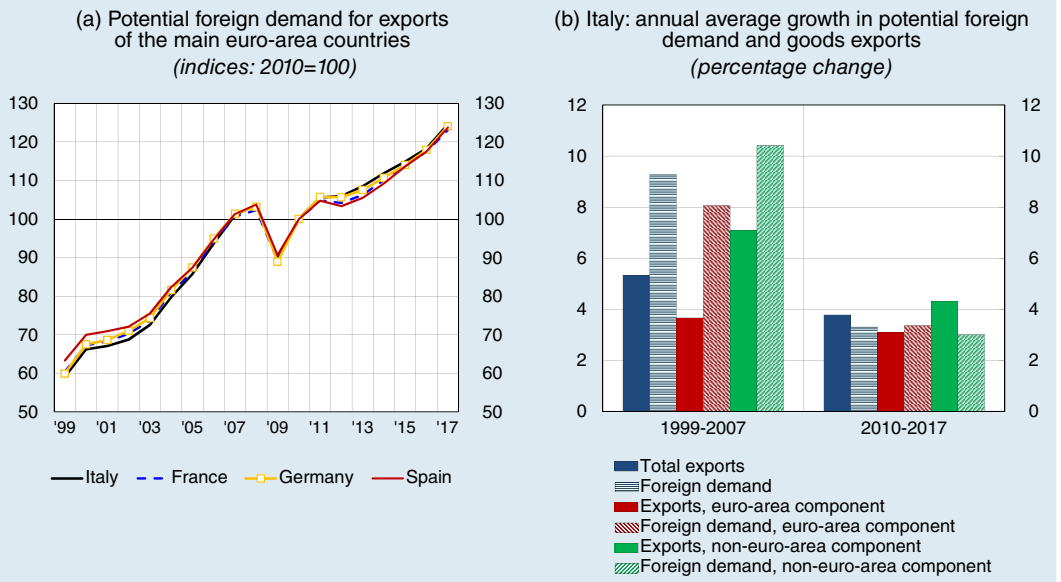
Foreign demand. – Because the exceptional expansion of world trade since 1999 has been driven by the rapid process of integration among the Asian economies, where the presence of European exporters is still limited, changes in potential foreign

demand for Italian goods may be best measured by the growth in imports in each outlet market against their respective weight on Italian exports, rather than by the trend in world imports (see Chapter 10, 'Foreign demand and the balance of payments').

Between 1999 and 2007, demand in Italy's outlet markets grew slightly more than in those of the other main euro-area countries; therefore, Italy's relatively unsatisfactory performance is not attributable to a concentration of sales in less dynamic markets compared with its competitors (Figure 15.4.a). In this period Italian exports increased by about half as much as foreign demand; the gap can be observed both in markets outside the euro area and, to a greater extent, in internal markets (Figure 15.4.b).

Figure 15.4

Foreign demand and goods exports in volume terms



Sources: Based on Eurostat, IMF, Istat and national foreign trade data.

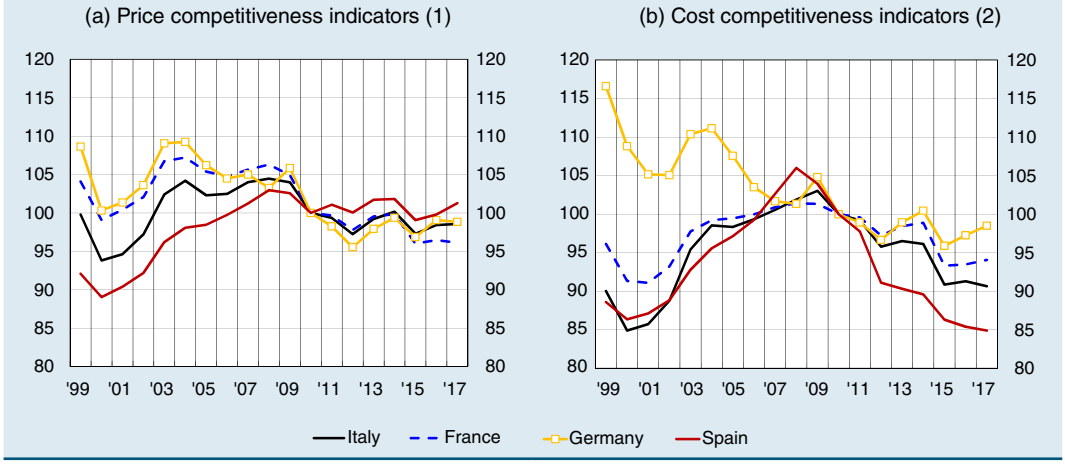
Since 2010 total sales abroad have grown more than potential demand for Italian goods, which in this period increased as much as that for French, German and Spanish products.

Competitiveness. – Price and cost competitiveness worsened in Italy between 1999 and 2007 (Figure 15.5). The loss was more moderate than in Spain but greater than in France and especially Germany, where competitiveness improved as a result of a distinctive combination of wage moderation, strong productivity growth and increased use of imported intermediate goods and services.[3]

[3] For a discussion of the most appropriate indicators for accurately measuring competitiveness, see C. Giordano and F. Zollino, 'Shedding light on price- and non-price competitiveness determinants of foreign trade in the four largest euro-area countries', *Review of International Economics*, 24, 3, 2016, 604-634, and M. Amici, E. Bobbio and R. Torrini, '*Patterns of convergence (divergence) in the euro area: profitability versus cost and price indicators*', Banca d'Italia, Questioni di Economia e Finanza (Occasional Papers), 415, 2017; see also Chapter 8, 'Demand, supply and prices', *Annual Report for 2012*, 2013, and the box 'Competitiveness indicators in the euro area: prices, costs and margins', in Chapter 9, *Annual Report for 2016*, 2017.

Figure 15.5

Price and cost competitiveness indicators of the main euro-area countries (1)
(indices: 2010=100)



Sources: Bank of Italy for panel (a); ECB for panel (b).
(1) Based on producer prices of manufactures. An increase signals a loss of competitiveness. These competitiveness indicators are calculated for each economy in relation to 60 competitor countries (including all members of the euro area). – (2) Based on unit labour costs for the economy as a whole. An increases signals a loss of competitiveness. These indicators are calculated for each economy in relation to 37 competitor countries (including all members of the euro area).

In 2008-10 the depreciation of the euro fostered a general improvement in the competitiveness indicators.

