CECIMO Statistical Toolbox

December 2016

cecimo
European Association of
the Machine Tool Industries

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The items in grey have not been updated since the CECIMO Statistical Toolbox's last edition.

Introduction

The global economy and the economic sentiment picked up during the second half of 2016. The world activity is expected to keep strengthening, even though it remains below its pre-crisis pace. Business confidence and economic growth are being rather resilient to the weakness of international trade and political uncertainty. The different indicators analysed in this study, in particular the CECIMO Business Climate Barometer, the European Commission's Economic Sentiment Indicator (ESI), the OECD Business Confidence Indicator and the Purchasing Managers' Index (PMI) indicate a rise in economic sentiment which lead to a more optimistic assessment of the current situation and to an improvement in expectations.

However, it cannot be denied that this unfavourable situation for international commerce is still affecting the machine tool sector worldwide, including the European one. The machine tools exports from CECIMO countries deteriorated by around 7.5% in the third quarter of 2016, while the global drop was 8.5%. Looking across the Atlantic ocean, Mr Trump rhetoric on free trade deals will surely contribute to further weakening the intensity of global trade. Among the first decisions of the new administration, withdraw from the TTP (Trans Pacific Partnership agreement) and started talks on renegotiate NAFTA (North America Free Trade Agreement).

As promised during the long political election campaign, the new US administration will encourage expansionary fiscal policy and contractionary monetary policy. In other words, the policy mix expected to put in place in America is: on one hand, a loose fiscal policy in the form of promised taxes cut and boost of investment in infrastructure, which will push up the aggregate demand; and, on the other hand, a tightening of monetary policy involving a faster rise of interest rates and control over the inflation rate, which is expected to end up the 2016 at a yearly value of 1.3% and reach 2.5% or more in 2017.

In Europe, the economic growth continues to be moderate but the recovery is firm. The Euro Area real GDP is expected to yearly expand above 1.5% along 2016-2019. Unsurprisingly, the European Central Bank decided to prolong its stimulus program of quantitative easing but at a lower pace: €60bn per month as from April 2017, which represents a scaling-down of 20 billion. The extension of the Eurosystem purchases until the end of 2017 -previously planned to run until the end of March and maybe beyond if it is considered necessary- still shows an accommodative monetary policy. In the political arena, three of the six founding members of the European Union will celebrate general elections during 2017: The Netherlands, France and Germany. They represent 56% of the Eurozone economy. Not to mention that it cannot be totally ruled out the possibility of some other country going for elections due to political instability. Once again, trade policy will surely be on the table of the political campaigns.

It is also noteworthy that energy will likely drive prices up in 2017. After the OPEC agreement in late November, oil prices have been rising. However, this energy inflation is still contained due to the fact that there is still abundant global spare capacity.

1. Data specific to the European machine tool market

1.1 CECIMO8 orders ⓘ

According to the latest available data, the overall situation for MT orders to CECIMO countries enfeebled in the third quarter of 2016 compared to the second one: CECIMO8 total orders decreased 15% quarter-on-quarter. It represents a downward movement more pronounced than in the previous years: we need to go back to the first quarter of 2012 to find a similar quarterly fall in orders. This plunge leads to a quarterly drop of 7% in the seasonally adjusted index and follows a rebound of 2% in the second quarter. This quarterly fall was distributed relatively equally among Italy (-19%), Switzerland (-18%), Germany (-15%) and Spain (-15%). United Kingdom (-4%) and Czech Republic (-3%) suffered from smoother decreases.

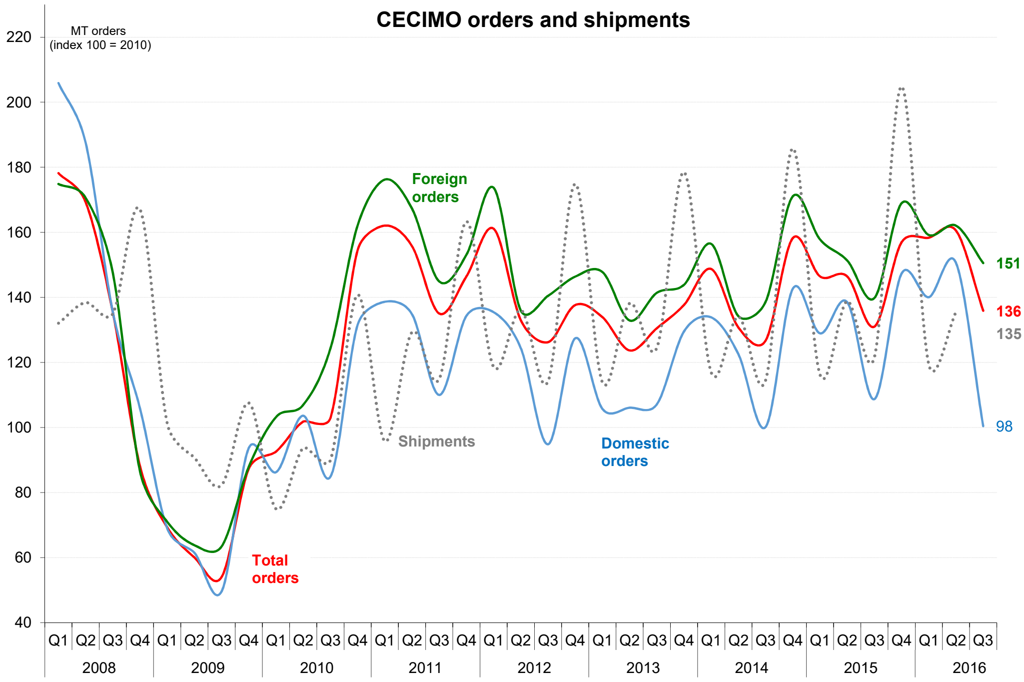
If we compare the third quarter of 2016 to the one of 2015, the highest drop was recorded in the United Kingdom, with a 27% fall. France and Czech Republic also registered negative values above 10%. On the positive side, Austria, which accounts for nearly 3.5% of total CECIMO MT output, received orders whose value was 28% higher. This value was driven by domestic orders: they displayed an increase of more than 60% in comparison with the second quarter of 2016, while the foreign orders were on the wane (-20%). Another country which performed particularly well in terms of orders was Spain, as its orders' inflow was around 17% greater than in the third quarter of 2015, well above the industry average trend during the period July-September 2016 (+4%).

With regard to foreign orders, they suffered from a quarterly 7% downturn, which is similar to the one registered in the third quarter of 2015. Consequently, the interannual increase booked in the second quarter of 2016 remained in the third one: the value of overseas orders was still 8% higher in the third quarter of 2016 than in the same period of 2015. This situation was quite the contrary for domestic orders, which during the period July-August 2016 were 8% less than the same months of 2015. It is clear that domestic markets are driving down the total number of orders. In the third quarter of 2016 the value was one third less than in the second quarter, which is a stronger drop than in the previous year (around -10%).

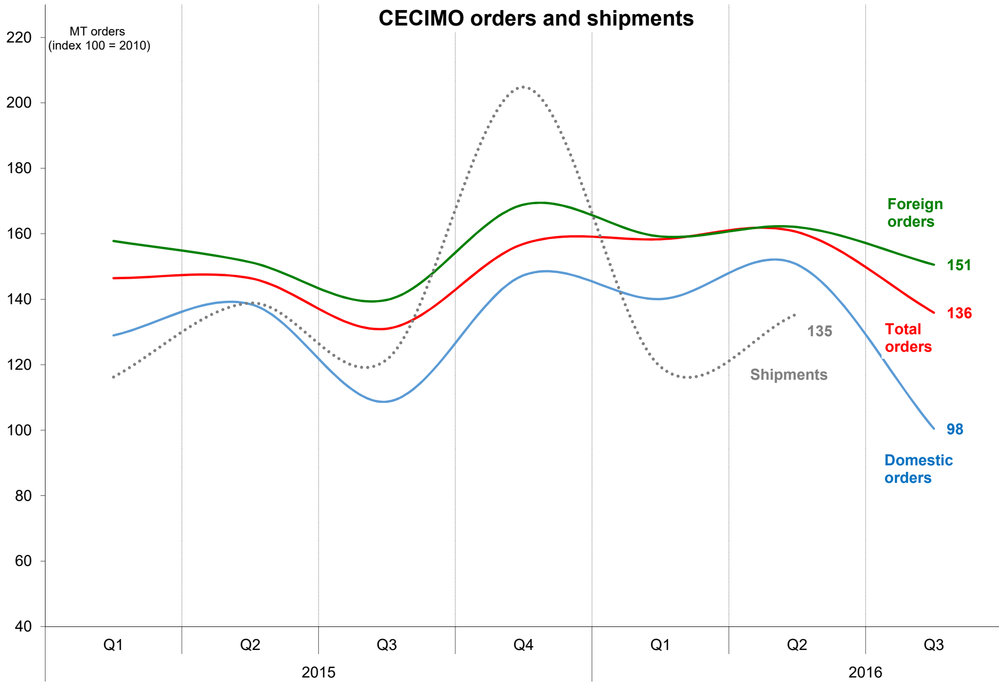
Comparing the European situation to the international one, the overall picture is quite positive. For example, Japanese orders of metal-cutting machine tools weakened over the recent quarters with a 23% drop year-on-year in the second quarter of 2016. The same yearly drop was experimented by the Taiwanese MT industry. Despite a downward quarterly movement of 2% of orders of Japanese metal-cutting MT in the third quarter this year, the year-on-year change of -12% is half the decline with respect to the previous quarter. It is also worth to mention the significant recovery of domestic orders of metal forming machine tools in Japan during the third quarter last year. In the U.S., the domestic orders in the first half of 2016 were not in a good momentum either, as they were at the lowest level in the last 6 years. However, during the third quarter they rebounded to reach late 2015 levels.

See graph on next page

CECIMO orders and shipments



CECIMO orders and shipments



1.2 Peter Meier's forecast

Overall situation:
Because of the Brexit, the OECD suspended the leading indicators during the summer months. After the outcome of the US elections, the question whether one should suspend again these indicators arises. Anyway, the leading indicators since September have been showing an upward in all major world markets.

After a brief decline in summer, business confidence in the US has now recovered. Since the beginning of 2015, however, it has been running below 100 points, which means in the contraction area. This is confirmed by the sluggish investment activity that the country has recorded for some time. Consumer sentiment, even if it has been gradually declining since mid-year, is still in the expansion area and it might be registered a increase after the election. This would have a positive effect on the industrial production, which just crossed a trough.

After a prolonged but rather restrained growth, the leading indicators in Asia have gained momentum since summer. Consumer spending has improved significantly in China in the recent months, and business confidence has also improved. Although consumption and industrial production continue to be on a backward movement in Japan, the indicators for Asia suggest a moderate recovery.

Since the slump of the euro crisis in 2012, the leading indicators in Europe have been steadily rising. Business confidence and consumer confidence have been expanding since 2013. Such a development is atypical, as usually the process is characterized by constant ups and downs. Apparently, expectations and reality are not entirely tuned. One possible reason: although consumption in Europe has exceeded the level of 2007, industrial production has not reached it yet. In other words, the industry doesn't operate at full capacity, which explains the restraint in investments. It looks as if industrial production will reach the level of 2007 again next spring. Subsequently the demand for capital goods is likely to rise.

The following graph clearly shows that the European Business Confidence Indicator has been in the expanding area since the end of 2013. It is worth to keep it in mind, as the rise of this indicator usually has a positive effect on the propensity to invest in machinery, yet with a lag of several months.
New orders in Q3 were clearly below expectations. This reflects a seasonal effect, which can be observed also in former years. The latest economic indicators didn't change the forecast, a sign that the business cycle is now in a rather stable phase. The forecast points on a growing demand for 2017.

