CECIMO Statistical Toolbox

December 2015

cecimo

European Association of the Machine Tool Industries

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The items in grey are not available in this edition of the Statistical Toolbox.

Introduction

Climate change has been in the spotlight this month. In the beginning of December, global leaders and diplomats gathered in Paris to achieve an international agreement limiting greenhouse gas emissions. This marks a turning point after more than 20 years of efforts to prevent dangerous levels of global warming. It is more than experts could have reasonably expected a year or two ago, but there are also serious doubts on whether it will be enough. Solutions to dramatically reduce greenhouse gas emissions already exist but to reach the scale of change necessary for net zero emissions many more processes, products and systems must be found, invented or improved. The economy's greening process depends on the innovative pace of the whole manufacturing industry, and European machine tool producers already have extensive knowledge on this important matter.

The statistical results of the European machine tool industry prove the competitiveness of the sector and its adaptability to new challenges. The European machine tool production grew by1% to reach 23.0 billion euro in 2014. The production is estimated to increase to 23.6 billion euro in 2015 (+3%). CECIMO expects the exports to increase to 18.7 billion euro in 2015, which would be the second best result of all times. This added to a positive outlook of European machine tool sales, this industry can look at 2016 with cautious optimism.

While the economy is improving, industrial investment still needs to accelerate. This is also recognised by policy-makers at national and European level. At EU-level, Juncker's Investment Plan for Europe was designed to give a firm push to competitiveness-enhancing strategic investment as a key policy tool. It complements the stimulus already coming from lower oil prices and the euro's weaker exchange rate following the ECB's quantitative easing. The European Investment Bank operating the plan selects projects on merit rather than with regard to any national interest, so it is more than a short-term stimulus to demand. It complements the wider European structural reform process and should have a positive impact on the private sector's investment levels.

On the other hand, at a time when we are discussing new ways to promote investment, our priority must be to use the money we have already earmarked to provide quality jobs, training, apprenticeships, further education or job-search assistance, especially for young people. The manufacturing talent shortage is seriously hindering the industry's growth. One of the major obstacles to the digitalisation of the industry is the lack of skills. A typical industrial engineer has an electro-mechanical background but in the era of digitalising industry, companies need much more than that to understand and develop the real potential of networking, processing and data analytics in plants and products. That means that the hiring policies and the organizational structure must change, and so should the curricula in educational institutions. The new business model of the so-called Industry 4.0 is a combination of products, services and intelligence, so people should be able to look beyond the product and understand the whole value stream. Employees must have deep knowledge in one particular area, but also the ability to work effectively horizontally across multiple areas of the business.

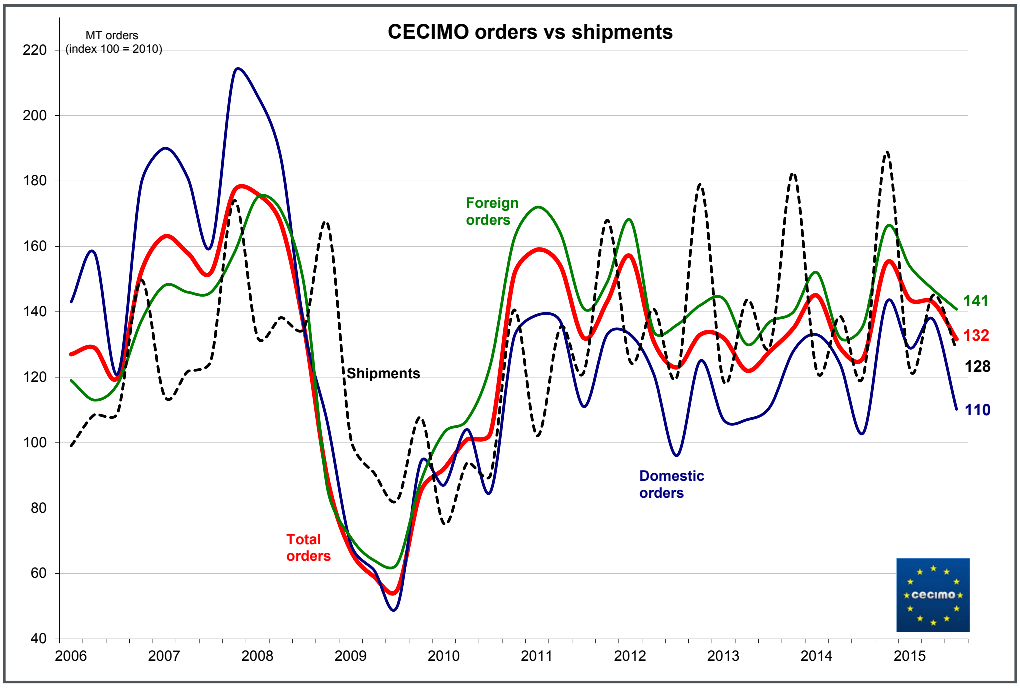
1. Data specific to the European machine tool market

1.1 CECIMO8 orders

In the third quarter of 2015, the CECIMO8 total orders' index decreased by 8% compared with the previous quarter but increased by 5% in year-to-year comparison. The index reflects the volatility and uncertainty of the business climate. While the European economy is slowly turning to growth, the manufacturing companies are making their investment decisions prudently and try to postpone big purchases as much as possible.

The CECIMO8 foreign orders' index increased of 3% compared to the third quarter of 2014 and fell by 4% compared to the previous quarter. The domestic orders index declined by 20% and grew by 7% compared to the levels of the previous quarter and the period of a year ago respectively.

Among CECIMO member countries, machine tool orders are increasing in France and the United Kingdom. The orders show negative trend in Austria and Germany. The results of economic reforms to support competitiveness can be felt in Italy and Spain, where the machine tool orders recorded solid growth on a yearly basis.



▲ 1.2 Peter Meier's forecast

Overall situation:
Business climate indicators such as the BCI (Business Confidence Indicator), the PMI (Purchasing Manager's Index) or the CCI (Consumer Confidence Indicator) transmit a fairly clear picture of the economic activity, -but you have to know how to interpret it. These indicators are determined by surveys. The PMI for example is determined by questions as whether production, prices, warehouse and order backlogs were higher, the same or lower as in the previous period. The answers to the individual components are combined, weighted and calculated to an index. Each country collects in this way its business climate indicators. These are then normalized by the OECD, so that a comparison between countries or an aggregation through economic blocs is possible.

