

CECIMO Statistical Toolbox

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cecimo
European Association of
the Machine Tool Industries

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Introduction

According to the Spring 2016 Economic Forecast of the European Commission, the economic growth should remain modest as key trading partners' performance has slowed and some of the so far supportive factors start to wane. As a result, the GDP in the euro area is forecast to continue growing at modest rates over the 2015-2017 period. The euro area's GDP is expected to grow 1.6% in 2016 and 1.8% in 2017 after 1.7% in 2015. The GDP growth in the EU is expected to moderate from 2.0% last year to 1.8% in 2016 before reaching 1.9% in 2017.

Some positive news for the European machine tool sector: the very accommodative monetary policy makes access to funding easier and cheaper, so a pick-up in investment is forecasted. On the other hand, the oil price is expected to rebound and lessen the previous positive effect on real disposable incomes. Similarly, although the euro area's exports are still benefiting somewhat from the euro's past depreciation, the currency's recent rise could make the region more susceptible to the effects of a slower external growth.

This all said, one event has brought the European and global growth in considerable risk. On 23 June 2016, the people of the United Kingdom voted in favour of leaving the European Union. From the creation of the Coal and Steel Community in 1951, to the creation of the euro, to the re-integration of central and Eastern Europe, the continent has been increasing its unity for generations. Brexit is, at the least, an interruption in that integration process.

That day in June left the country divided by age, social class and geography. The social effects are strong and even create speculations on the future of the state. The voters did not follow the warnings of economists, governments and international organisations and already now, the results are shaking the economy. The pound sterling fell to a 30-year low, the business confidence plunges and recession is threatening Britain. A less dynamic economy means fewer jobs, lower tax receipts and, eventually, more austerity. In conclusion the only certain thing is uncertainty.

However, the British people still need to democratically decide what they want instead. Unless they go for a second referendum. Putting aside that possibility, two options are realistic for the final deal. In the first option, the UK remains the European Economic Area (the "Norway model"). It stays in the single market except for agriculture and fisheries, keeps free movement of labour and a membership fee, and fully meets all EU single-market regulations that apply without a say in what they are. But this arrangement leaves the UK outside the customs union so it can strike its own trade deals and some more political co-operation projects. It is hard to see how that can be sold to a British public that voted for "taking back control". The second possibility is goods-only free trade deal that excludes the free movement of labour but still requires regulatory compliance of the traded products. While it is hard to find public support for the first option, the second would have severe negative effects on the economy.

In addition to the big disturbances in the United Kingdom and international markets, this set-back also makes it clear that the EU has to carry on with the necessary reforms. European negotiators need to find a good compromise for an orderly Brexit process. Building a new and sustainable relationship with the UK is in everybody's interest. It is also a moment to critically evaluate the Union's policies up to the present day. It is a unique opportunity to reform its way of working and pave a road to dynamic, future looking union.

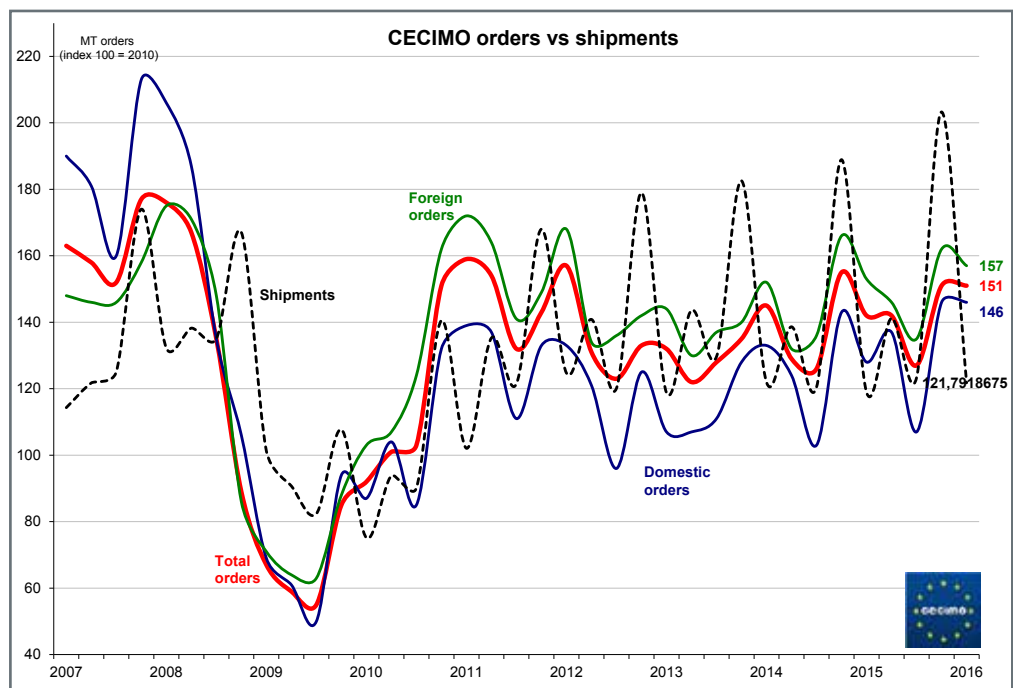
1. Data specific to the European machine tool market

▲ 1.1 CECIMO8 orders [ⓘ]

In the first quarter of 2016, the CECIMO8 total orders' index remained stable compared to the previous quarter but increased by 6% in year-to-year comparison. On one hand, the index shows that growth recovered in Europe over the last year, but the recent more modest global demand has made manufactures cautious about investing in new production facilities.

The CECIMO8 foreign orders' index grew 3% compared to the first quarter of 2015 and fell by 3% compared to last quarter. The domestic order intake proves the relative stability of the European economy. The domestic orders index kept its level on quarterly basis and grew by 14% compared the same period of a year ago.

Among CECIMO member countries, machine tool orders are increasing in Austria, the Czech Republic, Italy and Germany, and contracting in France and Spain. Due to the exchange rate appreciation and high base levels, the orders are also declining in Switzerland and the United Kingdom in yearly comparison.