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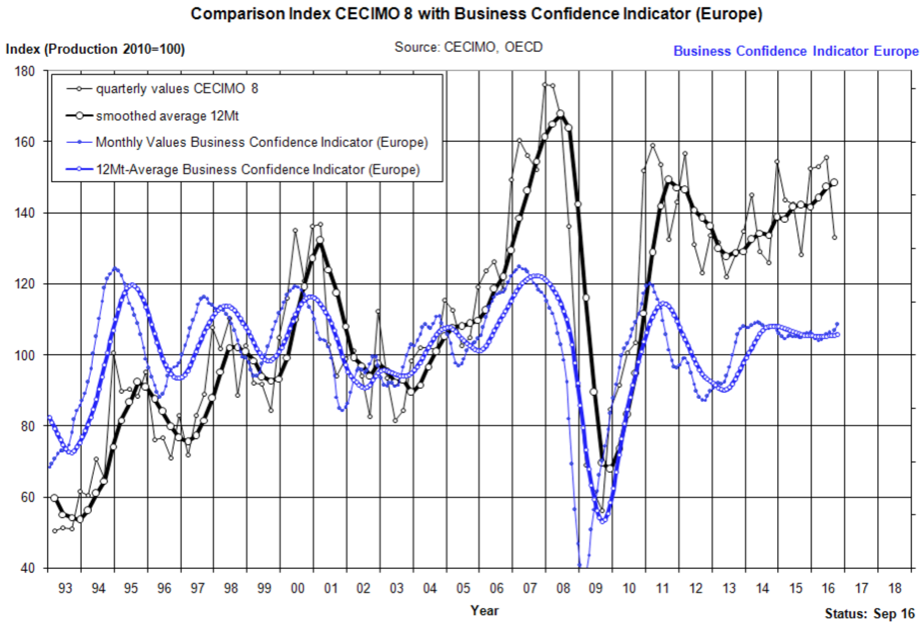
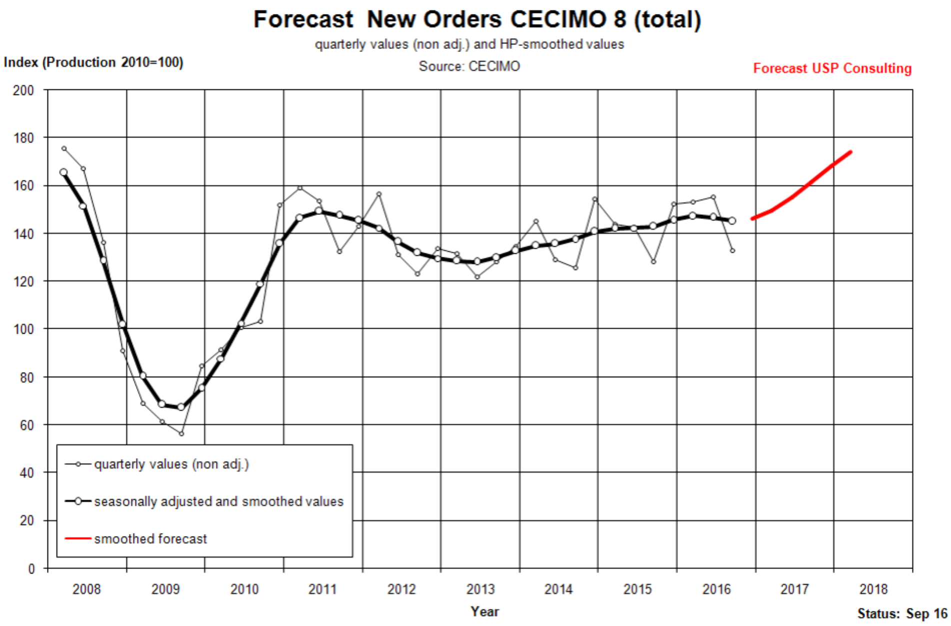


Comparison Index CECIMO 8 with Business Confidence Indicator (Europe)
Index (Production 2010=100)
Source: CECIMO, OECD
Business Confidence Indicator Europe
quarterly values CECIMO 8
smoothed average 12Mt
Monthly Values Business Confidence Indicator (Europe)
12Mt-Average Business Confidence Indicator (Europe)
Year
Status: Sep 16

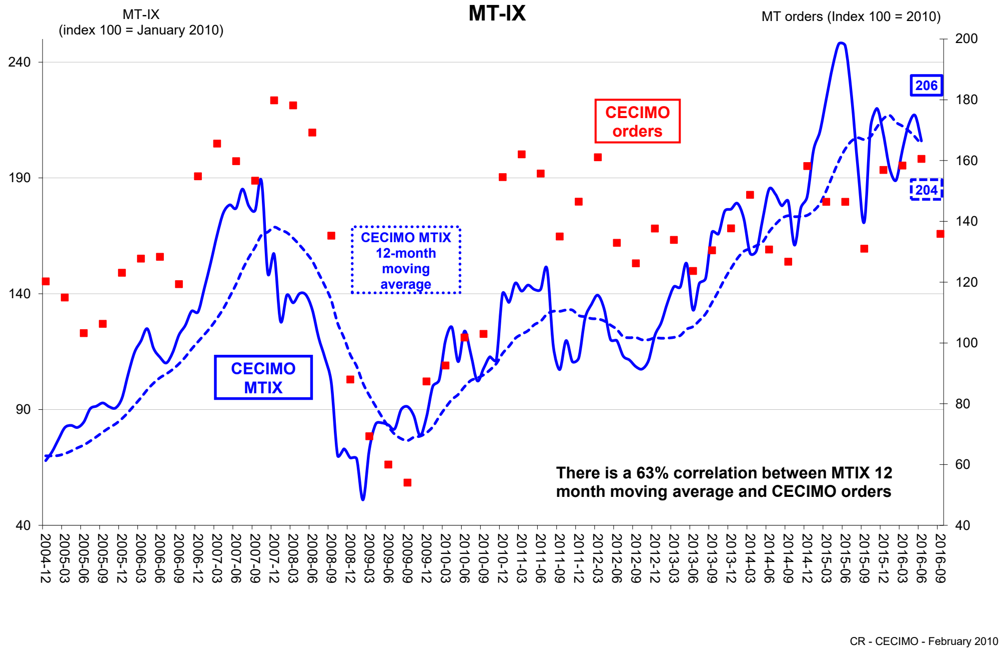


Forecast New Orders CECIMO 8 (total)
quarterly values (non adj.) and HP-smoothed values
Index (Production 2010=100)
Source: CECIMO
Forecast USP Consulting
quarterly values (non adj.)
seasonally adjusted and smoothed values
smoothed forecast
Year
Status: Sep 16

1.3 MT-IX ⓘ

In the second quarter of 2016, MT-IX index jumped almost 7% compared to the previous quarter's value, gaining 14 points and posting at 220 points. The annual average of the index reached its maximum at the end of 2015 and it is still above pre-crisis levels. The September value of the MT-IX index was 220.5, which shows a rise of 6.8% in comparison with its level of three months ago.

The machine tool companies' market value increased during the summer throughout the globe, especially in Brazil and Korea. The market capitalisation of companies based in CECIMO countries increased more than 5%, while the aggregated market cap of companies in the United States remained more or less stable. Among all countries included in this index, only Taiwan booked a slight decrease.



1.4 CECIMO trade

CECIMO countries' exports are forecasted to remain stable at 18.7 billion euro in 2016. This clearly illustrates that CECIMO countries are coping pretty well with the global negative context for international trade: in circumstances of sharp declines of global MT trade, CECIMO countries' trade is suffering quite less intense contractions. Considering the first nine months of 2016 versus the same period of the previous year, the situation is quite obvious perceivable: the non-CECIMO exports of machine tools deterioration was almost 10 percentage points higher than those originated in CECIMO countries, which accounted for more than 48% of MT world exports. Particularly remarkable is the fact than during the above mentioned period, Asian exports of machine tools weakened around 16%.

In the first half of 2016, while machine tools' global exports declined around 10% year-on-year, those coming from CECIMO suffered just a 3% decrease. Furthermore, CECIMO MT purchases from foreign countries (including those from all European countries) decreased a mere 3%. Data for the third quarter of 2016 yields quite similar results. In interannual terms, global machine tools exports went down by nearly 8.5%, while the machine tool exports from CECIMO countries declined of around 7.5%.

Within CECIMO, considering our most updated statistics from January to September 2016, Germany accounted for 42.4% of total CECIMO exports. It is, alongside with Italy (16.6%) and Switzerland (12.7%), the most important European MT builder. In terms of imports, almost 4 of every 10 euros of investments in machine tools came from Germany (26%) and Italy (12.4%). These countries, together with Turkey (9.6%), France (8.8%) and Belgium (8.2%), account for two thirds of CECIMO machine tool imports.

Intra-European trade clearly remains the most important for CECIMO members, as the European market accounts for a bit more than half of total CECIMO exports, and attracts one third of the world exports. This trade resist the weaknesses of the current environment better: CECIMO MT total exports, which account for the vast majority of European MT exports, weakened 4.6% in January-September 2016 in comparison with the first three quarters of 2015, while CECIMO exports to EU countries decreased a mere 0.6%.

CECIMO countries are responsible for 28% of MT purchases from foreign countries worldwide. An analysis of the biggest markets reveals a stronger position of CECIMO in Asia. Data collected until the third quarter of this year shows a significant interannual increase of CECIMO market share in the region (from 31.4% to 36.6%). This is despite the nearly 6% decline in CECIMO exports to Asia, when comparing the values of the first three quarters of 2016 with the same period of 2015. As for the Commonwealth of Independent States (CIS), exports from CECIMO countries account for an undoubtedly important percentage of their global imports. Nevertheless, the economic situation and the EU-Russia sanctions in place are clearly affecting the European MT sector. CECIMO exports to Russia declined by 37% to 358 million euros in January-September 2016, compared to January-September 2015, and in Q3-2016, exports to Russia decreased by 30% quarter-on-quarter.

Finally, it should be mention that companies are relatively optimistic about exports in the coming years. According to data provided by the European Commission, 20% of the EU industry predicts its exports to increase and only 10% forecasts a short-term decline.

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CECIMO exports and imports per zones - 2016Q3
in thousand euro. Export destinations and import origins

EXPORTS

Zone	2016Q3	2015Q3	2016Q2/ 2015Q2	Share 2016Q2	Share 2015Q2
I. ASIA	1 081,4	1 160,3	-7%	25%	25%
II. AMERICAS	708,7	768,1	-8%	16%	16%
III. EUROPE	2 207,9	2 309,0	-4%	51%	49%
CECIMO	1 765,2	1 793,7	-2%	41%	38%
non CECIMO	442,7	515,3	-14%	10%	11%
IV. Russia + CIS	147,2	218,1	-33%	3%	5%
V. AFRICA	79,1	80,8	-2%	2%	2%
VI. OTHERS	96,1	130,1	-26%	2%	3%
TOTAL EXPORTS	4 328,9	4 673,5	-7%		

IMPORTS

Zone	2016Q3	2015Q3	2016Q2/ 2015Q2	Share 2016Q2	Share 2015Q2
I. ASIA	657,0	708,1	-7%	27%	28%
II. AMERICAS	97,4	112,4	-13%	4%	4%
III. EUROPE	1 498,8	1 565,0	-4%	62%	61%
CECIMO	1 432,8	1 507,8	-5%	59%	59%
non CECIMO	66,1	57,3	15%	3%	2%
IV. Russia + CIS	1,9	3,7	-47%	0,1%	0,1%
V. AFRICA	0,9	1,9	-53%	0,0%	0,1%
VI. OTHERS	5,7	5,6	3%	0,2%	0,2%
TOTAL IMPORTS	2 412,5	2 551,7	-5%		

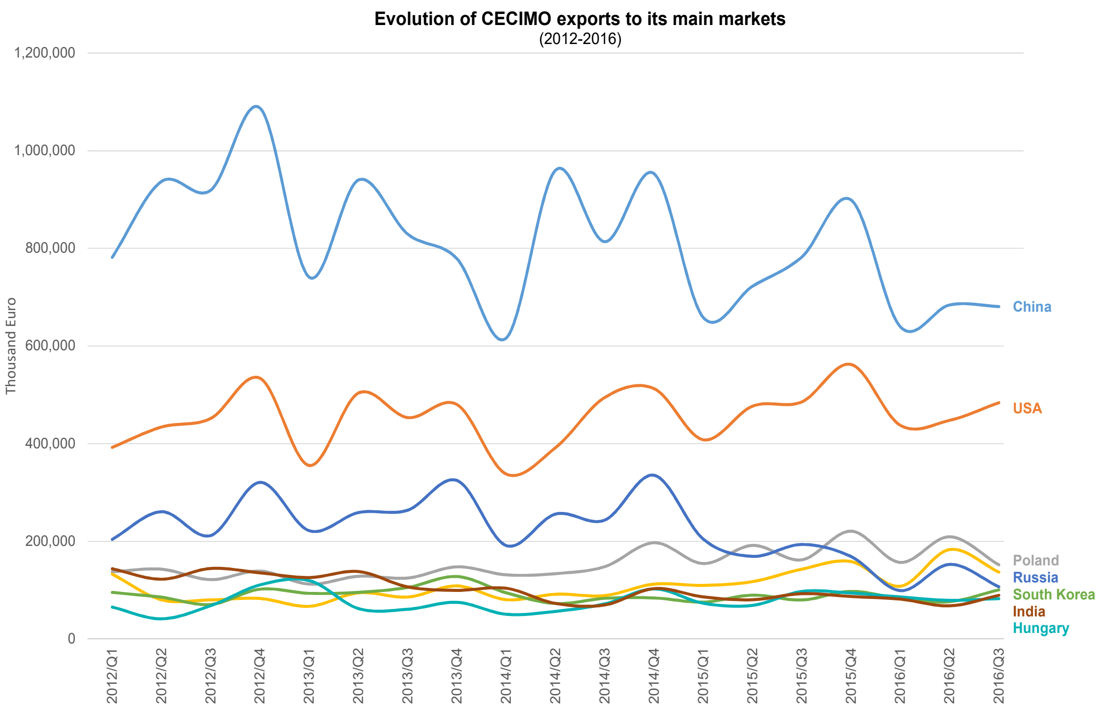
CECIMO exports and imports per zones - 2016H1
in million euro. Export destinations and import origins