Since the 2011-12 recession the trends have diverged: Italy and Spain have recorded more moderate growth in prices and labour costs compared with Germany and the performance of their foreign sales has improved. The profit margins of Italian manufacturing firms have recovered; they have continued to grow in Germany and, to a greater extent, in Spain.[4]

As a consequence of the growing weight of the emerging economies in world trade, the sharp increase in competitive pressure has led firms in advanced countries to focus increasingly on non-price competitiveness factors, such as the quality of their products. According to our calculations based on CEPII-BACI[5] data that are disaggregated by product and destination market, the quality of exported products, measured by an indicator that captures the characteristics that make it possible to charge higher prices for a given quantity of products sold, has increased in Italy, as it has in Spain and Germany, but more so than in France.[6]

Chinese competition. – China's entry in the World Trade Organisation (WTO) in 2001 is one of the events that has had a significant impact on international trade in recent decades. The share of Chinese exports in world imports has tripled over the past fifteen years, reaching 13 per cent in 2017, the highest level among all countries.

[4] M. Amici, E. Bobbio and R. Torrini 2017, op. cit.

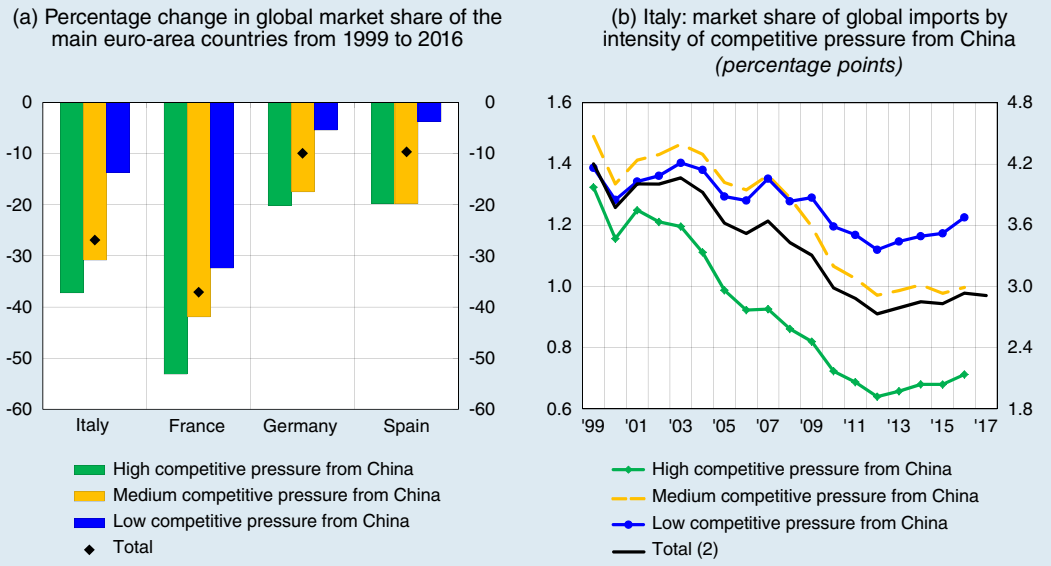
[5] M. Bugamelli, S. Fabiani, S. Federico, A. Felettigh, C. Giordano and A. Linarello, 2017, op. cit.

[6] The improvement in the quality of Italian exports is also highlighted by K. Benkovskis and J. Wörz, 'Non-price competitiveness of exports from emerging countries', European Central Bank, Working Paper Series, 1612, 2013. However, according to the estimates provided in the IMF's Export Quality Database, the quality of sales abroad is high but broadly stationary in the 2000s.

Differentiating exports according to their degree of exposure to Chinese competition, Italy has suffered from China's competitive pressures more than Spain or Germany, as a result of a sectoral specialization that is skewed towards less technologically advanced sectors (Figure 15.6.a). The displacement of Italian exports was very significant until 2007: the 0.6 percentage point decrease in market share compared with 1999, calculated at current prices and exchange rates, is almost entirely attributable to the products most exposed to Chinese competition (Figure 15.6.b).

Figure 15.6

Competitive pressures from China (1)
(percentage points)



Sources: Based on data from CEPII-BACI and IMF.
(1) Market share calculated at current prices and exchange rates; excludes raw materials. The distinction between high, medium and low competitive pressures is based on terciles of the distribution by product of China's market share of global exports (at current prices and exchange rates) in 2007. – (2) Includes raw materials. Right-hand scale.

Since 2010, Italian manufacturing firms have reacted to the heightened competition in global markets. On the one hand, specialization has shifted towards more advanced sectors such as motor vehicles and pharmaceuticals: the weight of the products most exposed to Chinese competition fell by almost a quarter between 1999 and 2010. On the other hand, improving the competitive capacity of Italian firms has led to a recovery in their global market share including, since 2012, in sectors facing greater competitive pressures from China.

Results of econometric and statistical analyses. – The econometric analyses carried out on data aggregated by country and sector confirm that Italy's performance on international markets hinges on price competitiveness more than it does for France and Germany:[7] the deterioration between 1999 and 2007 contributed significantly to the lag of Italian exports. The lack of competitiveness is also partly explained by the exceptionally large share of small firms.

[7] All econometric analyses mentioned in this paragraph are drawn from M. Bugamelli, S. Fabiani, S. Federico, A. Felettigh, C. Giordano and A. Linarello, 2017, op. cit.

Estimates based on micro data relating to the universe of Italian exporting firms show that larger exporters are much more capable of meeting foreign demand, of facing competition from emerging countries and of absorbing exchange rate fluctuations, partly owing to their choice to use invoicing currencies other than the euro (see the box 'The invoicing currency and the effects of exchange rate fluctuations on business activity').

THE INVOICING CURRENCY AND THE EFFECTS OF EXCHANGE RATE FLUCTUATIONS ON BUSINESS ACTIVITY

Italian firms set their prices mainly in euros even when they export outside the European Union (EU). However, a significant proportion of transactions are invoiced in other currencies,[1] in particular in US dollars: in 2015 a good 25.7 per cent of exports to non-EU countries and over 55 per cent of those directed to the United States were invoiced in dollars (see the figure).

There is a relationship between the pricing currency used in international trade and the change in the purchase prices of imported goods corresponding to exchange rate fluctuations (exchange rate pass-through).[2] A recent analysis of Italian firms' exports to non-EU countries between 2002 and 2015 confirms that importers' purchasing prices vary more when exporting firms set their prices in euros than when prices are set in the currency of the destination country.[3] When a third currency is chosen, such as the dollar for exports to Asian countries, price changes are driven by the dollar exchange rate, rather than by the bilateral rates between the euro and the currency of the importing country. This suggests that the prices expressed in the pricing currency are fairly rigid, at least in the short term. Exchange rate variations lead to an almost one-to-one change in import prices only when firms decide to invoice in euros which, in this case, also provokes a more marked response in terms of exported volumes.

