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Working group on commodity prices and foreign trade

World Trade and Commodity Prices in 2015-2016

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By Daniela Fantozzi (ISTAT)* Michele Burattoni (Prometeia)**, Paavo Suni (ETLA)***

Members of the commodity prices sub-group:

BIPE: Bureau d'Information et de Prévisions Économiques, Issy-les-Moulineaux

ETLA: Research Institute of the Finnish Economy, Helsinki

GKI: Economic Research Co., Budapest

HWWI: Hamburg Institute of International Economics, Hamburg

IBRKK: Institute for Market, Consumption and Business Cycles Research, Warsaw

IfW: Kiel Institute for the World Economy, Kiel

INSEE: Institut National de la Statistique et des Études Économiques, Paris

Prometeia: Prometeia, Bologna

Observers:

ECB: European Central Bank, Frankfurt,

OECD - Steel Committee

Members of the world trade sub-group:

IBRKK: Institute for Market, Consumption and Business Cycles Research, Warsaw

INSEE : Institut National de la Statistique et des Etudes Economiques, Paris

ISTAT:Istituto Nazionale di Statistica, Rome

NIESR: National Institute for Economic and Social Research, London

NIER: National Institute of Economic Research, Stockholm

Prometeia: Prometeia Associazione, Bologna

Observers:

ECB: European Central Bank, Frankfurt

WTO: World trade organization

* Fantozzi@istat.it , ** Michele.burattoni@prometeia.com , *** Paavo.suni@etla.fi .

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Summary

The world Gdp growth is quite stable in yoy terms but the contribution of the emerging markets is fading: growth in China is the lowest since 2009, and several high frequency indicators anticipate weakness still to come. Brazil and Russia are in deep recession triggered by different reasons but sharing low commodity prices, depreciation of the national currency and high inflation, among the other causes. The economic activity in US and EMU is improving and the first half proved to be solid. Private consumption is the main driver in both countries while in Japan the second quarter was disappointingly gloomy, heavily influenced by the very bad performance of exports. Inflation remains low worldwide with few exceptions. The volatility in financial and exchange rate markets is quite high as witnessed by the turmoil following Summer problems and devaluation in China.

Import and export volumes are expected to slow down remarkably this year, with a modest recovery in 2016. This means a revision that for 2015 amounts to about 2.4 p.p. with respect to May forecasts, whereas for 2016 the current forecast is around 1.2 p.p. lower than that of May. For imports this result stems from the combination of an unchanged forecast for the advanced economies and a huge downward revision of the emerging countries demand: within the group of advanced economies the upward revision for the Euro area trade offsets a lower growth for the other countries. Euro area is forecasted to gain market share, likely at the expenses of the emerging countries, given the mixed results for the other advanced countries. The huge decline of commodity prices, low inflation, strong dollar, mean also a decline in prices of traded goods around -3.8% in 2015. A more stable landscape for commodity and dollar exchange rate and a recovery in world economic activity will push the good prices to a positive growth in 2016.

Most risks are on the downside. The emerging countries growth is low by historical standards and is further threatened by the possible outflows of financial assets that could follow the coming liftoff in US interest rates. Moreover the possible worsening of the cyclical position of the Chinese economy poses risks for world demand for exporters and commodity prices although it is not clear the effect of low commodity prices in the balance between net exporters losses and net importers gains. A contagion from emerging economies to advanced ones in term of weakness via trade and financial channels cannot be completely ruled out. Deflation risks (the inflation for many countries is low or negative and in the pipeline there are low energy and commodity prices and output gaps) deserve a mention.

World commodity prices peaked on aggregate already in the second quarter of 2011 at all-time-high and have since declined. The price peak was achieved quickly after the sharp price drop in the crisis boosted by the exceptionally strong stimulus of public Chinese investments including commodity intensive activities in particular. The recovery of industrial countries boosted by strong stimulus to kick-start the economies affected also positively on prices. The record price has proven to mark a substantial change to lower prices in the commodity markets. The turn-around was related to the declining growth of China and recessionary developments in the EU, which dampened the growth of demand for commodities. In addition to cooling

demand, the recent price decline was in many cases, especially metals and energy, also reinforced by the increasing capacity and supply like in cases of crude oil and iron ore due to new investments. The decline of non-energy commodities aggregate price started after the peak contrasting to oil prices, which begun the strong decline not until June 2014. Prices of non-energy commodities will decline this year by 19 and crude oil price by 45 per cent.

Non-energy commodity prices and crude oil prices are forecast to bottom in winter 2015-2016 after sharp declines. Price development is, however, expected to be rather flat in both cases. Non-energy commodities get some strength in many cases about decreasing supply and mildly improving demand. Iron ore is, however, an exception as low-cost producers are increasing their production strongly to win market shares. The case of crude oil is a bit similar to the iron ore as low-cost OPEC aims to increase its market share with lower prices to decrease the high-cost shale oil production. In the forecast, the oil price is expected to fluctuate around the current values of 50-55 USD/bbl, as an expected decrease in shale oil production will be compensated by a similar increase in Opec production, particularly from Iran and Iraq.

World Trade and Commodity Prices in 2015-2016

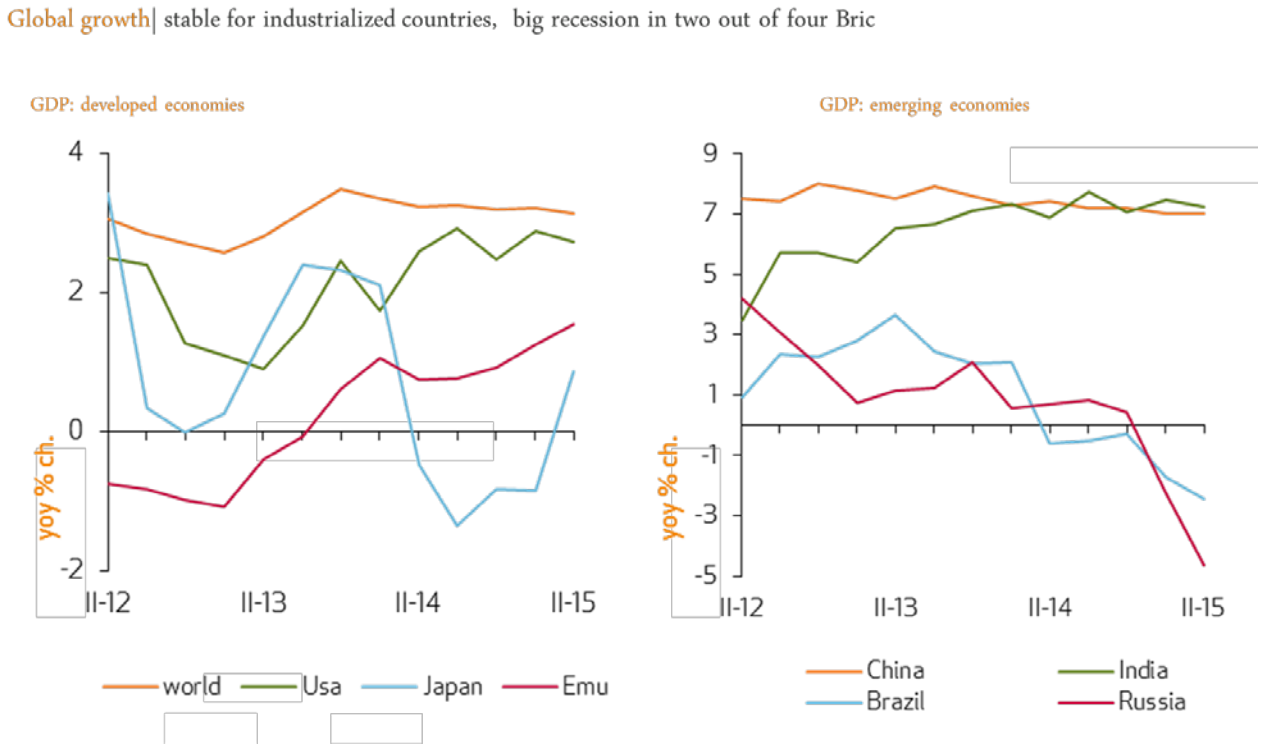
1. General overview and assumptions

1.1 Recent developments in the world economy

Global growth declined in the first half of 2015, reflecting a further slowdown in emerging markets and a weaker recovery in advanced economies.

In the second quarter of 2015, world GDP growth had a little decrease in q-o-q terms from 0.7 per cent in the first to 0.6 per cent implying little decrease in y-o-y terms from 3.2 per cent to 3.1 per cent. Emerging countries have contributed to this deceleration (4.2 and 4 per cent respectively in q1 and q2, y-o-y) while industrialized countries in part have offset the slowdown (1.9 and 2 per cent respectively in q1 and q2, y-o-y). However growth in advanced economies in the first half of 2015 remained modest.
The aggregate picture shows heterogeneous dynamics for Japan respect to USA and Eurozone; and underlies a dynamic in pair for China and India from the upside and Brazil and Russia from the downside of emerging countries.

Figure 1. Global GDP Growth



Source Prometeia: calculations on national data

According to the "advance" estimate released by the Bureau of Economic Analysis U.S. economy increased 1.5 percent in the third quarter of 2015, a slowdown respect to the second quarter (3.9 percent annual rate). Consumption, which account for 70% of economic activity, are nevertheless soared by 3.2%, a step in turn lower than the 3.6% chalked up in the previous three months robust but still considered solid. Towing has fallen to durable goods such as cars, rose by 6.7 percent. The heavier weights, however, was the drastic

reduction occurred in stocks of companies, a factor that, if the company warehouses are now available again thanks to a climate of greater confidence, along with the estate by consumption leaves hope for improvements. Manufacturing production increased at a robust and accelerated pace in October, with the rate of expansion the fastest for seven months (at 54.1, up from 53.1 in September, the final seasonally adjusted Markit U.S. Manufacturing Purchasing Managers' Index™) (see Figure 2). This reflected a reasonably strong upturn in new business volumes during the latest survey period. This scenario would allow the Federal Reserve to judge the recovery ready for the first rise in interest rates at a summit in mid-December, when it will consider a monetary policy tightening.