EXPORTS

Zone	2016H1	2015H1	2016H1/ 2015H1	Share 2016H1	Share 2015H1
I. ASIA	1 977,2	2 083,7	-5%	23%	23%
II. AMERICAS	1 404,4	1 384,6	1%	17%	16%
III. EUROPE	4 389,4	4 530,4	-3%	52%	51%
CECIMO	3 471,0	3 594,7	-3%	41%	41%
non CECIMO	918,4	935,7	-2%	11%	11%
IV. Russia + CIS	304,1	440,9	-31%	4%	5%
V. AFRICA	163,7	155,5	5%	2%	2%
VI. OTHERS	262,0	256,7	2%	3%	3%
TOTAL EXPORTS	8 508,4	8 873,3	-4%		

IMPORTS

Zone	2016H1	2015H1	2016H1/ 2015H1	Share 2016H1	Share 2015H1
I. ASIA	1 313,1	1 378,8	-5%	30%	31%
II. AMERICAS	191,4	256,3	-25%	4%	6%
III. EUROPE	3 046,7	3 131,9	-3%	69%	70%
CECIMO	2 914,4	2 998,4	-3%	66%	67%
non CECIMO	132,3	133,5	-1%	3%	3%
IV. Russia + CIS	7,7	6,3	23%	0,2%	0,1%
V. AFRICA	1,8	1,6	11%	0,0%	0,0%
VI. OTHERS	14,8	20,0	-26%	0,3%	0,4%
TOTAL IMPORTS	4 423,8	4 496,2	-2%		



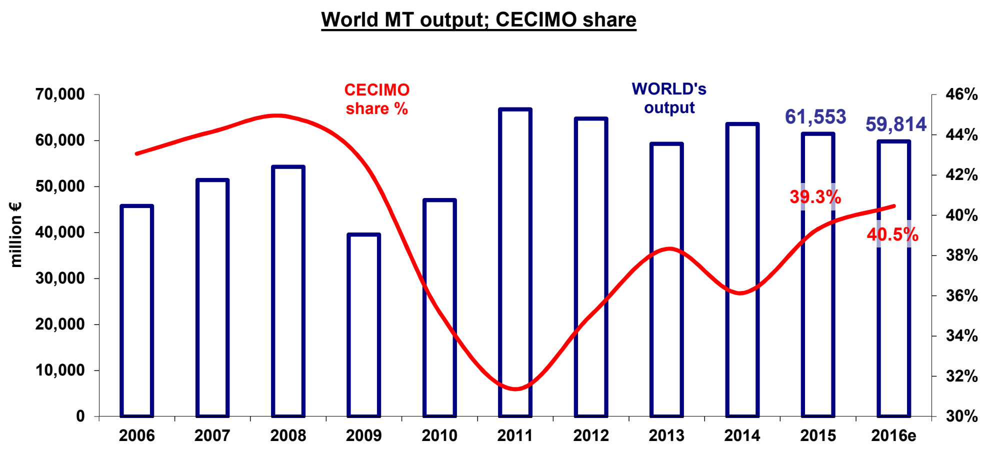
1.5 CECIMO production

After a 5% growth in last year production of the 15 CECIMO countries, 2016 CECIMO MT production is expected to scarcely increase above 24.2 billion euro. It is important to stress that this fact is taking place in a negative international context, as global production is forecasted to fall 4% (from 61.5 billion euro in 2015 to 60 billion in 2016). Comparing the global production to the CECIMO one in 2016, CECIMO market share of production will increase beyond 40%.

Among CECIMO countries, the latest forecast on production shows production in all CECIMO countries to raise or remain fairly stable this year, except for the United Kingdom (-19% in euro, -13% measured in sterling pounds), Switzerland (-7.6%), Belgium (-6.7%), Austria (-4%), Czech Republic (-8%) and Turkey (almost -5%). Upward trends can be observed above all in France (+7.6%), Italy (+5.6%), Sweden (+4.2%) and Spain (+3%).

Thus the European machine tool industry has been able to keep its competitive position. Digitisation improvements in the European manufacturing sector are making machine tools exported by CECIMO countries more attractive. In addition, some previously postponed investments are positively influencing local machine tool sales.

A country-by-country analysis indicates that the European MT sector doesn't expect any significant change in the market shares for 2016. Germany, which together with Italy accounts for more than two thirds of CECIMO machine tool output, is, by far, the biggest CECIMO MT producing country with 46.2 percent of its total production last year. Italy and Switzerland represent respectively 19.3 and 12.0%, followed by Spain (3.9%), Austria (3.5%) and UK (3.4%). The three major CECIMO MT producers account for more than three quarters of the MT production in this group of countries.



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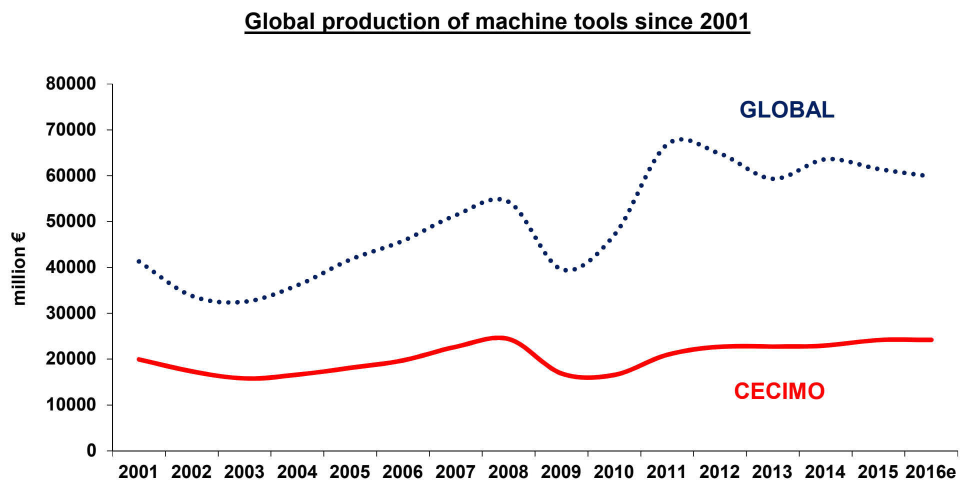


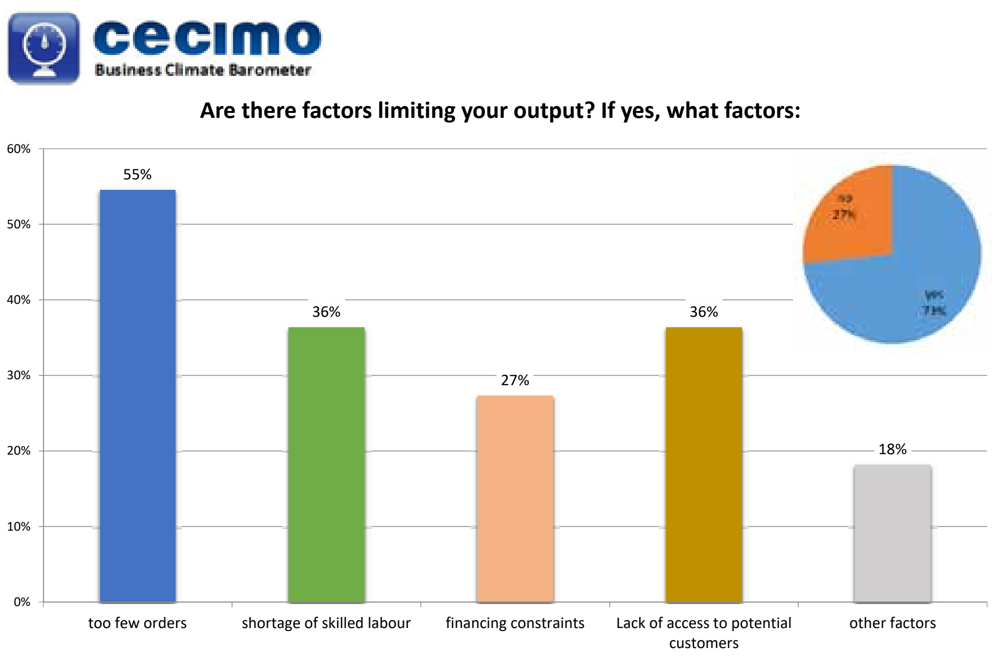
	2016e		2016e/2015
	% share	**Mio. €**	% change
CECIMO	**40.5%**	**24,203**	**0.2%**
China (offic.)	27%	16,078	-4.5%
Japan	19%	12,295	0.1%
S. Korea	5%	2,900	-20.0%
USA	5%	2,923	-16.6%
Taiwan	5%	3,073	0.1%
India	1%	759	9.9%
Canada	1%	390	-3.6%
Russia	1%	356	-3.6%
Thailand	1%	350	-3.6%
Singapore	1%	330	-3.6%
Poland	0%	199	-3.6%
Others	1%	781	-3.6%
TOTAL	**100%**	**59,814**	-2.7%

1.6 CECIMO Business Climate Barometer

The latest CECIMO Climate Barometer reflects the growing economic confidence in Europe. The survey was distributed to the respondents from 13 December 2016 to 31 January 2017 and the data gathers altogether replies to the CECIMO questionnaire, responses sent by national associations from their own sources and, in the case of German companies, we also take into account data from the Ifo Institute. The responses in the CECIMO Business Climate Barometer are analysed as the difference (net percentage) between the share of companies reporting an increase and the share of companies reporting a decrease in their business activities, or their perceptions about the reality.

The net percentage of companies reporting a good business situation grew from 7% in April 2016 to 30% at the end of the same year. In line with this positive outlook, export expectations increased to 7%. Thus, companies' assessment of their export possibilities ameliorated: MT companies believe that exports will keep driving the growth of the sector, helping them to offset the few number of orders, which is their main concern. Moreover, although the primary restriction to businesses' growth is insufficient order intake, it is worth mentioning that the index of companies stating to have too few orders decreased from 62 in April to 55 late last year, and the net percentage of companies expecting their net order intake to move upwards remain the same than in the previous barometer (12%). However, the effect of employment is still modest: the net percentage of companies considering to reduce its labour force rather than to increase it is 8% and 36% of respondents found their business limited by shortage of skilled labour and/or lack of access to potential customers.

The best market opportunities are in Europe and, to a lesser extent, Asia. The results of the survey confirm the expectation of intra-European MT trade to remain the most important one for European machine tools builders.



