upB ufficio parlamentare di bilancio

Summary[*]

The Italian recovery is continuing at the moderate pace seen in the second half of 2016. Based on the available indicators, the PBO estimates that GDP grew by about 0.2 per cent in the first quarter of 2017. Stronger growth in services and construction offset the contraction in industrial activity (-0.2 per cent according to PBO estimates). The forecast for the second quarter indicates a possible acceleration in GDP, on the order of 0.3 per cent.

The most recent information points to the good performance of exports, buoyed by the strengthening of world trade and the depreciation of the euro. With regard to domestic demand, the slowdown in the expansion of purchasing power and the decline in household confidence have slowed the growth of consumption. Conversely, investment growth has picked up. Istat revised this component of expenditure upward in 2016. Surveys point to the continuation of growth in 2017. The revival of capital accumulation – which is still insufficient to increase the net stock of capital - has been impacted by the recovery in corporate profitability, tax incentives and improved, albeit mixed, conditions for access to credit. Istat surveys show that at the beginning of 2017 the proportion of businesses whose access to credit has been rationed reached its lowest level since 2008. Investment decisions, as well as those on purchases of durables, are impacted by economic uncertainty. According to a new PBO indicator, presented here for the first time, the level of uncertainty in the economy has edged up since mid-2016, although it is still far from the peaks recorded in recent years.

In the labour market, employment growth has moderated since the end of last year. With the decline and then elimination of incentives for open-ended hiring, fixed-term contracts are again driving employment. Consumer price inflation has been affected by the transmission of higher commodity prices. However, domestic inflationary pressures remain modest.

The moderate Italian recovery is occurring against a background of improvement in the global economy, with international trade accelerating and most economies expanding more robustly. This more favourable environment remains shadowed by downside risks associated with uncertain developments in economic policies, the possible spread of protectionist measures and geopolitical tensions around the world.

[*] *Prepared by the Macroeconomic Analysis Department. Information updated to 1 p.m. of 28 April 2017*

The international environment

Global economic conditions improve, risks remain

The expansion of the world economy strengthened in recent months. The consolidation of economic conditions was widespread, involving both the advanced countries and the emerging economies. The good performance of global economic activity has been associated with an acceleration in international trade.

However, the more favourable environment continues to be impacted by risk factors. They mainly concern the medium term and are linked to uncertainty about the slant of the actual mix of macroeconomic policies in the United States, the possibility of a decline in the extent of integration of economies as a result of the spread of protectionist measures and the geopolitical tensions on the international stage.

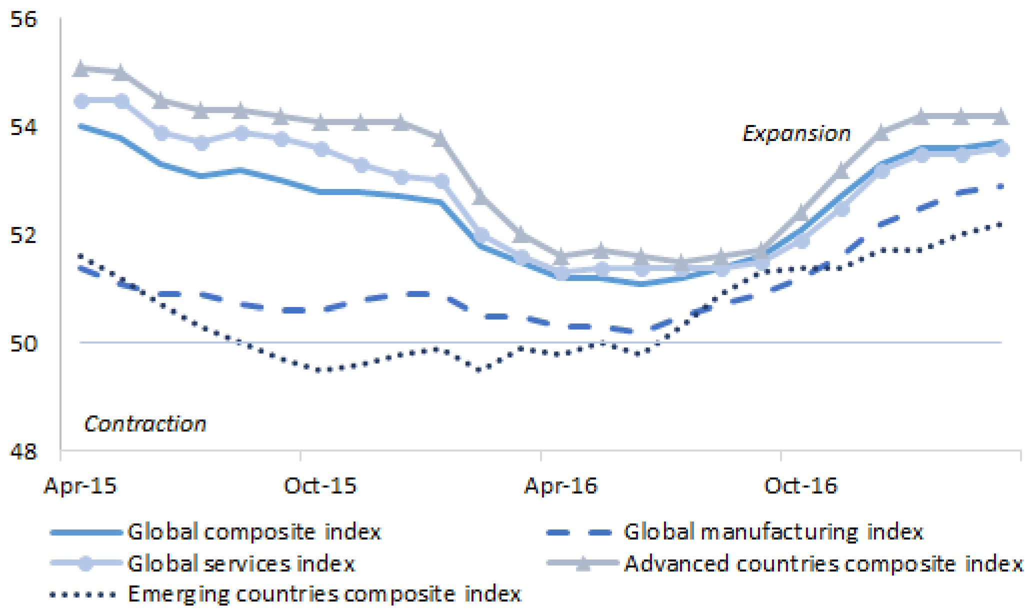
In Europe, questions remain about the evolution of negotiations for Brexit, which were officially launched at the end of March. The outcome of the first round of the French presidential election, however, appears to have diminished market uncertainty about the political and economic prospects of Europe. Equity markets have risen, while the euro has strengthened. Risk premiums on sovereign debt, which declined in the wake of the first round of the French election, have since turned upwards.

Recent economic developments

Despite slowing down in the last quarter of last year, the United States economy continues to grow. The deceleration at the end of 2016 was the result of a deterioration in net exports while domestic demand accelerated sharply. In the euro area, the expansion of consumption and the recovery in investment in the same period were the main drivers of the recovery. In the emerging economies, China and India have consolidated their respective rates of growth. Among the major exporters of raw materials, Russia and Brazil, although still contracting at the close of 2016, benefited from an increase in commodity prices and have undertaken a path to recovery that should emerge this year.

The latest economic data point to a continuation of the current expansion in the first part of 2017, showing a more marked improvement for the emerging countries. The Purchasing Managers' Index (PMI) lies well within in the zone indicating an expansion (index above 50) since the middle of last year (Figure 1).

Figure 1 – JP Morgan Global PMI (1)
(3-month moving average)

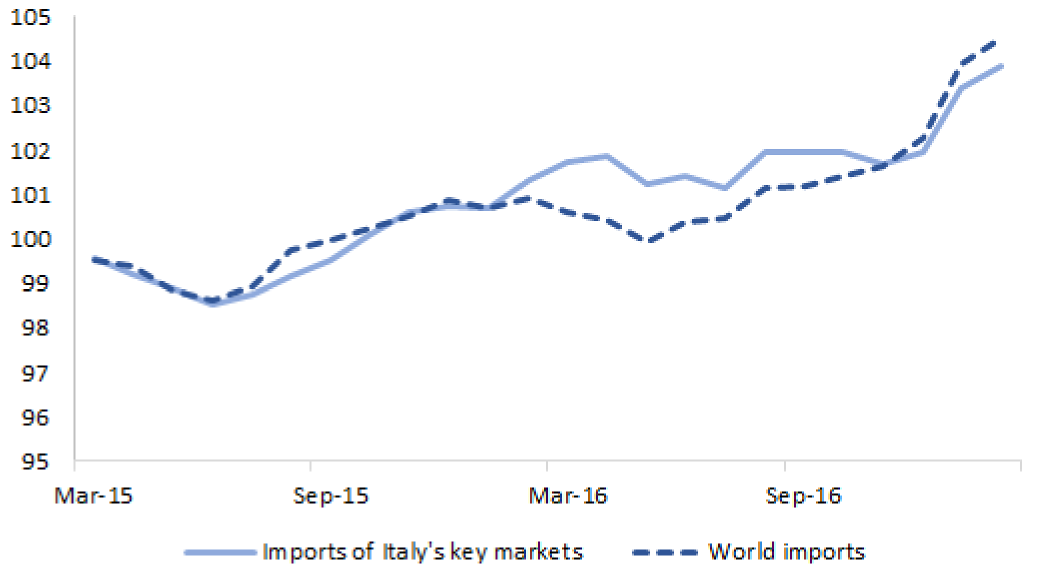


Source: Thomson Reuters.
(1) Confidence indicators based on the assessments expressed by corporate purchasing managers; a value of more than 50 indicates an expansion.