Nevertheless, growth in the United States was weaker than expected, despite a strong second quarter. This reflected setbacks to activity in the first quarter, caused by one-off factors, notably harsh winter weather and port closures, as well as much lower capital spending in the oil sector. Despite weaker growth, the unemployment rate declined to 5.1 percent at the end of August, 0.4 percentage point below its February level (and 1 percentage point below the level a year ago).

Eurostat's second release of Euro area GDP growth in second quarter 2015 confirmed expectations of a moderate but solid expansion (+0.4% after +0.5% in Q1, q-o-q). Primarily driven by domestic demand, growth is set to accelerate in 2015 with stronger-than-expected growth in Italy and especially in Ireland and Spain offsetting weaker-than-expected growth in Germany.

Improving labour market conditions are expected to maintain growth of consumption expenditure at a solid pace, by both private (+0.4%) and public consumption (+0.3%) expanded at a solid pace in the second quarter. Investment is expected to accelerate, but only slowly, mainly because construction investment remains a drag in many countries (Italy and France). Total investment decreased by -0.5% in the second quarter 2015. Exports (+1.6%) grew faster than imports (+1.0%); the contribution of net exports to real GDP growth was positive (0.3 pp).

The moderate Euro area recovery is projected to continue in 2015–16, sustained by lower oil prices, monetary easing, and the euro depreciation. At the same time, potential growth remains weak—a result of crisis legacies, but also of demographics and a slowdown in total factor productivity that predates the crisis. Hence the outlook is for moderate growth and subdued inflation. Nevertheless the business surveys corroborate prospects moderately favorable: in September, the composite index of purchasing managers (PMI) area firms remained well above the threshold (52) compatible with an expansion in economic activity while the growth rate of the Eurozone manufacturing sector ticked higher in October (52.3), as the final PMI data for output, new orders and employment all came in stronger than the earlier flash estimates (see Figure 2).

At its meeting in early September, the Governing Council of the ECB has increased to 33 percent the maximum limit for affordable single issue of securities of the public sector (from 25 initially planned). The Board estimates that the downside risks for inflation and economic activity have increased as a result of developments in the global markets. It is ready, if necessary, to modify the size, composition and duration of the program purchase of securities. Overall, the cash held by banks with the Eurosystem in excess of the required, is helping to keep money market rates at very low levels. The expansive operations conducted by the ECB continued to support the flow of credit to the private sector and reduce the cost.

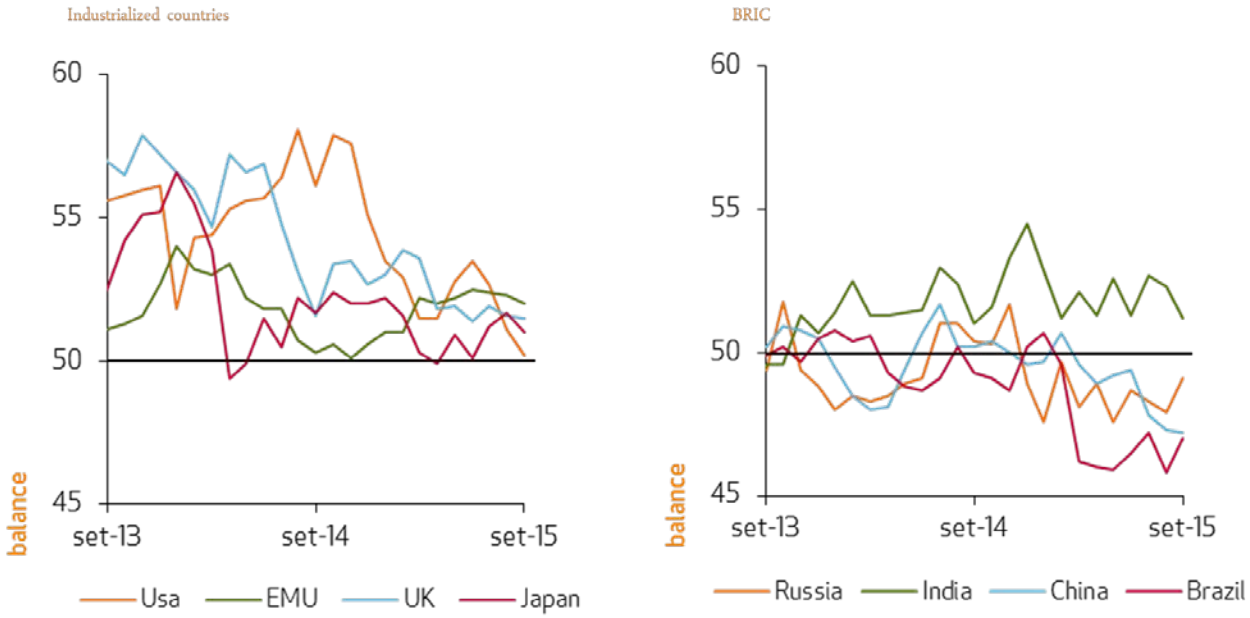
In the **United Kingdom**, GDP expanded at an annualized rate of 2¼ percent in the first half of 2015, with the unemployment rate now back near its pre-crisis average of about 5½ percent.

In **Japan**, a strong rebound in the first quarter was followed by a drop in activity in the second quarter. Over the first half of the year, consumption fell short of expectations and so did net exports. Exports declined substantially in the second quarter.

Japan's Q2 figure registered a drop in GDP by 0.3% on a quarterly basis. On the other hand, Q1 estimates were revised upward, with an annualized quarterly growth at 4.5%, up from previous 3.9%. Once again, the negative contribution came from domestic demand, with consumption decreasing by 0.7% QoQ, cutting

growth by 0.4%. Also foreign demand weakness weighed down on Q2 growth, with a contribution to net exports worth -0.3%. The capex contribution was negative as well, but with only a correction of -0.9% after the strong rebound in Q1 (2.8%). A positive signal came from the real estate sector with a 1.9% QoQ growth from previous 1.7%. The productive system suffers a stagnation of internal and external demand, due to China's slowdown, Japan's second commercial partner, coupled with domestic consumption weakness. The combination of raw materials' prices drop and yen's strength on the dollar, are increasing the risk of Bank of Japan missing its inflation target. This could induce it to decide on an intervention. Back to accelerate the expansion of manufacturing in Japan, remaining well above the threshold of 50 that separates growth from recession, the final reading of the index PMI compiled by Markit/Nikkei relative to October was in fact 52.4 points, slightly worse than the preliminary figure of 52.5 points, but up significantly from 51.0 points registered in September (and to 51.7 points in August, better reading of the previous six months). The figure, which is the best of the last year, is also higher than the 52.1 points of consensus. From August new orders accelerated, reaching the second highest growth rate of the year. A negative note comes from slowdown in new orders intended for export, with businesses registering diminishing volumes exported to China. As for prices, the survey highlighted a contraction in input prices for the first time since November 2012, due to falling raw materials' prices and in particular, oil. Output prices, on the other hand, are growing, with a change in direction.

Figure 2. Global economy: PMI Industrialized vs Bric



Source: Thomson Reuters

In the first half of 2015 the growth of the Chinese economy slowed to 7.0 percent year on year, from 7.3 on average in 2014, in line with the objectives defined by the government as part of the transition to a model development more balanced: the moderation in GDP growth rates is accompanied by an improved quality in its composition. Starting in 2014, China changed from being a system with strong capital inflows, accompanied by an increase in Central Bank currency reserves, to being a system with capital outflows and reserve decumulation, necessary to prevent an excessive depreciation of the Yuan. Despite the surplus in

current accounts, a capital and investment outflow was registered, only partly balanced by incoming investments in services' sector.
In July Industrial Production registered a brusque slowdown, from 6.8% in June to 6.0% YoY. Also a strong decrease in auto production (-11.2% YoY, corrected from 0.2% YoY) was registered, with auto production contracting by 26.3%, due to weak demand. While the adjustment phase is evident in the industrial sector and the real estate crisis, there is a favorable context for the tertiary sector, that in 2014 contributed by almost 50% to GDP growth. Specifically, the industrial sector continues to suffer from excessive productive capacity, connected to the adjustment process in the real estate sector and the deceleration in export growth. The services' sector is instead growing, in particular financial services.

For most emerging market economies, external conditions are becoming more difficult. Volatility in the financial markets and international currency - reduced in July after an agreement between Greece and European leaders - rose rapidly from mid-August, with the spread of fears of a sharp slowdown in the Chinese economy and its repercussions the rest of the world.
These fears have been exacerbated as a result of the sudden decision of the Chinese authorities to change the system for determining the exchange rate and simultaneously to devalue the renminbi against the dollar, and as a result of the new fall in share prices in the country. The events in China have triggered significant losses on the financial markets of developed countries and other emerging economies and led to a sharp depreciation of the currency in the countries producing raw materials. This is reflected in weakening commodity prices (especially those for metals) and weak exports to China.
Hence, the slowdown is not just about China, but also activity in some advanced and emerging market economies in east Asia—such as Korea, Taiwan Province of China, and economies of Association of Southeast Asian Nations (ASEAN) members—was also a bit weaker than expected, reflecting lower exports but also a slowdown in domestic demand. The international institutions have revised down growth prospects for most developing countries and there have been substantial outflows of capital from their stock and bond markets: according to forecasts Institute of International Finance in 2015 net flows of capital into emerging markets may be negative for the first time since 1988.