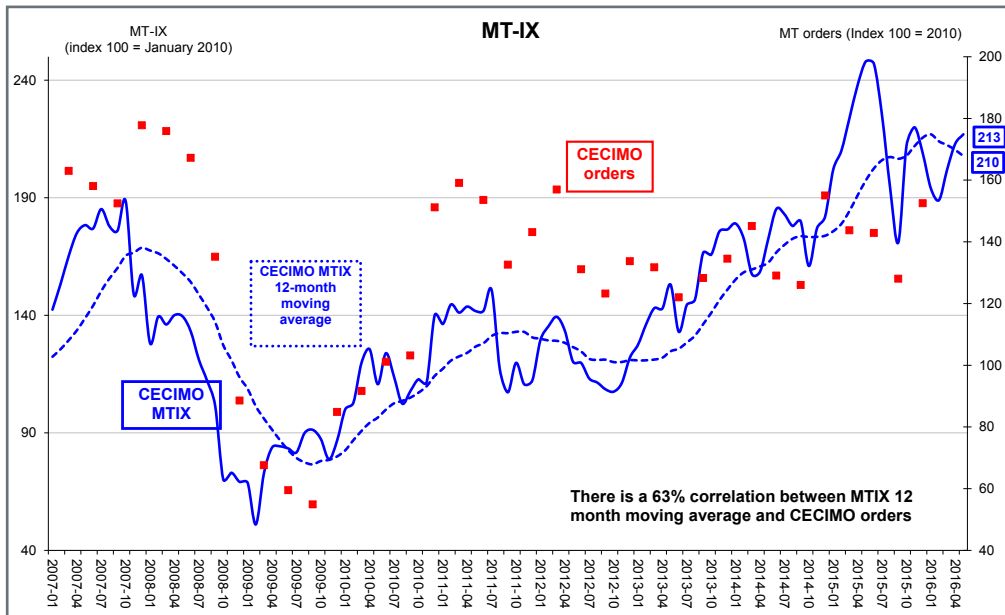


▲ 1.3 MT-IX [ⓘ]

In May, the MT-IX increased by 1.9% and posted at 217 points. The index gained 4 points compared to March's value.

The machine tool companies' market value increased in Brazil, South Korea and Taiwan. The market capitalisation of companies was stable in the United Kingdom. In Japan, the euro area, the United States and Switzerland, the machine tool companies' market capitalisation booked more varied results.

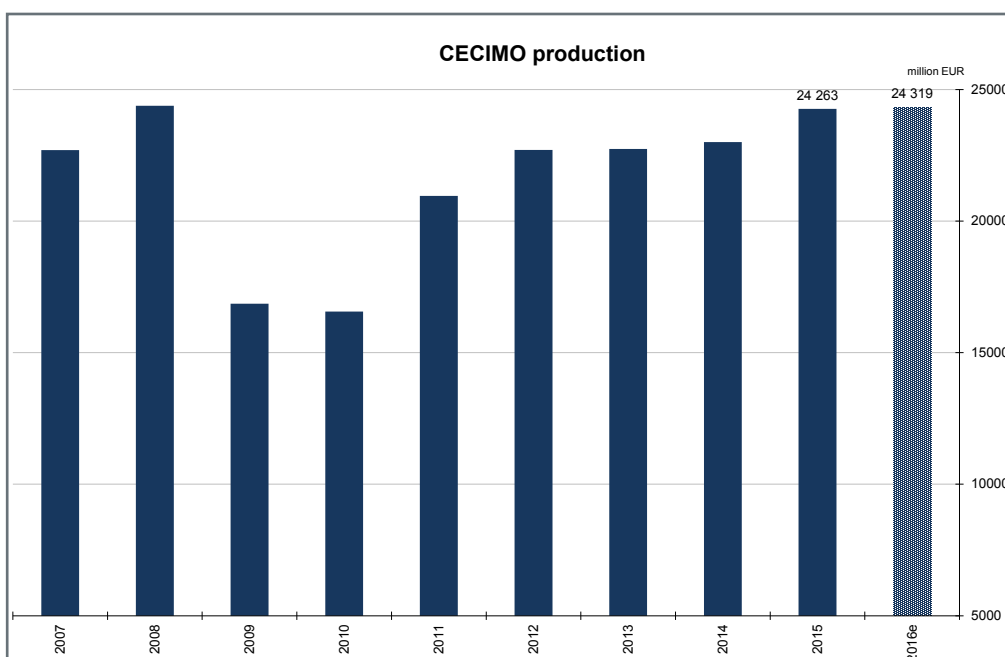
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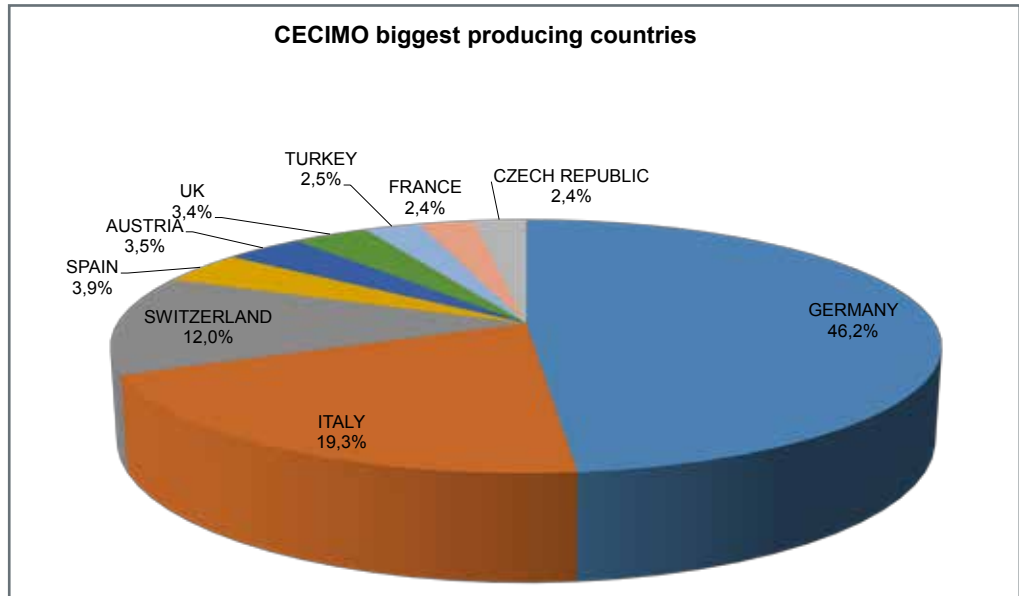
▲ 1.5 CECIMO production

Based on the results of the statistical forms collected before CECIMO General Assembly in Fuschl-am-See on 21 June, the confirmed production of the 15 CECIMO member countries increased 5% to 24.3 billion euros in 2015. Taking into account the more modest global growth, the production is expected to stabilise and keep its high level of 24.3 billion euro this year as well. Despite the declining global machine tool market, the European machine tool industry has been able to keep its competitive position. The low euro rates are making European machines cheaper on foreign markets while domestic consumption and some previously postponed investments drive local machine tool sales. Still, the increasing uncertainty and geopolitical tensions keeps the industry from having a highly positive future outlook.

CECIMO's biggest machine tool producing countries remain Germany, Italy and Switzerland, which represent respectively 46.2, 19.3 and 12.0% of the total production in 2015. Spain, Austria and the UK produced respectively 3.9, 3.5 and 3.4% of the total output.