The depreciation of the euro observed between 2014 and 2015 makes it possible to look more closely at how pricing strategies may influence the relationship between exchange rate fluctuations and business activity. The surveys carried out by the Bank of Italy on a sample of Italian industrial firms showed that the depreciation of the euro had mixed effects across companies: controlling for other possible determinants,

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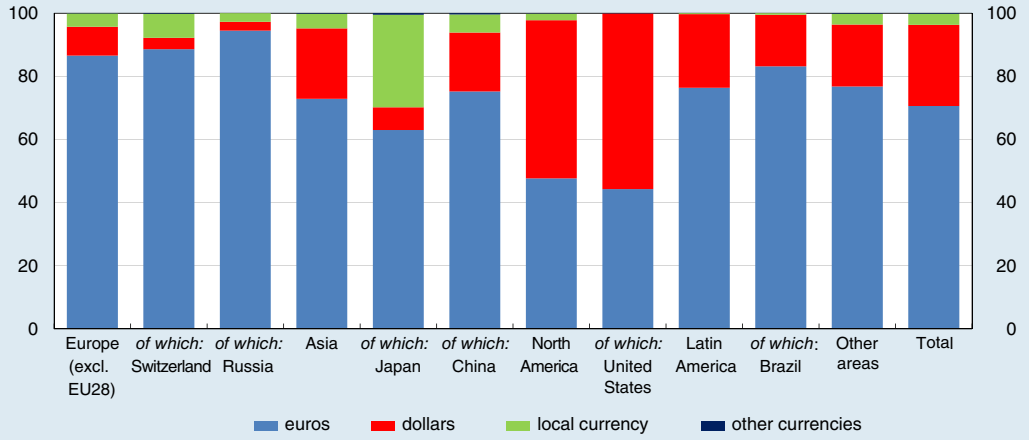
[1] Although referring to potentially different concepts, the terms 'invoicing currency', 'list-price currency' or 'pricing currency' are used synonymously, given that some empirical analyses have shown that they are interchangeable in almost all transactions; see R. Friberg and F. Wilander, 'The currency denomination of exports. A questionnaire study', *Journal of International Economics*, 75, 1, 2008, 54-69.

[2] L.S. Goldberg and C. Tille, 'Vehicle currency use in international trade', *Journal of International Economics*, 76, 2, 2008, 177-192; G. Gopinath, 'The International Price System', Jackson Hole Symposium, Volume 27, Federal Reserve Bank of Kansas City, 2015.

[3] A. Borin, A. Linarello, E. Mattevi and G. Zevi, 'Fluttuazioni del cambio e valuta di pricing: caratteristiche ed effetti sull'attività delle imprese italiane', Banca d'Italia, Questioni di Economia e Finanza (Occasional Papers), forthcoming. This paper uses information from Istat's foreign trade database on transactions with non-EU countries and from the surveys on industrial and service firms conducted by the Bank of Italy. In the first case, the invoicing currency is exclusively available for non-EU exports as requested in the customs declarations that firms must compile to meet legal requirements. In the surveys, the question on invoicing currency relates to the currency predominantly used to set prices in the following markets: the euro area, the rest of Europe, the United States, China, the group comprising Russia, Brazil and India, and the rest of the world.

Invoicing currencies for Italy's goods exports to non-EU countries
(per cent)



Source: Based on Istat's foreign trade data.

firms that achieve a higher share of turnover abroad, particularly in the United States, were more likely to express a positive opinion on the effects of a depreciation, while those with a greater share of input purchases in dollars expressed a negative opinion more frequently. Among the firms that found the effect to be positive, those that set prices mainly in a foreign currency in at least one of the non-European markets stated that they had benefited from the depreciation of the euro, above all through an increase in markups, while those that generally used the euro as the invoicing currency recorded increases above all in sales volumes.

The choice of invoicing currency is one of the competitive strategies a business may adopt in function of the characteristics of the target market.[4] The responses provided by the firms surveyed show that the largest and most productive companies are more likely to set prices in a foreign currency; these firms are also better able to manage the risks associated with exchange rate fluctuations and the fixed costs needed to maintain price lists that are differentiated by market. Companies that adopt a currency other than the euro do so above all to meet local customer demands in significant markets or in order to keep their sales prices aligned with those of competitors; in some cases this choice reflects intra-group transaction agreements.

The currency invoicing strategy seems to be associated with a propensity on the part of the largest and most productive firms to pass on exchange rate changes to markups; the shift of exports towards this type of firm may have contributed to making overall export volumes less sensitive to exchange rate fluctuations in recent years.[5]

[4] L.S. Goldberg and C. Tille, 'Micro, macro, and strategic forces in international trade invoicing: synthesis and novel patterns', *Journal of International Economics*, 102, 2016, 173-187.

[5] M. Bugamelli, S. Fabiani, S. Federico, A. Felettigh, C. Giordano and A. Linarello, '*Back on track? A macro-micro narrative of Italian exports*', Banca d'Italia, Questioni di Economia e Finanza (Occasional Papers), 399, 2017, also published in *Italian Economic Journal*, 4, 1, 2018, 1-31.

China's entry in the WTO at the start of this century has resulted in heightened global competitive pressures. In Italy, a country already weakened by unresolved structural problems, these pressures have been coupled with a gradual loss of competitiveness, even vis-à-vis its main European competitors. This has prompted a gradual reorganization of Italy's industrial system and the redistribution of exporters among markets, sectors and size classes.[8] Despite the significant shock of the double crisis, since 2010 the effects of this structural reinforcement have improved Italian firms' ability to compete in international markets. If the composition by sector and firm size of Italian exporters in 2010 had remained as it was at the start of the 2000s, the increase in sales abroad in the following five years would have been lower by at least a fifth.

[8] S. Rossi, *La regina e il cavallo. Quattro mosse contro il declino*, Bari, Laterza, 2006 and A. Brandolini and M. Bugamelli (eds.), '*Report on trends in the Italian productive system*', Banca d'Italia, Questioni di Economia e Finanza (Occasional Papers), 45, 2009; see also A. Linarello and A. Petrella, '*Productivity and reallocation: evidence from the universe of Italian firms*', Banca d'Italia, Questioni di Economia e Finanza (Occasional Papers), 353, 2016.

16. CYBER-RISK AND THE ITALIAN ECONOMY

Digital and ICT technologies play an increasingly important role in the world economy. In 2016, some 95 per cent of firms in the OECD countries used the Internet and 77 per cent had a website. More than half of the adult population made at least one purchase online during the course of the year; in 2010, the figure was 36 per cent.[1]

The use of ICT is growing in Italy as well, although overall it is still below the OECD average. According to Bank of Italy data, in 2017 one fifth of Italian firms with 20 or more employees in industry and non-financial private services also sold their products online; 13 per cent had industrial machinery, CCTV, lighting systems, sensor networks and other equipment that could be connected to the Internet (Internet of things, IoT), while 7 per cent collected and analysed big data. Approximately one third of Italian consumers bought a product or service online.[2]

Almost all production processes and a growing number of consumer activities take place at least in part in cyber-space. This includes, for example, the physical infrastructure of the Internet and other computer networks, the set of IT protocols and programs for communicating within these networks, the information that is exchanged, and 'smart' production equipment and consumer goods (smartphones, smart TVs and so on).[3]

Even a firm or person that is not directly using advanced technologies nevertheless relies on services – financial, logistic and data transmission – that do.