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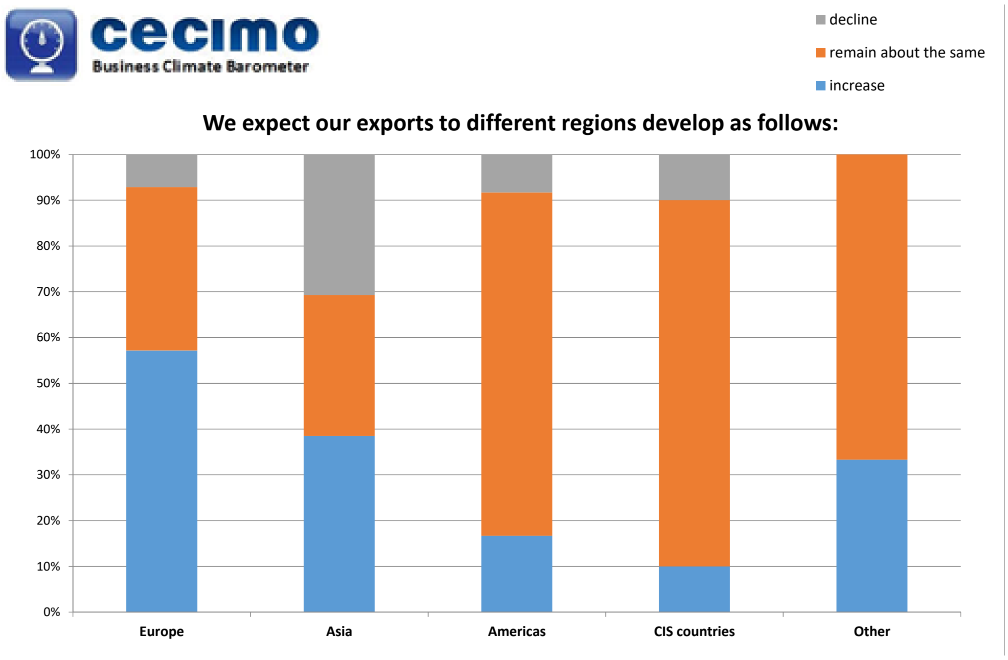
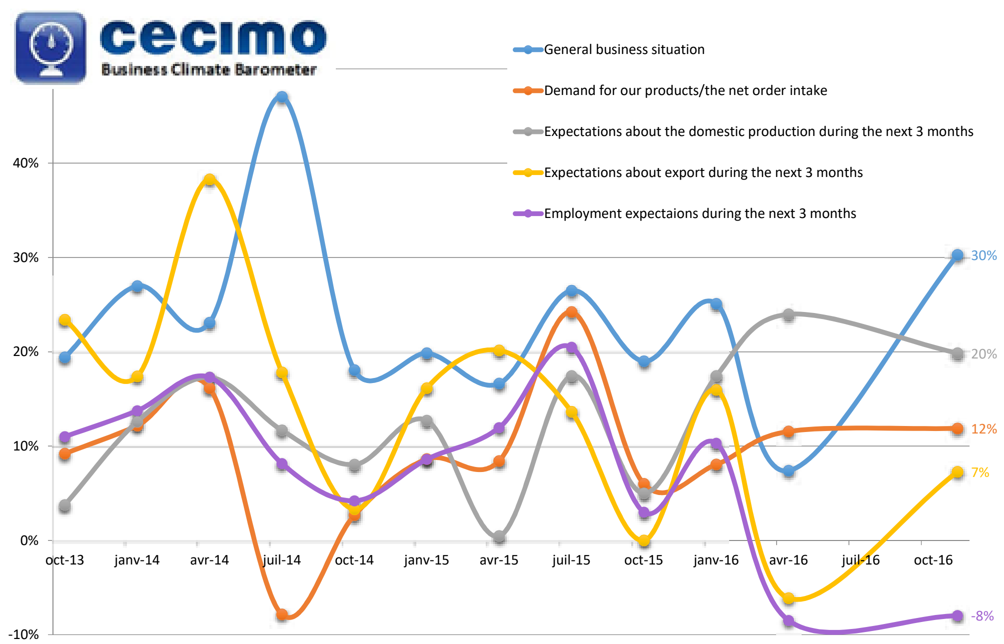

cecimo
Business Climate Barometer
decline
remain about the same
increase
We expect our exports to different regions develop as follows:
100%
90%
80%
70%
60%
50%
40%
30%
20%
10%
0%
Europe
Asia
Americas
CIS countries
Other


cecimo
Business Climate Barometer
General business situation
Demand for our products/the net order intake
Expectations about the domestic production during the next 3 months
Expectations about export during the next 3 months
Employment expectaions during the next 3 months
40%
30%
20%
10%
0%
-10%
oct-13
janv-14
avr-14
juil-14
oct-14
janv-15
avr-15
juil-15
oct-15
janv-16
avr-16
juil-16
oct-16
30%
20%
12%
7%
-8%

2. Macroeconomic data in relation with machine tool orders

2.1 GDP

The World gross domestic product is forecasted to have risen by about 2.3 – 2.5% in 2016 and the World Bank predicts it to accelerate up to 2.7% in 2017.

In Europe, according to the latest Eurostat estimates, the seasonally adjusted nominal gross domestic product rose by 0.6% in the European Union and by 0.5% in the Euro Area during the fourth quarter of 2016 compared to the previous one. The same indicator registered an increase of 0.4% in the EA and 0.5% in the EU during the third quarter. In interannual terms, data for the fourth quarter of 2016 reveals that the seasonally adjusted GDP rose by 1.8% in the EA and by 1.9% in the EU. Finally, taking into consideration the whole 2016, the gross domestic product grew by 1.7% in the Euro Area and by 1.9% in the European Union.

It is worth to take a look at the gross domestic product in real terms, i.e. adjusted for inflation in order to avoid its effects on the measurement of the yearly output. Real GDP in the euro area expanded 0.3% quarter-on-quarter in the third quarter of last year, and the estimates for the 2016 annual growth are around 1.7-1.8%, both for the EU and the EA. However, the picture is relatively mixed across the continent. The European Commission forecasts the real GDP to grow in 2016 above 3% in Ireland, Spain, Luxembourg, Malta and Slovakia. On the negative side, Italy, Finland and Portugal are expected to grow at a lower rate than 1% this year in comparison with 2015. The biggest downgrades from the EC Spring projections are for the Baltics (their forecasts were cut by 0.8-0.9 percentage points), Ireland (its growth rate was brought down from 4.9% to 4.1%), Italy (from 1.1% to 0.7%), Portugal (from 1.5% to 0.9%), Poland (from 3.7% to 3.1%). For 2017, the EU growth is projected at 1.6%, 0.1 percentage points more than the rate for the Euro area.

As for the UK, the UK Office for National Statistics (ONS) informed that the national GDP grew by 0.6% during the fourth quarter of 2016, which is the same figure recorded in the previous two quarters and 0.1 percentage point better than the estimates in the CECIMO November report. Taking a look at the real forecasted indicators for the whole year, the annual real GDP growth was 2%, slowing down the pace of growth booked in 2015 (2.2%) and 2014 (3.1%). Nevertheless, UK is one of the fastest growing G7 economy. Among the seven leading nations belonging to the G7, Britain is ahead of France, Germany, Italy, Japan and Canada. Britain's Autumn Statement, given by the Chancellor of the Exchequer to Parliament in late November, revealed that the Office for Budget Responsibility (OBR) forecasted growth to slow and inflation to rise over the next two years. It also announced the government's new fiscal target of 2% underlying deficit and debt falling by 2020. According to the British fiscal watchdog, by 2020 the UK economy will grow by 2.4 percentage points less than what it was predicted before the Brexit referendum. It means around 830 GDP decrease of the average real earnings in 4 years time. GDP per capita growth returned to pre-crisis levels in 2014 but fell back since then. In 2016, the GDP per head was reported to increase 1.3%.

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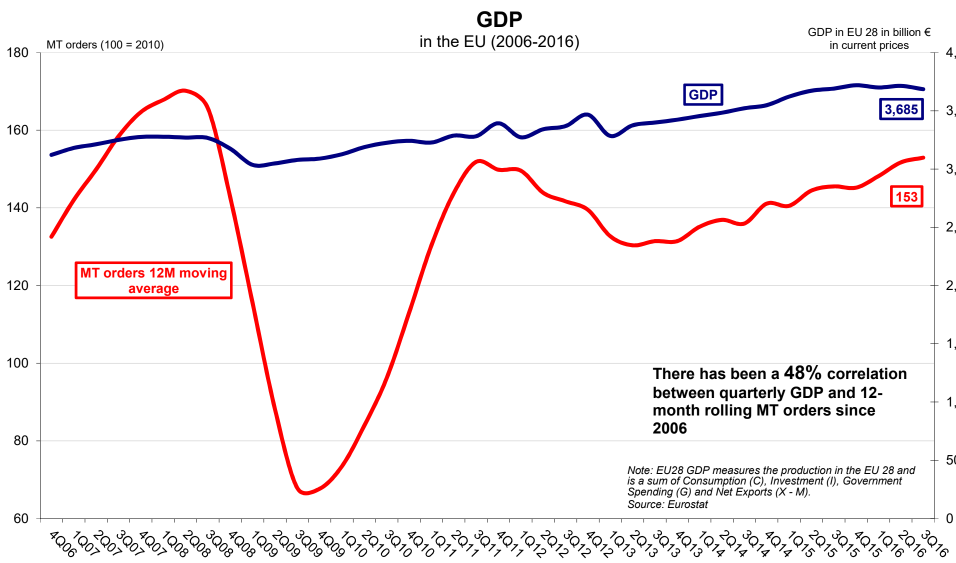
Taking a look at the other major world economies, the real gross domestic product in the US increased at an annual rate of 1.9% in the fourth quarter of 2016 and 3.5% in the previous one. For the full year 2016, the annual growth rate was 1.6%, which is lower than expected, and one percentage point weaker than in 2015. The deceleration in fixed investment and local government spending was offsetted by a slowdown of imports and a hike in exports and federal government spending. In turn, the Japanese real GDP will expand 0.7%. For the next year, the growth estimates are around 0.5 percentage points higher for the US and just 0.1 for Japan. On the other hand, Chinese estimate of 6.6% GDP growth seems clearly plausible, after expanding its economy by 6.7% in three quarters in a row this year.

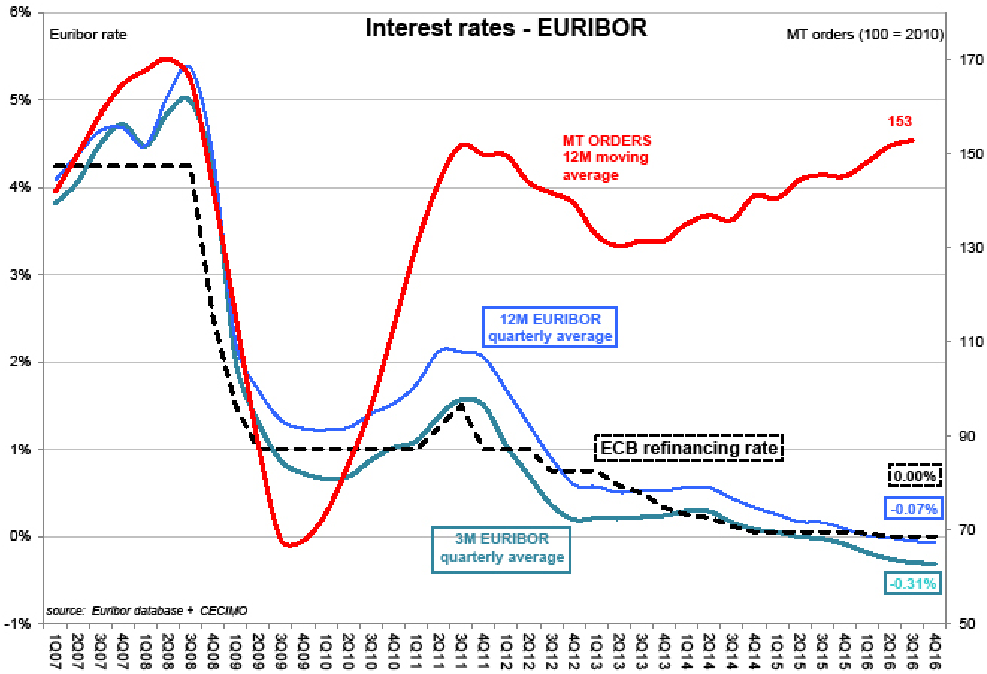


2.2 Interest rates – EURIBOR ⓘ

As expected, the key European Central Bank interest rates for the Euro Area were kept on hold by the Governing Council. The rate on the deposit facility continues at -0.4%, while the rate on the marginal lending facility and the interest rate on the main refinancing operations have remained unchanged since March at 0.25% and 0% respectively. Mario Draghi, ECB President, calmed markets saying that an abrupt end to the bond-buying programme was unlikely and it would continue even beyond March 2017 if necessary.

In average 2016 values, the 3 months and 12 months Euribor were -0.265% and -0.035% respectively. In December the average 3 months EURIBOR (short for EURo InterBank Offered Rate) went down to -0.316% from its November value of -0.313% and the October value of -0.309%. The 12 months Euribor interest rate kept dropping, as its average value in December was -0.08%, lower than the -0.074% in November, -0.069% in October and -0.057% in September. A similar trend was registered for loans of maturities longer than 3 months.