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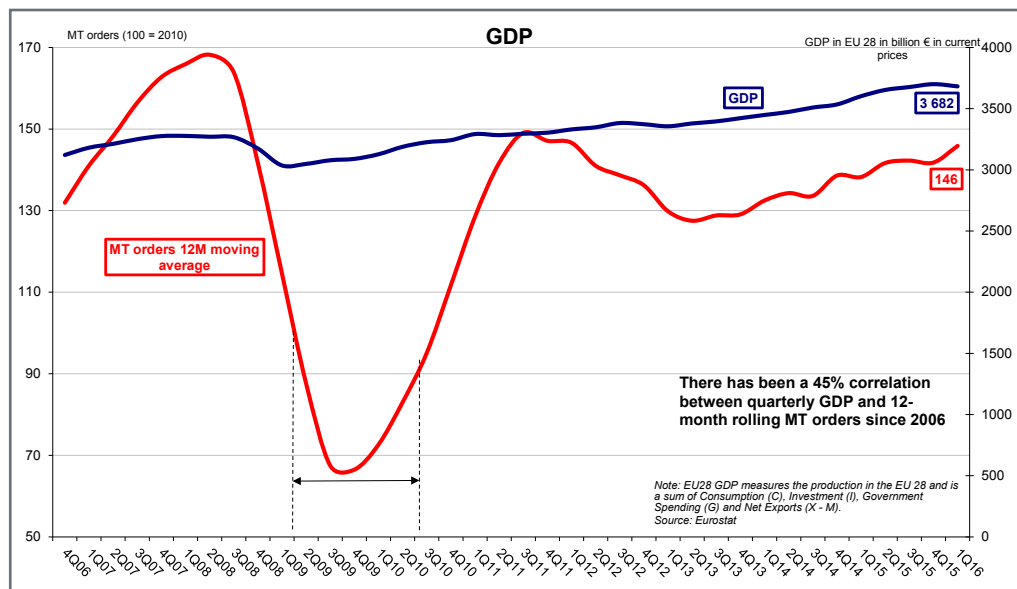
2. Macroeconomic data in relation with machine tool orders

▲ 2.1 GDP

The seasonally adjusted GDP rose by 0.6% in the euro area and by 0.5% in the EU28 during the first quarter of 2016, compared with the previous quarter, according to an estimate published by Eurostat, the statistical office of the European Union. In the fourth quarter of 2015, the GDP grew by 0.4% and 0.5% respectively. Compared with the same quarter of the previous year, the seasonally adjusted GDP rose by 1.7% in the euro area and by 1.8% in the EU28 in the first quarter of 2016, after +1.7% and +2.0% respectively in the previous quarter.

Among Member States for which data are available for the first quarter of 2016, Romania (+1.6%), Cyprus (+0.9%), Spain, Lithuania, Austria and Slovakia (all +0.8%), Bulgaria and Germany (both +0.7%) recorded the highest growth compared with the previous quarter. Decreases were registered in Hungary (-0.8%), Greece (-0.5%) and Poland (-0.1%), while GDP in Estonia remained stable.

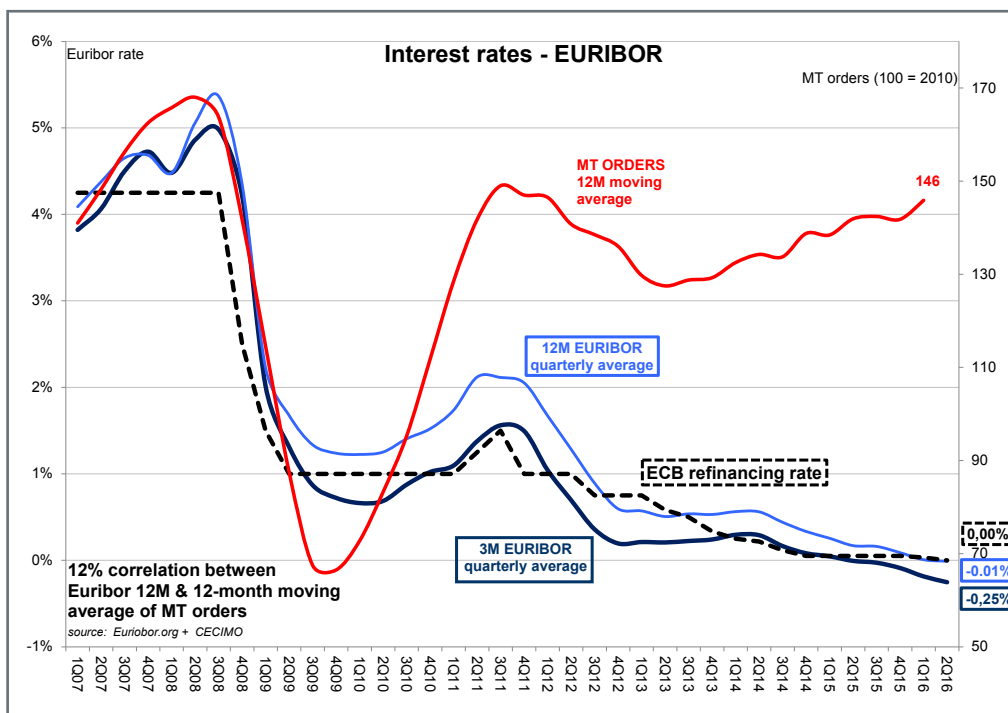
During the first quarter of 2016, GDP in the United States increased by 0.2% compared with the previous quarter (after +0.3% in the fourth quarter of 2015). Compared with the same quarter of the previous year, GDP grew by 2.0% (after +2.0% in the previous quarter).



▼ 2.2 Interest rates – EURIBOR [ⓘ]

The average 3-month Euribor and 12-month Euribor recorded respectively -0.26% and -0.01% in April 2016. Compared to March 2016, the average 3-month Euribor decreased by 1 percentage point and the average 12-month Euribor remained stable. The policy rates of the European Central Bank were also maintained at their previous levels.

Euro area annual inflation is expected to be -0.1% in May 2016, up from -0.2% in April, according to a flash estimate from Eurostat. The increasing price level reflects mostly higher energy and services price inflation. However, the inflation rates are likely to remain very low or negative in the next few months before picking up in the second half of 2016, in large part owing to base effects in the annual change rate of energy prices. Therefore, the ECB is also committed to the monthly asset purchases of €80 billion and intends to run the program at least until the end of March 2017.