The new technologies bring evident advantages: they increase business productivity and allow consumers a wider choice of goods and services at lower prices. They can also be a factor in economic and social inclusion: in some low-income economies, the advent of mobile banking has enabled access to the financial system even in remote areas far from any large urban centres, where in any case few bank branches exist.

Alongside these benefits, digitalization brings costs and risks for the economy. Some of these have been the subject of study and reflection on the part of economists because they replicate, albeit in different forms, the problems raised by innovation in the past. These include the unemployment of workers whose skills have been rendered obsolete by the new technologies, the growing wage disparity between workers with different levels of qualification, and the emergence of dominant positions in some markets thanks to network externalities. By contrast, the risk of

[1] OECD, *Digital Economy Outlook*, 2017.

[2] Istat, *Cittadini, imprese e ICT*, 2017.

[3] Presidenza del Consiglio dei Ministri, *Glossario intelligence*, 2013.

cyber-attacks, which can also have significant systemic consequences, has been less studied by the economic profession.

The economic impact of cyber-risk

Cyber-risk is not new: in the early stages of digitalization, however, the number of both potential victims and perpetrators was small. Only a few sectors, such as defence and telecommunications, were sufficiently computerized to make them vulnerable to attack. Moreover, the know-how and resources required to plan and carry out such attacks were available almost exclusively to the military and some research centres. Over the years, as the use of IT equipment and access to the Internet has expanded dramatically, the number of potential targets has multiplied. Meanwhile, the skills required to program and distribute malware have become available to numerous criminal organizations that develop malicious tools and even market them online at low cost to a broad customer base.

In 2017 the damage caused by two computer viruses, WannaCry and NotPetya, cost businesses and public institutions hundreds of millions of dollars, including the UK's National Health Service, the Danish shipping giant Moller-Maersk and the multinational pharmaceutical corporation Reckitt Benckiser. From 2016 to 2017, cyber-attacks against financial institutions linked to the interbank payments system via the SWIFT network wiped out huge sums of money and even affected some central banks.

Cyber-risk should not take second place to any of the other problems that have arisen with digitalization. Cyber-attacks can cause significant financial damage to the targets and create a perception of insecurity, which in turn can undermine the operation of those markets that are based on the availability and circulation of digital data and are by now vital to the global economy.

Guaranteeing the cyber-security of firms, networks and infrastructure is not just a technological problem. Their vulnerability often stems from an undervaluation of the risks and from distorted incentives that lead to organizational failings, imprudent behaviour of staff, and insufficient investment in protection. Many attacks are carried out using simple tools that could easily be neutralized.

Software and hardware manufacturers have a very strong incentive to enter as early as possible a market in which, because of significant network externalities, a product's success depends on the number of users that choose it (as, for example, is the case of messaging platforms and operating systems). The adoption of higher standards of security is therefore sacrificed in the interests of rapid distribution. Moreover, hackers often do not attack their target directly, particularly if it is a large, well-protected business; instead, they seek out weaker third parties with access to the target's network and prey on their vulnerability. In either case, lack of attention to cyber-security produces negative externalities: in practice, those who market products that are not secure and those who do not protect their systems properly are not the ones that bear the cost of a cyber-attack.

Sales contracts for software and hardware usually exclude civil liability for damage to clients caused by cyber-attacks. In the case of the third parties whose vulnerability is

exploited in the course of an attack, there is in general no automatic means by which the actual victim can obtain compensation without going through a judicial process of uncertain outcome.

One of the main obstacles to correcting these distortions and setting up systems to defend against cyber-attacks is the lack of information about their occurrence and their impact. The cyber-security data gap was highlighted by the G7 Finance Ministers and Central Bank Governors, and under Italy's presidency[4] they have encouraged countries and institutions to find suitable solutions.

Measuring the frequency and cost of cyber-attacks in Italy

Since 2016 the Bank of Italy has collected data on the cyber-risk affecting Italy's production system. It analyses firms' investment in cyber-security, the frequency and financial impact of cyber-attacks as well as the use of specialized insurance policies. This is the first database in Italy – and one of the few worldwide – that complies with standards of statistical representativeness, transparency of method and publication of micro-data.

Many of the difficulties encountered in collecting the data and estimating the relevant aggregates, such as the frequency of cyber-attacks on a given range of potential targets and the calculation of their direct and indirect financial cost, can be overcome, at least in part, by using suitable statistical methods (see the box 'Measuring the economic impact of cyber-attacks').

MEASURING THE ECONOMIC IMPACT OF CYBER-ATTACKS

Obtaining reliable estimates of the frequency and costs of cyber-attacks presents significant methodological difficulties. The data are generally collected by interviewing a sample of firms that do not always have the technical ability to identify past breaches or are reluctant to report them for fear of reputational repercussions.[1] The impact of cyber-attacks is therefore potentially underestimated.

In the Bank of Italy's analyses[2] the sample data acquired in the Survey of Industrial and Service Firms are corrected to take account of these eventualities. Firms that declare they do not monitor their IT systems (in all likelihood including those that potentially failed to detect an attack) and firms that skip the questions on cyber security despite having completed the rest of the questionnaire (potentially reticent firms), are assigned responses in line with those provided by comparable firms in terms of size, sector of activity, or other characteristics. Observing the sample, there is a higher probability that small, low-tech firms fail to detect an attack

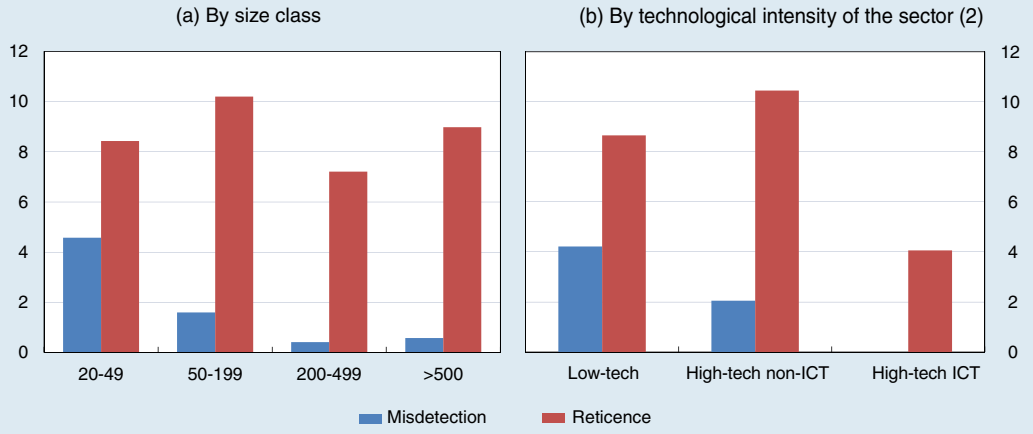
[1] E. Gal-Or and A. Ghose, 'The economic incentives for sharing security information', Information Systems Research, 16, 2, 2005, 186-208.