World trade strengthens

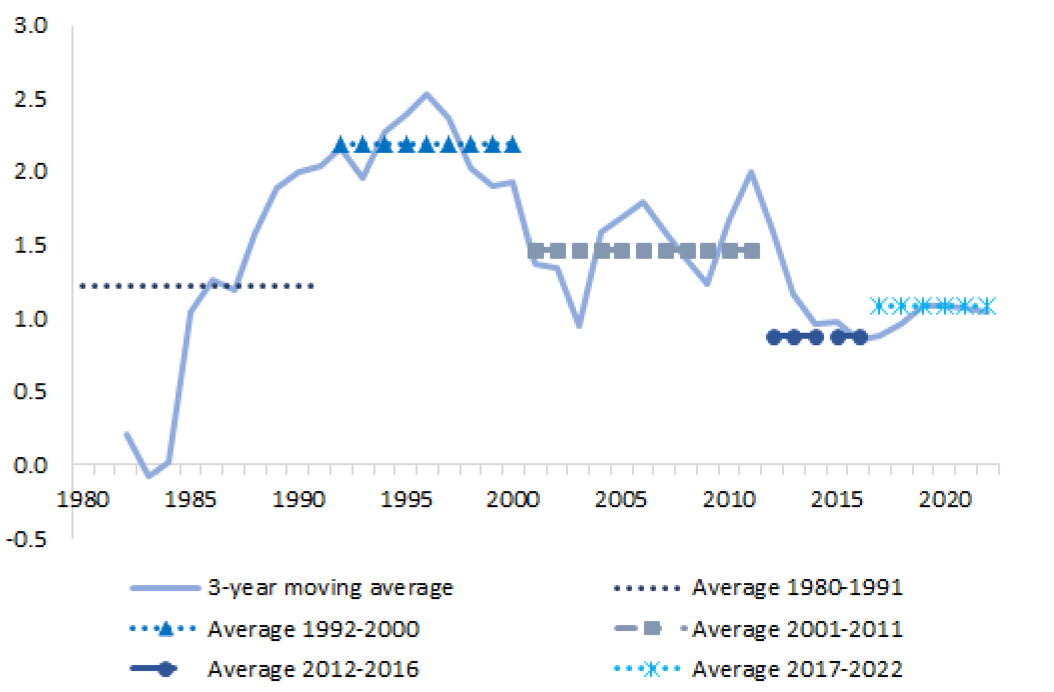
After months of modest growth below the pace of the expansion in global economic activity, since the end of last summer international trade has been rising at a more buoyant rate. The improvement, driven by imports in both the advanced and emerging economies, has translated into more robust growth in the markets for Italian exports (Figure 2). Looking forward, the strengthening of world trade should continue. More specifically, trade could finally return to growing at a slightly faster rate than world GDP (Figure 3). The recovery in the elasticity of trade to international output would still be small, remaining well below the levels that marked the peak period of globalization in the nineties and the subsequent consolidation in the decade prior to the recent crisis.

Figure 2 – World imports and Italy's key markets
(3-month moving average; indices, 2015=100)



Source: based on Thomson Reuters data.

Figure 3 – Ratio of world trade growth to world GDP growth



Source: based on IMF data, *World Economic Outlook*, April 2017.

The world economy in recent IMF forecasts

In its April forecasts, the International Monetary Fund (IMF) substantially confirmed the world growth projections published in its January update. Global economic growth is expected to accelerate from 3.1 per cent in 2016 to 3.5 per cent this year (one-tenth higher than previous forecasts; Table 1). In 2018, international growth is forecast to reach 3.6 per cent (in line with the January projection). The broad confirmation of forecasts for the world economy incorporates marginal upward revisions for the advanced countries in 2017 (about one-tenth of a point for the entire area). The latter reflect a slight increase in growth forecasts for the euro area (one-tenth of a point, to 1.7 per cent) and more substantial increases for the United Kingdom and Japan (five and four-tenths of a point, respectively), while the outlook for the United States was unchanged at 2.3 per cent in 2017. Forecasts for the expansion of world trade appear to be in line with earlier projections for 2017 (3.8 per cent), but have been corrected slightly downward for the following year (by two-tenths of a point, to 3.9 per cent) .

Overall, the Fund's estimates appear to assess the signs of improvement in international economic conditions with caution. These signals are reflected in the IMF forecasts in the form of a broad confirmation of the forecasts issued with the January update, which had already revised the projections from the previous October upwards. In the view of the IMF, the global recovery is being held back by structural impediments, such as slowing productivity growth and increasing inequality, while the balance of risk remains tilted to the downside, mainly in relation to policy developments in the major economies.

Table 1 – IMF forecasts
(percentage changes and differences in percentage points)

	WEO April 2017		Difference with WEO January 2016	
	2017	2018	2017	2018
World output	3.5	3.6	0.1	0.0
Advanced economies	*2.0*	*2.0*	*0.1*	*0.0*
United States	*2.3*	*2.5*	*0.0*	*0.0*
Euro area	*1.7*	*1.6*	*0.1*	*0.0*
Emerging economies	*4.5*	*4.8*	*0.0*	*0.0*
World trade	3.8	3.9	0.0	-0.2

Source: IMF (2017), *World Economic Outlook*, April.

The rise in oil prices and the appreciation of the dollar fade

On the commodity front, the effects of the OPEC agreement at the end 2016 to reduce output appear to have gradually dissipated. The price of crude oil, which rose to $55 a barrel in February (about $10 more than in November), first stabilized then gradually weakened, falling to $51 in the last week of April. The rebound in unconventional US production capacity (shale oil) at the beginning of the year, fostered in part by rising prices, seems to have blunted the attempt of the large producers (OPEC and Russia) to contain supply, reduce inventories and thereby revive a weak market. Given the moderate pace of recovery expected for demand in the consuming countries, the outlook for oil prices will depend on finding a complex balance between any further attempts to reduce output on the part of OPEC cartel and constantly expanding US production.

The foreign exchange market has also seen the ebbing of the rise in the dollar that began in November following the US elections in connection with expectations of a change in the economic policy stance (fiscal stimulus and protectionist measures) and the possible monetary policy response (bringing forward interest rate hikes). The uncertainties that subsequently emerged about the actual policy choices of the US administration have probably had an impact in curbing the appreciation of the dollar. An additional factor in recent days was the outcome of the first round of the French presidential elections, which partially eased investor uncertainty about the outlook for the European economy, causing the euro to appreciate by 1.7 per cent against the dollar compared with pre-election levels.

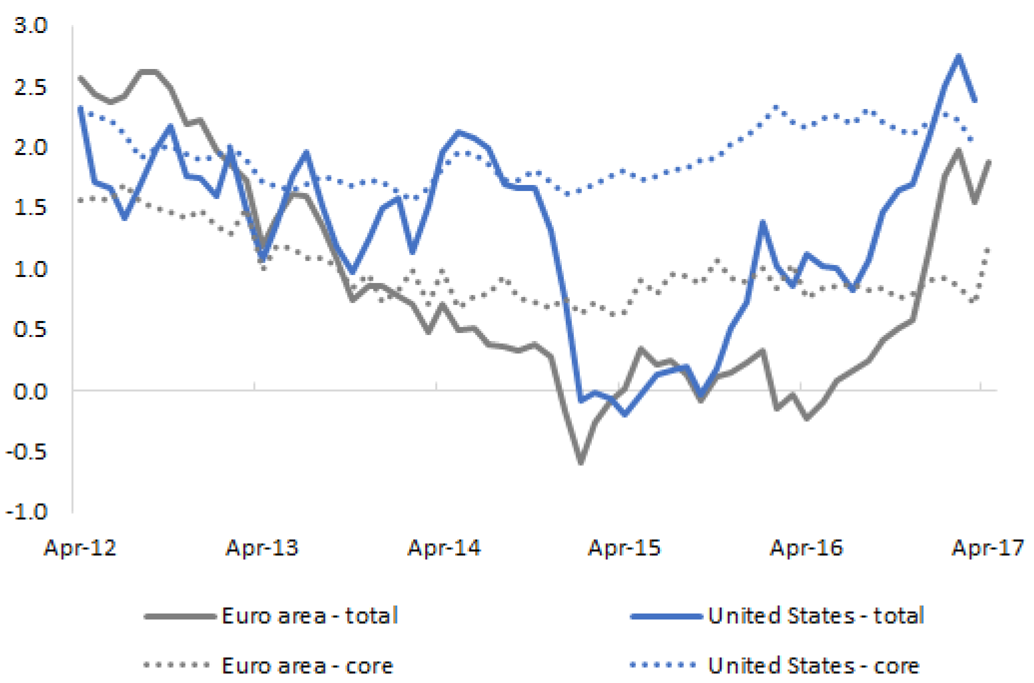
Euro-area inflation rises but internal pressures are weak; inflation expectations are subdued

The developments in commodity and foreign exchange markets impact euro-area inflation. Consumer price inflation continued to increase from the end of last year, reaching 1.9 per cent in April. The rise in European inflation has essentially reflected the acceleration in prices for energy products and unprocessed food, i.e. components that are directly linked to the rise in commodity prices and the dollar. Excluding the latter, core inflation remained low (1.2 per cent in April), reflecting wage moderation and the weak pressures on production costs that continue to characterize the euro area (Figure 4). Core inflation could rise somewhat in the coming months, reflecting the propagation of the second-round effects of prior increases in commodity prices in the price formation process. However, this impact could be mitigated in the coming months if the recent easing of external upwards pressures continues.