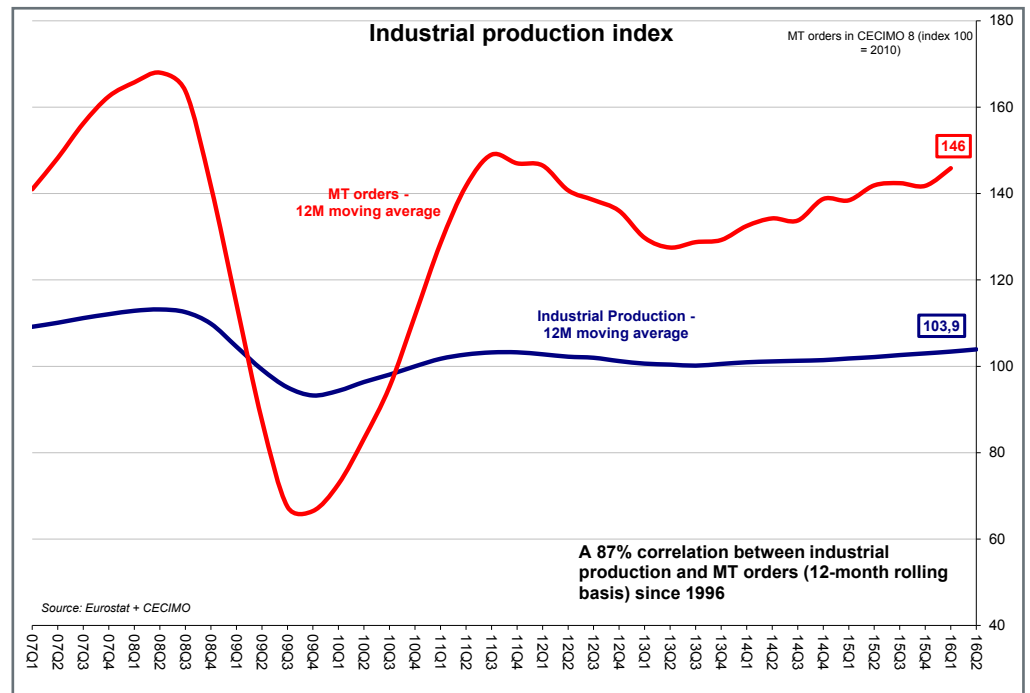
▲ 2.3 Industrial production index [ⓘ]

In April 2016 compared with March 2016, the seasonally adjusted industrial production rose by 1.1% in the euro area (EA19) and by 1.3% in the EU28, according to estimates from Eurostat. In March 2016, industrial production fell by 0.7% in the euro area and by 0.5% in the EU28.

The increase in industrial production in the euro area is due to the production of durable consumer goods rising by 2.3%, the production of capital goods by 1.9%, the production of non-durable consumer goods by 1.6%, the production of intermediate goods by 0.4% and the production of energy by 0.3%. In the EU28, the increase is due to the production of non-durable consumer goods rising by 2.3%, the production of durable consumer goods by 1.9%, the production of capital goods by 1.7%, the production of energy by 0.5% and the production of intermediate goods by 0.4%.

Among Member States for which data are available, the highest increases in industrial production were registered in Ireland (+6.7%), Portugal (+6.4%), Estonia (+5.9%) and Hungary (+5.4%), and the largest decreases in Croatia (-2.8%), Lithuania (-2.7%) and Latvia (-2.0%).

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In April 2016 compared with April 2015, industrial production increased by 2.0% in the euro area and by 2.5% in the EU28. The increase in the euro area is due to the production of capital goods rising by 3.8%, the production of both intermediate goods and durable consumer goods by 1.5%, the production of energy by 1.3% and the production of non-durable consumer goods by 1.0%. In the EU28, the increase is due to the production of capital goods rising by 3.5%, the production of non-durable consumer goods by 2.4%, the production of durable consumer goods by 2.2%, the production of intermediate goods by 1.3% and the production energy by 1.0%.

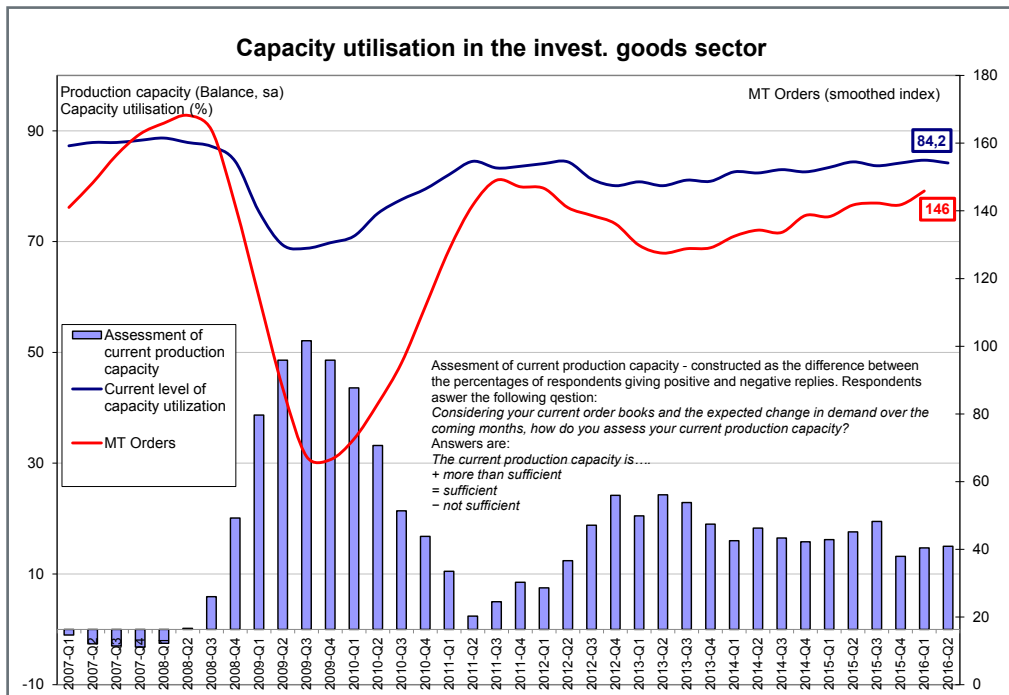
In yearly comparison, among Member States for which data are available, the highest increases in industrial production were registered in Slovakia (+7.2%), Poland (+5.9%), Slovenia (+5.3%), Hungary (+5.2%) and Croatia (+5.0%), while decreases were observed in Malta (-3.6%), Luxembourg (-2.5%), Lithuania (-1.3%) and Latvia (-0.5%).

▼ 2.5 Capacity utilisation in the investment goods sector ^①

In the European manufacturing sector, the estimated rate of capacity utilisation fell to 84.2% in the second quarter of 2016 from 84.7% in previous quarter. Capacity utilization in the euro area decreased to 81.4% in the second quarter of 2016 from 81.9% in the first quarter of 2016. It averaged 81.04 percent from 1985 to 2016, reaching an all-time high of 85.30 percent in the fourth quarter of 1989 and a record low of 69.60 percent in the third quarter of 2009.

The declining capacity utilisation also influences the views of the managers. The share of production managers assessing their current production capacity as 'more than sufficient' (in view of current order books and demand expectations) remained stable. 15% more managers estimated their production capacity sufficient that is the same level showed in the first quarter of 2016. The modestly downward trend in the capacity utilisation also forecasts a decline in machine tool order intake.