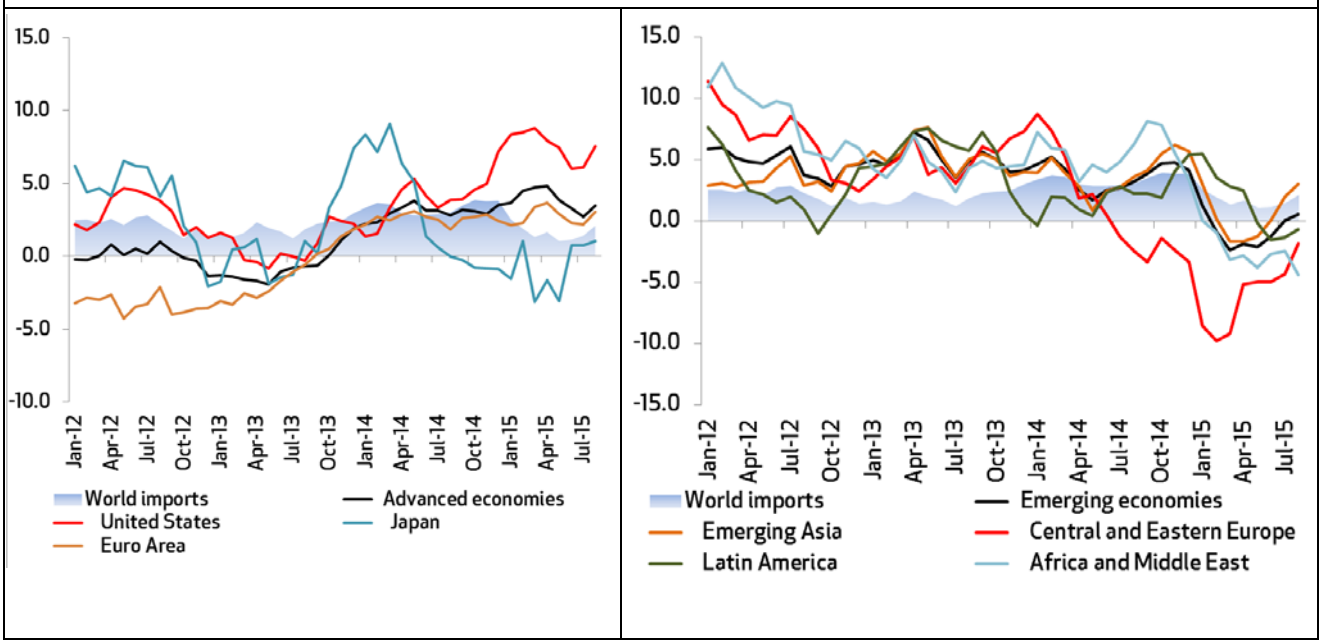
In Latin America, the downturn in Brazil was deeper than expected, and with declining commodity prices, momentum continues to weaken in other countries in the region. Growth was also lower than expected in Mexico, reflecting slower U.S. growth and a drop in oil production.
The decline in GDP in Russia over the first half of 2015 was somewhat larger than forecast, and the recession in Ukraine was deeper than previously forecast, reflecting the ongoing conflict in the region. Finally, macroeconomic indicators suggest that economic activity in sub-Saharan Africa and the Middle East also fell short of expectations, affected by the drop in oil prices, declines in other commodity prices, and geopolitical and domestic conflicts in a few countries.

1.2 Recent trends in world trade

After the sharp drop recorded in the first quarter, world trade has stagnated in the second. Foreign trade in emerging Asia continued to suffer from weak flows of China, while in advanced economies the growth in trade has been supported by the euro area and the United States.

According to the last release of CPB, August data on real world trade (volumes s.a.) show a further decline around 0.5% on the previous month after a similar result in July. In yoy terms growth is rapidly decelerating from an average of 3.3% in 2014 to less than 1% in August. As a whole global trade volumes in the first 8 months of 2015 grew only by **1.7%** with respect to the same period of 2014. The poor performance of world

Chart 3,4: world gdp, yoy % chg.



trade could be attributed mainly to the lack of demand coming from the emerging markets. As a whole this

group of countries posted for the imports a **-1.7%** in August yoy but also the exports are declining at a pace around **-2.1%.** Because of the volatility of monthly trade figures, moving average (momentum) is the preferred measure of trade growth. According to data on import by industrialized and emerging countries with data smoothed by a 3 month m.av. (chart 3 & 4) there are signals that the bottom of the cycle was already reached but it is still apparent the very different cyclical position of industrialized countries compared to the emerging ones, still growing barely above zero. Problems were quite widespread but the recovery seems to involve most of the emerging areas excluding Africa and Middle East who are still suffering the loss of income due to low oil prices. The very negative growth rate for Eastern countries is mainly determined by the collapse of Russian Federation imports. Overall import and export momentum surged in emerging Asia. Among advanced economies, the largest accelerations occurred in Japan

Chart 5: contribution to world imports (Jan-July 2015 on the same period 2016, p.p.)

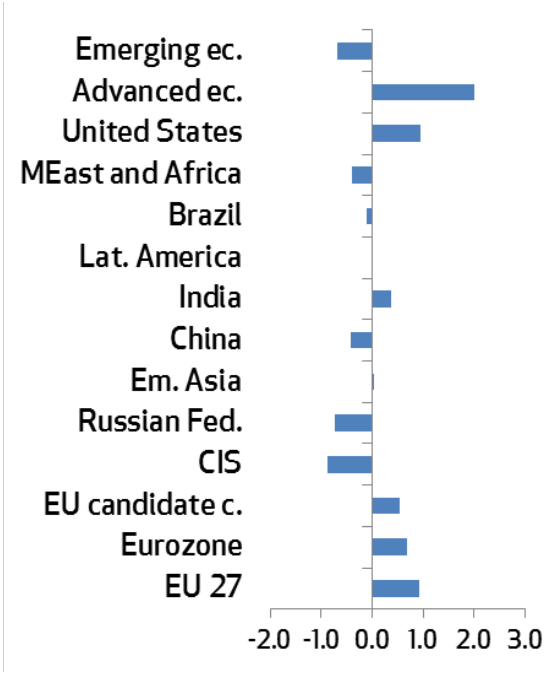
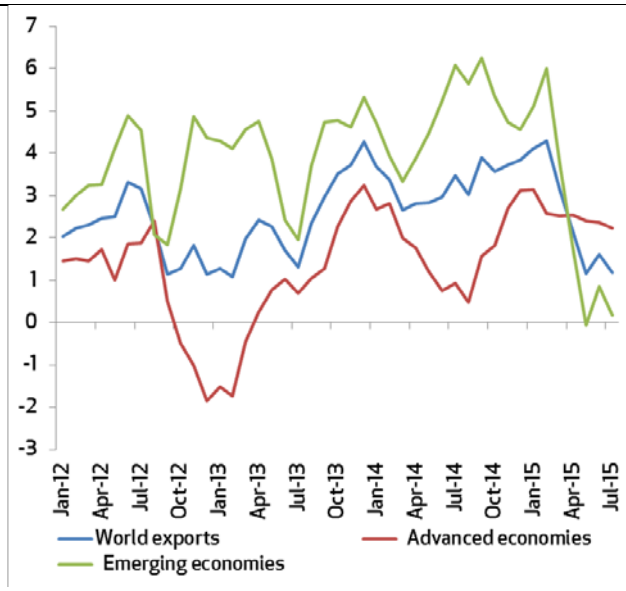


Chart 6: world exports (yoy %chg)



Referring to the average of the first 8 months of the year, the contribution to growth of imports (chart 5) was negative for emerging countries as a whole, with China, playing the main role, and ME, Africa and Russia, in other words big commodity producer, in the group of worst performers. The main positive contribution to growth came from US, and from EMU. Moreover, for the latter, intra area trade partly shielded the member countries from the declining trend in the emerging countries demand. This is quite evident on the export side of world trade. As shown in chart 6 the export growth for the advanced economies was quite stable in the first part of 2015 sustained by the buoyant intra-EU trade. Growth of Japanese exports, for which emerging markets represent a share around 65% of total export, and of the US exports is along a declining trend since the beginning of the year.

As far as WTO is concerned, much attention has been paid to the fact that the rough two-to-one relationship that prevailed for many years between world trade growth and world GDP growth appears to have broken down, as illustrated by the fact that trade and output have grown at around the same rate for the last three years. Nevertheless the ratio of world trade growth to world GDP growth (referred to as the "income elasticity of world trade") fell drastically over the last two decades. A lower global trade elasticity does not imply a lower world trade/GDP ratio but these facts probably suggest a combination of cyclical and structural factors at work behind the trade slowdown, including adverse macroeconomic conditions, the maturation of global supply chains, and the accumulation of post-crisis protectionist measures.

1.3 Main assumptions and forecast risks

The **global growth** forecast for 2015 and 2016 have been revised downwards since the release of May 2015. So the outlook is weaker than the one in the May. Global GDP growth for 2015 is expected by 3.0%, a growth rate quite lower than forecasted in May 2015 (-3.6%). It also shows a slowdown compared to 2014 (3.3%). The 2016 global GDP forecast has been revised sharply downward by 0.7 pp. compared to the projections of May 2015.

However a recovery is expected in 2016. The global GDP is predicted to grow by 3.4 percent, 0.4 pp. higher compared with 2015 forecast (see Table 1).

The decline in growth this year reflects a further slowdown in emerging markets, partially offset by a modest pickup in activity in advanced economies—particularly in the Euro area. While the sizable pickup in projected 2016 growth reflects stronger performance in both emerging market and advanced economies.

The outlook for 2015 and 2016 in Eurozone, has brought to a one decimal point of difference for each, while for US and Japan downward revision for each year is quite higher.

Growth in the United States and Japan was weaker than expected in May, while growth in China this year was broadly in line with previous forecasts (see Table 1).