The advantage of the sentiment indicators is mainly the fact that they are readily available. Thanks to a standardized query method, they also show a clear cyclical pattern if they are observed over a longer period. The BCI and PMI have the same economic pattern whose highs and lows largely coincide with the development of the demand for capital goods. Usually, the BCI is running ahead of the demand for capital goods by about one to two quarters. It is clear that the willingness to invest depends heavily on the assessment of the future development and therefore the business confidence is an appropriate indicator.

The BCI collected by the OECD fluctuates around the value 100. A reading above 100 means expansion. Values over 101 indicate boom, values below 99 a crisis. Usually, the BCI is quite volatile. It shows about every second year a pronounced high and, in between, a low.

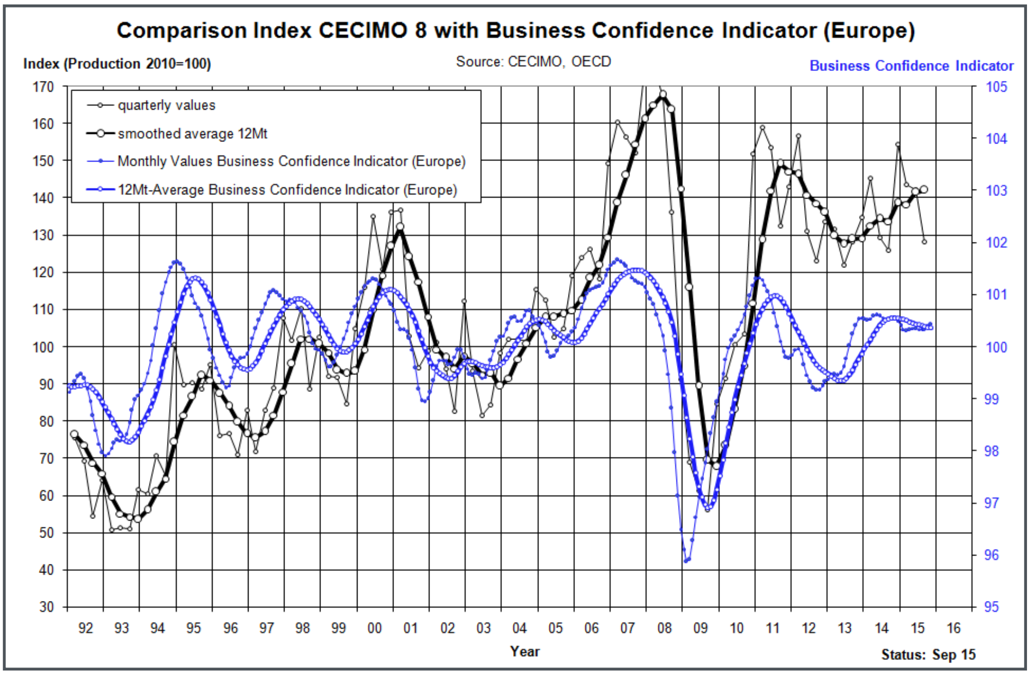
The business confidence indicator (BCI) provides a clear picture of the current economic situation:

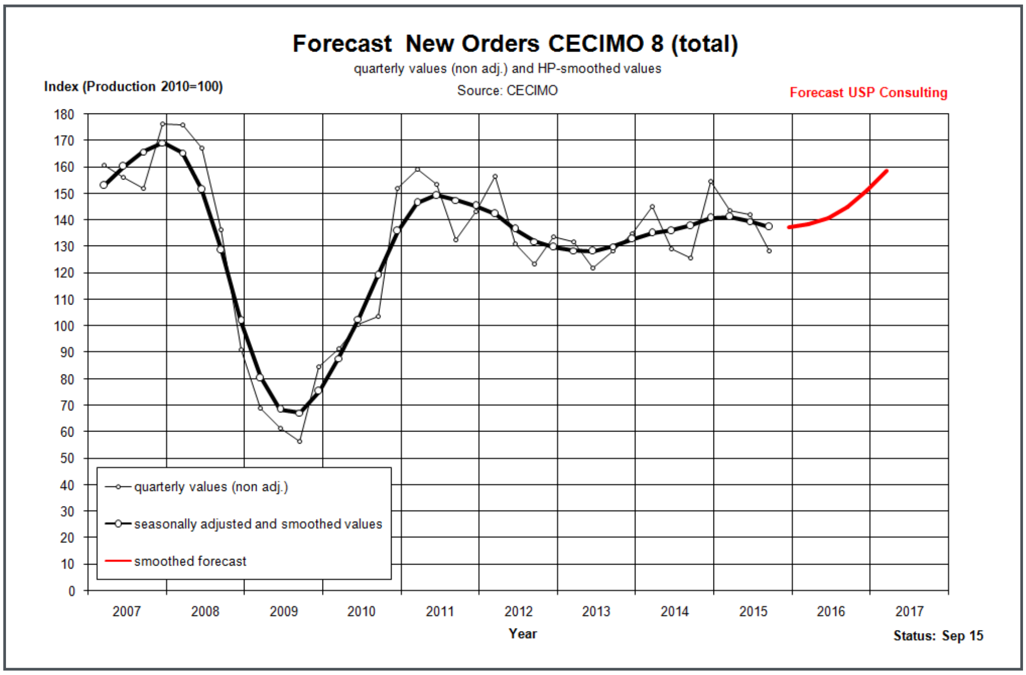
- In Asia, the BCI runs in a contractionary phase, already since mid-2011. Right now, it is at almost 99 points, on the verge of recession.
  Asia's growth engine stutters. In China, there is less investment because the infrastructure has already to a large extent been created, but the continuing strong consumption growth still supports it. A major crisis which would have an impact on the global economy is not likely in the near future.
- A year ago, the US' BCI was on a high with 100.9 points. It is currently at 99, clearly in the contractionary area.
  After a long period of growth, the US economy is now stabilizing. The still growing consumption acts supportive, even though it has lost some of its momentum.
- The BCI for Europe differs. Since the end of 2013, it remained at a level of 100.3 to 100.5 points. The fact that it moves sideways over such a long time is exceptional. It is in a slightly expansionary phase but the various crises in the Middle East and Ukraine generated a dull atmosphere last year. This year, it is the refugee crisis. But the recovery in the countries of southern Europe raises hope because there is a clear backlog of investment demand.

In the coming months, the demand for capital goods will remain more or less at the current level. For highly cyclical sectors, there may be a dent. By mid or end of next year, positive stimuli should increase, which could give Europe in particular a clear upswing. However, questions remain as regards the possible effects of the refugee crisis and last month's terrorist threat.