The persistent moderation of endogenous inflationary pressures in the euro area is confirmed by inflation expectations at short and medium term, as inferred from inflation swap contracts (Figure 5). Expectations showed signs of increasing in conjunction with the acceleration in commodity prices in late 2016 and early 2017. However, as these effects have attenuated, the rise in expectations has been interrupted and they are now at a very low level, well below the monetary policy objective (2 per cent).

In this environment, at its meeting on 27 April the Governing Council of the ECB reiterated that it would continue its asset purchase programme through December 2017 or beyond, if necessary, until it sees a sustained adjustment in the path of inflation consistent with its inflation target. It should be noted that the positions of most observers reflect expectations that that programme will be gradually wound down by the end of 2018. The ECB also indicated that official interest rates will remain at present or lower levels for an extended period of time, well past the end of the asset purchase programme.

Figure 4 – Inflation in the main areas
(annual percentage changes)



Source: Thomson Reuters.

Figure 5 – Inflation expectations in the euro area (inflation-linked swaps)

Source: Thomson Reuters.

The Italian economy

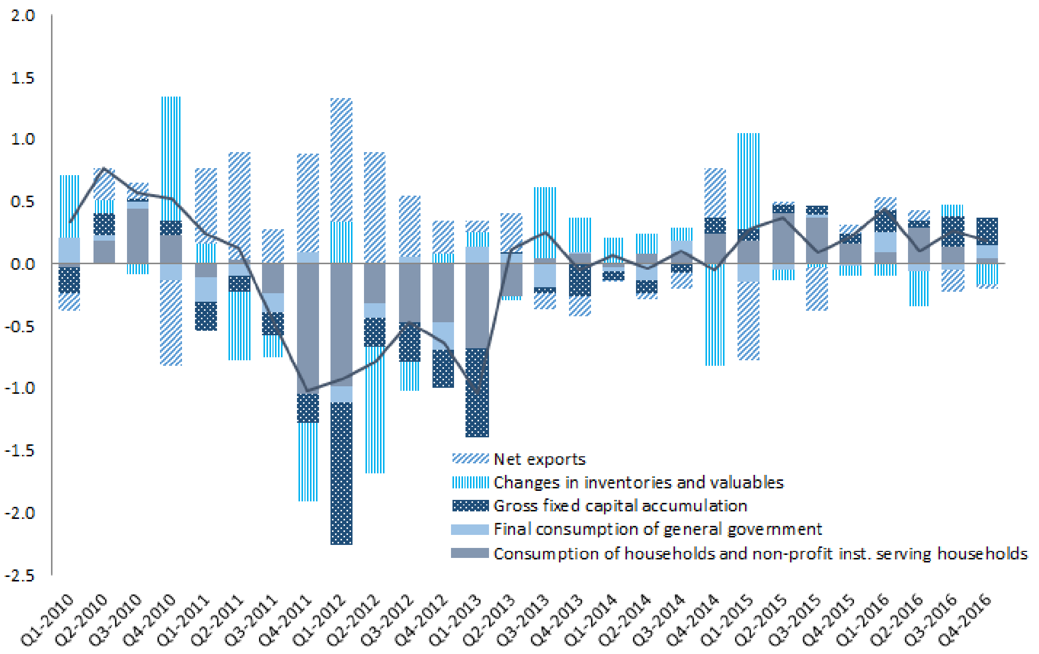
The moderate recovery continued in the fourth quarter

In the last quarter of 2016, economic activity continued to recover, although the pace was slower than the euro-area average and was slowing (0.2 per cent on the previous quarter) compared with the growth posted in the summer (0.3 per cent). As a result, GDP adjusted for calendar effects expanded by 1 per cent on average in 2016. On an unadjusted basis, i.e. excluding differences in the number of working days, the increase was 0.9 per cent. The growth at the end of 2016 had a positive impact on 2017 of 0.3 per cent.

On the supply side, the uptick in the level of economic activity in the last quarter of the year reflected an increase in the value added of the industrial sector, including both manufacturing (0.9 per cent) and construction (0.6 per cent), while it was flat in services and contracted in agriculture (-3.7 per cent).

As regards the components of demand (Figure 6), the contribution to growth of domestic spending remained positive in the fourth quarter (about 0.4 percentage points). Change in inventories subtracted about two-tenths of a percentage point. Net foreign demand had essentially no impact, reflecting a recovery in exports (1.9 per cent), driven by the strengthening of world trade and the depreciation of the euro at the end of the year, accompanied by rapid growth in imports (2.2 per cent), driven by the recovery of investment plans and the acceleration in exports itself.

Figure 6 – Change in GDP on previous quarter and contributions of the components of demand
(percentage changes and contributions in percentage points)



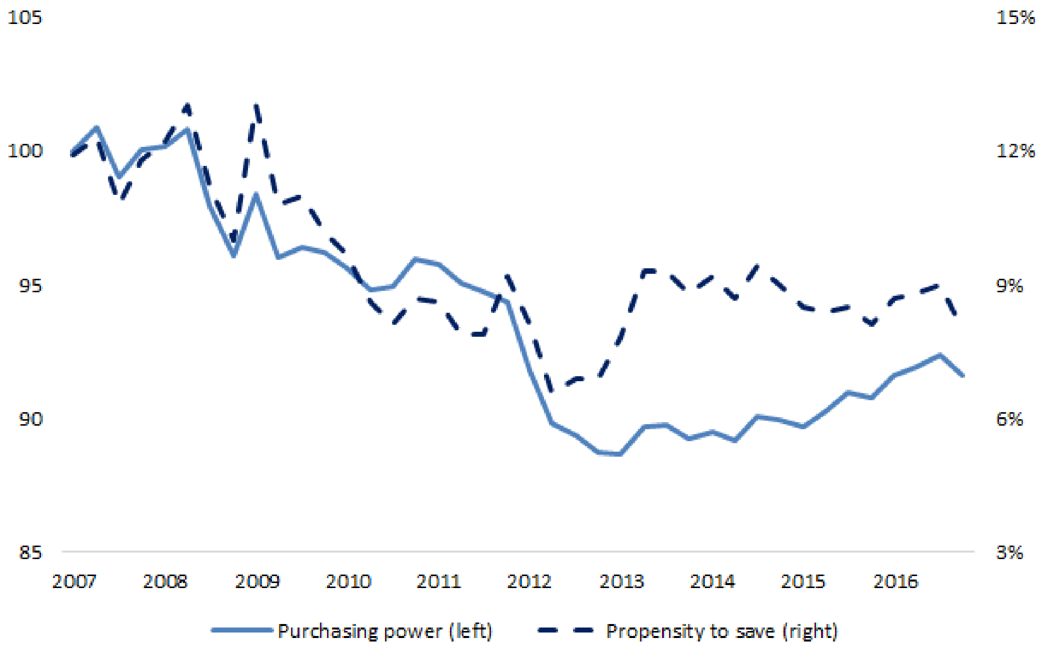
Source: based on Istat data.

Household expenditure continues to decelerate ...

The slowdown in private consumption that started in the central months of the year continued in the last quarter. Household spending, including spending by non-profit institutions serving households, increased by 0.1 per cent on the previous period, compared with variations of 0.2-0.5 per cent in the first three quarters. Consumption expenditure was affected by the decline in household purchasing power (down 0.9 per cent from the average for the summer months) and the steady deterioration in the climate of confidence (which was only partially offset by the upturn in the final months of 2016). The increase in household spending, although very small, combined with a decrease in income to produce a decline the average propensity to save in the fourth quarter, which fell to 8 per cent of disposable income, one point less than in the third quarter (Figure 7).

The most recent survey data show a further deterioration in consumer confidence on average in the first quarter of 2017, although less unfavourable signals can be found in respondents' assessments of their personal financial situation. The April figure shows the level of confidence almost unchanged over the previous month, with the downward revision in the general climate offset by an improvement in personal assessments.