Compared to that disclosed last May by the Working group, growth prospects in **Eurozone** have been revised marginally downward in 2016, mainly due to the weaker expansion of trade with emerging countries and turbulence on the currency and financial markets. The moderate Euro area recovery is projected to continue in 2015–16, sustained by lower oil prices, monetary easing, and the euro depreciation. We expects a slight depreciation of the bilateral exchange euro/dollar for the next two years (1.11 in 2015 and 1.098 in 2016). Hence the outlook is for moderate growth and subdued inflation.

The recovery is expected to continue in the **United States**, supported by lower energy prices, reduced fiscal drag, strengthened balance sheets, and an improving housing market. These forces are expected to more than offset the drag on net exports coming from the strengthening of the dollar. As a result, growth is projected to reach 2.5 percent in 2015 and 2.7 percent in 2016.

In **Japan** GDP growth is projected to rise from –0.1 percent in 2014 to 0.7 percent in 2015 and 1.2% in 2016. The gradual pickup reflects support from higher real compensation and higher equity prices due to the Bank of Japan's additional quantitative and qualitative easing, as well as lower oil and commodity prices.

While a sharp appreciation of the yen/dollar exchange rate is set in 2015 (from 105.9 in 2014 to 121.2 in 2015 Yen/ US $). This trend is expected to continue for 2016.

GDP growth in **China** is expected to remain at + 6.9 percent in the year, and to have in 2016 a slowdown of three percentage points compared to last spring forecast (see Table 1).

Previous excesses in real estate, credit, and investment continue to unwind, with a further moderation in the growth rates of investment, especially that in residential real estate. The forecast assumes that policy action will be consistent with reducing vulnerabilities from recent rapid credit and investment growth and hence not aim at fully offsetting the underlying moderation in activity. The decline in stock market valuations is assumed to have only a modest effect on domestic consumption (reflecting modest household holdings), and the current episode of financial market volatility is assumed to unwind without sizable macroeconomic disruptions.

World trade volume has been revised significantly downward than forecast in May 2015. In particular, it provides a sharp deceleration in 2015 (1.5%) compared to 2014 (3.1%) and a fairly sustained recovery for 2016 (3.3%). Weak investment worldwide, particularly in mining, as well as the trade spillovers of China's growth transition, has likely contributed to this slowing.

A pickup in trade is forecast for advanced economies. For emerging markets import and export growth is projected to increase, sustained by higher oil exports from the Middle East and the pickup of domestic demand in advanced economies.

Table 1. Global assumptions

	May 2015 (% change or level)			**October 2015** (% change or level)		
	2014	**2015**	**2016**	**2014**	**2015**	**2016**
Global GDP	3.5	3.6	4.1	3.3	3.0	3.4
US GDP	2.4	2.9	2.9	2.4	2.5	2.7
Euro Area GDP	0.9	1.4	1.7	0.9	1.5	1.6
Japan GDP	0	1.0	1.3	-0.1	0.7	1.2
China GDP	7.4	6.9	6.7	7.4	6.9	6.4
USD per EURO	1.33	1.11	1.10	1.3	1.1	1.1
Yen per USD	111.7	121.1	119.4	105.9	121.2	124.0
Brent (USD/b)	100.8	65.1	73.4	99.3	55.0	52.8
Other raw material prices (USD)	13.8	3.7	21.2	-4.3	-19.0	-2.1
World trade*	3.3	4.4	5.3	3.1	1.5	3.3

*The growth rate of world trade is calculated as the average of the growth rate of world import and export volumes

Oil prices and non-oil commodity prices in dollar terms are also significantly lower than in the Spring forecast (see next section for details). The oil price drop was driven mainly by surging production in North

America, although falling demand in emerging markets also played a part. Hence in commodity exporters, the near-term outlook has deteriorated with lower oil prices and commodity prices more broadly.

Several risks to the forecast have to be taken into account. In particular emerged **downside risks**, connected with the recent Asian financial turmoil and the slowdown of emerging economy.

Volatility in the financial markets and international currency - reduced in July after an agreement between Greece and European leaders - rose rapidly from mid-August, with the spread of fears of a sharp slowdown in the Chinese economy and its repercussions the rest of the world.

The possible global repercussions of a generalized slowdown in emerging market and developing economies depicts a scenario that includes the materialization of a number of risks as a slowdown in investment and growth across emerging market economies, more severe in faster-growing economies such as China and India. Vulnerabilities and financial stability risks in **emerging market economies** have likely increased amid lower growth, exchange rate depreciation across emerging market economies, recent commodity price declines, higher risk premiums and increased leverage after years of rapid credit growth.

US GDP growth could disappoint if tighter monetary conditions and lower oil prices choke off investment, including in the energy sector. Any shortfall in the **US** performance would leave few alternative sources of rising import demand.

In some advanced economies, especially in the Euro area, demand continues to be relatively weak, and output gaps are still large. Hence, the risk of a protracted **shortfall of domestic demand** associated with excess saving will remain a concern.
At the end of September emerged a factor of uncertainty resulting from possible effects of manipulation of tests on diesel engine emissions, that has undermined the credibility of the German automaker Volkswagen and it is reflected on the confidence climate about the prospects of growth in Germany. The effects, yet difficult to quantify, will depend on a possible impact on the car industry and on related industries, sectors that have contributed significantly to the cyclical recovery in euro.
Inflation in the Euro area is expected to stay below target beyond the usual monetary policy horizons, and **deflation risks** remain elevated amid crisis legacies and constraints on monetary policy at the zero lower bound. Advice Steering the European Central Bank is ready, if necessary, to use all the tools available.

Tensions in Russia and Ukraine, in the Middle East, and parts of Africa with serious consequences for energy and other commodity markets, remain a toll on confidence.

In regard to **upside risks,** lower oil and commodity prices could have a stronger impact on demand than currently expected. They could boost global GDP and trade going forward if their positive impact on net

importers of these products outweighs the negative impact on net exporters. In particular, in commodity importers, the windfall gains from lower commodity prices from more persistent supply improvements would lower costs and increase real incomes, which should boost spending and activity.

2 World trade outlook

2.1 Import volumes and prices

The Group made a substantial downward revision of import growth rate for both 2015 and 2016 compared to the forecast made in May. For 2015 the revision amounts to 2.4 p.p. while for 2016 the current forecast is 1.2 p.p. lower than that of May. (table 1, appendix)

This result stems from the combination of a substantially unchanged forecast for the advanced economies as a whole and a huge revision of the emerging countries demand . A stronger euro area import growth (5.1% vs 4.3%) is offsetting the worsening for the other advanced economies while for the emerging markets the trade weakness is that is expected to decline 0.6% against a strong growth around 4.6 in May. This means also that the formerly expected acceleration in 2015 with respect to 2014, will be replaced by a further deceleration, and only in 2016 a new increase in the growth rate is projected to be feasible.

In view of the deceleration of the World GDP, the elasticity of import to GDP is set to decline further from 0.9 in 2014 to 0.7 in 2015 and then to revive a bit in 2016 (1.2), but still very low in historical comparison. As already discussed in the previous WTG report, this low elasticity is, at least partly, probably a new feature of the world trade, implying than the pre-crisis elasticity level will be hardly reached in the future. In this particular cyclical phase, the collapse in the emerging markets can help to explain the collapse of elasticity. Emerging countries trade is often characterized by a high content of imports for unity of export with high level of intra-emerging areas trade. This means that wherever a decrease in demand starts it could spread in these areas at a fast pace with minor impact on the net trade. National accounts in many Asian countries for instance show a contemporary collapse of both import and export while GDP growth remains roughly unchanged.

In the latest months many elements have contributed to the decline in the demand for the emerging countries. The decline in the price of commodities, which represent a very important source of income for most of the emerging countries (spanning from 87% of total exports of M.East to 70% of CSI and Sub Saharian Africa and about 40% of Latin America) and the worsening of term of trade heavily hit the purchase power of national operators. The exchange rate reshuffling in August

in many cases increased this loss of purchase power. In Brazil and Russia (let aside le sanctions and countersanctions) a deep recession with high inflation and restrictive monetary policy is still ongoing and last but not least the Chinese economy is slowing down.

Many of these weaknesses are expected to continue to affect the emerging countries albeit with a smaller intensity. The Chinese slowing expected to extend next year, will contribute to soften any commodity prices recovery and to limit goods demand coming from that country. Brazil and Russia recovery will not be complete in the forecast horizon. Given the trade structure Latin America imports are expected to stall, while those of Central Eastern Europe could fall by 3.9% in 2015 because the projected -24% of Russian federation, notwithstanding the huge growth of Poland, Hungary and Czech R. imports spurred by the domestic demand and export in Europe. An incentive to import that could have already played some important role in the recent rebound is the low price of goods becoming really interesting also for stock building purposes.

Among the industrial countries, as told, EMU imports are expected to grow by 5.1% thanks to the intra-area trade and a positive (although not buoyant) domestic demand development. The upward revision for the area (.8 p.p. with respect to May forecast) is shared by most of the countries with the few exceptions related to the negative cycle: Finland, Greece, Austria. The rest of industrialized countries are revised downward, the main difference coming from Japan, whose currency devaluation and mild recovery is expected to dampen import demand, net commodity exporters (Australia, Norway) sharing the same fate as commodity exporters within the emerging countries group but maybe at a lower intensity and Nordic European countries.

2.2 Import and Export Prices

Import and export prices are expected to decline around 4 per cent on average in 2015. The huge decline in prices of commodity weighting around 30% of the world trade in goods is the main driver for this decline, reinforced by the appreciation of the dollar vis à vis Euro and Yen and also vis à vis most of the emerging countries. The different intensity of decline of import and export prices among the countries broadly follows the composition of trade, with net importers of commodities enjoying stronger decline. The stabilization of oil and raw material prices together with that of the dollar exchange rate will add less deflationary pressure in 2016 while some pressures on salaries in emerging market (namely China) will likely put some further pressure in the opposite direction. 2016 prices are expected to have a little growth.