Business Confidence:
The CECIMO order volume fell back again in Q3 2015 (fine black line). Since the beginning of this year, the Business Confidence Indicator (Europe) moves sideways on a slightly lower level than last year.

CECIMO 8 Forecast:
New orders in Q3 2015 were clearly below expectations. The latest economic indicators didn't change the forecast, a sign that we actually are in an economically quiet phase. The forecast points now more or less on a horizontal movement until mid of 2016. Afterwards, the demand is likely to grow.

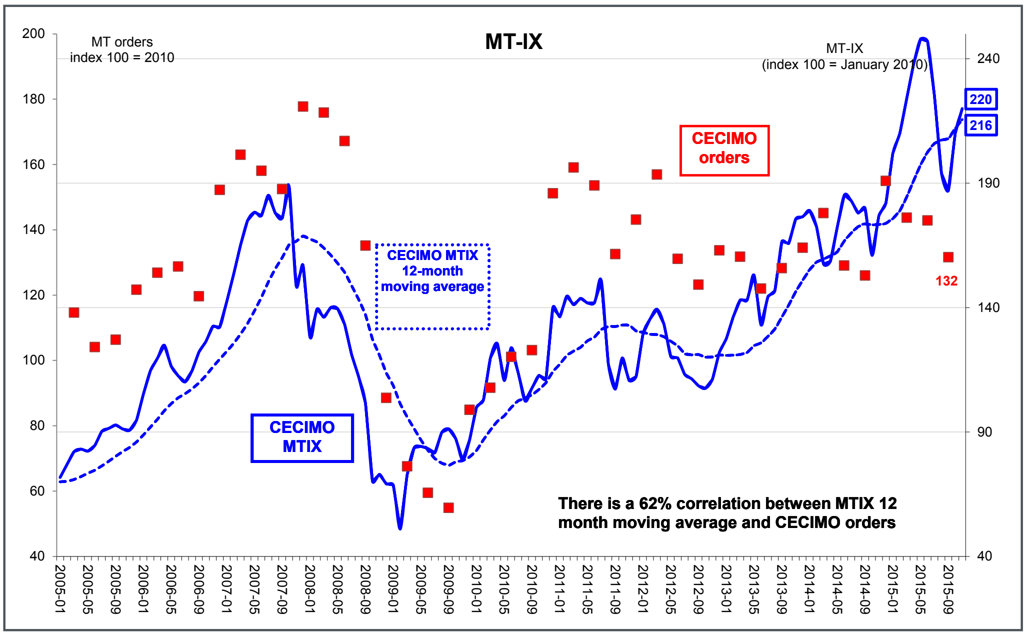




▲ 1.3 MT-IX ⓘ

In November, the MT-IX increased by 4.8%. The index gained 10 points compared to October's value, and posted at 220 points in October 2015.

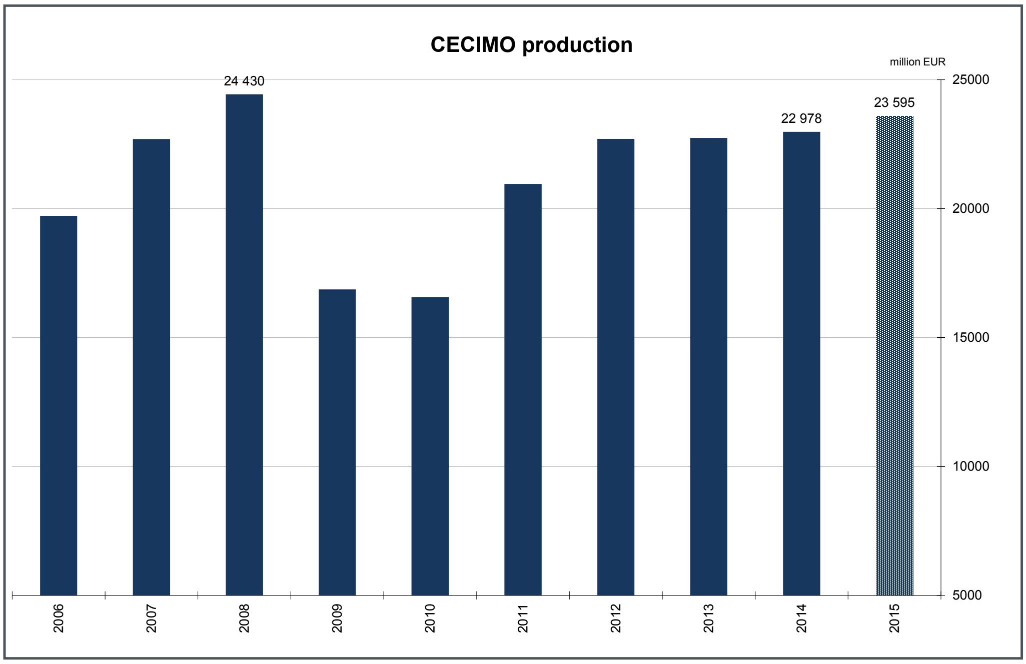
The market value of machine tool companies decreased in South Korea, Taiwan, the United Kingdom and the United States. The market capitalisation of companies increased in Brazil. In the euro area, Japan and Switzerland, the market capitalisation of machine tool companies booked more varied results.