Figure 7 – Household purchasing power and propensity to save
(indices - January 2007=100; percentages)



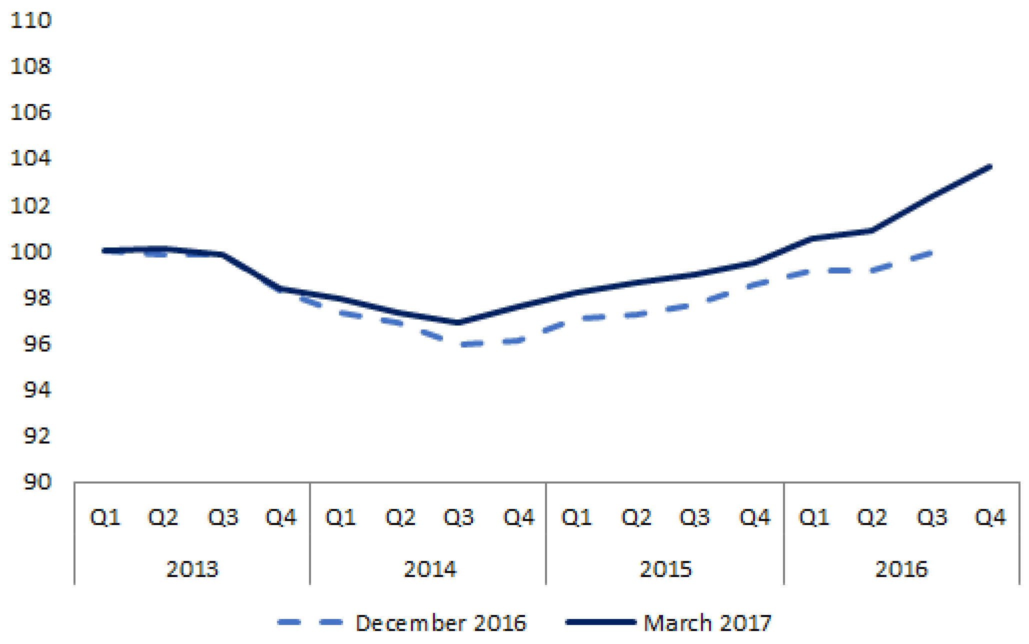
Source: based on Istat data.

... but capital accumulation improves

The picture of investment emerging from the Istat national accounts data published last March is substantially more favourable than it was in the previous edition of quarterly accounts (Figure 8), with quarter-on-quarter growth rates in 2016 of more than 1 per cent higher in all quarters with the exception of the second (which was nevertheless positive at 0.4 per cent). The Istat revision essentially regarded investments in machinery and plant, the growth in which between the first quarter of 2015 and the third quarter of 2016 in the revised data was more than double the previous figures. However, the more robust growth in capital accumulation was not sufficient to reverse the decline in the ratio between the capital stock (net of depreciation) and value added that has marked the Italian economy since the last recession and is largely confirmed in the new national accounts data (Figure 9).

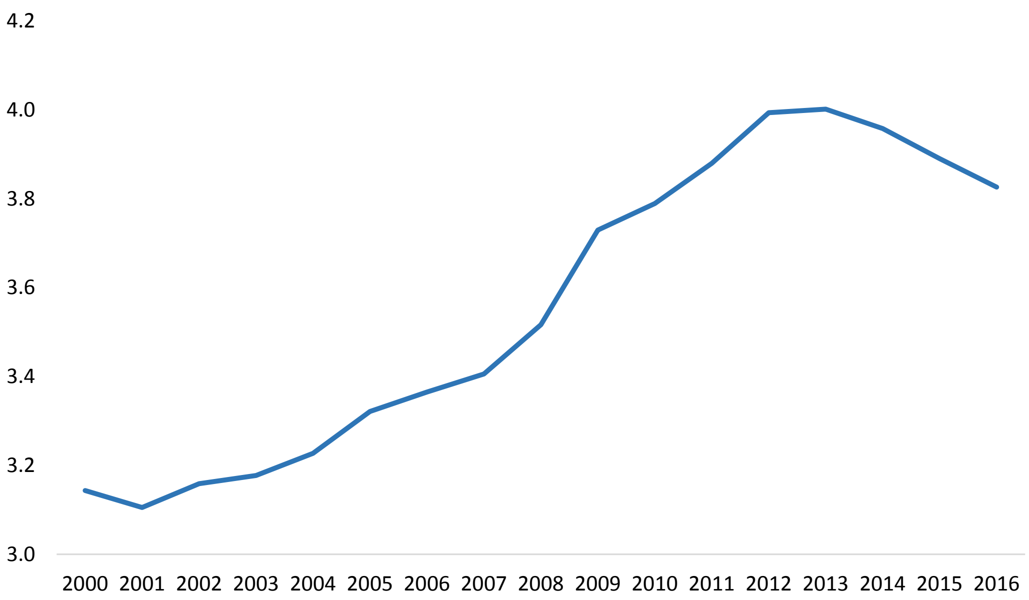
With regard to more recent developments, the growth in investment in the fourth quarter (1.3 per cent) was driven by the jump in investment in transport equipment (13.6 per cent). Although less robust, the growth also involved investment in plant and machinery (0.4 per cent) and construction (0.5 per cent), with the latter primarily sustained by the residential component.

Figure 8 – Volume of total gross fixed investment
(index; 2013 Q1 = 100)



Source: based on Istat data.

Figure 9 – Ratio of capital stock (net of depreciation) to value added – total economy



Source: based on Istat data.

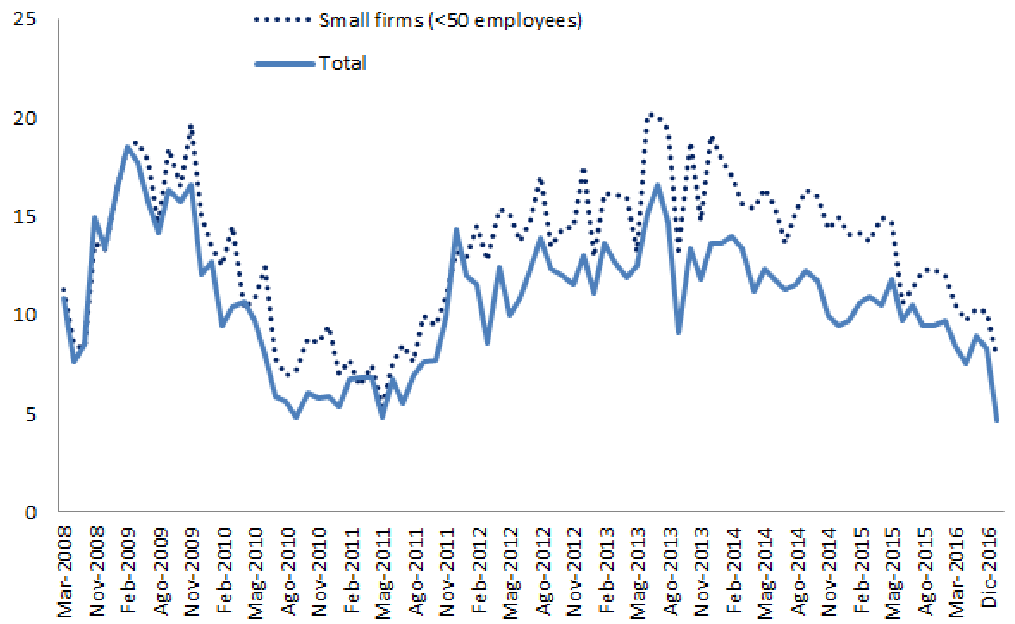
The gradual recovery in investment should continue in 2017. The findings of the Bank of Italy's survey of inflation and growth expectations, which largely confirm the picture emerging from the semi-annual Istat/European Commission survey in January, point to an expansion of planned investment in industry (manufacturing) and services in 2017, facilitated by tax relief for the purchase of high-tech goods.

Signs of a gradual improvement can also be found in profitability indicators for firms, which in the final part of last year continued to benefit from the moderation of production costs and relatively favourable financing conditions.

Lending recovers slowly

Surveys of firms and banks provide relatively encouraging news for the first months of this year, despite the persistently large volume of impaired loans on bank balance sheets. The Istat survey shows that the percentage of manufacturing firms whose access to credit has been rationed (i.e. those claiming that they did not receive the credit they applied for) dropped substantially at the beginning of the year and in March reached the lowest level (4.6 per cent; Figure 10) since this question began to be asked (March 2008). However, the terms of access to bank financing continue to differ by the size class and business sector of borrowers (being relatively more accommodating for medium/large applicants in manufacturing and services than for construction companies). The tax measures designed to foster the development of alternatives to bank financing (such as Individual Savings Plans or tax relief for investment by pension funds in Italian businesses) could provide additional resources for the most dynamic firms and those with a greater focus on exports. Lending to households has exhibited encouraging signs, accelerating in February under the impetus of rising demand for mortgage loans for home purchases. The cost of credit, which was stable in February, remains at historically low levels.