[2] C. Biancotti, 'Cyber attacks: preliminary evidence from the Bank of Italy's business surveys', Banca d'Italia, Questioni di Economia e Finanza (Occasional Papers), 373, 2017.

[4] G7, *Communiqué*, issued on the occasion of the meeting of Finance Ministers and Central Bank Governors, Bari, 12-13 May 2017.

(with a correspondingly greater correction), while reluctance to report a breach is more widespread among high-tech firms that do not belong to the ICT sector, with no significant differences based on size (see the figure).

Correction model for underestimation of attacks in 2017 (1)
(firms to which an attack is imputed; per cent)



Source: Survey of Industrial and Service Firms, 2017.
(1) Share of firms – in each size class or by degree of technological intensity – whose responses were corrected (by assigning at least one breach to them) based on the statistical model. – (2) According to the OECD/Eurostat classification that distinguishes between, in manufacturing, firms with high and low technology intensity and, in services, firms with high or low knowledge intensity, assimilated here to comparable manufacturing firms; firms operating in the ICT sector are isolated within each high-tech category. Firms in the energy sector, not covered by the original classification, are reclassified as non-ICT high-technology.

In addition to the failure to detect attacks and firms' reluctance to report them, impact assessments are further hindered by how difficult interviewees find it to quantify some costs (such as lost earnings due to a business outage or a loss of competitiveness)[3] and by the fact that the statistical samples used in the surveys, constructed to be representative of the main economic trends, do not permit accurate estimations of low-probability events such as major cyber-attacks.[4] Combined, these factors suggest that the overall costs are probably underestimated.

Even if these difficulties were resolved, we would still not have a satisfactory assessment of what cyber-attacks cost the entire economy, i.e. one that incorporates both the direct impact on the companies affected and that on third parties. For example, if computerized network infrastructures in the financial, energy or telecommunications sectors slow down, there are costs not only for managers but also for users. Their estimation is de facto hindered by the lack of in-depth knowledge of digital interdependencies and value chains in the economy; estimates should be based on a sample of incidents rather than on firms and, for each incident, account should be taken of the economic impact on all parties.

[3] O. Livingston, M. Shabat and T. Cheesebrough, 'Cost of cyber incidents', acts of the 16th Annual Workshop on the Economics of Information Security, San Diego, 2017.

[4] UK Department for Culture, Media and Sport, *Cyber security breaches survey: main report*, 2017; C. Biancotti, 'The price of cyber (in)security: evidence from the Italian private sector', Banca d'Italia, Questioni di Economia e Finanza (Occasional Papers), 407, 2017.

More reliable data will be available in the coming years as recent international, European and national laws require a wide range of companies to notify the authorities of successful breaches. For attacks that compromise the confidentiality of personal information, the onus to report it may also be on citizens whose data have been violated. The new EU General Data Protection Regulation[5] is particularly incisive in this respect and since 25 May 2018 has introduced in Europe the same obligations that already apply in the US.

Combining administrative archives based on these reports with data from the sample surveys would mark a crucial step forward in enriching our knowledge of existing interconnections and enabling the total cost to the economy of cyber-attacks to be estimated more accurately.

[5] Regulation (EU) 2016/679 with regard to the processing of personal data and on the free movement of such data, and repealing Directive 95/46/EC (General Data Protection Regulation).

The data reveal that Italy's production system is extremely heterogeneous as regards the management and awareness of cyber-risk (Table 16.1). The median expenditure on cyber-defence per firm is around €4,530, which is about 15 per cent of the gross yearly salary of a non-managerial employee. And there are significant differences between sectors: for low-tech firms the figure often barely reaches €3,500, while it is higher among large firms; in the ICT sector it tops €19,000.

Table 16.1

Cyber-security expenditure, cyber-defence awareness and frequency of cyber-attacks
(per cent of firms unless otherwise indicated)

FIRMS	Median expenditure (1)	Employee training	Vulnerability analysis	Data encryption	Attacks (raw data) (2)	Attacks (adjusted data)
			Sector (3)			
Low-tech	3,420	60.4	51.9	29.1	13.6	26.2
High-tech non-ICT	6,930	74.2	66.1	36.1	17.0	29.3
High-tech ICT	19,080	95.0	91.6	77.1	19.8	23.9
			Size class			
20-49	3,120	59.5	50.8	28.6	13.6	26.4
50-199	7,770	73.7	66.1	37.7	15.8	27.4
200-499	10,000	84.8	79.5	49.8	18.3	25.8
500 and over	44,590	89.2	87.6	63.9	28.9	37.8
Total	**4,530**	**65.0**	**56.9**	**32.7**	**14.7**	**26.9**

Source: Survey of industrial and service firms (data for 2016 for expenditure and defence measures and data for 2017 for frequency of attacks).
(1) Thousands of euros. – (2) Answers to the question 'Did your company suffer any cyber-attacks in 2017? Consider only attacks that had an effect on the firm's IT system or the integrity and confidentiality of the data stored, including limited or short-lived effects or easily reversible ones.' – (3) The distinction is based on the OECD/Eurostat classification, which distinguishes, in manufacturing, between high-tech and low-tech firms and, in the service sector, between knowledge intensive and less knowledge intensive firms, which for our purposes are likened to their equivalents in manufacturing; within the high-tech category, we distinguish between ICT and non-ICT firms. Energy firms, which were not included in the original classification, are regarded as high-tech non-ICT firms.

As to the type of cyber-defence adopted, two out of three firms report that they provide personnel training on how to use IT equipment securely and over half declare that they carry out analyses of network vulnerability, while just a third encrypt their data, a practice that is less costly than the other two but highly effective. This last fact bears out the hypothesis that there is an information asymmetry working to the advantage of sellers of cyber-defence services, which they exploit to offer firms the most expensive solutions rather than the best ones.

Major differences also exist between sectors and size categories of firm in the adoption of cyber-defence measures and the frequency of attacks capable of impacting on the operation of IT systems or the integrity and confidentiality of the data stored in them. The rate of adoption of defence measures is significantly higher than average among ICT companies and large firms. Data for 2017 indicate that the frequency of attacks is also greater for large firms.