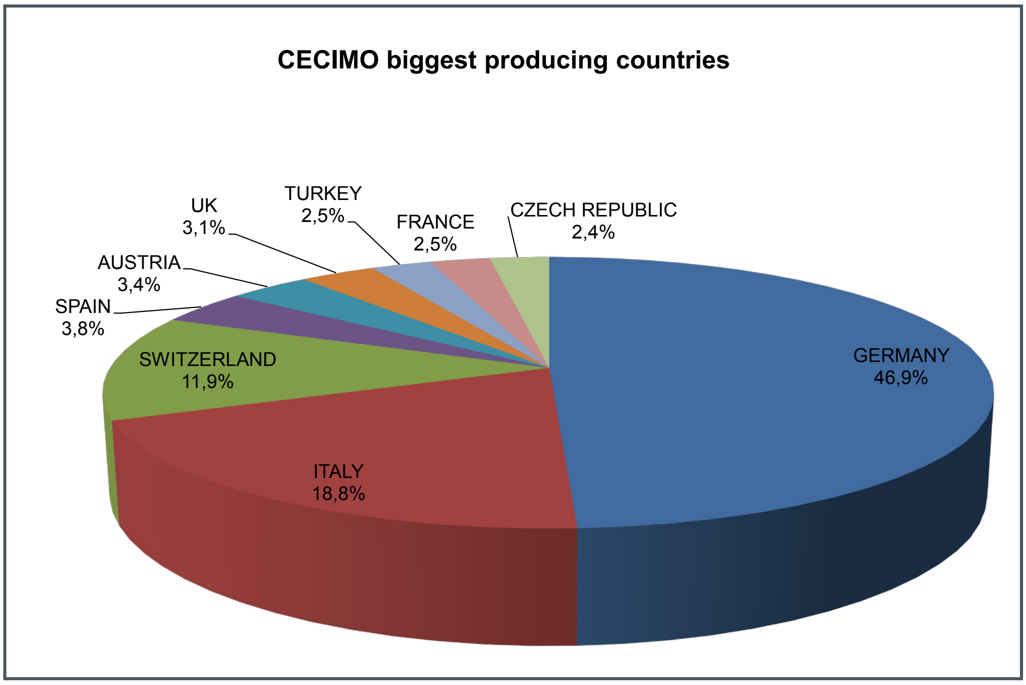


1.5 CECIMO production

Based on the results of the statistical forms collected before CECIMO General Assembly in Brussels on 3 December, the production of the 15 CECIMO member countries reached 23.0 billion euros in 2014. However, after a fractional increase last year, the production is expected to increase 3% to 23.6 billion euro in 2015. This is dominantly supported by the recovering developed economies where markets are performing relatively well. On the other hand, the European machine tool industry faces rising uncertainty for the next year. China is slowing down and machine tool builders have lost many clients due to the Russian sanctions. Nevertheless, the industry expects the low euro rates and oil prices to tip next year's production on the positive side.

CECIMO's biggest machine tool producing countries remain Germany, Italy and Switzerland, which produced respectively 46.9, 18.8 and 11.9% of the total production in 2014. Spain, Austria and the UK produced respectively 3.8, 3.4 and 3.1% of the total output.





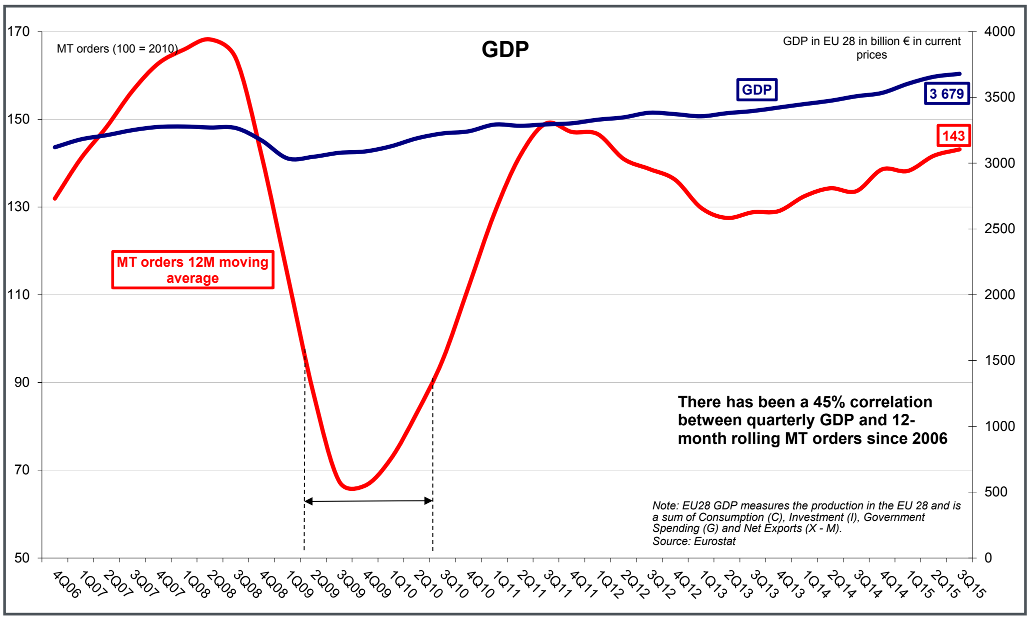
2. Macroeconomic data in relation with machine tool orders

2.1 GDP

The seasonally adjusted GDP rose by 0.3% in the euro area and by 0.4% in the EU28 during the third quarter of 2015 compared with the previous quarter, according to a second estimate published by Eurostat, the statistical office of the European Union. In the second quarter of 2015, GDP grew by 0.4% and 0.5% respectively. Compared with the same quarter of the previous year, the seasonally adjusted GDP rose by 1.6% in the euro area and by 1.9% in the EU28 in the third quarter of 2015, the same as in the previous quarter.

Among Member States for which data are available for the third quarter of 2015, Romania (+1.4%), Croatia (+1.3%), Malta (+1.1%), Latvia (+1.0%), Poland and Slovakia (both +0.9%) recorded the highest growth compared with the previous quarter, followed by Spain and Sweden (both +0.8%). Decreases were registered in Greece (-0.9%), Estonia and Finland (both -0.5%) as well as Denmark (-0.1%).