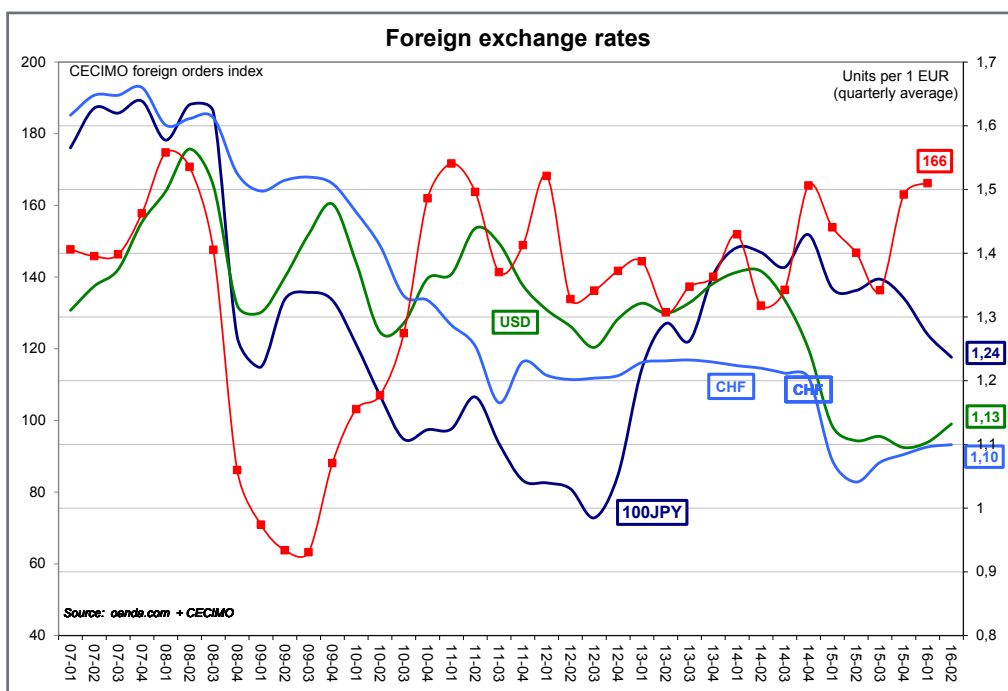
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2.7 Foreign exchange rates

In foreign exchange markets, the euro strengthened modestly over the last two months. The appreciation of the euro reflects the evolution in market expectations regarding the monetary policy of major economies. It was also supported by an improved market sentiment towards the euro, explained by the encouraging data on economic activity in the euro area. The nominal effective exchange rate of the euro, as measured against the currencies of 19 of the euro area's most important trading partners, stood in May at 0.2% above April's rate and 3.8% above its level one year earlier.

In bilateral terms, the picture is more varied. The average euro exchange rate depreciated against the US dollar by 0.4% and against the Japanese yen by 1.1% in April compared to previous month. At the same time, the euro appreciated against the Swiss franc by 1.1%.

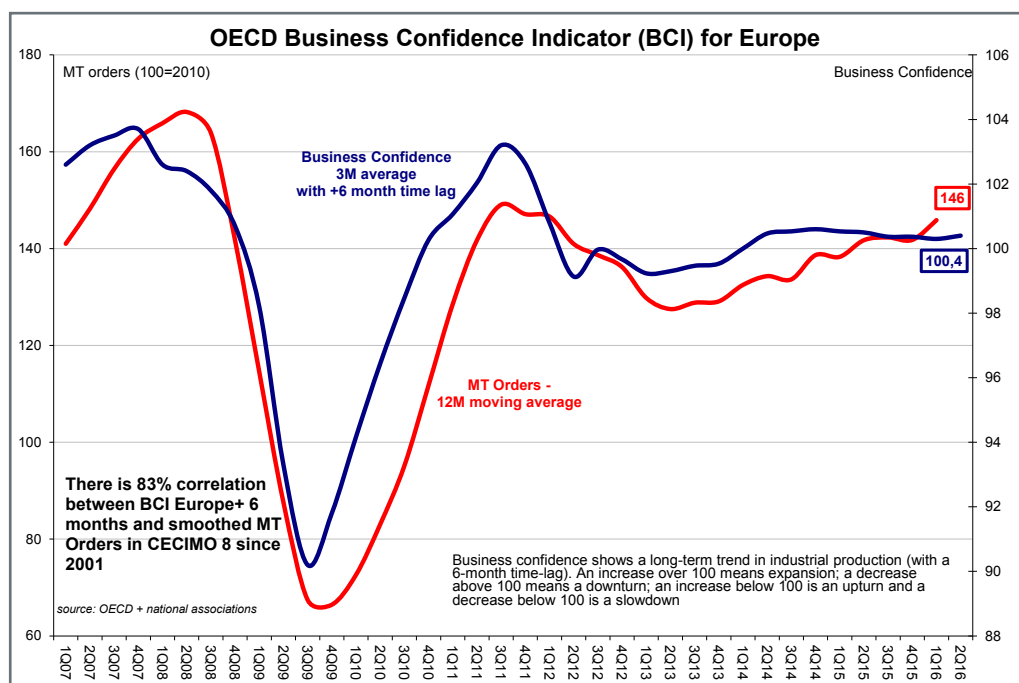


2.9 OECD Business Confidence Indicator (BCI) for Europe ⁱ

Business confidence indicators (BCIs), designed to anticipate turning points in economic activity relative to trend, point to firming growth in the OECD area as a whole.

In Europe, the BCI point to a stable growth momentum. In the euro area as a whole and in Germany the outlook is for firming growth. A stable growth momentum above long term average is anticipated in Italy and France. The BCI for Spain shows growth slowing down. The BCI of the United Kingdom gives signs of a positive change in growth momentum.

Among other developed countries, the United States' BCI indicates a stable growth momentum and in Japan, the BCI continue to point to easing growth. Among major emerging economies, the BCIs for Brazil and Russia confirm the signs of positive change in growth momentum flagged in last month's assessment. BCIs continue to point to stable growth momentum in India and firming growth in China.