Figure 10 – Manufacturing: firms that applied credit but were rejected
(percentage of firms that applied)



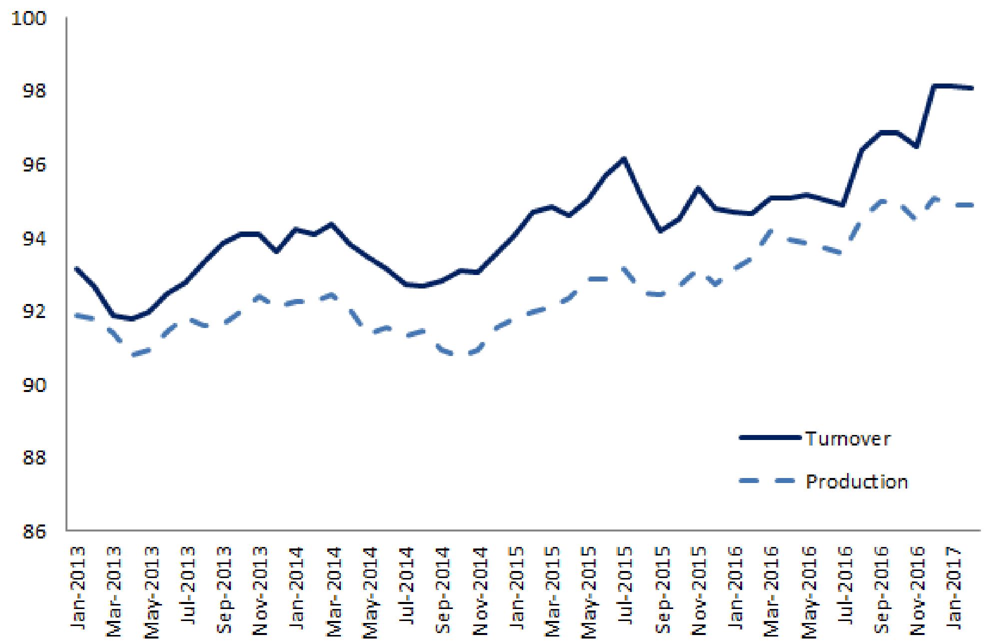
Source: Istat.

The latest economic indicators

The most recent economic data suggest that economic activity is still expanding, although key indicators performed quite erratically in the early months of the year. The acceleration in the volume of industrial output registered at the end of last year was followed by a contraction in January (-2.3 per cent compared with December), which was only partially reversed in February (+1 per cent). According to PBO estimates, these uncertain developments, which partly reflected calendar effects, should continue in the coming months: on average in the first quarter, industrial production is estimated to have fallen by 0.2 per cent compared with the last three months of 2016. Stronger performance was registered for manufacturing turnover in volume terms, which thanks to the growth in both the domestic and foreign components in February recouped almost all of the ground lost the previous month, signalling an industrial recovery beginning last summer that has been even more robust than the one reflected the manufacturing production index (Figure 11).

Qualitative indicators point to a strengthening of economic activity in the short term: the Purchasing Managers' Index (PMI) for manufacturing in March reached its highest level in more than over six years. The confidence index for manufacturing firms, which has been gradually improving since last autumn, remains stably above the long-term average.

Figure 11 – Manufacturing: production and turnover indices in volume terms
(Indices - (2010=100; 3-month moving averages)

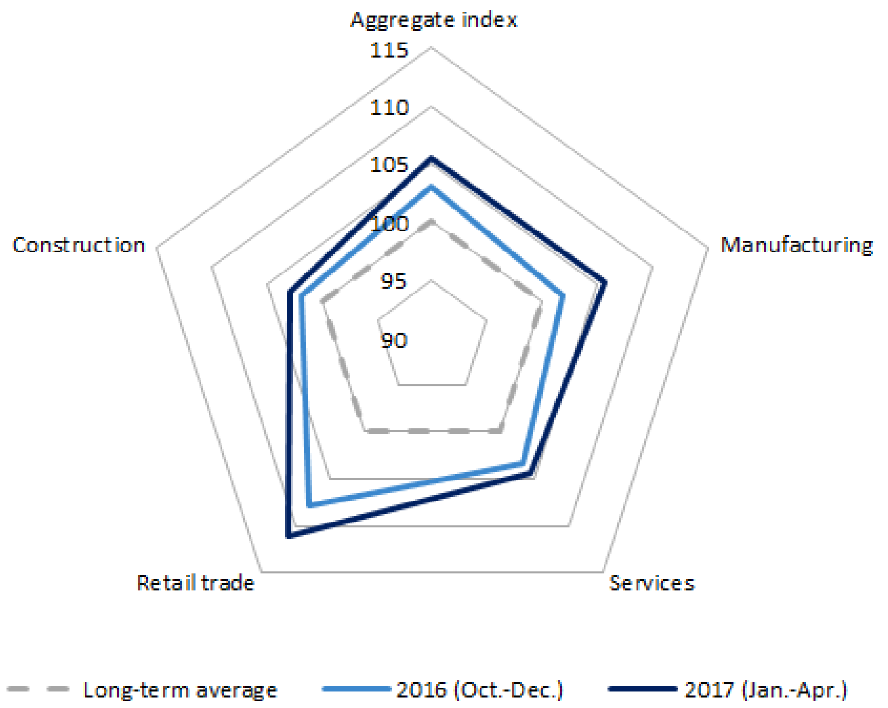


Source: based on Istat data.

The production index for the construction sector remains highly volatile, posting a jump in February (4.6 per cent) that reversed the fall registered in January. Relatively positive signals have come from the real estate market, which showed gains in the last part of last year: the increase in sales was accompanied by price stabilisation in the fourth quarter (0.1 per cent) after some five consecutive years of decline. Confidence among construction firms continues, albeit with fluctuations, the improvement that began at the end of 2014, which was further consolidated with strong progress in April (nearly 5 percentage points higher than March).

The recovery in services continued at the end of last year. In the fourth quarter of 2016, the seasonally adjusted index of turnover in value terms increased by 0.5 per cent on the previous quarter, largely driven by growth in wholesale trade. Indices of retail sales (in both volume and value terms) stagnated, having stabilized for more than three years at record lows compared with pre-crisis levels. However, assessments of the confidence of service and retail firms remained slanted towards expansion in April and point to a recovery for these segments.

Figure 12 – Confidence in productive sectors (1)
(index; average January 1998 – April=100)



Source: based on European Commission and Istat data.
(1) The aggregate confidence indicator is constructed by applying the weights used by Istat to produce the Istat Economic Sentiment Indicator (IESI) to the time series (standardised) of sectoral confidence indicators of the European Commission. For the confidence indicator for all productive sectors and the individual sectoral indicators, the chart compares the average for January-April 2017 (dark blue line) with the average for the indicators for October-December 2016 and the long-term average (calculated as from January 1998).

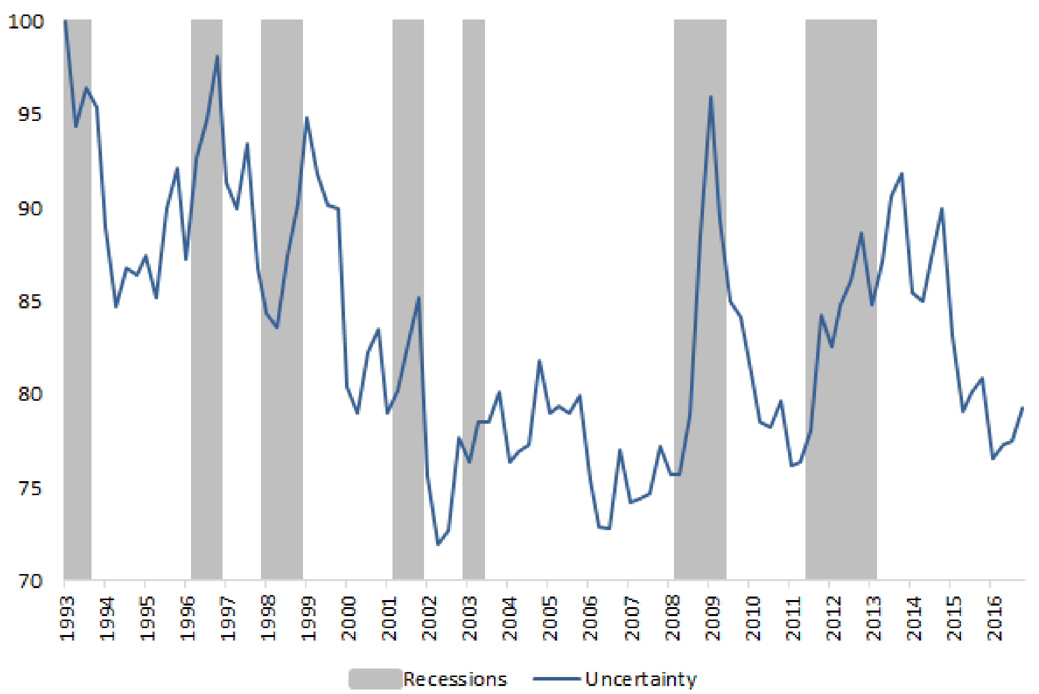
For all sectors, the aggregate index of business confidence, obtained as a weighted average of sectoral indices, was at a relatively high level on average for January-April this year (around 105), both compared with the average for the fourth quarter of 2016 (103) and the long-term average (normalized to 100; Figure 12).[1] More generally, the chart shows how the area obtained by joining the most recent data (dark line) encompasses that delineated by the long-term averages (dotted line), indicating favourable cyclical conditions across all production sectors. Compared with the end of 2016 (lighter line), the chart also shows that the upward revision of the aggregate indicator for the average of the first few months of 2017 was largely driven by manufacturing and retail trade.