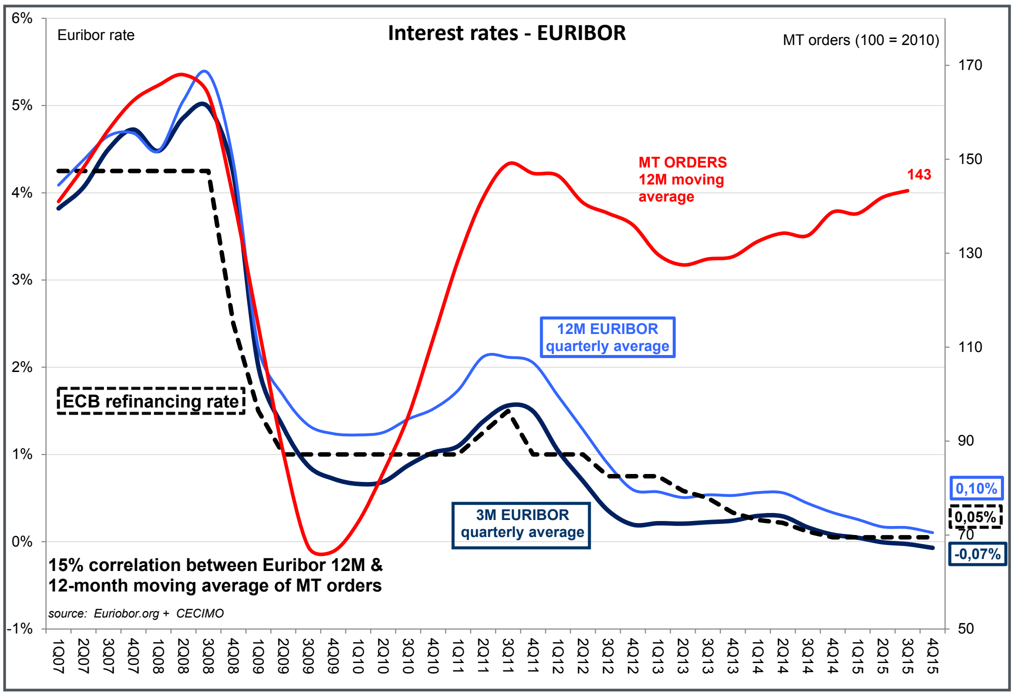
During the third quarter of 2015, GDP in the United States increased by 0.5% compared with the previous quarter (after +1.0% in the second quarter of 2015). Compared with the same quarter of the previous year, the GDP grew by 2.2% (after +2.7% in the previous quarter).



2.2 Interest rates – EURIBOR ⓘ

The average 3-month Euribor and 12-month Euribor recorded respectively -0.09% and 0.08% in November. Compared to October, the average 3-month Euribor decreased by 4 percentage points and the average 12-month Euribor by 5 percentage points. The European Central Bank kept its key interest rates unchanged in November.

The euro area annual inflation was 0.1% in November 2015, unchanged from the level of October. Therefore, the decision of the European Central Bank (ECB) to lower the interest rate on the deposit facility by 10 basis points to -0.30% on its 3 December meeting was an expected next step. Regarding non-standard monetary policy measures, the central bank extended the asset purchase programme. The monthly purchases of €60 billion under the program will run until the end of March 2017. (See graph on next page.)



2.3 Industrial production index ⓘ

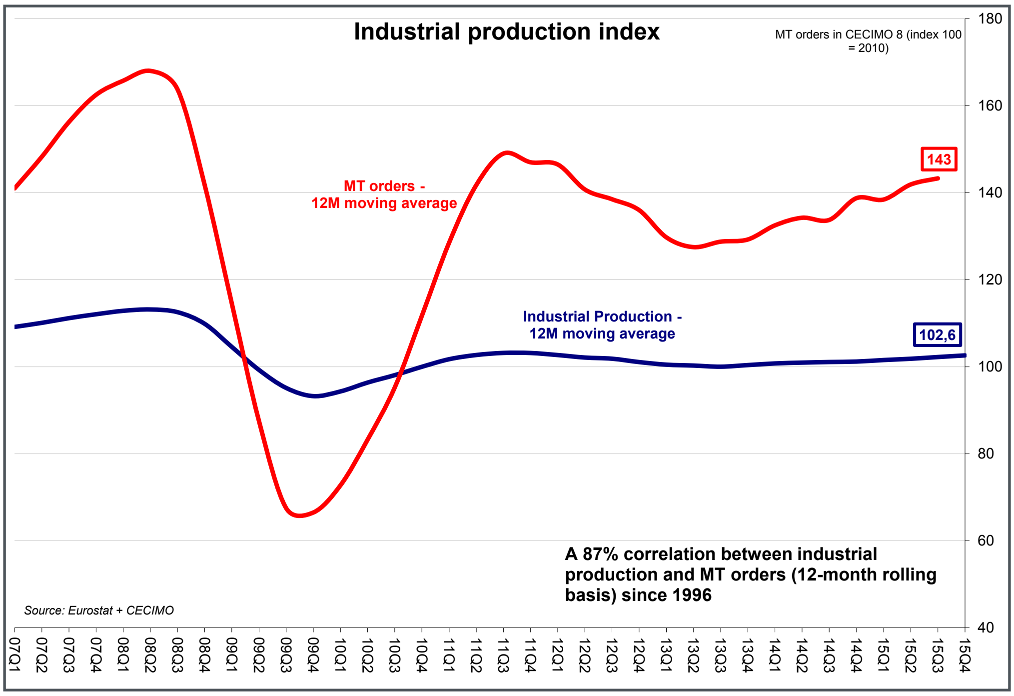
In September 2015 compared with August 2015, the seasonally adjusted industrial production fell by 0.3% in the euro area and by 0.1% in the EU28, according to estimates from Eurostat. In August 2015, industrial production fell by 0.4% and 0.2% respectively.

The decrease in industrial production in the euro area is due to the production of durable consumer goods falling by 3.9%, the production of non-durable consumer goods by 1.0% and the production of capital goods by 0.3%, while the production of intermediate goods remained stable and the production of energy rose by 1.2%. In the EU28, the decrease is due to the production of durable consumer goods falling by 2.5%, the production of non-durable consumer goods by 0.6% and the production of energy by 0.2%, while the production of both capital goods and intermediate goods rose by 0.1%.

Among Member States for which data are available, the largest decreases in industrial production were registered in Ireland (-2.4%), Lithuania (-2.3%) and Greece (-1.9%), and the highest increases in Croatia (+5.9%), Hungary (+2.9%), the Czech Republic (+2.6%) and Slovakia (+2.2%).

In September 2015 compared with September 2014, industrial production increased by 1.7% in the euro area and by 1.8% in the EU28. The increase in the euro area is due to the production of durable consumer goods rising by 2.6%, the production of capital goods by 2.2%, the production of non-durable consumer goods by 2.1% and the production of intermediate goods by 1.8%, while the production of energy fell by 1.4%. In the EU28, the increase is due to the production of capital goods rising by 2.7%, the production of both durable and nondurable consumer goods by 1.7%, the production of intermediate goods by 1.4% and the production of energy by 0.1%.