2.3 Export volumes

Export volumes are expected to grow by around 2.4% in 2015 and 4.1% in 2016, a quite substantial downward revision in comparison with the forecast produced in May. Lower projection for the economic activity and the declining elasticity of imports to GDP imply a declining global demand to be satisfied through exports as a whole; the different regional growth, commodity prices and the new landscape in terms of competition shaped by the exchange rate changes, sometimes very significant, determine the relative performance of countries. The group of advanced economies suffers a lower downward revision than that of emerging economies (-1p.p. vs 3.3 p.p.), partly reflecting once again the strong performance of intra-euro area commerce: the revision for the area export as a whole is quite small (-0.3 p.p., from 4.8 to 4.5) given also the help coming from the depreciated euro. The revision is shared by most of the countries of the area, the most intense being regarding those countries whose exports are mainly directed toward the emerging markets, China, Russian Federation and northern Africa in particular. Exports for the other advanced countries are revised downward accordingly with some additional negative effect coming from the larger exposure to emerging market (Japan mainly). The emerging economies trade will grow well below that of the advanced ones (1.7%) to recover in 2016. In particular in the coming quarters the emerging Asian countries will suffer the still weak demand of China and Japan and the already discussed intense outward processing in the area. Latin America, Africa and Middle East, may benefit from the low prices of commodities and increase the grow rate of their export volumes, compared with 2014, but in any case with a downward revision with respect to May forecast. This is assessed around 1-2 p.p. given the world economic activity and the different mix of commodity exported by the two groups of countries. Central and Easter Europe, will also maintain a positive rate of export growth, coming from the good performance of Poland, Hungary and Czech, for which the high carryover implies an upward revision with respect to May forecast. A low but positive growth is also forecasted for Russian Federation exports, bounded by sanctions but revived by low commodity prices and new contracts with Asian countries.

2.4 Market shares

The above forecasts imply a gain of market share for the Euro area: given the mix of results for the other main industrialized countries, this happens at the expense of the emerging market exporters. The depreciation of the Euro vis è vis the dollar and the buoyant first part of the year allowed this gain for the Euro area as a whole and 2016 should see another small progress in this direction. For UK and US the export performance in broadly in line with the potential demand in both years while for Japan the exchange rate depreciation should help to have a gain in the forecast horizon. Among the European countries detailed informations show the gain of market shares for Germany, Italy and France that is partly already written in the first eight months of the year, driven by the great performance of German exports outside the area and their demand inside the area that foster export of the big neighbors, while loss of share hit mainly countries for which problematic destination markets (Russia, N.Africa) have a relatively larger weight. In 2016 gains

and losses will be more balanced, given the relatively stable exchange rate forecasted for the euro. The relatively higher weight of German exports toward countries of emerging Asia and eastern Europe, expected to improve a lot their import dynamic, should allow Germany to gain further market shares.

3 COMMODITY PRICE OUTLOOK TO MID-2017

3.1 RECENT PRICE DEVELOPMENTS

World commodity prices peaked on aggregate in the second quarter of 2011 at all-time-high and have since declined. Both **energy** and **non-energy prices** declined on average from the peak, but energy prices did not start a sharp decline until in the second quarter of 2014, while non-energy commodity prices had declined continuously and rather strongly after the price peak. Sizes of decreases naturally vary by commodities and commodity groups due to commodity specific reasons, but all commodities included in the calculation of dollar-based HWWI index (weighted average of 30 commodity prices) were in September 2015 on average 54 per cent cheaper than in the record quarter. September prices were generally, with the exception of cocoa and tea, also much cheaper than in the second quarter of last year. Non-energy commodity prices rose on average pronouncedly in the early 2000s up to new record in 2008, collapsed in the financial and economic crisis, rebounded to a recent 'all-time-high' in the second quarter of 2011 and have since declined sharply until autumn 2015. The strong rise in the early 2000s was related to the growth of demand both in industrialized countries and emerging countries, but particularly in China. Marked price decline in the financial and economic crisis was on the other hand dominated by unusually strong decline in the activity of industrialized countries.

The 'all-time-high' record price in the second quarter of 2011 has proven to be a substantial change to lower prices in the commodity markets. The price peak was achieved quickly after the sharp price drop in the crisis boosted by the exceptionally strong stimulus of public Chinese investments including commodity intensive activities in particular. The recovery of industrial counties boosted by strong stimulus to kick-start the economies affected also positively on prices. After achieving the price peak, prices began wide-ranging decline among non-energy commodities. The turn-around was related to the declining growth of China and recessionary developments in the EU, which dampened the growth of demand for commodities. In addition to cooling demand, the recent price decline was in many cases, especially metals and energy, also reinforced by the increasing capacity and supply like in cases of crude oil and iron ore due to new investments in response to the almost a decade long period of strongly rising prices before the recent slide of the prices. In addition, supply was also strengthened by the support of substantial depreciations of currencies in many commodity dependent countries, notably Australia, Brazil and Russia.

In group of energy commodities, the prices of **coal and oil declined both by about 55 per cent from the peak, but their price profiles differed markedly**. While the price of coal started to fall already in 2011 and since then declined continuously with small fluctuation around the trend, the price of oil remained rather stable around 110 USD/bbl until the second quarter of 2014, when the price started its strong, but volatile slide. Weak demand and abundant supply have also been reflected in decreasing natural gas prices which started to decline.

The **price of oil** (Brent) declined to below 50 USD/bbl in January 2015, but rebounded to nearly 70 US$/bbl. in mid-May. The rebound observed in the first half of 2015 proved short-lived. The oil price turned into a steep decline in the third quarter of the year. Crude oil Brent **reached its 6-years low in the last days of August**, at a time when it was traded close to 40 US$/b, before some improvements in the market economics led to a tentative rebound in September. In later October oil was fluctuating somewhat below 50 US$/barrel.

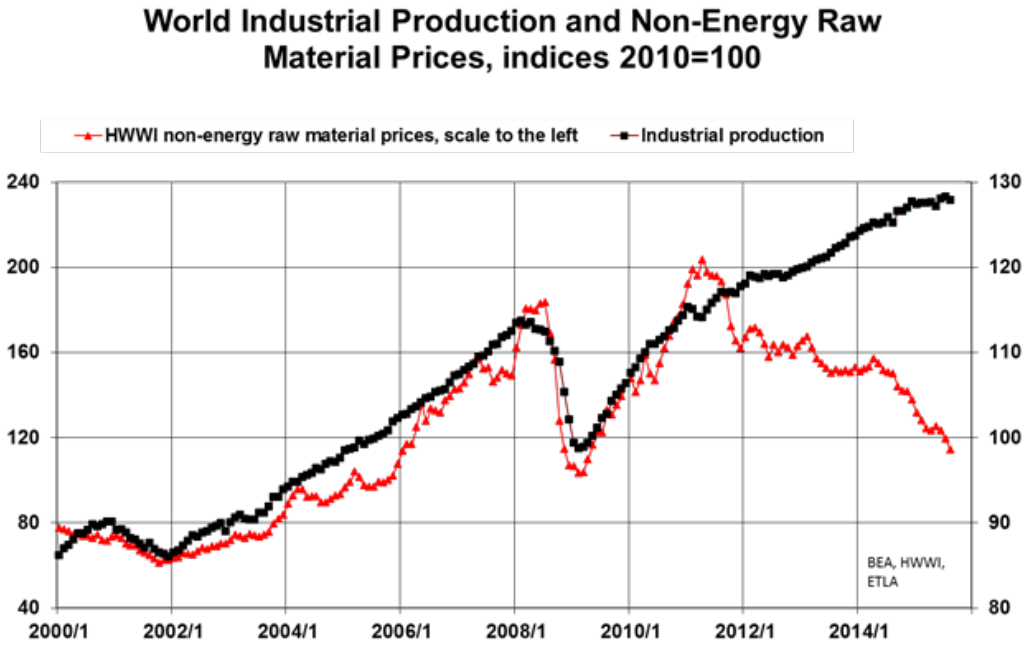
Box 1. Non-oil commodity prices, China's growth and rebalancing by Paavo Suni, ETLA

World non-energy commodity prices were in September 2015 no less than 1 .7 times higher than in 2001, when the sharp commodity price rise began, reaching a new all-time high in the second quarter of 2008. In real terms (deflated by world manufacturing export prices), the price was 1.3 times higher.

The sharp price rise was related to China's insatiable need for commodities in developing its industrial base. The average annual growth rates of industrial production, construction and the GDP were 11.4, 11.8 and 10.6 per cent in 2001-2008. On the other hand the growth rates of investments and exports were 12 and 16 per cent in a year. Imports have risen somewhat slower than exports. The growth rate of private consumption was close to 8 per cent per year. With such a rapid momentum in the economy, China has contributed strongly to the changes in world industrial production and GDP.

The strong growth in China across all the sectors in the economy was very commodity-intensive. China started to dominate the commodity price developments due to its share size. Commodity consumption shares of world metal consumption currently range between 40 per cent in case of lead to 54 per cent for aluminium. The shares in other key commodities are also large, though clearly smaller with the exception of some minor metals. The Chinese share of world crude oil consumption is only slightly over 10 per cent.

The very strong economic growth of China combined with large consumption shares of major commodities implies high price sensitivity of commodity prices to even small changes in Chinese consumption.