See graph on next page

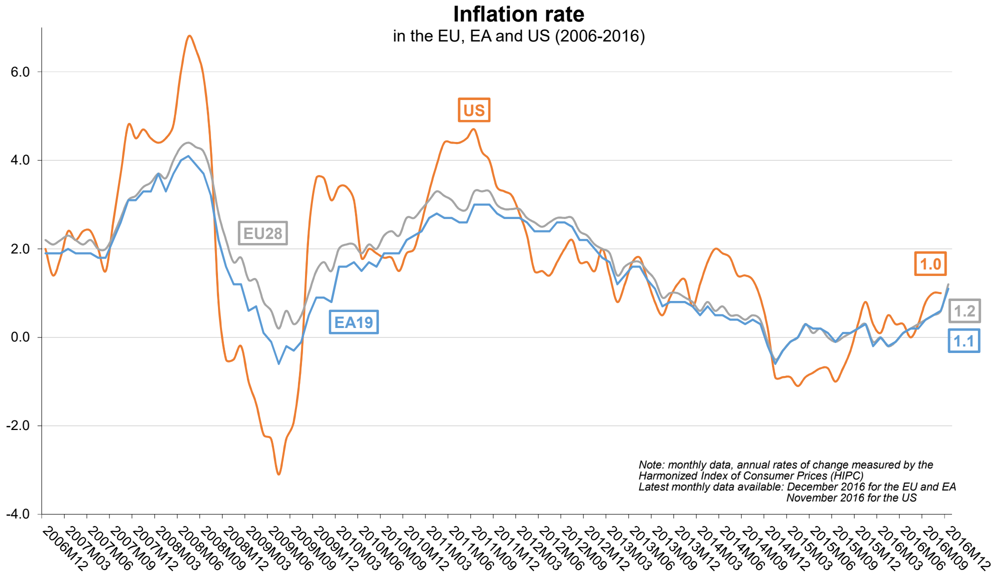


2.3 Inflation

The inflation in the Euro Area in the second quarter was negative, but it picked up in the second half of the year. Positive base effects in energy inflation and a stronger economic activity will make pressure for an increase of the Harmonised Index of Consumer Prices (HICP) next year. This fact is illustrated quite well when taking a quick look at the energy annual inflation, which is down from -7.3% in November 2015 and -5.8% in December of the same year, to -1.1% and 2.6% in November and December 2016 respectively.

The inflation annual rate in the Euro Area was 1.1% in December, up from 0.6% in November, 0.5% in October and 0.4% in September. This data confirms the upward trend of inflation in the continent. While the annual inflation for the whole year 2016 is foreseen to have been 0.25% in the EA and the EU, it is expected to gradually rebound to 1.4% in the Euro Area and 1.5% in the European Union in 2017. The cost of energy will likely be the primary driver: it is expected to become 8% more expensive (annual rate) in January.

See graph on next page



2.4 Industrial production index

The industry sector is still the largest economic activity in the EU, accounting for 19% of total gross value added and for 15% of employment.

In October 2016 compared with September 2016, the seasonally adjusted industrial production fell by 0.3% in the EU and only by 0.1% in the EA. On a yearly basis, industrial production grew by 0.6% both in the EA and 0.5% in the EU. The highest monthly decreases were registered in Ireland (-3.6%), Sweden (-2.9%) and Luxembourg (-2.2%), while Denmark (+4.7%) and Greece (4.5%) experienced the largest increases. Year-on-year, industrial production increased the most in in Ireland (-6.5%) and Malta (-5.7%), and decreased 7% in Greece and more than 6.5% in Latvia and Slovenia. Always on an annual comparison, capital goods production rose by 0.9%.

Nevertheless, data for the end of the year clearly indicates an upturn of industrial production, as it is shown in the following summary table:

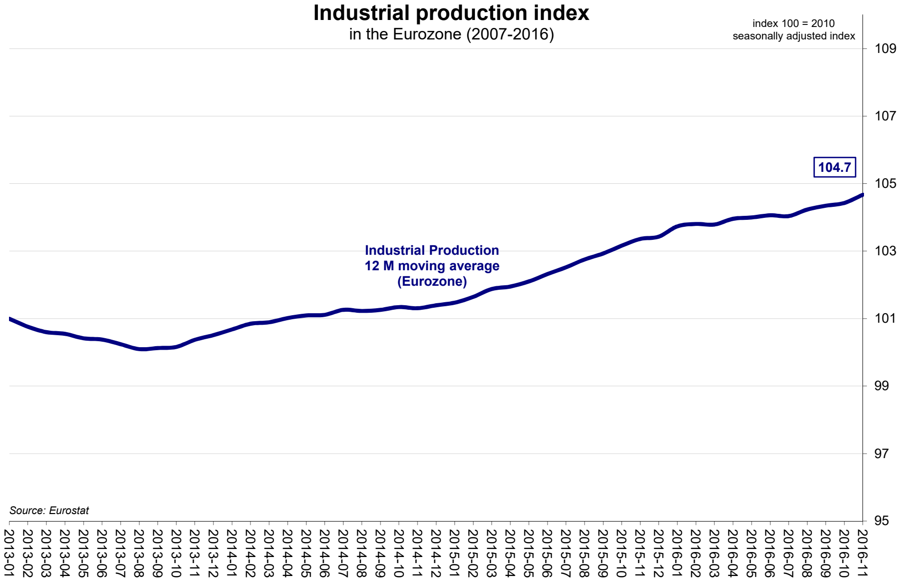
Industrial production
(percentage change compared with the previous month)

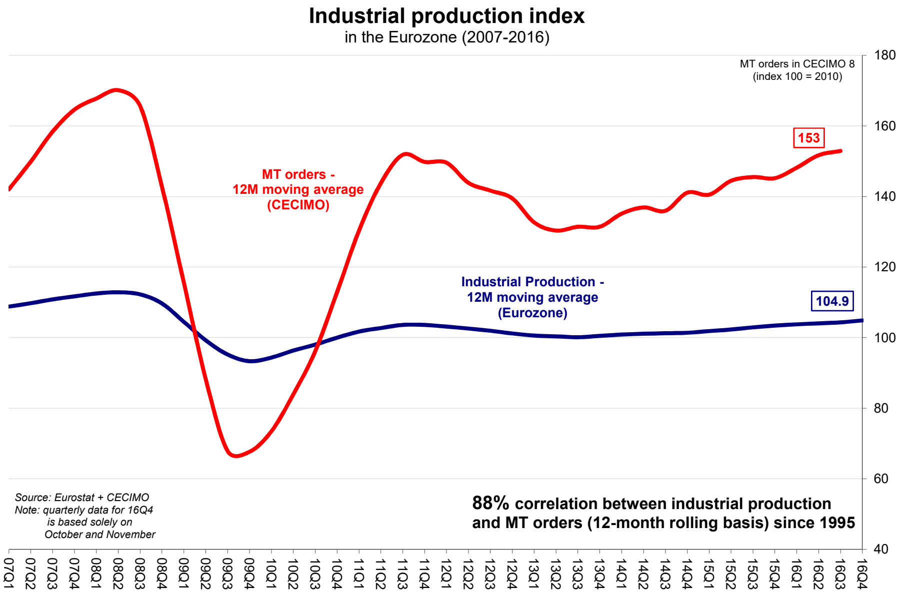
	EA19			EU28		
	November 2016	October 2016	September 2016	November 2016	October 2016	September 2016
Total industry	1.5	-0.1	-0.9	1.6	-0.3	-0.7
Capital goods	0.1	1.0	-2.1	0.3	0.3	-1.6
Intermediate goods	1.6	-0.5	-0.7	1.7	-0.5	-0.1
Energy	1.2	0.8	0.0	1.7	0.1	-0.7
Durable consumer goods	-0.1	1.5	-5.5	0.1	1.1	-3.8
Non-durable consumer goods	2.9	-1.5	0.1	2.8	-0.7	-0.6

See graph on next page

Industrial production
(percentage change compared with the same month of 2015)

	EA19			EU28		
	November 2016	October 2016	September 2016	November 2016	October 2016	September 2016
Total industry	3.2	0.8	1.4	3.1	0.6	1.2
Capital goods	3.1	1.3	1.2	2.7	1.2	1.5
Intermediate goods	2.5	1.0	1.5	2.9	0.9	1.8
Energy	5.9	2.3	1.4	4.4	0.0	0.1
Durable consumer goods	-0.8	-1.9	-0.6	0.6	0.0	0.7
Non-durable consumer goods	3.7	-0.7	1.7	3.6	-0.6	0.6





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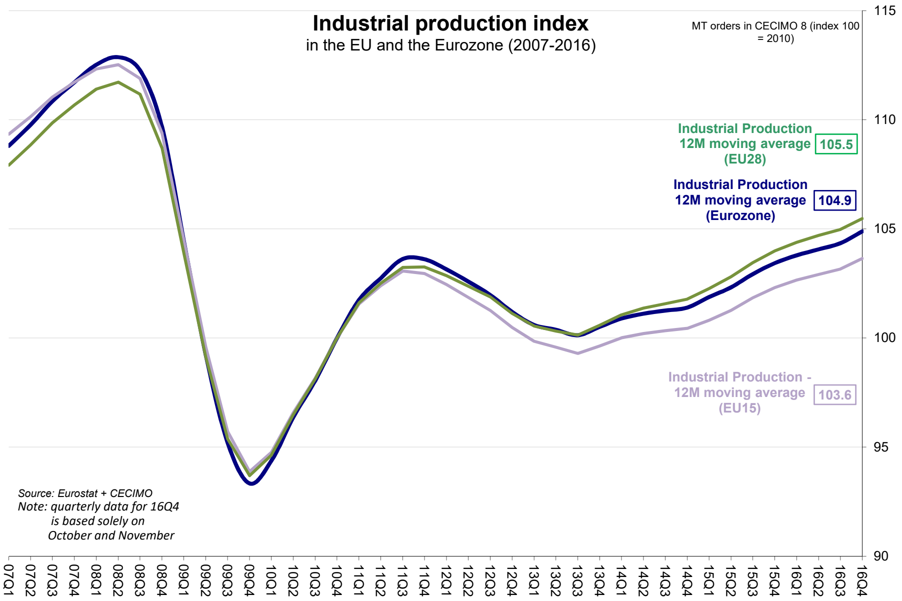


2.5 Gross Fixed Capital Formation

Business investment grew moderately in the third quarter of 2016 and this trend is expected to continue beyond the next quarter, thanks to demand upturn, replacement needs, accommodative monetary policy and favourable financing conditions.

The Gross Fixed Capital Formation (GFCF), formerly known as Gross Domestic Fixed Investment, reveals that investments in fixed assets remain under the targeted levels which would be consistent with sustainable growth, but the Euro Area's business investments are now back to the pre-crisis peak recorded in 2008. Furthermore, the ratio of EA real business investment to value added has now surpassed its long-term average. Since the slow recovery of investment levels in the EA begun in 2013, the level of business investment has registered an almost 15% increase with great inequalities among the different countries. The largest contributors to this upturn in investments have been Germany, Spain and France.

With regard to the gross fixed capital formation in the machinery sector in the Euro Area as a whole, it amounted to 165.2 billion euro, representing a 0.27% monthly growth, -0.3% quarter-on-quarter percentage change and 2.3% annual percentage change. The net increase in fixed assets is an important indicator for MT builders. In fact, 82% of correlation has been observed between orders (measured on rolling orders average) and GFCF in the euro area since 1996.

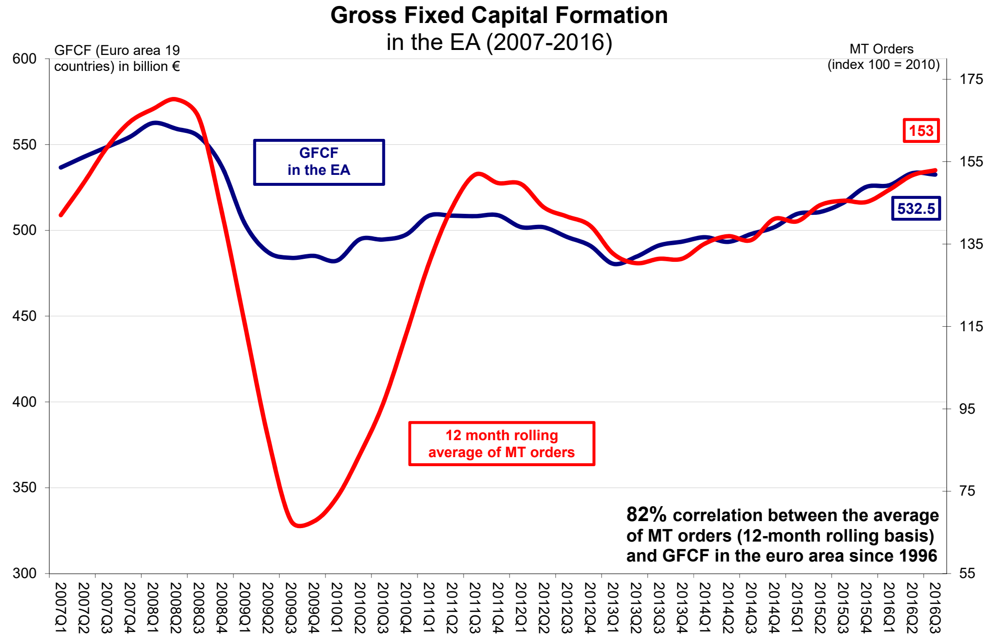
There are some goods prospects for the near future. It is well known that these investments are highly correlated with the economic sentiment, which the Economic Sentiment Indicator (ESI) published by the European Commission or the Business Climate Indicator (BCI) provided by the OECD show as increasing (further information under the sections 2.10 and 2.11).