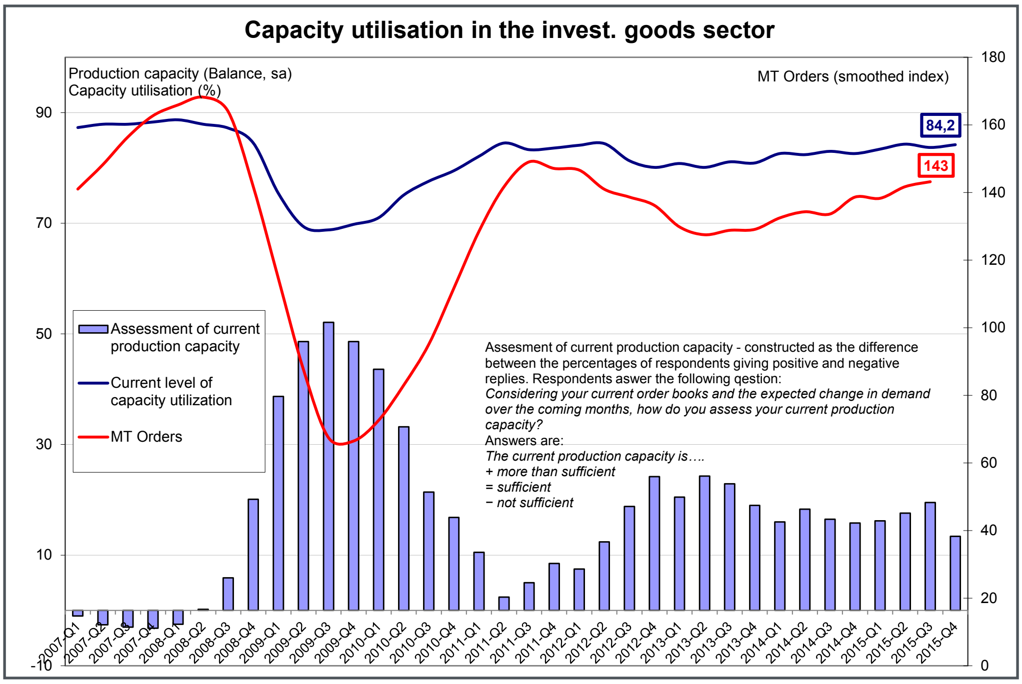
In yearly comparison among Member States for which data are available, the highest increases in industrial production were registered in Ireland (+14.6%), Hungary (+7.9%), Slovakia (+7.2%) and Sweden (+7.1%). Decreases were observed in the Netherlands (-5.6%), Estonia (-4.1%) and Lithuania (-0.6%).



2.5 Capacity utilisation in the investment goods sector

Capacity utilisation plays an important role in forecasting industrial investment. The level of capacity utilisation provides crucial input to capital spending decisions. In the European manufacturing sector, the estimated rate of capacity utilisation increased to 84.2% in the fourth quarter of 2015 from 83.7 in previous quarter. In the euro area, capacity utilisation increased to 81.50 percent in the fourth quarter of 2015 from 81.10 percent in the third quarter of 2015. Capacity utilisation in the Euro Area averaged 81.03 percent from 1985 until 2015, 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.

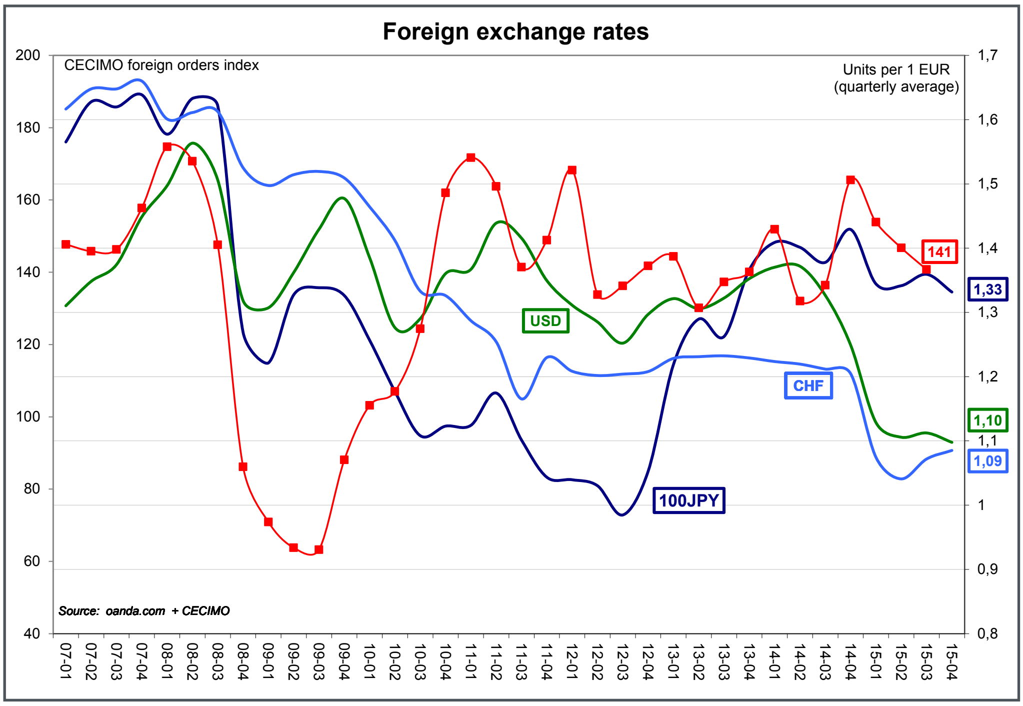
At the same time, the share of managers assessing their current production capacity as 'more than sufficient' (in view of current order books and demand expectations) decreased. 13.4% more managers estimated their production capacity sufficient compared to 19.5% in previous quarter. On the other hand, managers' views on export order books and production expectations worsened.



2.7 Foreign exchange rates

The euro exchange rate continued to decline in November following the expectations of further loosening in the monetary policy of the ECB. 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 November at 2.7% below October's rate and 7.9% below its level one year earlier.

On bilateral level, the average euro exchange rate depreciated against the US dollar by 4.4%, against the Japanese yen by 2.4% and against the Swiss franc by 0.3% in November compared to the previous month.