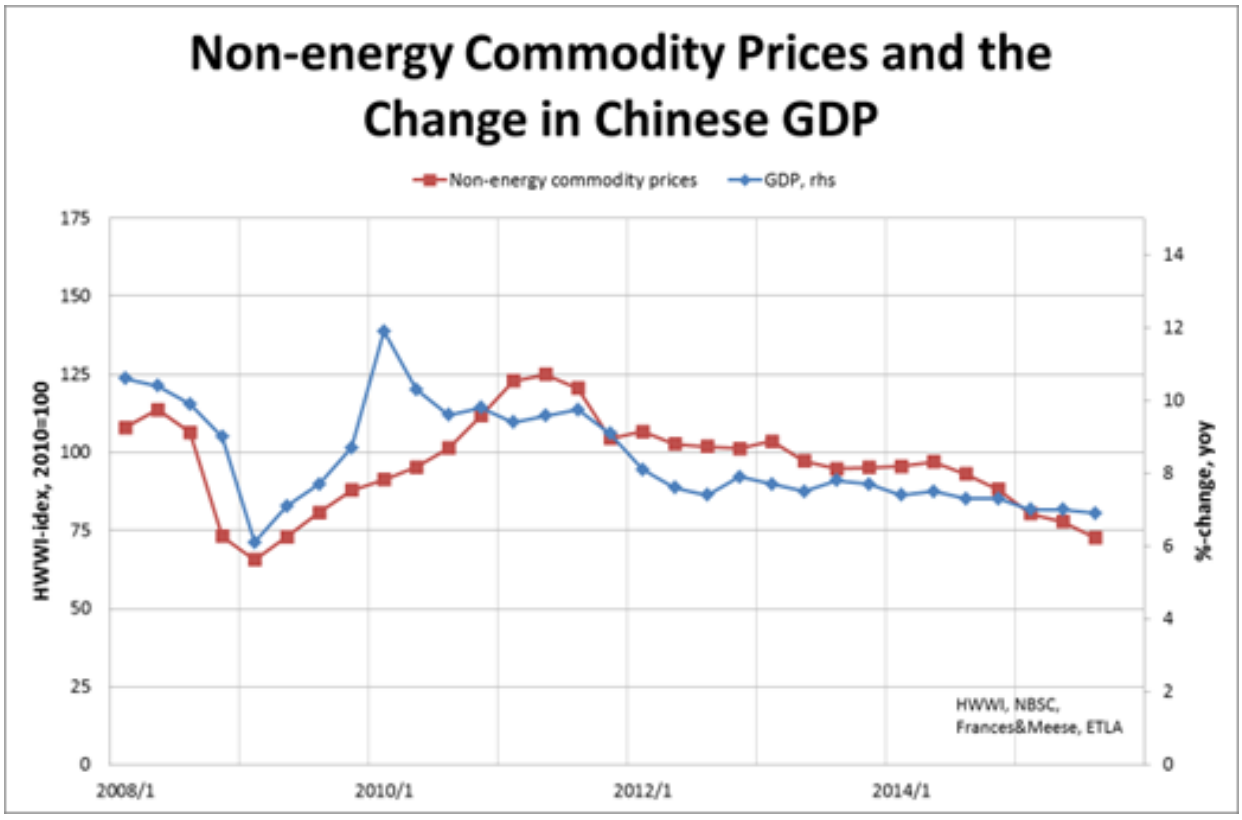


Box 1 continues

The connection between Chinese activity and particularly world industrial production with non-energy prices is visible in 2000-2010 as can be seen in the attached chart. Even the exceptionally strong demand shock in the financial and economic crises was nicely explained by the world industrial activity. Obviously industrial countries had also a rather strong influence on prices in this period. In 2011, when the prices hit to the new all-time-high very much thanks to strong Chinese stimulus, the connection broke down and prices started a long slide so far until this autumn.

After the price peak in the 2nd quarter of 2011, the dominance of China was reinforcing the downward trend in prices. Huge infrastructure and other investments, which had first created a strong rise in demand for commodities, resulted growing over supply in many markets in China and globally once the growth of demand started to falter in China. This had a significant depressing effect on e.g. steel prices (see the steel text on p. 48) via the strongly raising steel exports from China. The government changed its growth strategy from investment and export led growth to consumption based growth, which is dampening the growth possibilities of demand for industrial commodities, but will on the other hand raise the demand for food and other consumer related commodities, if the reform will be successful.

After 2011 the non-energy prices have moved downward roughly in line with the changes in Chinese GDP. The case of energy is different as the Chinese consumption share of oil is low and supply changes particularly in the North America and OPEC have so far dominated the crude oil price developments.



Price development is highly volatile as markets discount the influence of several supply and demand factors like the growth of China or a magnitude of the US shale oil production, whose future developments contain much uncertainty.

Price developments of **industrial raw material prices** have developed very heterogeneously during the past year. Prices in September 2015 were on aggregate by almost a quarter lower than in September in 2014. The prices of iron ore and scrap declined most, by 35 per cent, followed by base metals with 25 per cent decline. Textile fibres' prices on the other hand declined only 6 per cent.

Steel markets are suffering from substantial overcapacity estimated to amount to a quarter of capacity globally of which above half situates in China. Strongly rising Chinese exports puts pressure on the prices of steels. Many countries have reacted with requesting protection. The normalization of steel markets requires for capacity reductions, which seems to progress slowly. The price declines of different qualities of steels varied driving prices 25-30 per cent lower in September 2015 compared to September 2014.

The price of **iron ore** has declined dramatically since the beginning of 2013 in spite of growing demand i.e. world steel production up to 2014. The price of iron ore (Steel import price in Tianjin, CFR) has declined in September 2015by 64 per cent from the peak in February 2013 and 32 per cent from the level in 2014 mostly as a response to increased supply of iron ore. The strategy adopted by especially low-cost Australian mining companies is to raise their market shares by increasing ore production irrespective of rapidly declining prices to push high-cost rivals out of the markets.

The **base metal** prices measured with dollar-based HWWI-index decreased by 16 per cent - more than in other commodity groups save energy in four months from May to September in 2014. Markets are in the midst of a fundamental rebalancing process. The legacy of excess capacity of production is pushing to low capacity utilization and pressure on prices. Not surprisingly, these markets have suffered severe losses in the past 3 years, which further deepened in the summer of 2015, primarily owing to a combination of faltering Chinese demand, declining energy costs, and growing uncertainty stemming from, among the others, the US monetary policy, the Greek Crisis developments, and emerging markets slowdown. All in all the recent drops are, however, expected to have set the floor for the prices. Indeed, as quotes descended close to marginal cost, several miners and refiners began operating at loss and the base metals markets experienced a wave of capacity cuts particularly evident between 2014 and the first half of 2015.

Food prices are well supplied and prices have generally declined thanks to good harvests. International grain prices have on aggregate weakened further over the summer. The bearish mood was strongest between July and mid-September and coincided with general weakness in the financial markets triggered by negative news about the outlook in China. Grain markets continued to be well supplied and the continued strength of the US-Dollar contributed to the weakness of prices as exports from other countries remained attractive despite lower dollar prices. Soybeans prices nearly halved since summer 2014 and hit a more- than -five-year-low in September initiated by a worldwide record crop and significant production increases in major exporting countries.

Tropical beverages' prices are like food prices strongly dependent on weather conditions, which have recently been favourable. Worldwide coffee production recovered from prolonged drought in Brazil that had led to rising prices in 2014/15 inducing a price decline with prices having falling by more than 30 per cent since October 2014, when coffee prices hit an over three years high. Since October 2014 coffee prices have declined sharply by 35 per cent in September 2015. Cocoa prices have on the other hand fluctuated on a high level rising sharply in July 2015, but turned since downwards following the global downward trend in commodity prices with an announcement in Côte d'Ivoire to make more cocoa available. The price of cocoa was bit higher in September 2015 than a year ago.

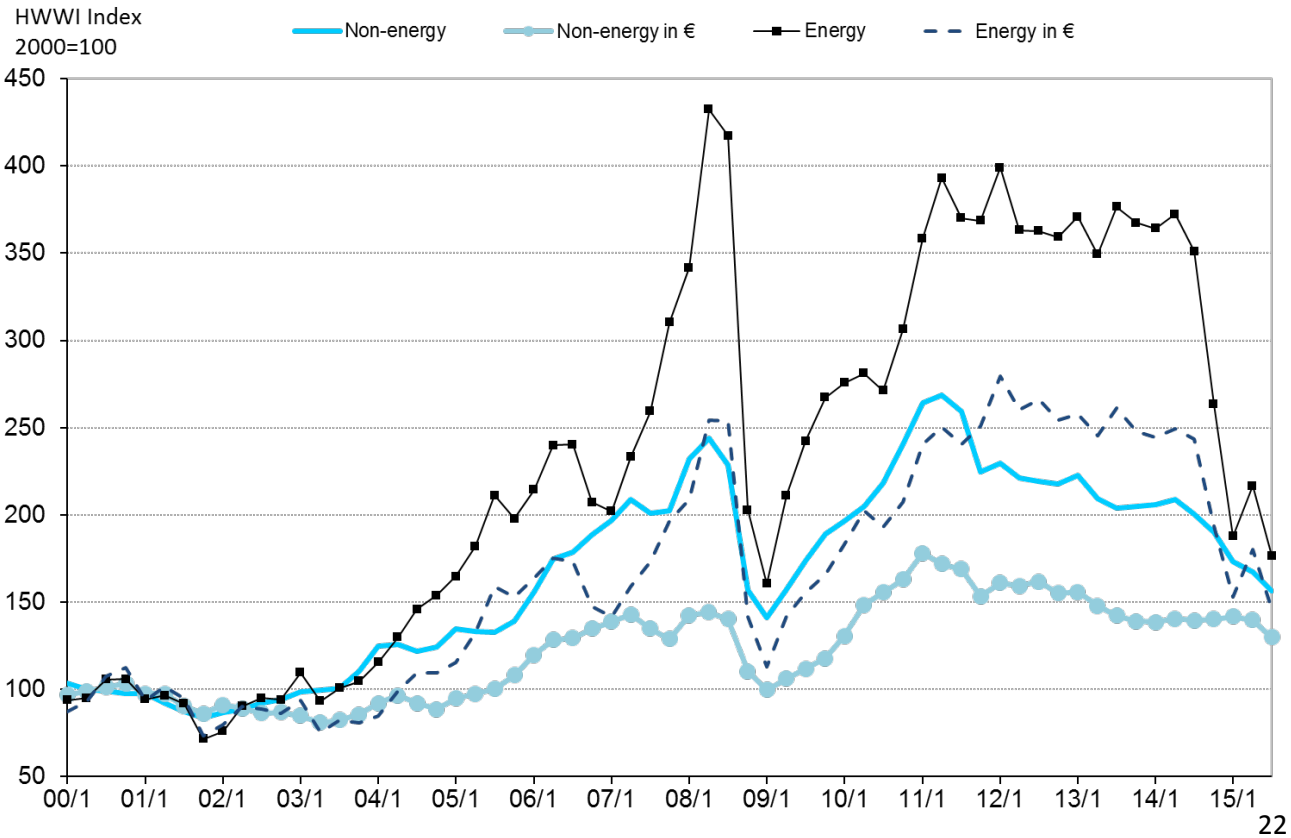
Box 2. Foreign exchange rates and commodity prices by Federico Ferrari, Prometeia

Foreign exchange and commodity prices seem often move in inverse relation. For example, a decline in oil price was related to the appreciating US dollar between April and December in 2014.