The likelihood of a firm suffering a cyber-attack depends on how attractive it is to hackers, which in turn is linked to the value of the data stored and the firm's exposure to risk (measured, for example, in terms of the number of devices connected to the Internet or the number of transactions conducted online), as well as to its ability to defend itself.

In Italy's production system, the risks appear to be greatest, at present, among high-tech non-ICT firms, because unlike low-tech firms they attract cyber-attacks, but unlike ICT companies they have not acquired sufficient defence capability. This is borne out by the fact that cyber-attacks are more frequent among firms using e-commerce and cloud computing, as well as IoT devices; they occur less often among firms that use AI technologies. The first set of technologies, which are also the most widespread, do not call for advanced technical skills and many of the firms adopting them probably do not try to identify weak points in their security systems and plug them. The use of AI instead demands a higher level of skill (the rate of adoption is seven times higher in the ICT sector than the average for the economy as a whole), which presumably also implies greater attention to cyber-security.

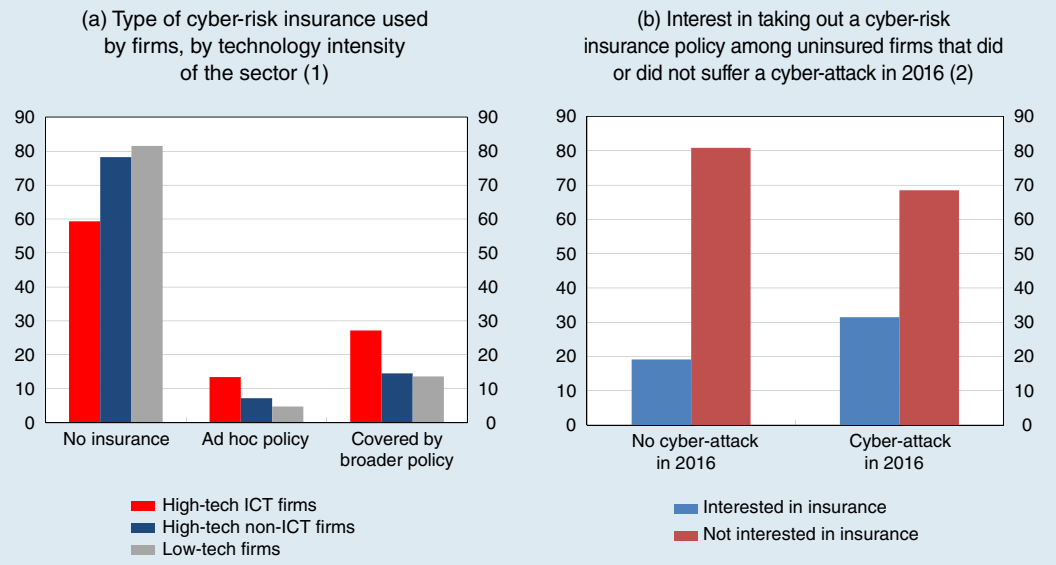
Wide use of specific insurance policies against cyber-attacks could help considerably to mitigate the risk. On the one hand, it would assist in identifying – for legal purposes as well – the liability for any compensation; on the other hand, with appropriately graduated premiums, it would offer an incentive for better management of corporate IT systems, as is already the case in other sectors.[5] The market for cyber-risk insurance is still very underdeveloped, however.

In Italy, about a fifth of firms with 20 or more employees are insured against cyber-attacks, but only a minority of this group have a separate, ad hoc policy, providing greater transparency concerning the scope of coverage and calculation of premiums. As with other aspects of the cyber threat, it is mainly firms in the ICT sector that take out this type of policy (Figure 16.1).

[5] OECD, *Enhancing the Role of Insurance in Cyber Risk Management*, 2017.

Figure 16.1

Use of cyber-risk insurance in Italy in 2017
(per cent of firms)



Sources: Business Outlook Survey of Industrial and Service Firms, 2017; Survey of Industrial and Service Firms, 2016.
(1) The distinction is based on the OECD/Eurostat classification, which distinguishes, in manufacturing, between high-tech and low-tech firms and, in the service sector, between knowledge intensive and less knowledge intensive firms, which for our purposes are likened to their equivalents in manufacturing; within the high-tech category, we distinguish between ICT and non-ICT firms. Energy firms, which were not included in the original classification, are regarded as high-tech non-ICT firms. – (2) Firms classified as 'interested' are firms that reported they were not insured because they had not found a suitable policy on the market or because the premiums were too high.

Having experienced a cyber-attack in the past determines in part the amount of interest firms show in seeking cyber-risk insurance, but it also reduces the likelihood that a policy will actually be underwritten. This finding could point to some form of rationing by insurance companies: without sufficiently deep historical data and a fairly rich case history, insurers may use a past event as the main measure of a firm's risk, leaving the latter unable to take out insurance or faced with excessively high premiums. This rationing apparently occurs regardless of the fact that according to the data almost all firms that have experienced a cyber-attack strengthen their defences in its wake.

As to the damage wrought by a cyber-attack, in seven out of ten cases the firms targeted have to allocate additional funds to restore their systems and need to slow their output, even though the actual cost is almost always small. In a few cases, notably those involving ICT companies and firms with more than 500 employees, the damage can be very substantial (Table 16.2).

The policy responses

The increase in cyber-risk has created complex policy challenges for governments. Malware and other means of cyber-attack jeopardize personal and national security and can damage the economy in a similar way to traditional weapons. National legislation and international law are gradually adjusting to the new scenario.

Table 16.2

Technical consequences and financial costs of cyber-attacks
(per cent of firms that reported at least one cyber-attack) (1)

FIRMS	Consequences			Costs			
	Interruption of business	Need to restart systems	Theft or destruction of data	Less than €10,000	From €10,000 to €49,999	From €50,000 to €199,999	More than €200,000
				Sector (2)			
Low-tech	69.5	71.1	16.2	92.4	7.0	0.6	0.1
High-tech, non ICT	72.7	76.9	15.7	92.7	5.7	1.5	0.1
ICT	65.4	72.1	4.6	82.7	15.3	1.8	0.2
				Size class			
20-49	69.9	71.1	15.6	96.6	2.8	0.6	–
50-199	70.4	73.6	14.9	85.6	13.4	1.0	–
200-499	73.3	80.6	17.6	88.6	9.2	2.2	–
500 and over	68.5	78.5	16.9	76.7	18.6	2.4	2.3
Total	**70.1**	**73.4**	**15.6**	**92.2**	**7.0**	**0.9**	**0.1**

Source: Survey of industrial and service firms, 2016.
(1) Data for 2016. – (2) The distinction is based on the OECD/Eurostat classification, which distinguishes, in manufacturing, between high-tech and low-tech firms and, in the service sector, between knowledge intensive and less knowledge intensive firms, which for our purposes are likened to their equivalents in manufacturing; within the high-tech category, we distinguish between ICT and non-ICT firms. Energy firms, which were not included in the original classification, are regarded as high-tech non-ICT firms.