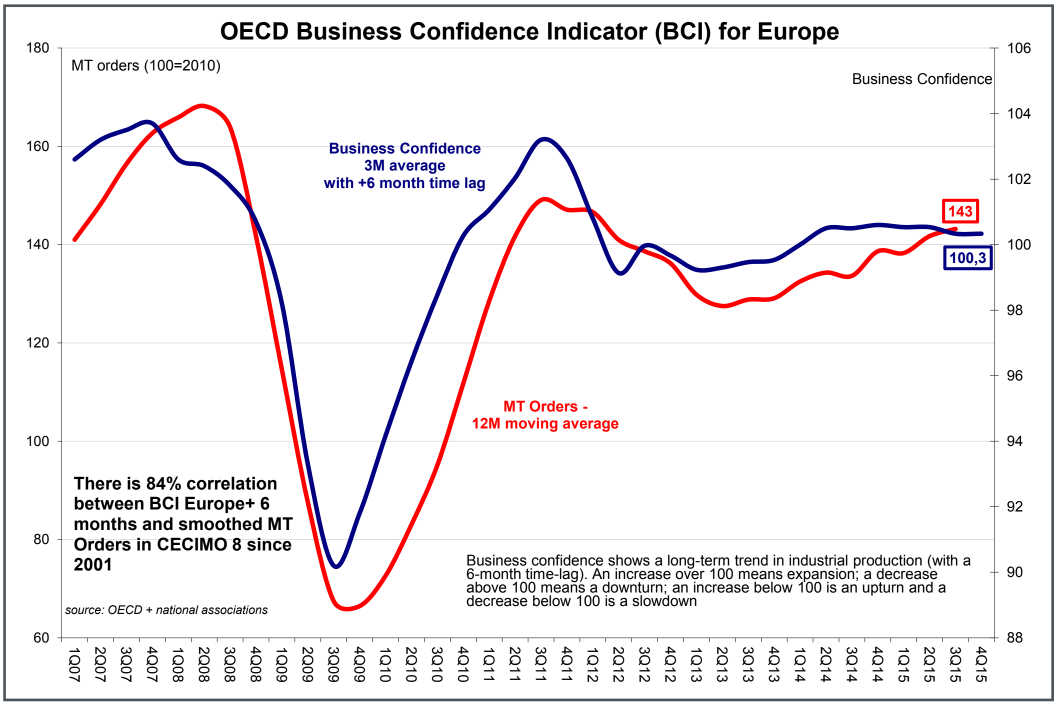


2.9 OECD Business Confidence Indicator (BCI) for Europe

Business confidence indicators (BCIs), designed to anticipate turning points in economic activity relative to trend, point to stable growth momentum in the OECD area as a whole but below the long-term trend. Stable growth momentum is anticipated in the euro area as a whole and broader Europe. The BCIs for Germany, France and Spain show a loss of growth momentum, albeit from relatively high levels. The BCI points stable growth in Italy.

Stable growth momentum is anticipated in Japan. The BCIs for the United Kingdom and the United States point to a loss of growth momentum.

Amongst the major emerging economies, tentative signs of stabilisation are emerging in in Brazil, while firming growth is anticipated in Russia. In China and India the BCIs point to stable, but below long-term trend, growth.

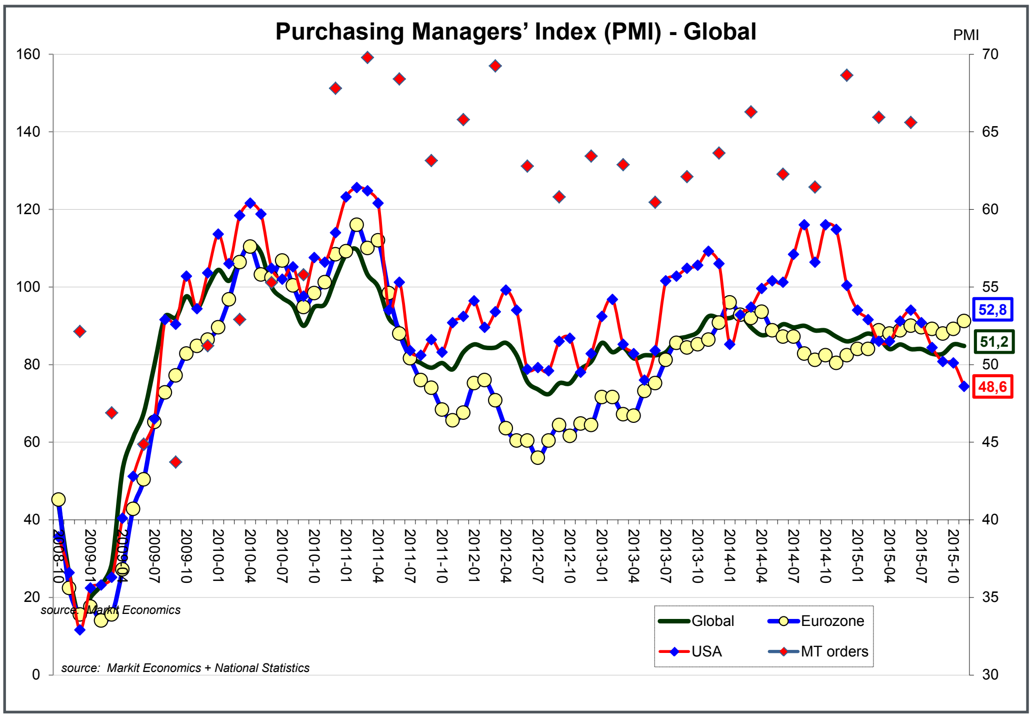


2.10 Purchasing Managers' Index (PMI)

Global manufacturing growth remained tepid in November as the global Purchasing Managers' Index (PMI) fell to 51.2, below October's five-month high of 51.3. The main drag was new orders that increased at a slower pace. However the global index has been above the 50 mark that separates growth from contraction for three years. The Americas and Asia cast doubt on the strength of global economic growth. The US manufacturing sector contracted in November for the first time in 36 months, its PMI registering 48.6 down from the October reading of 50.1. China's manufacturing PMI edged up to 48.6 up from 48.3 in the previous month but the index has shown contraction for nine straight months. Only in Japan has the manufacturing activity expanded, as output and new export orders picked up, suggesting that its economy is starting to turnaround from a recession. The PMI was a seasonally adjusted to 52.6 in November.

Europe saw steady growth in manufacturing activity. The area's manufacturing growth picked up to a 19-month high in November, the PMI rose to 52.8 from 52.3 in the previous month. Moreover, the survey's sub-indicators on employment, new orders and backlogs of work signalled the strongest monthly expansions in four-and-a-half years. Growth accelerated to a three-month high in Germany, fuelled by the biggest monthly improvement in new business for two years. The Germany's PMI posted 52.9. Faster growth was also signalled in Italy and Spain while France's manufacturing remain stable.