Theoretically, exchange rates could affect demand or/and supply via changes in domestic prices. For example, a depreciation of a certain country's currency vis-a-vis the US dollar makes this country's producers more profitable, inducing more production. As a result, the dollar price of a commodity decreases, compensating part of the effect. Vice-versa, a weakening dollar makes commodities cheaper for foreign (not-US) buyers, which increase their demand and, consequently, push the commodity prices up. From another point of view, as the US dollar plunges, producers located outside the US will need higher prices to preserve their margins, and are enforced to sell their dollar denominated raw materials at higher prices. Another explanation of this relationship is connected to the use of commodities as alternative asset class, which emerged in the years of the "commodity super cycle". Indeed, one way that investors have to diversify their portfolios denominated in US dollars (in order to hedge against inflation and exchange rate risks) is by switching from traditional assets to commodities (commodity returns are positively correlated with inflation and negatively with stock and bond returns).

However, this kind of relations seems not to be stable and there is no clear consensus about the relationship. After December the connection has indeed weakened: as the oil price recovered in the first half of 2015 – before retrenching again in the last few months – the US$/€ exchange rate was relatively flat. The Chinese economy's troubles, and the massive increase in OECD inventories, provide again a justification for both the failed recovery of oil price and the proceeding decline of non-energy prices which characterized the summer of 2015.

Graph 3.1 World commodity prices in US$ and €



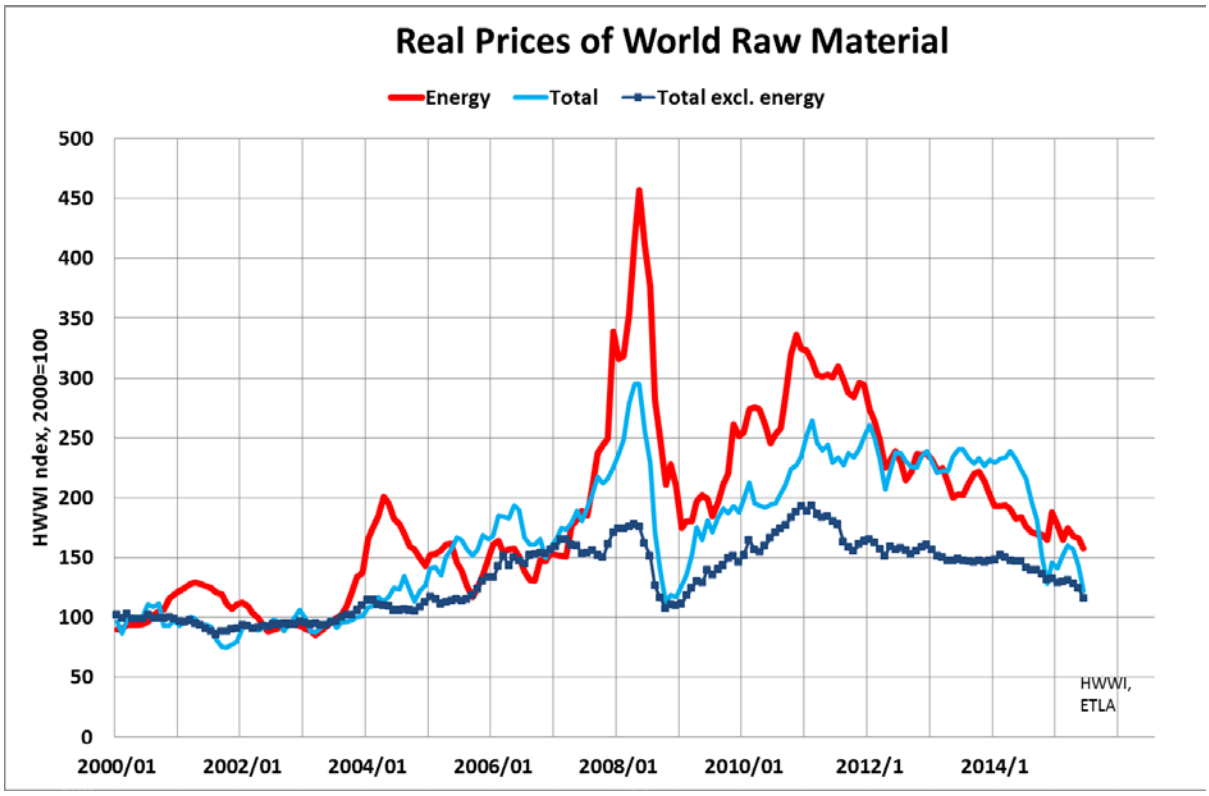


Table 1. Spring 2015 forecasts and realisations

	USD terms				EUR terms			
	2015 Q2		2015 Q3		2015 Q2		2015 Q3	
	Forecast	**Actual**	Forecast	**Actual**	Forecast	**Actual**	Forecast	**Actual**
	Quarterly percentage changes							
All commodities*	12	**11**	5	**-16**	16	**13**	5	**-16**
Total excl. energy	-1	**-3**	1	**-7**	2	**-1**	1	**-7**
Food total	-4	**-5**	0	**-1**	-1	**-3**	0	**-1**
Cereals	-4	**-5**	0	**0**	-1	**-3**	0	**-1**
Tropical beverages, sugar	-4	**-5**	1	**-2**	-1	**-4**	1	**-3**
Oilseeds, vegetable oils	-4	**-5**	-1	**1**	-1	**-3**	-1	**0**
Industrial raw materials	0	**-3**	1	**-9**	3	**-1**	1	**-10**
Agricultural raw materials	-1	**-3**	0	**-4**	2	**-1**	0	**-5**
Non-ferrous metals	6	**0**	2	**-12**	10	**1**	2	**-13**
Ferrous raw materials	-17	**-9**	-2	**-8**	-14	**-7**	-2	**-9**
Energy raw materials	17	**15**	6	**-19**	20	**18**	6	**-19**
USD/EUR	1.09	1.11	1.09	1.11				

* HWWI index, total

3.2 OVERVIEW OF THE OUTLOOK FOR COMMODITY PRICES

World commodity prices are expected to stabilize in 2016 after substantial declines since the second quarter of 2011. Prices of **all commodities** measured with HWWI aggregate index (weighted average of 30 commodity prices) will decline this year by 40 per cent on average after a 7 per cent fall in 2014. Average prices decline in all the quarters of 2015 from the previous quarter. In 2016 all the quarterly prices turn rising, but the prices on average will still be 4 per cent lower than in 2015 due a large carry-over from the year 2015.

Energy prices measured with HWWI-index as well as total index are dominated by oil price developments, which has overwhelmingly largest import share of developed economies' commodity imports. Crude oil weight is currently has 74.6 per cent in the total index.

Crude oil prices have declined sharply since June 2014 from 111.8 US$/bbl to somewhat below 50 dollars in late October. Oil prices decreased first as a reaction to actual and expanding supply surplus due to unexpectedly strongly increasing high –cost US shale oil production. In November 2014, the announcement of OPEC not to support the price by diminishing supply triggered a battle of market shares. The aim of OPEC was to stabilise markets by pushing high-cost shale oil producers from the markets.

Prices declined rapidly and oil investments were dampened, but shale oil production continued its rise until June 2015, because of several reasons. First, when the fixed investments had been done, there was no reason to stop producing. Some producers had hedged their forthcoming oil revenues. Third, the shale oil producers learnt to improve their efficiency and even break-even costs for starting the production were decreased markedly.

The shale oil wells are depleted rather quickly, in 1-2 years, which means that oil production should start declining rather quickly, if new rigs are not erected. The group sees 55 US dollars per barrel a break-even for the new production. The US and other high-cost production is expected to decrease due to current low price, but on the other hand the break-even is serving as a roof for the oil price. Once the prices start rising, oil productions tart rising, which stabilise the price development.

Our baseline scenario is relatively conservative. In a nutshell, as global supply is expected to continue to exceed demand in the short term, we expect to observe another global inventories accumulation in 2016, but we expect markets to slip into deficit in 2017. Upward pressure on prices will be mitigated by the enormous volume of inventories accumulated during the previous years. The Brent benchmark is expected to gradually move towards US$ 55/bbl at the end of 2016.

The reaction of **coal** supply on sharply decreasing the US$-denominated world market prices has been only moderate so far as falling oil price and exchange rate effects (i.e. the US$ strengthening against the currencies of major coal exporters) helped to maintain the coal exports viable. According to the AIECE forecast, the turnaround on coal markets could be expected no earlier than at the end of 2016 or in 2017. The yearly average price quotations of Australian and South African **steam coal** would decrease by 18 per cent this year and by 14 per cent in 2016, while the benchmark price of Australian **coking coal** would fall by 19 per cent and 17 per cent respectively.