[1] The series are normalised to fluctuate around an average value of 100 with a standard deviation of 10. The long-term average is calculated by considering the period from January 1998 to April 2017. The aggregate confidence indicator is constructed by applying the weights used by Istat to produce the Istat Economic Sentiment Indicator (IESI) to the time series (standardised) of sectoral confidence indicators of the European Commission.

Uncertainty in the economy

As many have pointed out, the scope for an improvement in the Italian economy depends to a large extent on the uncertainty in the economy, which may prompt firms to postpone more difficult or risky spending decisions and increase the risk aversion of banks. In order to attempt to measure the level of uncertainty, a useful source is the wealth of information available in Istat's monthly surveys of firms and households. Figure 13 presents an uncertainty indicator based on this source (for more on the construction of the indicator, please see the Box "Uncertainty measured on the basis of business and consumer surveys"). As we can see, after the decline registered in 2015 and in the first part of 2016, the uncertainty indicator regained some ground more recently, while remaining relatively low, especially when compared with the previous peaks reached during the so-called first recession (in 2009) and in the initial stages of the current recovery (2014). This contrasts partially with other indicators (based, for example, on the frequency with which the word "uncertainty" appears in newspapers or on developments in financial variables), which indicate larger increases in uncertainty (or risk) for the Italian economy, and with the concerns expressed by international organisations and others about financial condition of the Italian banking system.

Figure 13 – Indicator of uncertainty in the Italian economy (1)
(1993 T1=100)



Source: based on European Commission and Istat data.
(1) The areas in grey indicate recessions in the Italian economy, identified applying the procedure developed by Harding, D. and A. Pagan (2002), "Dissecting the cycle: a methodological investigation", *Journal of Monetary Economics*, 49, 365-381, to the quarterly GDP series (in log form). In order to reduce erratic short-term changes, the uncertainty indicator is expressed in terms of quarterly averages of monthly values.

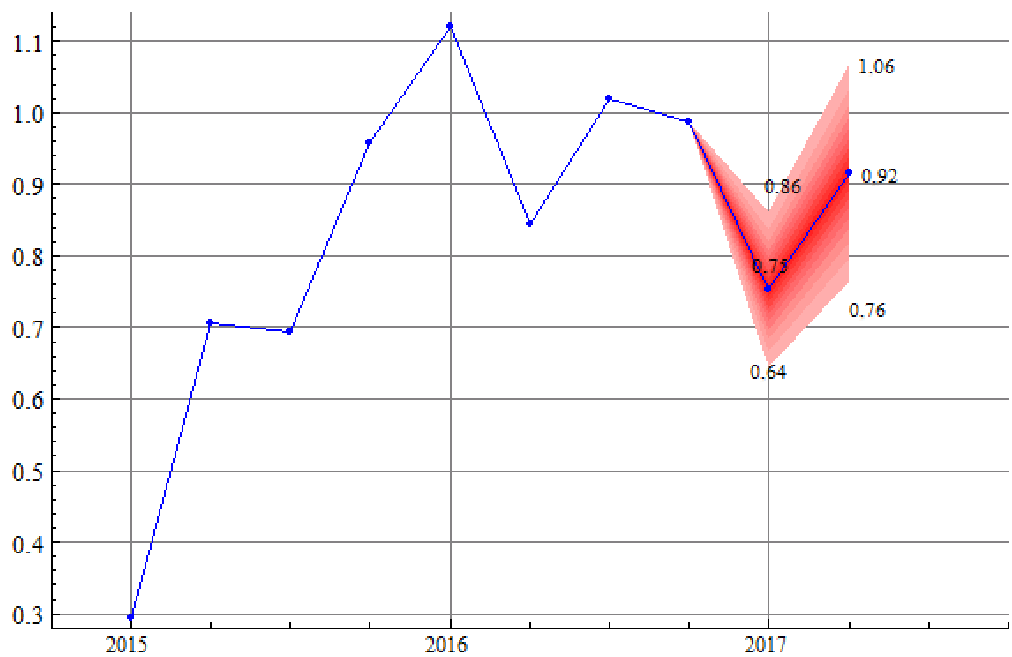
Short-term forecasts

The overall assessment we can draw from this complex economic picture essentially points to a continuation of the cyclical recovery of the Italian economy in the first part of 2017 at the slow pace that marked the second half of last year. More specifically, on the basis of the forecasts produced with the PBO's short-term models, it is estimated that GDP could have risen by about 0.2 per cent quarter-on-quarter in the first quarter of 2017. Growth is expected to pick up in the second quarter (close to 0.3 per cent), which would be boosted by a return to growth in the industrial sector. The year-on-year growth rate would be about 0.8 per cent in the first quarter, rising to 0.9 per cent in the second (Figure 14).

Employment growth slows and the proportion of fixed-term employment increases

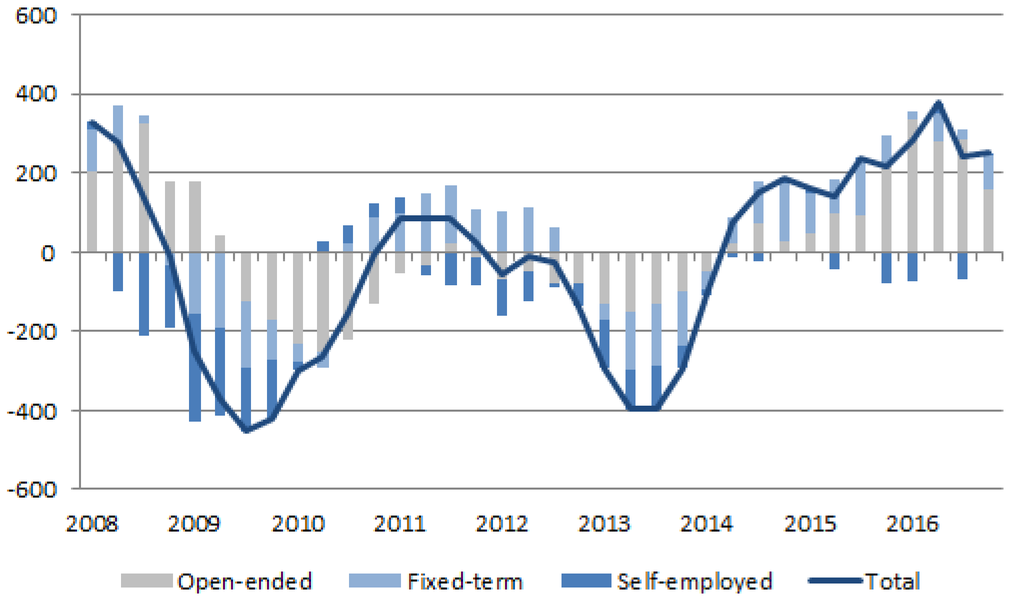
Employment growth has slowed. According to the Quarterly Labour Force Survey, in the fourth quarter of 2016, the number of persons employed showed a slight increase (0.1 per cent) after the stagnation observed in the previous quarter. The main factors were an increase in self-employment (0.5 per cent), which reversed part of the contraction in the third quarter, while growth in payroll employment stalled. The latter is the result of a small reduction in open-ended employment (-0.1 per cent), the first after six quarters of consecutive growth. Conversely, the growth in fixed-term employment continued at a pace similar to that in the previous quarter (0.9 per cent; Figure 15).

Figure 14 – Short-term forecasts for year-on-year GDP growth and standard error (1)



(1) The error bands regard a confidence interval of 90 per cent.