A number of countries began adapting the tools of criminal law in the 1990s by making acts such as unauthorized access to IT systems a criminal offence.[6] Since the early 2000s, the advanced economies and leading emerging countries have been developing broader strategies that usually include the development of an institutional architecture for crisis prevention and management; measures to enhance the security of general government and critical infrastructure; incentives for specialist training and public/private sector cooperation; and software and hardware security certification schemes.

International cooperation projects, which are essential to cope with a global threat, are still few and far between. Progress has been made only on specific aspects, such as the coordination of police forces to combat certain crimes, and in contexts such as NATO and the G7, in which countries share the same main strategic security objectives.

Italy's legislation reflects the cyber-security strategy developed at European level, which rests on Directive EU/2016/1148 (Network and Information Security, NIS). This requires member states to have in place an organization that will make it compulsory for operators of services deemed essential for the economy to adopt stringent security measures. The directive sets up a cooperation group within the EU for the exchange of information and best practices.

[6] For Italy, see Law 547/1993 amending the provisions of the Criminal Code and the Code of Criminal Procedure regarding cybercrime.

IT security requirements for a range of entities are also embodied in two recent EU provisions: Regulation (EU) 2016/679 (the General Data Protection Regulation, GDPR) and Directive (EU) 2015/2366 (the Revised Directive on Payment Services, PSD2). Other obligations may be imposed after the passage of the Cybersecurity Act, presented by the Commission in 2017, which gives the EU the power to certify the security of IT devices and codes.

Italy's cyber-security architecture is set out, for the time being, in two provisions: the Decree of the Prime Minister of 17 February 2017, which tasks the DIS (Department for Intelligence and Security of the Prime Minister's Office) with coordinating the prevention and management of cyber-crises through the Cyber Security Unit (NSC);[7] and the legislative decree transposing the NIS, which makes the DIS the point of contact with European institutions and indicates the authorities in charge of implementing NIS measures in strategic branches of the economy. The competent authority for both the banking industry and financial market infrastructure is the Ministry of Economy and Finance, assisted by the Bank of Italy and the Companies and Stock Exchange Commission (Consob).

The financial system is a key target of cyber-attacks, be they motivated by profit or by the intention to subvert the orderly functioning of the economy. The numerous interdependencies mean that such attacks may cause substantial damage and have repercussions throughout the system. Intensive use of digital technologies also creates multiple potential points of entry for hackers.

Central banks and supervisory authorities have a key role to play in ensuring the cyber-security of the financial system. In many countries they manage vital components, such as payments systems; they can ask supervised entities for information on attacks suffered, call for the adoption of suitable defence measures, and impose sanctions on non-compliance.

International cooperation has achieved better results in the financial sector than in other areas of the economy, although once again there is greater unity among countries in forums like the G7 or the Eurosystem. Convergence on shared guidelines was made easier by previous synergies on other fronts, above all financial stability, and by the global presence of some of the key players. The areas of action include the security of financial intermediaries, on the one hand, and of payment infrastructures on the other (see the box 'International cyber-security initiatives in the financial sector').

INTERNATIONAL CYBER-SECURITY INITIATIVES IN THE FINANCIAL SECTOR

International cooperation on financial sector cyber-security covers three crucial areas: establishing regulatory standards and requirements, developing practices and tools, and preparing risk analysis models for financial stability. It takes place in several venues, reflecting the various levels of sectoral and national competences. The main forum for market infrastructures and payment systems is the Committee on Payments and Market Infrastructures (CPMI) of the Bank for International

[7] The permanent members of the Unit are the ministries forming the Interministerial Committee on the Security of the Republic (CISR): Foreign Affairs, Defence, Interior, Economy and Finance, Economic Development, and Justice.

Settlements (BIS); matters of supervision are dealt with by the Financial Stability Board (FSB) and the BIS's Basel Committee for Banking Supervision (BCBS). The G7 also plays an important role and has published a set of non-prescriptive principles.[1]

The FSB is conducting a study of the regulatory systems and supervisory practices of 25 countries as well as the cyber-security guidelines issued by 10 international organizations.[2] It is also preparing a cyber lexicon, to be published by the end of 2018, which is expected to facilitate future regulatory efforts.

The G7 is drawing up a protocol for international cooperation among authorities to govern responses to cross-border incidents. It has set up a discussion panel with private sector representatives to decide on the best regulatory measures and on methods of exchanging information. One important development will be the creation of a technical frame of reference for a set of exercises to test the effective ability of public and private financial institutions to protect against, register and respond to cyber-attacks, along similar lines to the stress tests already carried out on the banking system.

At EU level, the European Systemic Risk Board (ESRB) ensures high-level liaison on financial stability between the European Commission, the appropriate European authorities,[3] the Eurosystem and the national macroprudential authorities. The European Cyber Risk Group has been set up within the ESRB to analyse the potential systemic impact of cyber-attacks, particularly in respect of the European economy.

In the field of banking supervision, the EBA has issued guidelines for the authorities on the assessment of IT risk and recommendations on the outsourcing of cloud computing services; it has also drawn up security requirements for payment service providers and harmonized supervisory rules. The observance of these requirements by significant banks is monitored within the Eurosystem by the Single Supervisory Mechanism (SSM), which also gathers reports of significant cyber incidents and has set up a specific task force (the Cyber Crisis Group) to handle incidents classified as major. The SSM initiates inspections to analyse cyber-risk in response to specific risk indicators based on incident reports or problems identified during off-site supervision.

Regarding payment systems and other financial market infrastructures, the CPMI-IOSCO working group on cyber resilience (WGCR) is currently monitoring the implementation of the Cyber Guidance issued by the CPMI-IOSCO in 2016[4] and disseminating it beyond the G20 countries. Furthermore, following several

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1 G7, *Fundamental elements of cybersecurity for the financial sector*, 2016; G7, *Fundamental elements for effective assessment of cybersecurity for the financial sector*, 2017.

2 FSB, *Stocktake of publicly released cybersecurity regulations, guidance and supervisory practices*, 2017.

3 European Banking Authority (EBA), European Securities and Markets Authority (ESMA), European Insurance and Occupational Pensions Authority (EIOPA).