Finally, it is also important to mention the recent investment slowdown in South Asia[1]. In the period from 2011 to 2014, the investment growth slowed from 11 percent to 3 percent. In 2015 it rebounded slightly up to 6 percent. The uptick in

Continued ▶

1. For the purpose of paragraph 5 of section 2.5, 'South Asia' means Afghanistan, Bangladesh, Bhutan, India, Maldives, Nepal, Pakistan, and Sri Lanka

public investment spending has not completely offset the decline of investment in the private sector. Some underlying factors could be the excess of manufacturing capacity and the political uncertainty, which results in instability of government policies.



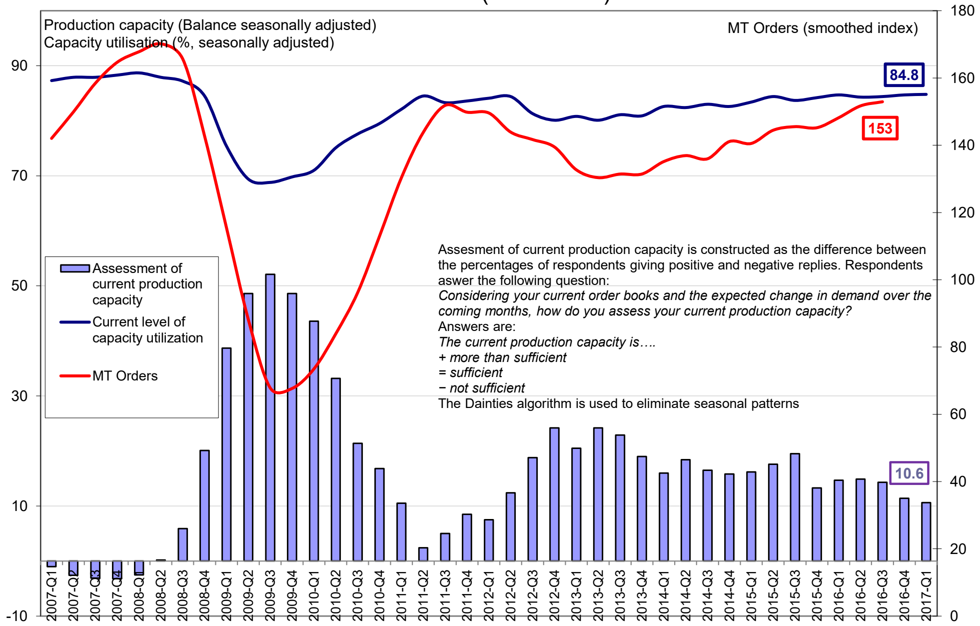
▲ 2.6 Capacity utilisation in the investment goods sector ⓘ

The capacity utilisation in the EU is so far reaching pre-crisis levels in this quarter (84.8% is a slightly greater value than the one registered one year ago). This peak, shown in the business surveys for the first quarter of 2017, has been preceded by an increase in the second half of 2016: from 84.3% to 84.7% in the end of the year. The highest correlation between the evolution of the level of capacity utilization and machine tools orders is observed when using one quarter time lag. In this case, the correlation is almost 42% in the period 1996-2017. In the EU19, companies forecast that the capacity utilization during the first quarter of 2017 will be 85.2%, which is the largest percentage since the end of 2015, comparable only with the levels booked before the financial crisis erupted. Among all EU Member States, the business surveys conducted by the European Commission revealed that the highest capacity utilizations are in Germany (88.6%), Slovak Republic (87.9%), France (87%) and Czech Republic (86.5%), while the weakest levels are in Cyprus (63.9%), Latvia (72.2%), Bulgaria (74.1%) and Estonia (74.5%). Italy, the second biggest producer of machine tools in the EU, marked a value below 77%.

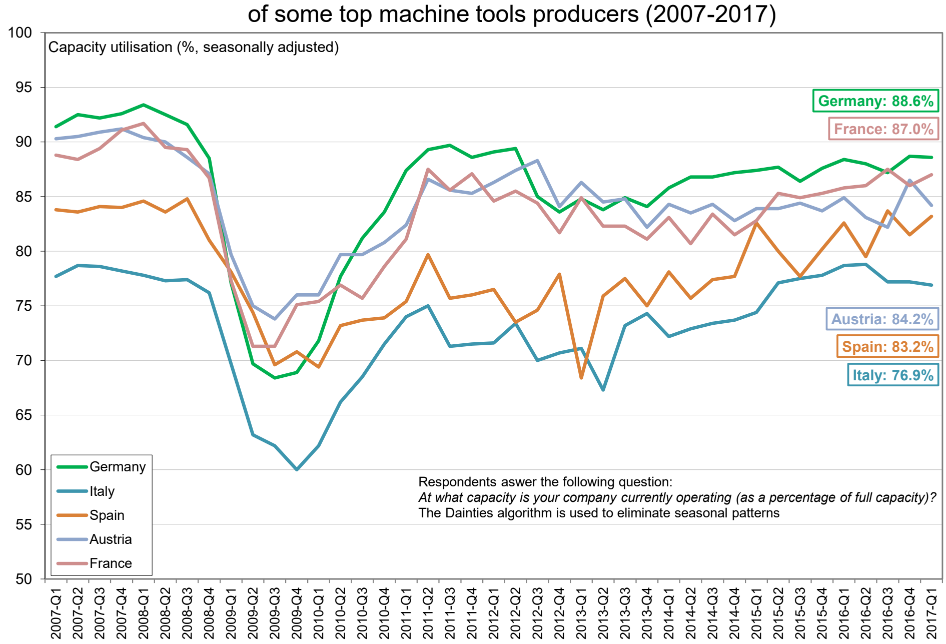
In the US, the capacity utilization for the industrial sector picked up from its November value of 74.9% to 75.5% in December, although it remains 4.5 percentage points below the US long-run (1972-2015) mean. For the manufacturing sector, the capacity utilization in December was 74.8%, which is 3.7 percentage point less than its long-term average.

See graph on next page

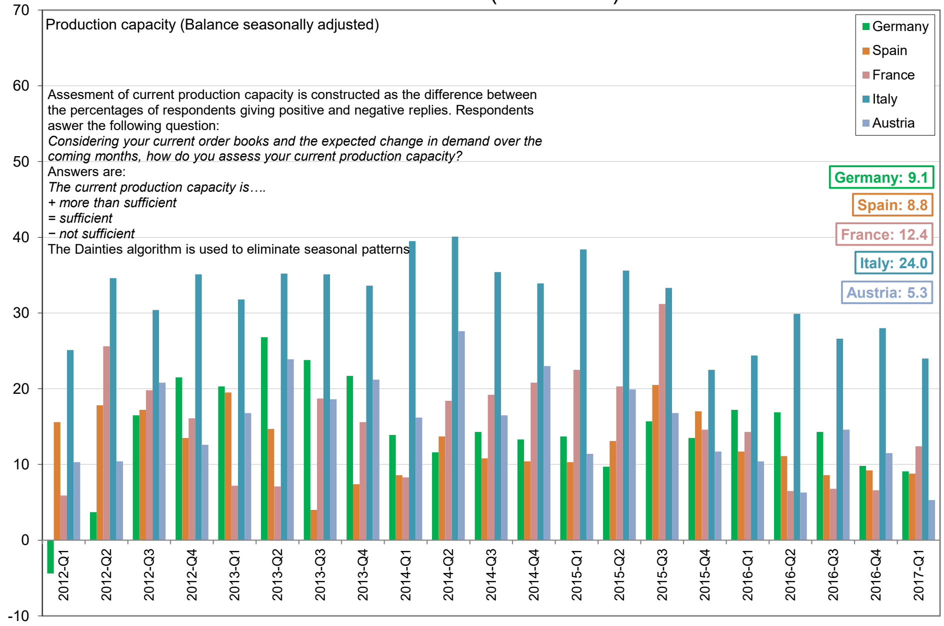
Production capacity and its utilisation in the investment goods sector
in the EU (2007-2017)



Capacity utilisation in the investment goods sector
of some top machine tools producers (2007-2017)



Production capacity in the investment goods sector
in the EU (2012-2017)

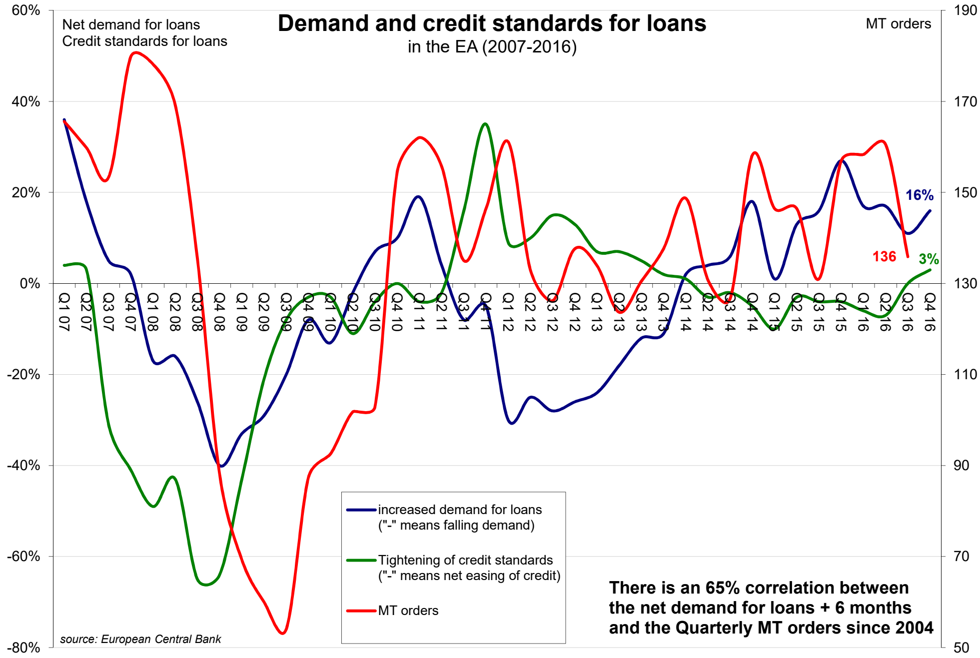


2.7 Bank lending survey

Euro area banks continued to further reduce their rejection rate for loan applications from enterprises at a -5% net rate in the fourth quarter of 2016, which follows declines of -7 and -4 net percentages in the two previous quarters. This was mainly due to the competitive pressure, but also somewhat to the banks' lower cost of funds and the decrease of balance sheet constraints. Across the large EA countries, the share of rejected applications for loans to enterprises decreased in Italy, Spain and the Netherlands, while it remained unchanged in Germany and picked up in France. Broadly in line with expectations, the overall credit standards of banks of the EU19 on loans to enterprises experimented the first tightening in net terms (3%) since the fourth quarter of 2013. However, that 3% is largely the result of the large tightening on credit standards to enterprises reported in the Netherlands (34%), as the indicator remain mostly unchanged in the majority of euro area economies. That being said, banks in the EA as a whole expect to continue easing their credit standards applied to the loan approval for enterprises (-2% in net percentage) during the first quarter of 2017.

As expected, the net demand for loans to enterprises kept increasing during the fourth quarter of 2016 but at a slower path than foreseen. It registered a net percentage of 16%, following a 11% in the third quarter and a 17% rate in the second one. It is expected to rise further in the fourth quarter. Among the large euro area members, the loan demand by enterprises increased in Germany, France, Italy and the Netherlands, while it moved down in Spain. The most important underlying driver is the low interest rates environment.

See graph on next page



2.8 Foreign exchange rates

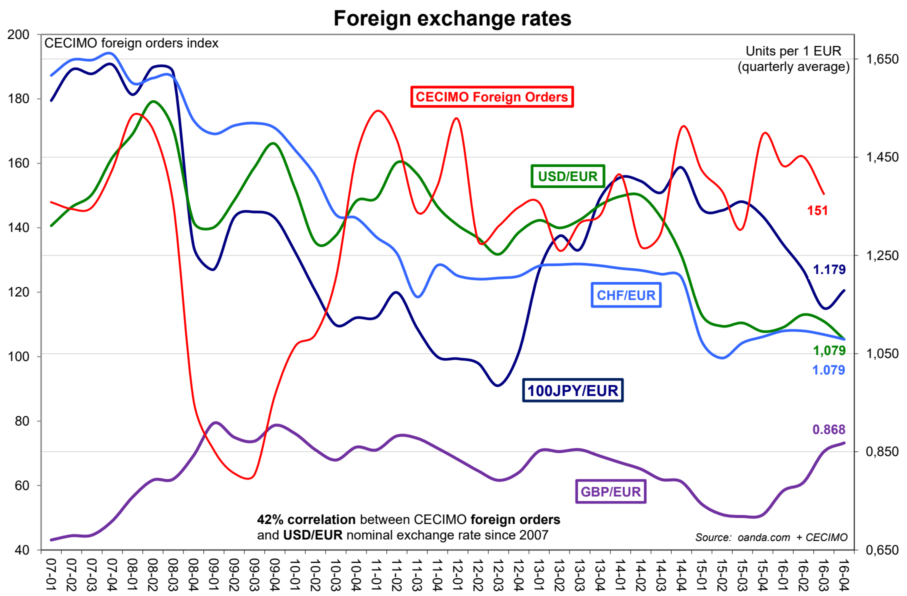
In December 2016, the euro kept depreciating vis-à-vis the US dollar. After a 1.5% depreciation against USD in October and 2.2% in November, the Euro Area currency weakened an additional 2.4% in December. Apart from this quarterly 6% depreciation against the US dollar, the euro also weakened 2.7% against the sterling in December, and depreciated against the Chinese renminbi and the Swiss franc by around 2% and 1% respectively in the last quarter of 2016.