Figure 15 – Employment by type of contract
(absolute year-on-year changes; thousands of units)

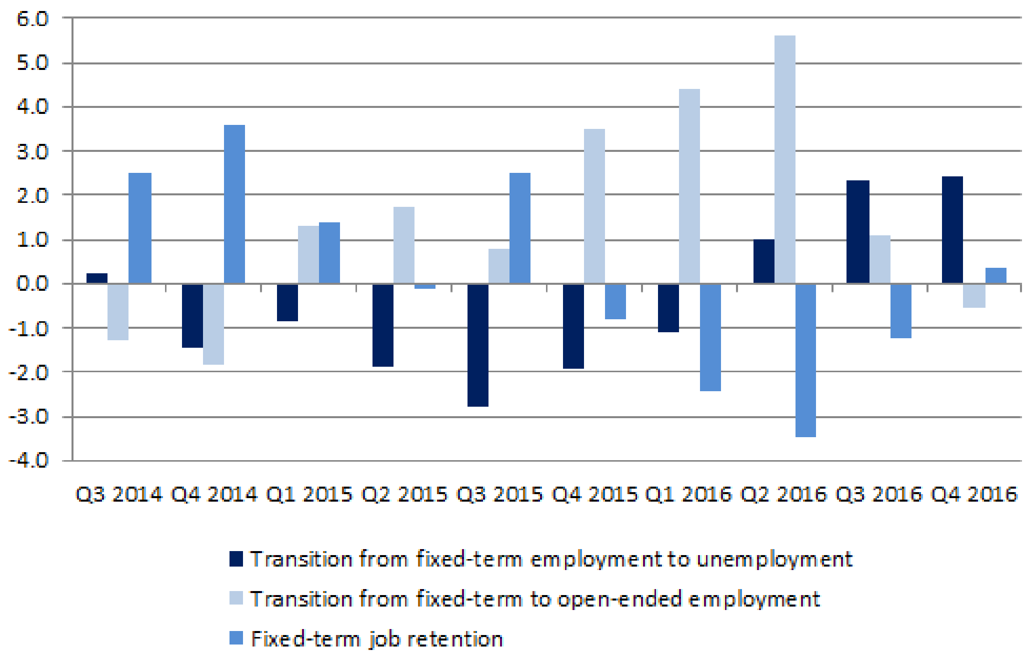


Source: Istat.

According to flow data for changes in employment status, in the fourth quarter of 2016 the flow of transitions from fixed-term employment to open-ended positions turned negative for the first time since the beginning of 2015 (-0.5 percentage points for shifts observed between the fourth quarter of 2015 and the fourth quarter 2016 compared with the value one year earlier). This was a consequence of the sharp deceleration in such transitions that had already been observed in the third quarter of 2016. At the same time, there was a rise in the retention rate for fixed-term payroll employment, which turned slightly positive (with a difference of 0.4 percentage points between transitions registered between the fourth quarter of 2015 and the fourth quarter of 2016 and the analogous transitions one year earlier). Flows from fixed-term employment to unemployment also increased (Figure 16).

The data for early 2017 substantially confirm the trends observed at the end of last year. On average in January-February, the increase in the number of persons in employment remained moderate (0.1 per cent compared with the fourth quarter of 2016) and was mainly driven by the growth in fixed-term payroll employment (0.5 per cent), while self-employment and open-ended payroll employment were virtually unchanged.

Figure 16 **–** Job retention, retention and transition of workers in fixed-term employment
(differences in percentage points between flow data over one year)



Source: based on Istat data.

The growing proportion of fixed-term employment (14.3 per cent of total employment in the first two months of 2017, compared with 13.6 per cent in the same period of 2016) appears to reflect the reduced attractiveness of open-ended hiring as a result of the gradual dissipation of the effects of contribution relief measures. It should also be borne in mind that these measures are temporary, with relief for hiring in 2015 and 2016 terminating at the end of 2017.

The weakening of the effects of tax incentives is underscored by the statistics from the Observatory on Insecure Employment of the National Social Security Institute (INPS). In 2016, the number of employment relationships benefitting from relief was 615,000, of which about 67 per cent consisted of new open-ended positions and the remaining 33 per cent of fixed-term contracts. Hiring benefitting from the relief measures accounted for 38 per cent of total new hires/transformations to open-ended contracts. This proportion was around 61 per cent in 2015. Overall, in 2016, the net change in open-ended employment relationships (taking account of terminations) was positive (45,700 positions), but sharply down on 2015 (when the balance amounted to approximately 885,000 contracts). This result reflected a reduction in open-ended positions (-37.0 per cent compared with 2015) that was only partially offset by a reduction in terminations of such positions and a decline in transformation of fixed-term contracts (down 204,000).

At the same time, INPS data show an increase in hiring on fixed-term contracts and apprenticeships beginning in the second half of 2016. This trend continued in the first few months of 2017, when firms did not benefit from any incentives for new open-ended hiring. In January-February, the net change in fixed-term and apprentice positions was greater than in the same period of 2016. The balance of open-ended hiring, although still positive (about 19,000 positions), was sharply lower (-40.8 per cent) than in the same period of 2016. The INPS data also reveal a rebalancing between permanent and fixed-term employment, reflecting a shift in labour demand towards temporary and part-time positions in the light of the slow improvement in economic conditions.

On the unemployment front, in January-February 2017, the number of job-seekers declined (-1.4 per cent compared with the fourth quarter of 2016), entirely attributable to the male component of the labour market. With no change in labour market participation, the unemployment rate rose to an average of 11.7 per cent in those two months, marginally lower than the average level in the last three months of 2016.

Inflation rises under the impulse of the increase in commodity prices

Based on Istat's preliminary estimates, inflation rose to 1.8 per cent in April (from 1.4 per cent in March), mainly reflecting the rise in regulated energy prices (5.7 per cent, after a decline 1.2 per cent in March) and the prices of transport services (5.5 per cent). The increase in the latter contributed to a marked acceleration of inflation in the services sector (to 1.7 per cent, up from 1 per cent in March). However, on an annual basis, the prices of goods rose only slightly (1.8 per cent, as against 1.7 per cent in March).

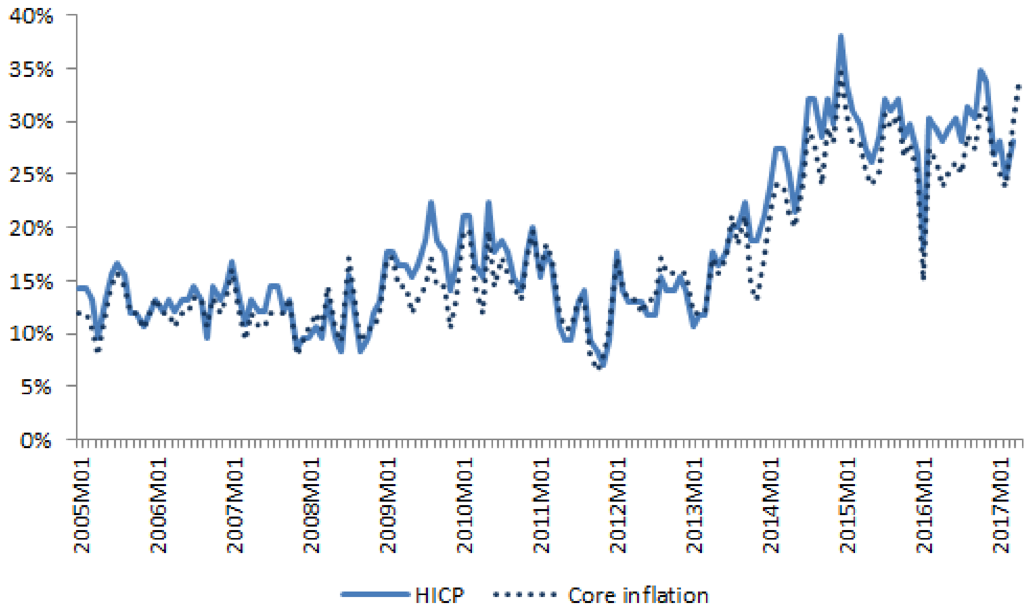
Core inflation, which excludes the prices of energy products and unprocessed food, rose by three-tenths of a percentage point, to 1 per cent in April. This reflected the transmission through the price formation process of past increases in commodity prices. Internal inflationary pressures remain weak, reflecting the moderate pace of the recovery, high unemployment and substantial wage moderation.

In March, the share of products in the basket of the consumer price index whose prices are still decreasing was 28 per cent, virtually unchanged on the end of 2016 (Figure 17), while the share of items whose prices rose by less than 0.5 per cent decreased (to 46 per cent from 49 per cent in February) as did that of items with prices rising by less than 1 per cent (65 per cent, from 67 per cent in February). Conversely, the proportion of items whose prices are falling increased for the components of core inflation (about 34 per cent).

In the upstream phase of the inflationary process, the year-on-year increase in the producer prices of goods sold on the domestic market declined slightly in March (3.7 per cent, compared with a decrease in November), primarily reflecting developments in energy prices. At the same time, the acceleration in the import prices of industrial products continued in February (5.7 per cent, compared with a 0.3 per cent decrease in November).