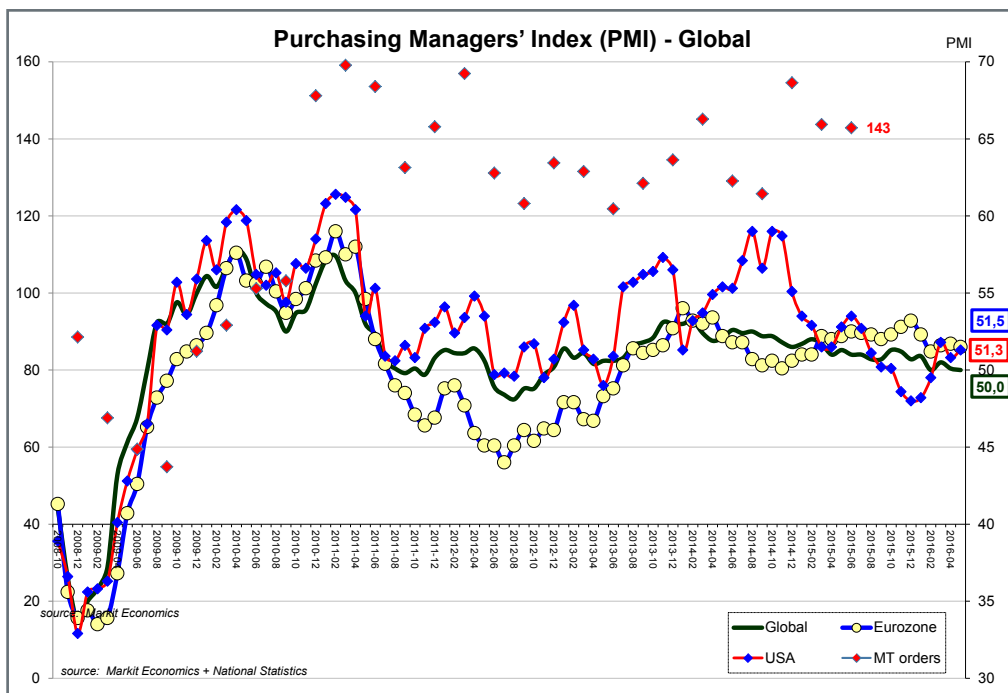
2.10 Purchasing Managers' Index (PMI) ⁱ

The global manufacturing activity remained stuck in a rut last month. Asia, Europe and the Americas' factory output barely improved as producers struggled to bring in new orders. The recent weeks' speculation about U.S. Federal Reserve raising interest rates in the next few months, the concerns about the Chinese economic growth, and worries of a possible British exit from the European Union are all factors that have knocked confidence. The global PMI came in at 50.0 in May, right on the level that separates growth from contraction, compared to 50.1 in April. The Chinese PMI showed deteriorated conditions for a 15th month straight with the index falling to 49.2 from 49.4 in last month. In India, the manufacturing activity increased at a modest pace as output growth dropped for the second month in a row. The US PMI rose to 51.3 in May from 50.8 in April, but the employment index remained unchanged. The manufacturing PMI for Britain rose, against all expectations, to just above the 50 level but the outlook for the second quarter is weak due to Brexit tensions. After a year of high exchange rates and →

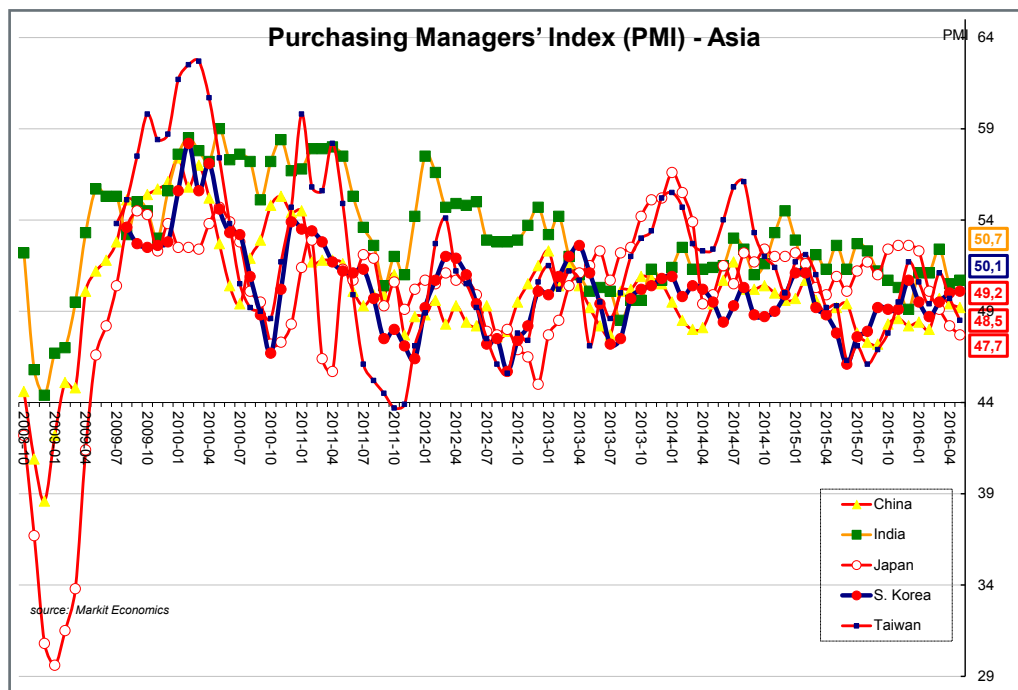
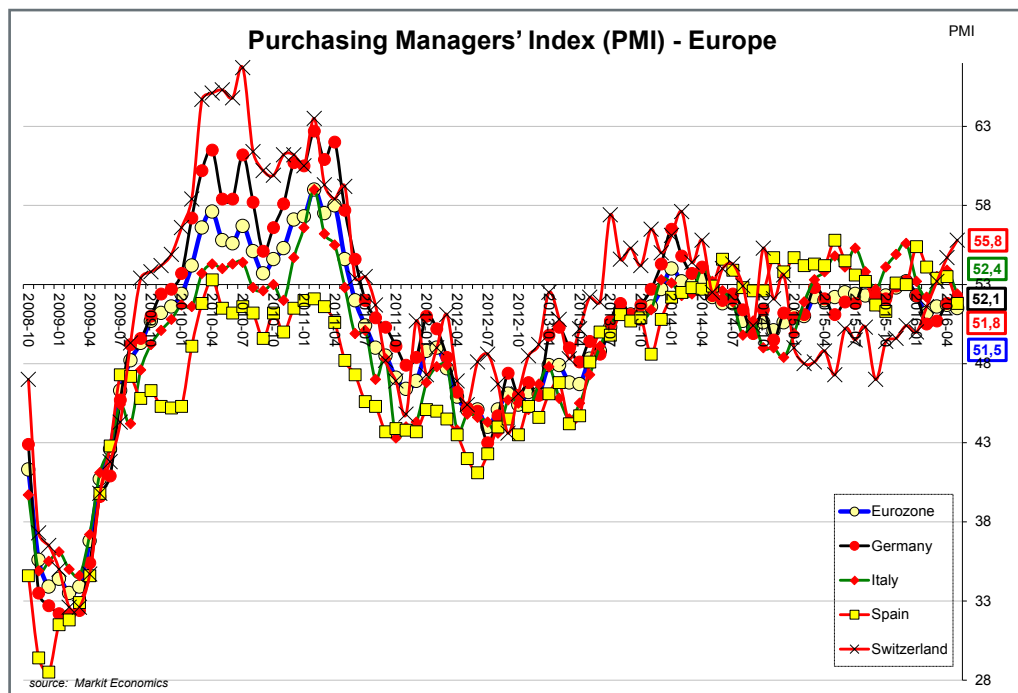
curbed competitiveness on international markets, the Swiss industry is preparing for a turnaround boom, the PMI rose for the fourth straight month to 55.8 points in May, its highest reading in more than two years.