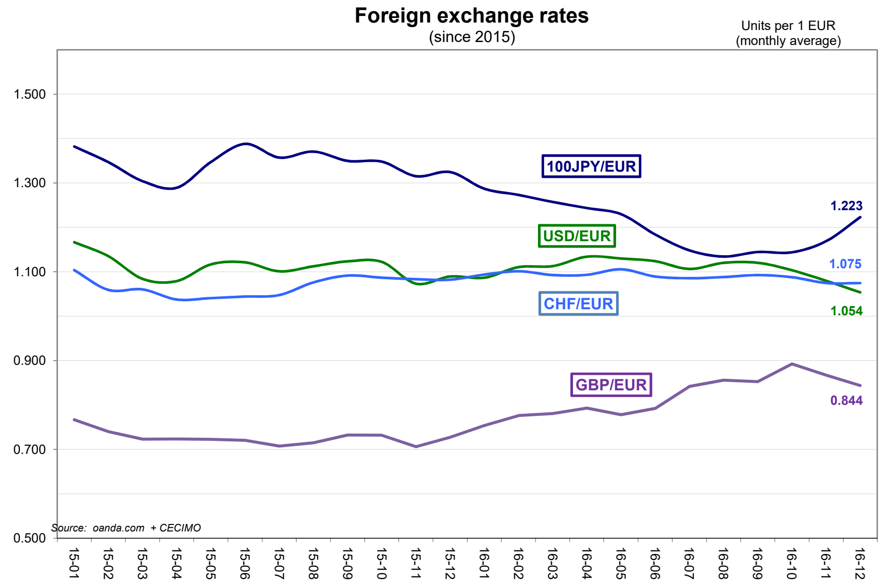
The dollar sharp appreciation following Trump's victory in the elections, held in November last year, is still ongoing as it hit 1.03 USD/EUR nominal exchange rate in mid-December. It is moving around 1.05-1.06. Market players see very likely that Trump puts in place the measures promised during the campaign, namely boosting investments and cutting taxes. The question remains how far the new administration will go in its expansionary fiscal policy.

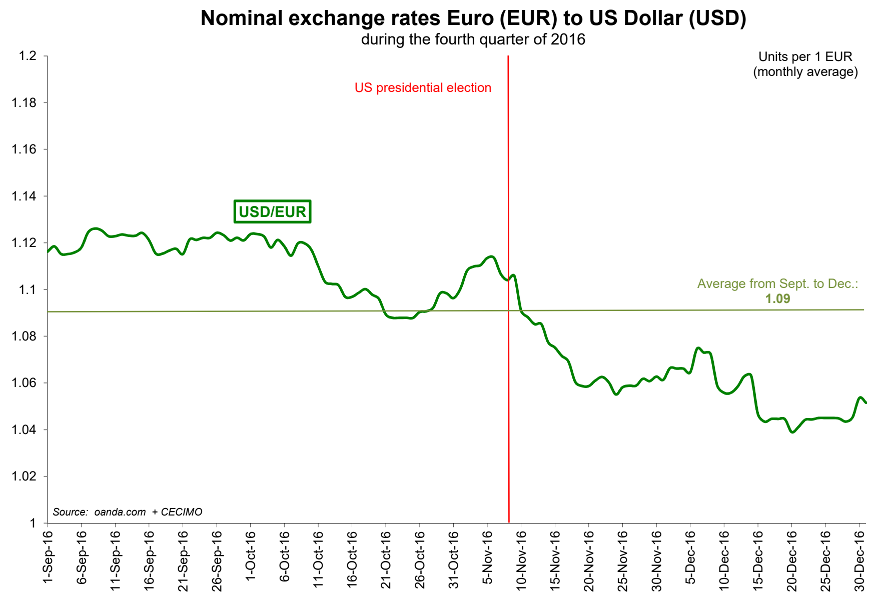
Among the risks of a very strong dollar, it is worth highlighting the much higher loan repayments some countries would face, notably emerging economies that borrowed dollars in abundance while the currency was weak. According to the Bank for International Settlements (BIS), governments and businesses outside America racked up $9.7trn of debts denominated in dollars by the end of 2015. Apart from these financial consequences, America trade deficit could be greater, which would make more likely the elected president to implement protectionist measures as a way of reversing that deficit.

The effects of Brexit vote over the sterling pound have been even higher than the trend experienced by the U.S. dollar following Donald Trump's victory last November. The sterling keep moving in historically low levels and it is one of the world's performing currencies over the year: in trade-weighted terms, sterling has depreciated by around 15% in 2016. The weak pound has not implied an increase of trade balance, as the United Kingdom registered in the third quarter the highest trade deficit since 2013. Apart from the fact that many exports are quality-based, many of the costs of the global supply chains are paid in foreign currency. Keeping it in mind, UK has to struggle to avoid economic stagnation or low rates of growth combined with high inflation.

See graph on next page


Foreign exchange rates
CECIMO foreign orders index
Units per 1 EUR
(quarterly average)
CECIMO Foreign Orders
USD/EUR
CHF/EUR
100JPY/EUR
GBP/EUR
151
1.179
1,079
1.079
0.868
42% correlation between CECIMO foreign orders
and USD/EUR nominal exchange rate since 2007
Source: oanda.com + CECIMO

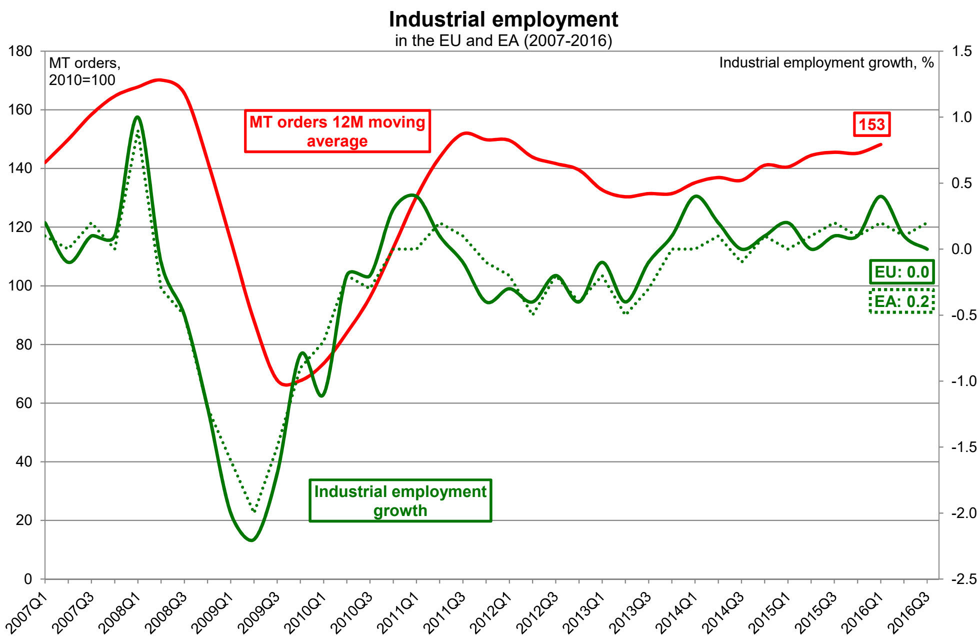

Foreign exchange rates
(since 2015)
Units per 1 EUR
(monthly average)
100JPY/EUR
USD/EUR
CHF/EUR
GBP/EUR
1.223
1.075
1.054
0.844
Source: oanda.com + CECIMO


Nominal exchange rates Euro (EUR) to US Dollar (USD)
during the fourth quarter of 2016
Units per 1 EUR
(monthly average)
US presidential election
USD/EUR
Average from Sept. to Dec.:
1.09
Source: oanda.com + CECIMO

2.9 Industrial employment

Industrial employment growth picked up in 2016 both in the EU and the EA. At the beginning of 2016, the European Union recorded the highest growth rate since the first quarter of 2014 (0.4%), and an even greater indicator for the manufacturing sector (0.5%). Besides, the EA registered its highest employment growth since the beginning of 2008. The employment continued to increase during the second and the third quarter at growth rates of 0.1-0.2%. The correlation between machine tool orders and the industrial employment is 50.5% in the EU and 55% in the Eurozone.

General employment growth kept strengthening in November 2016 both in the EU and the EA. The EU unemployment rate recorded 8.3% (versus 8.4% in October 2016 and 9% in November 2015), which is its lowest rate since February 2009. As for the EA, the November unemployment rate was 9.8%, down from 10.5% in November 2015. The differences across the EU are quite significant though: from values close to 4% in Germany and Czech Republic to 12% in Italy or 18-19% in Spain. Europe is still far from the below-5% US unemployment rate.

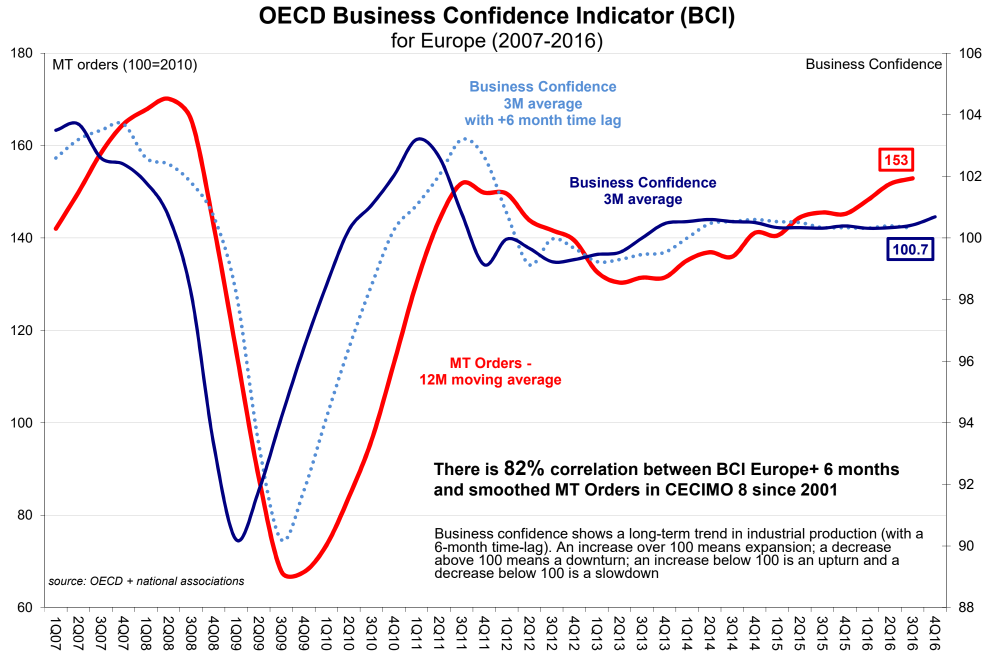


2.10 OECD Business Confidence Indicator for Europe ⓘ

Business confidence indicators (BCIs) keep showing an outlook for relatively stable growth in the OECD area and the Euro Area. In Europe, the BCI signals short term improvements in the United Kingdom but the uncertainty remains. It also points out that Germany and France are gaining growth momentum.

Among other developed countries, the BCIs confirm that the growth momentum improved in the United States and Canada.

Among major emerging economies, the BCIs picture an optimistic growth outlook for China, Brazil and Russia, while the growth momentum in India is deteriorating a little.



2.11 European Commission Economic Sentiment Indicator ⓘ

In December 2016 the EC Business Climate Indicator significantly increased. The respondents see more clearly the good prospects for growth and it results in a rise of the BCI index by 0.38 points up to 0.79.