4 CPMI-Iosco (International Organization of Securities Commissions), *Guidance on cyber resilience for financial market infrastructures*, 2016.

serious instances of cyber-fraud,[5] the CPMI recently released a security strategy for reducing the risk of wholesale payments fraud related to endpoint security.[6] In 2017, the Governing Council approved the Eurosystem Oversight Cyber Resilience Strategy for European market and payment infrastructures to harmonize the implementation of the CPMI-IOSCO Cyber Guidance within the EU and to strengthen the readiness of individual financial institutions and their service providers to respond to cyber-attacks. It also promotes cooperation between the public and private sectors and has set up the European Cyber Resilience Board for that purpose.[7]

In 2017, the Bank of Italy set up the GCSC (Gruppo di coordinamento sulla sicurezza cibernetica – Cyber-Security Coordination Group), membership of which is also extended to IVASS (the Italian Insurance Supervisory Authority). The GCSC recently drew up a document detailing the action taken by the Bank and IVASS in the field of cyber-security and how it fits into the international, European and Italian context.[8]

[5] These include cases such as the fraud perpetrated against the Central Bank of Bangladesh in 2016; see BIS, *Central banks are reviewing wholesale payments security*, 2017.

[6] CPMI report, 'Reducing the risk of wholesale payments fraud related to endpoint security', published on the BIS website on May 2018, https://www.bis.org/press/p180508.htm.

[7] Cyber Resilience Oversight Expectations (CROE) are now being drawn up, along with a plan for advanced cyber-security testing (EU Threat Intelligence Based Ethical Red Teaming, TIBER-EU); ECB, *Views on the regulation of cyber security*, 2017.

[8] GCSC, *Documento quadro sul rischio cibernetico*, forthcoming.

The cyber-security policies adopted in the advanced economies assign the exchange of information between the public and private sector a key role in preventing and responding to cyber-attacks. However, those who have been the victim of an attack or who have identified weak points do not always share what they have learnt because they are unsure about confidentiality and reciprocity. Sometimes favourable conditions occur spontaneously within groups of economic agents that are highly aware of cyber-risk. More often the authorities need to step in to provide encouragement and establish trust: the financial sector has developed advanced solutions in Italy as well (see the box 'The computer emergency response teams (CERT) in the Italian financial sector).

THE COMPUTER EMERGENCY RESPONSE TEAMS (CERTS) IN THE ITALIAN FINANCIAL SECTOR

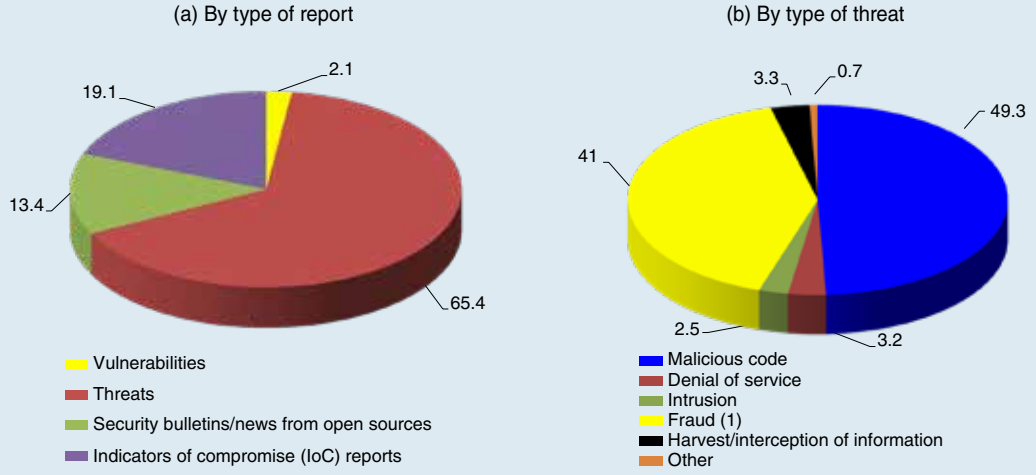
There are two prevailing models for sharing information on computer security incidents: information sharing and analysis centers (ISACs), which are platforms that enable participants to interact but lack a system for joint response; and CERTs and computer security incident response teams (CSIRTs), which enable both the sharing of information and the rapid coordination of responses to any incidents. There are also international and European CERT/CSIRT cooperation networks that comply with specific quality standards.[1]

[1] The main CERT/CSIRT networks are: the Forum of Incident Response and Security Teams (FIRST), active since 1990, bringing together more than 300 organizations from different countries and sectors; and the Trusted Introducer, formed by the community of European CERTs in 2000, which has over 100 member organizations.

Italy's regulatory framework[2] envisages the creation of a CERT/CSIRT network that unites the general government sector with operators of essential services and of critical national infrastructures (for example, the electricity grid, and telecommunications and transport networks); it also encourages the development of cohesive sectoral strategies. In this respect the Bank of Italy and the other authorities perform the dual role of regulators and promoters of public-private partnership initiatives for sharing information.

The Bank of Italy has bolstered its ability to withstand cyber-attacks by forming an internal CERT that participates in international cooperative networks and provides a wide range of security services to the Bank itself (CERTBI). The primary objective is to enhance the Bank's ability to analyse cyber-threats in order to develop effective preventive mechanisms. Specifically, CERTBI oversees training programmes designed to raise the cyber security awareness and the risk culture both of the Bank's employees and external stakeholders.

CERTFin Reports
(per cent)



Source: CERTFin. Data updated to 31 December 2017.
(1) Unauthorized use of resources, phishing, attacks designed to misappropriate money from customers.

The Italian financial sector CERT (CERTFin) has been in operation since January 2017. It was developed as a joint initiative of the Bank of Italy and the Italian Banking Association (ABI) to enhance the exchange of information within the national financial sector. Its members comprise 42 financial institutions (36 banks and banking groups, Poste Italiane SpA, four technical service providers and an operator of financial market infrastructures).[3] In its first year of operation, CERTFin analysed and sent to its members around 1,000 reports on possible attacks, breaches

[2] Directive on national cyber protection and digital security (DPCM of 17 February 2017) and Directive (EU) 2016/1148 on the security of networks and information systems.

[3] The Bank takes part in both the governing bodies (strategic and steering committees) and operational activities (through CERTBI).

and technological vulnerabilities, of which more than two thirds were on threats of attacks (see panel (a) of the figure), specifically campaigns to spread malware and attempted fraud, such as phishing (see panel (b) of the figure).

As part of its efforts to raise cyber security awareness it has also published a pamphlet containing guidelines for the safe use of online banking, payment cards and e-commerce services. Finally, CERTFin belongs to the international networks of CERTs, broadening the opportunities for exchanging information to the benefit of its members.

The measures described above are a step in the right direction but they are not enough. They apply only to certain sectors (like the NIS directive) or specific types of attack, however frequent (like those envisioned in the GDPR). There are still no principles of civil liability that can rectify the externalities at a more general level.

ADMINISTRATION OF THE BANK OF ITALY

AT 29 MAY 2018

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