The euro area manufacturing PMI came in at 51.5 in May of 2016, slightly down from 51.7 in April. It is the lowest figure in three months because the output eased, new business growth slowed to a 15-month low and employment expanded at a slower pace. In addition, purchasing costs fell for the tenth month. However the performance of individual member states varied considerably. Rising demand at home lifted German factory activity to a four-month high in May PMI rising to 52.1 from 51.8. The manufacturing growth slowed in Italy and Spain while French manufacturing activity contracted for the third straight month.

“Manufacturing in the euro area remained stuck in a state of near-stagnation in May, failing to break out of the slow growth phase that has plagued producers since February. The disappointing performance of manufacturing adds to suspicions that the pace of eurozone economic growth in the second quarter has cooled after a surprisingly brisk start to the year based on the latest estimate of GDP. New orders grew at the slowest rate for over a year as demand showed signs of waning both within the euro area and further afield. Not surprisingly, companies remain reluctant to build capacity and take on extra workers, lacking signs of any imminent upturn in demand. /--/ The overall slowing of manufacturing activity confounds expectations that recoveries will accelerate on the back of the ECB stimulus announced earlier in the year. Hopes remain pinned on forthcoming corporate bond purchases and new tranches of ultra-cheap bank loans from the ECB providing an extra boost in coming months,” commented Markit.



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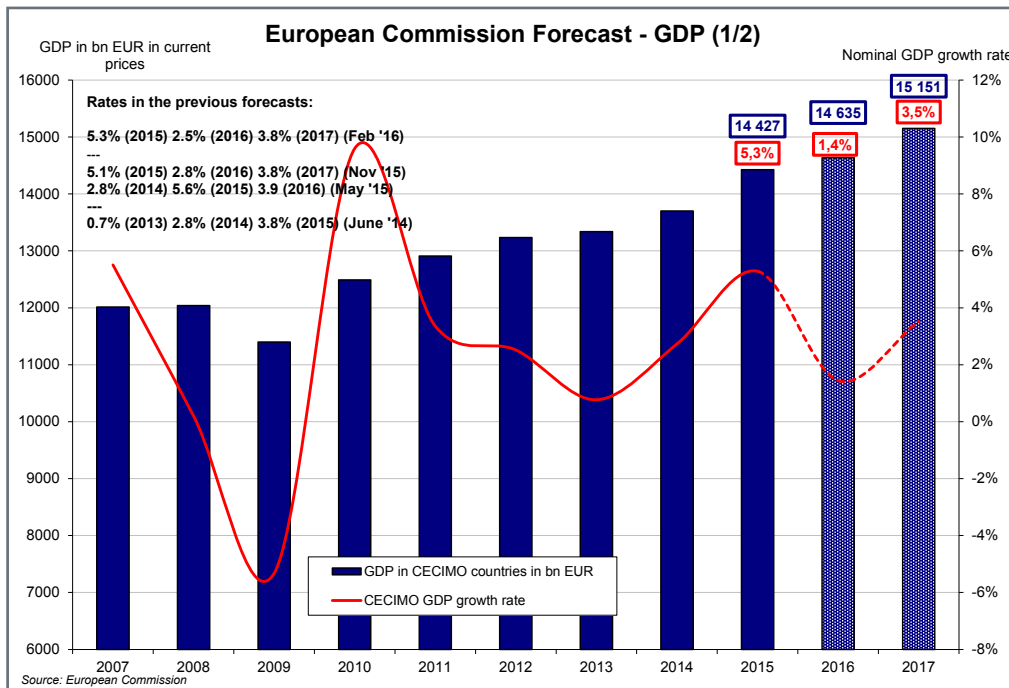
▼ 2.11 European Commission's Forecast ⁱ

The European economy has been benefitting from an exceptional combination of favourable factors. Low oil prices, a low euro exchange rate, supportive monetary policy measures and increased public expenditure associated with the inflow of asylum seekers in some Member States have provided generous support to the economy. However, the boost from these factors has been partly offset by external headwinds stemming from the downturn in emerging economies, and also from a slowdown in major advanced economies. Therefore the euro area's GDP is forecast to grow at modest rates rather than gather momentum over the 2015-2017 period, as it is projected at 1.6% in 2016 and 1.8% in 2017, after 1.7% in 2015. GDP growth in the EU is expected to ease from 2.0% last year to 1.8% in 2016 before reaching 1.9% in 2017. →

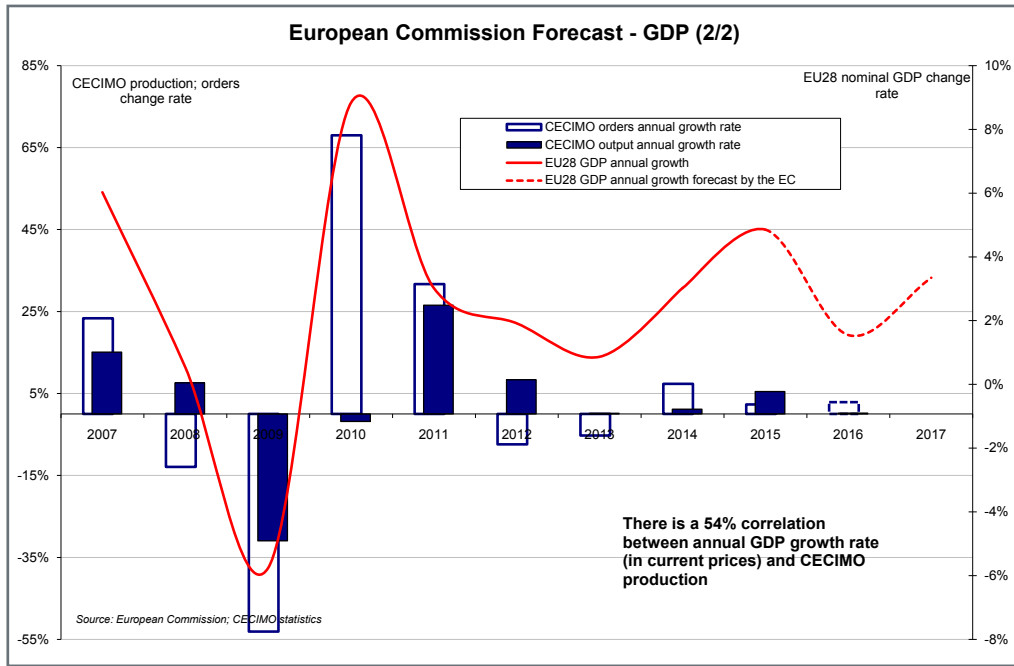
With net exports turning negative, the GDP growth was entirely driven by domestic demand in 2015. This pattern is expected to continue this year and next, although the composition of domestic demand is expected to show some rebalancing, as private consumption slows down and investment gathers speed. Private consumption should continue to benefit in 2016 and 2017 from improving labour market conditions, moderate rises in wages and higher non-labour incomes. The very low inflation foreseen this year should also support stronger increases in real gross disposable incomes.