Household and business expectations point to an attenuation of the increase in prices. In April, consumer expectations for the next 12 months indicated a slowdown in inflation (the balance reported in the Istat survey of consumers went to -17 from -11), with a reduction in the proportion of those expecting stable or larger price increases (27.1 per cent, compared with 30.2 per cent).[2] Firms also expressed intentions to reduce sales prices (4.4, from 3.8 in March), with particular reference to intermediate goods. However, they remain more optimistic about selling prices for capital goods (with the balance rising to 8 from 5).

Figure 17 – Proportion of goods and services in consumer price index (HICP) experiencing deflation
(percentages)



Source: based on Istat data.

[2] The question and responses in the Istat consumer survey are as follows: "Compared with their current level, do you think that consumer prices in Italy in the next 12 months will: increase more; increase by the same amount; increase less; remain broadly stable; decrease; don't know".

Box – Uncertainty measured on the basis of business and consumer surveys

The uncertainty in an economy can be defined as the degree of dispersion of the assessments of economic actors (firms, households, economic policy-makers) of the current and expected state of economic activity. High levels of uncertainty tend to depress investment and consumption plans, restrict the demand for the factors of production and worsen business and household financing conditions, with adverse consequences for the economy as a whole.

Despite the increasing attention being paid to the phenomenon of uncertainty in the media, in the economic-political debate and in the academic world, the abstractness of the concept makes it difficult to identify metrics for measuring uncertainty and, consequently, to quantify its impact on economic developments in the short term. Commonly used metrics to quantify uncertainty are based on stock index volatility, the dispersion of forecasts produced by institutions and/or specialized professional forecasters or the prevalence of key terms (such as "economic uncertainty") reported in newspapers. These indicators have advantages but also weaknesses. A critical issue with metrics that use stock price data is associated with the possibility of idiosyncratic dynamics, i.e. that are not necessarily related to developments in the real economy. On the other hand, metrics derived from the dispersion in the forecasts of specialised operators provide an incomplete picture that does not necessarily reflect the motivations underlying investment and spending decisions by firms and consumers. The indicators calculated on the basis of the prevalence of keywords in the media are ultimately affected by a certain degree of arbitrariness in the choice of relevant terms, whose meaning and contextual use can also change over time.

An alternative approach is to build an uncertainty indicator based on the use of information gathered in business and consumer surveys. This uncertainty metric assumes that respondents (businesses and households) when providing their assessments of the expectations for the economy or of their economic and financial condition reveal a certain degree of discordance in those assessments, which in turn depends on how uncertain the future course of the economy is at the time of the survey. This indicator, introduced by Bachmann, Elstner and Sims (2013) and extended by Girardi and Reuter (2017),[3] is based on measuring the dispersion of the expectations of firms and consumers at time t, calculated using the fractions of positive responses (p_+) and negative responses ($p-$) in accordance with the formula:

$$inc_t = \sqrt{(p_+ + p_-) - (p_+ - p_-)^2} \qquad \text{(F.1)}$$

Intuitively, F.1. suggests that increases in uncertainty depend on the share of answers that differ from the central value (the first term in parenthesis) and the absence of a net predominance of optimists or pessimists (the second term in parenthesis)[4].

F.1 is calculated using information from multiple questions (a total of 22), drawn from questionnaires for consumers (7 questions) and manufacturing firms (5), services firms (4), construction firms (2) and retail trade firms (4),[5] and aggregated in a composite index after prior standardization.[6]

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[3] Bachmann, R. S. Elstner and E.R. Sims (2013), "Uncertainty and Economic Activity: Evidence from Business Survey Data", American Economic Journal: Macroeconomics, 5, 217-249; Girardi, A. and A. Reuter (2017), "New Uncertainty measures for the euro area using survey data", Oxford Economic Papers, 69, 278-300.

[4] F.1. can be applied directly in the case of questionnaires involving firms, where respondents select their answers on the basis of a Likert scale with three items (positive, stable, negative). The structure of the questionnaire for consumers generally involves a scale with five items (very positive, p_{++}, positive, stable, negative, very negative, p_{--}). Using F.1. with consumers requires prior aggregation of positive replies (p_+ and p_{++}) and negative replies (p_- and p_{--}).

[5] For a complete description of consumer and business questionnaires, see European Commission (2015), The Joint Harmonised EU Programme of Business and Consumer Surveys: User Guide.

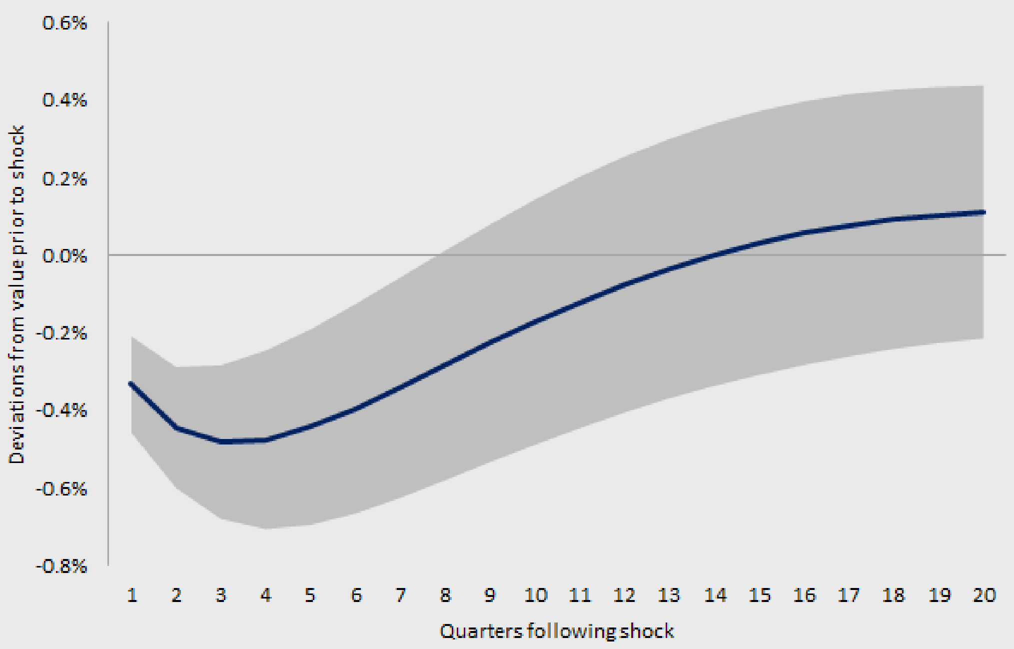
[6] More specifically, in constructing the uncertainty indicator presented in Figure 13 in the main text, the dispersion of views is measured in terms of the coefficient of variation, which as a dimensionless number makes it possible to control the scale effect inherent in the concept of standard deviation. This modification

Since uncertainty is a phenomenon that cannot be observed directly, the plausibility of an uncertainty metric is generally assessed on the basis of two distinct criteria: one, justifying the observed maximums, and two, quantifying the effects of the uncertainty so measured on indicators of economic activity (such as the industrial production index or GDP) in time series models that include variables considered relevant to determining the economic cycle.

With reference to the first criterion, Figure 13 in the text highlights peaks of uncertainty coinciding with recessions (the grey areas) such as, for example, 1993 and 2008-09, or key events for the Italian economy such as the abandonment of the fluctuation mechanism in the European Monetary System (at the end of 1996) and the adoption of the euro (early 1999), suggesting that the indicator has a clearly counter-cyclical dynamic consistent with economic theory.

As regards verification of the second criterion concerning the quantification of the effects of uncertainty on the level of economic activity, an vector autoregression model was estimated that considered time series for consumer prices, working hours, wages and short-term interest rates in addition to the uncertainty indicator and GDP. Figure R.1 shows the effect of a uncertainty shock (equal to one standard deviation of the indicator, i.e. 5-6 percentage points) on GDP over a simulation horizon of 20 quarters. The chart clearly shows that uncertainty has a recessive effect, with a decline in economic activity compared to the level before the shock (represented by the horizontal axis) that is statistically significant (based on a confidence region of 90 percent represented by the grey area) in the initial quarters of the simulation horizon and with a maximum intensity of about half a percentage point after about three quarters.

Figure R.1 – Response of GDP to an uncertainty shock (1)



Source: based on European Commission and Oxford Economic Forecasting data.

requires calculation of the mean (the denominator of the coefficient of variation) as a diffusion index (similar to PMI indices) rather than as a balance (difference between positive and negative judgements) to ensure a positive range. The composite uncertainty indicator was obtained as the simple average of the individual components (dimensionless by construction). In order to reduce erratic short-term variability, the indicator is expressed in terms of quarterly averages of monthly values and transformed into an index by setting the first quarter of 1993 as 100.