"*The euro area's manufacturing recovery continued to build momentum in November, with factory output and new orders both showing the largest monthly gains for one-and-a-half years. It's by no means a spectacular pace of expansion, however, broadly consistent with 2% annualised growth, and there are also few signs of underlying inflationary pressures picking up. Average prices charged by manufacturers fell for the third month running and average input costs continued to drop sharply,*" commented Markit.
(See graphs ton next page)



Purchasing Managers' Index (PMI) - Global
PMI
160
140
120
100
80
60
40
20
0
70
65
60
55
50
45
40
35
30
52,8
51,2
48,6
2008-10
2009-01
2009-04
2009-07
2009-10
2010-01
2010-04
2010-07
2010-10
2011-01
2011-04
2011-07
2011-10
2012-01
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2012-10
2013-01
2013-04
2013-07
2013-10
2014-01
2014-04
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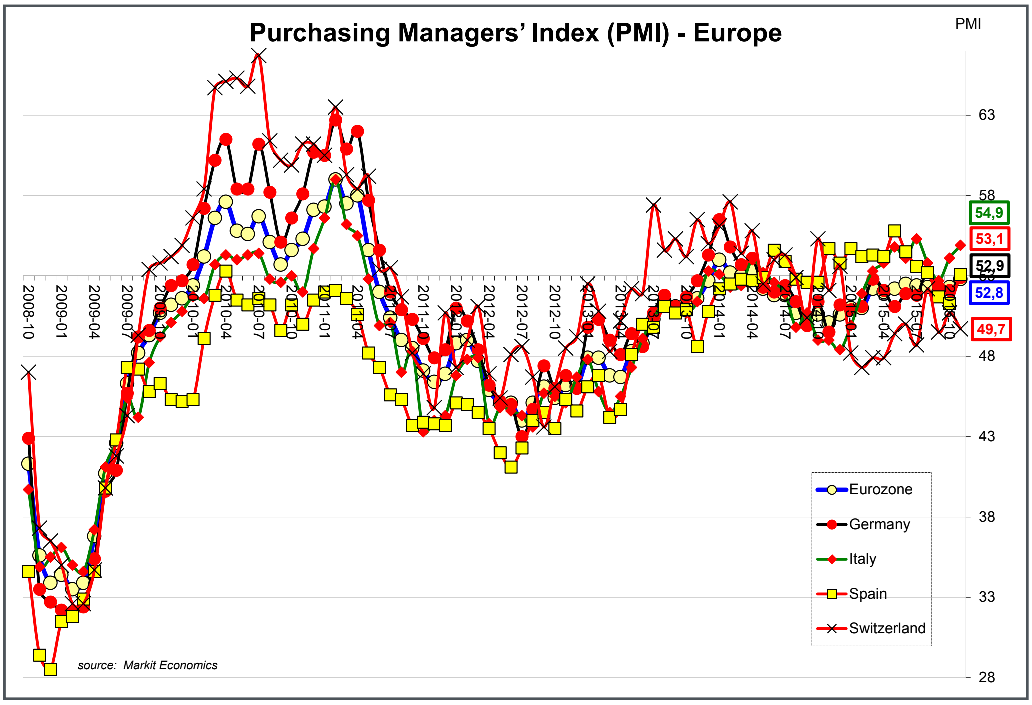
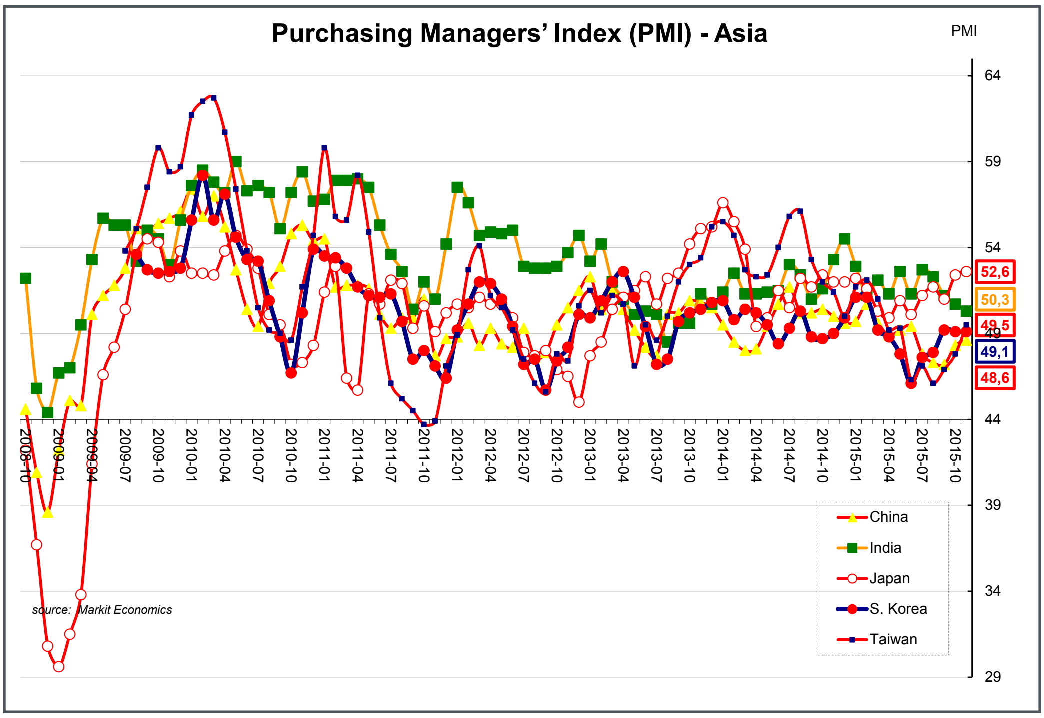
source: Markit Economics
Global
Eurozone
USA
MT orders
source: Markit Economics + National Statistics



Purchasing Managers' Index (PMI) - Europe
PMI
63
58
48
43
38
33
28
54,9
53,1
52,9
52,8
49,7
2008-10
2009-01
2009-04
Eurozone
Germany
Italy
Spain
Switzerland
source: Markit Economics



Purchasing Managers' Index (PMI) - Asia
PMI
64
59
54
49
44
39
34
29
52,6
50,3
49,5
49,1
48,6
2008-10
2009-01
2009-04
2009-07
2009-10
2010-01
2010-04
2010-07
2010-10
2011-01
2011-04
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2012-10
2013-01
2013-04
2013-07
2013-10
2014-01
2014-04
2014-07
2014-10
2015-01
2015-04
2015-07
2015-10
China
India
Japan
S. Korea
Taiwan
source: Markit Economics

Glossary ⓘ

1.3 MT-IX

MTIX is and 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 and 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

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