Investment is expected to moderate in the near term, as it is held back by expectations of weak global demand but the chances for investment to pick up further down the line have improved. The borrowing conditions have eased, capacity utilisation is above its long-term average, corporate deleveraging pressure is fading, and global demand is expected to gradually strengthen. The Investment Plan for Europe is also expected to yield increasing tangible results on public and private investment as a growing number of projects should move to the implementation phase.

The outlook for global GDP growth has weakened. The growth outside the EU is expected to have fallen to 3.2% in 2015, its slowest pace since 2009, and is forecast to pick up only modestly to 3.3% in 2016 and 3.7% in 2017. In the US, the weak external demand is likely to continue to weigh on activity while domestic demand should continue to support it. As a result GDP growth is expected to be around 2.2% over the next two years. The outlook for emerging markets is fragile and subject to a high degree of uncertainty. In particular, the challenges surrounding an orderly rebalancing and gradual slowing of the Chinese economy remain pressing and entail considerable risks, even though pressures on the exchange rate and capital outflows have recently abated.



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Glossary

1.1 CECIMO8 orders

This section presents the “new orders received index” showing the development of the machine tool demand as an indication of future production. An order is defined as the value of the contract linking a producer and a third party in respect of the provision by the producer of goods and services.

The CECIMO8 orders index combines the relevant indexes of Austria, the Czech Republic, France, Germany, Italy, Spain, Switzerland and the United Kingdom. The weights of the different indexes correspond to the countries shares in total production of the eight countries in 2010. The new orders received are split according to the origin of the order, based on the change of ownership. This identification is the basis for domestic and foreign new orders. The origin is determined by the residency of the third party that has made the order.

1.3 MT-IX

MTIX is an index based on the capitalization of 23 leading, publicly listed machine tool producing companies. The capitalization of the companies included is weighted by the share of machine tool turnover in total revenues. The total capitalization calculated in that way is weighted then by an estimated share of the European companies in the world total output in 2010.

2.2 Interest rates - Euribor

Euribor® (Euro Interbank Offered Rate) is the rate at which euro interbank term deposits are being offered by one prime bank to another within the EMU zone.

<http://www.euribor-ebf.eu/>

2.3 Industrial production index

The objective of the production index is to measure changes in the volume of output at close and regular intervals, normally monthly. It provides a measure of the volume trend in value added over a given reference period. The production index is a theoretical measure that must be approximated by practical measures. Value added at basic prices can be calculated from turnover (excluding VAT and other similar deductible taxes directly linked to turnover), plus capitalised production, plus other operating income plus or minus the changes in stocks, minus the purchases of goods and services, minus taxes on products which are linked to turnover but not deductible plus any subsidies on products received. The division of production in construction between building construction and civil engineering is based on the classification of types of construction (CC). Statistical population: Production: sections B, C, D of NACE (D353 excluded); Base period: Year 2010 = 100.

http://epp.eurostat.ec.europa.eu/cache/ITY_SDDS/EN/is_esms.htm

2.5 Capacity utilization in the investment goods sector

Population: Investment goods producers. Data covered: Assessment of current production capacity, measured as a balance (seasonally adjusted); Current level of capacity utilization, measured in % (seasonally adjusted). More than 38 000 industrial firms are surveyed every month, while the biannual investment survey includes over 44 000 units. Answers obtained from the surveys are aggregated in the form of “balances”. Balances are constructed as the difference between the percentages of respondents giving positive and negative replies. The Commission calculates EU and euro-area aggregates on the basis of the national results and seasonally adjusts the balance series.

http://ec.europa.eu/economy_finance/db_indicators/surveys/documents/userguide_en.pdf

2.9 OECD Business Confidence Indicator (BCI) for Europe

The Composite leading indicators (CLI), which BCI is part of, comprises a set of component series selected from a wide range of key short-term economic indicators to ensure that the indicators will still be suitable when changes in economic structures occur in future. While theory says that a turning point in the CLI signals a turning point in the reference series, such turning points, in reality, are determined by a complicated process. Therefore, one often needs to wait for several periods to draw a more definite conclusion. A useful way to exploit the information in CLIs is to take their year-on-year growth rate.

The standardised BCIs represent only the manufacturing sector. BCI shows a long-term trend in industrial production (with a 6-month time-lag). An increase over 100 means expansion; a decrease above 100 means a downturn; an increase below 100 is an upturn and a decrease below 100 is a slowdown.

<http://stats.oecd.org/mei/default.asp?lang=e&subject=5>

2.10 Purchasing Managers' Index (PMI)

The Global Report on Manufacturing is compiled by Markit based on the results of surveys covering 9,000 purchasing executives in 30 countries. Together these countries account for an estimated 86% of global manufacturing output. Questions are asked about real events and are not opinion based. Data are presented in the form of diffusion indices, where an index reading above 50.0 indicates an increase in the variable since the previous month and below 50.0 a decrease.

<http://www.markiteconomics.com/Survey/Page.mvc/AboutPMIData>

2.11 European Commission economic forecast

European Commission Directorate General for Economic and Financial Affairs produces short-term macroeconomic forecasts twice a year, in the spring and autumn. These forecasts concentrate on the Member States, the euro area and the EU, but also include outlooks for candidate countries as well as some non-EU countries. Each forecast has at least a two-year time horizon (with an additional year added each autumn) covering the current year and the next. The forecasting process considers a total of 180 variables and is the result of several iterative rounds.

The forecasts are not based on a centralised econometric model. Instead, they result from analyses made by the DG ECFIN country desks, each of which uses statistical methods to varying degrees. The forecasts are checked for consistency, in particular as regards trade flows. The EU and euro-area variables are not a direct forecast, but are obtained by aggregating the individual Member State forecasts.

In between the fully-fledged spring and autumn forecasts, interim forecasts are produced in which an update of real GDP growth and inflation is estimated for the seven largest Member States and for the current year only. The interim forecasts are largely prepared using indicator-based models.

http://ec.europa.eu/economy_finance/eu/forecasts/index_en.htm

The weights of the Member States in the EU and euro area aggregates can be found through the link below.

<http://circa.europa.eu/Public/irc/dsis/ebt/library?>

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