The marked upturn of confidence in industry, retail trade and among consumers is also reflected in the EC Economic Sentiment Indicator (ESI), which broke again its record of 2016 (+1.8 points to 109.1, 1.3 above the Euro area), in line with the trend recorded in the recent months but at a faster pace. The difference between ESI values in the Euro Area and the European Union is largely due to the improved sentiment in the largest European economies outside the Euro Area. The upward trend of the ESI is also confirmed in the UK: it registered an increase of 1.3 points, and it is its seventh monthly improvement in a row, after plummeting subsequently the Brexit referendum. The reading for France was 105.5 points (+2.0 points since November), while Germany also registered a positive development (109.6 points, +1.6 points since November). In the case of Italy, the index remained unchanged at 104.2 points in comparison with the previous month. The best BCI monthly growth was collected in Sweden: +3.7 points

Industry confidence in the European Union weighted 40 per cent in the calculation of the ESI and moved up 0.8 points from November to December. It was preceded by a strong downward trend throughout the year.

On the negative side, the improved readings do not seem to result in better expectations of employment in the industry.

▲ 2.12 Purchasing Managers' Index ⓘ

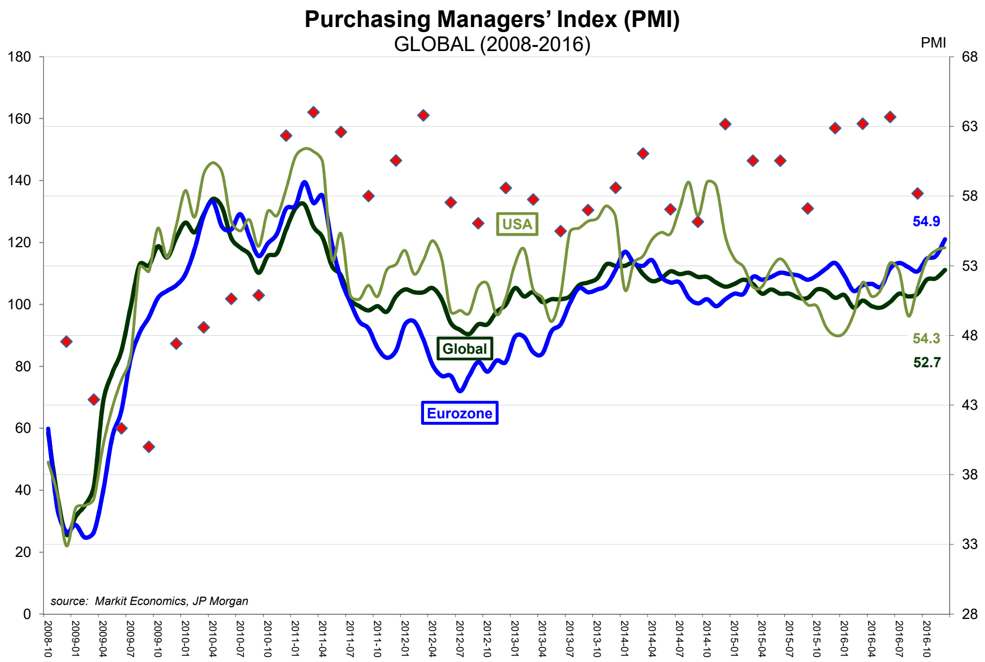
Global manufacturing keeps showing strength and posted again at a 27-month high of 52.1 in December, which is the highest value in two years.

European manufacturers ended the year on a solid note. The PMI index continues to signal expansion for the manufacturing sector in the Eurozone, and this time it has been doing it with the greatest value (54.9) since mid-2011.

The US manufacturers are also in expansion on the basis of their December PMI reading of 54.3 (up from 54.1 in November). They informed of higher prices and stronger hiring. Furthermore, in part due to the recent surge of the US Dollar, demand was mainly driven by domestic customers, while exports played a lesser role.

With regard to CECIMO countries, the manufacturing production in Germany scaled up in November (54.3) and even further in December (55.6). German companies expect a healthy growth throughout 2017. The more optimistic readings were in the Netherlands (57.3), Austria (56.3) and the United Kingdom (56.1). In the UK, orders from the domestic and foreign markets in the manufacturing sector expanded but, as explained more in detail in the section 2.3 of the present report, cost pressures -due to the weak pound- keeps making more expensive imports and the production taking place abroad.

In Japan the survey reveals the greatest improvement in manufacturing conditions since January, and the PMI index shows that ASEAN countries as a whole are at the no-change rate of 50 up from the the contraction area.



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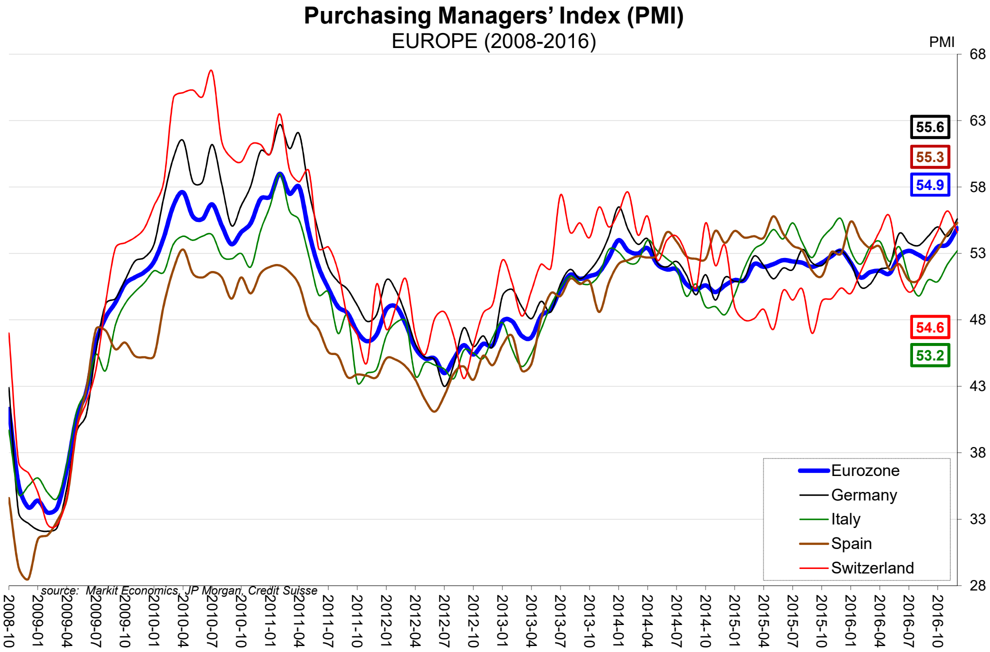
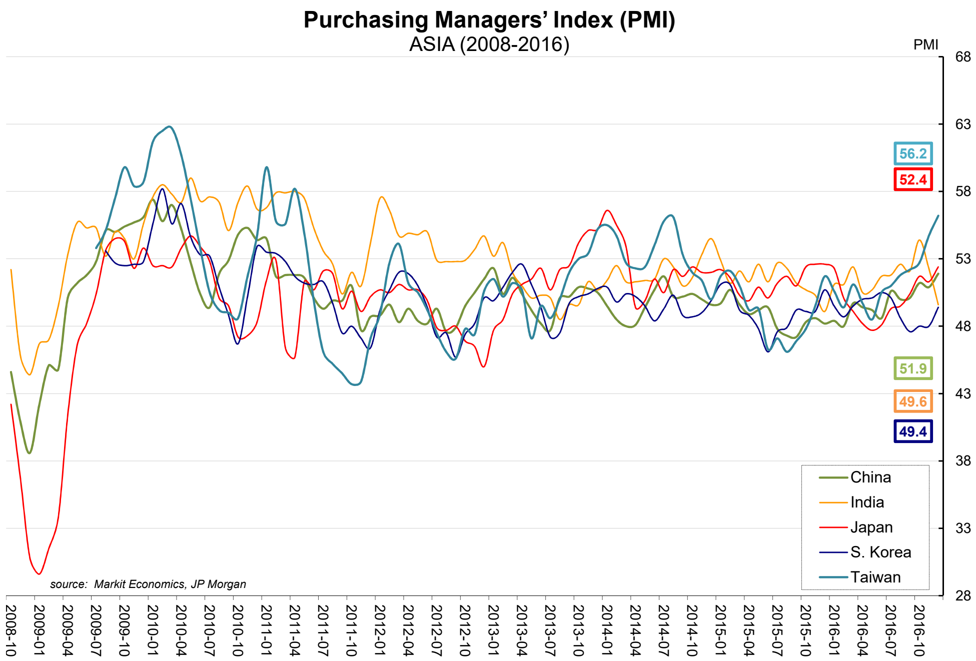

Purchasing Managers' Index (PMI)
EUROPE (2008-2016)
PMI
55.6
55.3
54.9
54.6
53.2
Eurozone
Germany
Italy
Spain
Switzerland
source: Markit Economics, JP Morgan, Credit Suisse


Purchasing Managers' Index (PMI)
ASIA (2008-2016)
PMI
56.2
52.4
51.9
49.6
49.4
China
India
Japan
S. Korea
Taiwan
source: Markit Economics, JP Morgan

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. Monthly data are calculated as averages of daily values from the banks with the highest volume of business in the euro area money markets.
http://www.euribor-ebf.eu/

2.4 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.
Industrial production is compiled as a fixed base year Laspeyres type volume-index. 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 Gross Fixed Capital Formation

The Gross Fixed Capital Formation (GFCF) consists of resident producers´ aquisitions, less disposals, of fixed tangible or intangible assets. This covers in particular machinery and equipment, vehicles, dwellings and other buildings. The GFCF is a key determinant of both aggregate demand and supply.
Source: Eurostat and ECB.

2.6 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

2.7 Bank lending survey

The bank lending survey is addressed to senior loan officers of a representative sample of euro area banks. Its main purpose is to enhance the understanding of bank lending behaviour in the euro area. The questions distinguish between three categories of loan: loans or credit lines to enterprises; loans to households for house purchase; and consumer credit and other lending to households. For all three categories, questions are posed on credit standards for approving loans; credit terms and conditions; and credit demand and the factors affecting it.
The responses to questions related to credit standards are analysed in this report by focusing on the difference ("net percentage") between the share of banks reporting that credit standards have been tightened and the share of banks reporting that they have been eased. A positive net percentage indicates that a larger proportion of banks have tightened credit standards ("net tightening"), whereas a negative net percentage indicates that a larger proportion of banks have eased credit standards ("net easing"). Likewise, the term "net demand" refers to the difference between the share of banks reporting an increase in loan demand and the share of banks reporting a decline. Net demand will therefore be positive if a larger proportion of banks have reported an increase in loan demand, whereas negative net demand indicates that a larger proportion of banks have reported a decline in loan demand.
http://www.ecb.eu/stats/money/surveys/lend/html/index.en.html

2.10 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. CLIs are calculated for 33 OECD countries (Iceland is not included), based on enterprises' assessment of production, orders and stocks, together with its current position and expectations for the near future.
These indexes are designed to anticipate turning points in economic activity relative to trend. 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. Turning points in the detrended reference series are usually found about 4 to 8 months in advance. 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. It is based on companies' assessment of production, orders, stocks and its current position and expectations. 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

2.11 European Commission Economic Sentiment Indicator

The Economic Sentiment Indicator (ESI) is a composite indicator made up of five sectoral confidence indicators with different weights: Industrial confidence indicator, Services confidence indicator, Consumer confidence indicator, Construction confidence indicator Retail trade confidence indicator. Confidence indicators are arithmetic means of seasonally adjusted balances of answers to a selection of questions closely related to the reference variable they are supposed to track (e.g. industrial production for the industrial confidence indicator). Surveys are defined within the Joint Harmonised EU Programme of Business and Consumer Surveys. The economic sentiment indicator (ESI) is calculated as an index with mean value of 100 and standard deviation of 10 over a fixed standardised sample period. Data are compiled according to the Statistical classification of economic activities in the European Community, (NACE Rev. 2). The industry confidence is weighted at 40 per cent in the calculation of the ESI. Source: DG ECFIN

2.12 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

Geographical information

CECIMO countries

The European Association of the Machine Tool Industries (CECIMO) bring together 15 national associations of machine tool builders from the following countries: Austria, Belgium, Czech Republic, Denmark, Finland, France, Germany, Italy, the Netherlands, Portugal, Spain, Sweden, Switzerland, Turkey and the United Kingdom.

Euro area (EA)

The euro area (EA19), also called Eurozone, consists of those Member States of the European Union that have adopted the euro as their currency. It includes Belgium, Germany, Estonia, Ireland, Greece, Spain, France, Italy, Cyprus, Latvia, Lithuania, Luxembourg, Malta, the Netherlands, Austria, Portugal, Slovenia, Slovakia and Finland.

European Union (EU)

The European Union (EU28) includes Belgium, Bulgaria, the Czech Republic, Denmark, Germany, Estonia, Ireland, Greece, Spain, France, Croatia, Italy, Cyprus, Latvia, Lithuania, Luxembourg, Hungary, Malta, the Netherlands, Austria, Poland, Portugal, Romania, Slovenia, Slovakia, Finland, Sweden and the United Kingdom.

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