There is limited space for gas demand increase; therefore demand is expected to remain depressed in the coming years. There has been a robust deployment of renewables in electricity generation and this is likely to continue. It is difficult for gas to compete with renewables whose price is decreasing and cheap coal. This could be counterweighted to some extent by the increased use of natural gas in producing petrochemicals. Weak demand and abundant supply have been reflected in decreasing natural gas prices. The average annual

import price was down by 14 per cent in 2014 and another fall of 26 per cent is anticipated in 2015 on an annual basis, whereas a slight, 1 per cent increase is likely in 2016.

Price behaviour of **non-energy** commodities is roughly similar reflecting common demand factors, the deceleration of Chinese demand in particular, although average price development masks sometimes substantial differences between commodities or commodity sub-groups. There are also notable differences reflecting commodity specific factors for many food and soft commodities like a threat of deviations from normal harvests due to abnormal weather phenomena like El Niño in winter 2015-2016 (see the box on p. 18).

Prices of non-energy prices are expected to fall by 19 per cent on average in 2015 and 2 per cent in 2016. Largest declines are seen in iron ore (-42%), steel scrap (-33) and nickel (- 28 %) in 2015. Prices of these commodities are expected to decline also next year. Only prices of cocoa (2 %), tea (+1 %) and barley (24%) will rise this year. Cocoa price rises after a strong rise (24%) in 2014, while the price rise of barley only compensates part of the strong decline in the previous year (-38%).

The **world steel** outlook is grim. World steel markets suffer from significant excess capacity and the steel consumption of main producer turned into decline in 2014. Old and inefficient capacities are shut markedly especially by a dominant producer China, producing half of the world production, in response to the unprofitability and easing the pollution, but more new capacities have entered the markets due to past strong investments and the demand for steel has turned into decline. The growing flow of Chinese steel to world will continue to be a big concern for the producers outside China and has raised trade protection by using e.g. anti-dumping measures. Substantial reduction of world capacities is necessary to normalize the steel markets. Against this backdrop a quick rebound in prices is not in sight.

The prices of reinforcing rounds or rebar are expected to decline by about 20 per cent in 2015 and 7 per cent in 2016. The price of scrap, dominant raw material in rebar production, follows the price of rebars in 2015-2016 with stronger swings.

The price of iron ore has declined dramatically since the beginning of 2013 in spite of growing demand i.e. world steel production up to 2014 due to the increasing supply of low-cost ore especially from the low-cost Australia has increased massively as producers try to normalize the markets by forcing high-cost producer out of the markets. The price forecast of the iron ore is rather uncertain as timing of the supply reductions of the high-cost producers depend also on political decisions. The price of iron ore will be low for an extended period as growth of demand will be rather weak and seaborne iron ore supply is rising rather strongly. We expect the price to vary around 50 US dollar per tonne during the forecast period, 100 USD lower than in the beginning of 2013.

Non-ferrous metals prices will decrease this year by 15 percent pushed down by the cooling Chinese economy. Prices are, however expected turn into rise already in the final quarter 2015 supported by tightening supply. In 2016 stabilising demand combined with sluggish supply will on average support prices to a modest average rise.

Aluminium remains one of the metals with the fastest-growing demand profiles and is gaining market share from copper and galvanised steel in the automotive sector. World aluminium production is forecast to increase by 8% in 2015, mainly in China, and by 4% in 2016 as new capacities will be opened in the Middle East and India. The market will turn into surplus in 2015, due to higher-than-expected oversupply in China in particular. However, slowing growth of world mine production towards the end of the year is expected to tighten supply in 2016. Moreover, should the Indonesian bauxite ban remain in place, the supply shortage will persist in 2016 supporting the prices.

In the short term, **slowing consumption of copper, China macro concerns and low energy costs** are expected to keep on dragging on market sentiment, staving off the chance for a lasting copper price recovery; LME price is expected to fluctuate around 5500 Us$/ton until the end of 2015. However, long-term perspectives look relatively more constructive. Recent production cuts have probably set the floor for copper price at 5000 US$/tonne. Delays in project and capacity investments and slowing demand in Emerging Markets could end up to deficit in 2017 adding upward pressures on copper quotes in the very last part of the forecast period.

Global usage of **refined lead metal** is anticipated to fall this year slightly. However, as China's automotive market matures, the need for replacement batteries, coupled with weather events, will continue to provide a sound source of demand. Also, expansion in the construction of 4g mobile phone base stations should also boost lead consumption. As a result, demand should increase by 2.6% in 2016. The global lead is likely to see this year a bigger surplus than previously expected due to falling consumption in China. In 2016, even if surplus could persist, demand should make prices rise.

LME nickel stocks are at record levels with 12 weeks of consumption. Stocks have been boosted, at least in part, by the Qingdao port scandal in 2014 and are now equal to almost a quarter of annual supply. The ban on exports by Indonesian administration has reduced mine output from the country and production cutbacks have been announced In Brazil and Australia. Moreover, nickel pig iron output is expected to slow in China and LME stock will be depleted, improving market balance should push prices higher in 2016.

Persistent uncertainty about the extent of China's slowdown and about the health of global economy will continue to weight on **tin** price in the remainder of this year, delaying the price recovery. However, starting from 2016 the global tin price is however expected to rise from the current lows, climbing above US$ 18K/tonne – a level which appears more consistent with the demand-supply outlook.

World demand for refined **zinc** metal is forecast to rise in 2015-16 moderately. While Chinese usage is expected to rise more modestly this year, numerous infrastructure projects, together with government willingness to support the economy would result in rising zinc consumption in 2015-16. However, the closure of big mines such as Century in Australia and Lisheen in Ireland would result in supply-demand deficit in 2016. Tight supply and decreasing stocks should make prices rise in 2016.

The competitiveness of the northern Europe **sawn wood** producers Finland and Sweden - due to the strong US-Dollar - increased their exports volumes during the first five month of 2015 by 1.5% and 4.6% respectively compared to the same period in 2014. The supply and demand imbalance resulted in downward price pressure on the world market. Concerning the outlook for 2016 it is likely that prices will decline further due to uncertainties concerning the world economy and the possible economic slowdown in China. A price outlook for the **NBSK pulp** is improving. The world economic growth will accelerate in 2016-2017 from a low growth in 2015, which will increase the demand for pulp. Euro Area economies are getting more strength adding to a relatively strong US growth. The price of NBSK is expected to be stable in the winter 2015-2016 following a slight rise in 2016. The price rise is cushioned by increasing capacity and production of the NBSK and the intensifying competition of still less expensive hardwood pulp. The US$ price of the NBSK is forecast to decrease by 7 per cent in 2015. In 2016, the price turn slow rise, but on average the price decrease by a per cent.

Prices of textile fibres prices into a slow rise in late 2016. In 2015-2016, cotton prices are projected to decrease moderately. Prices are currently under pressure due to tight competition with oil-based synthetic fibres. The sluggish development will continue in 2016-2017. However, in longer-term, the market dynamism is expected to return as to a gradual dwindling of the Chinese massive stocks are gradually improving market balance. World wool prices have been on a downward trend since 2007 save a pick up in

the second quarter of 2015. This downward trend is partly explained by a depreciation of the Australian dollar against the US dollar since 2013. The average Eastern Market Indicator (EMI) is forecast to increase by 2 per cent kg in 2016. This increase is supported by a fall in wool production in Australia and New-Zealand. The price of **natural rubber** is forecast to decrease by 19 per cent in 2015 and by 10 per cent in 2016. This decline in the forecast years is due to a gap between production and demand. Stocks are also relatively high (about one quarter of world production) keeping strong price rises unlikely. However, a significant increase in oil price would lower the price pressure due to a loss of price-competitiveness of synthetic rubber. Also a threatening El Nino could make significant damage to the harvests, which could push prices strongly up.

International **grain prices** have on aggregate weakened further over the summer. The bearish mood was strongest between July and mid-September and coincided with general weakness in the financial markets triggered by negative news about the outlook in China. Grain markets continued to be well supplied and the continued strength of the US-Dollar contributed to the weakness of prices as exports from other countries remained attractive despite lower dollar prices. While supply and demand have become more balanced recently and 2015/16 is expected to see modest deficits developing in the maize and rice markets, supply is expected to remain ample over the forecast horizon given that the level of inventories is historically high. Thus the upside to prices seems limited for the time being. For 2016 we expect world market prices for cereals on average to level off, following another substantial decline by a 21 per cent in 2015.

Beverages' prices are on different trends. While worldwide coffee production fell sharply in season 2014/15 due to a prolonged drought in Brazil followed by increasing prices, the 2015/16 season production is expected to increase inducing a price decline. Hence, coffee prices are likely to fall to some extent, but stay near current levels. El Niño may, however, have a significant impact on worldwide rainfall patterns and can therefore notably influence coffee harvests. Overall grindings of **Cocoa** are expected to see the first year-on-year decrease in grindings since seven years. Despite this fall in grindings, the decrease in production will presumably overcompensate the lower demand, resulting in a slight market deficit. Hence, cocoa prices are more likely to increase even further in the near future. In absence of unexpected weather-related disruptions in one of the main tea growing areas, tea prices are expected to maintain nearby current levels with possible minor declines in prices.

The season 2015/16 will see the first deficit in the global **sugar** market in six years. Five consecutive years of excess production have led to the accumulation of stocks to comfortable levels of 45 per cent, from historically relatively low levels of little more than 35 per cent in 2010/11. Given ample inventories, the small market deficit expected for the current year should not lead to a major increase in prices. Only a small deficit is seen in the global sugar market in an environment of ample inventories. As a result world sugar prices will basically remain at current low levels over most of the forecast horizon, rising by 5 per cent on average in 2016, following more than 20 per cent decline in the current year.

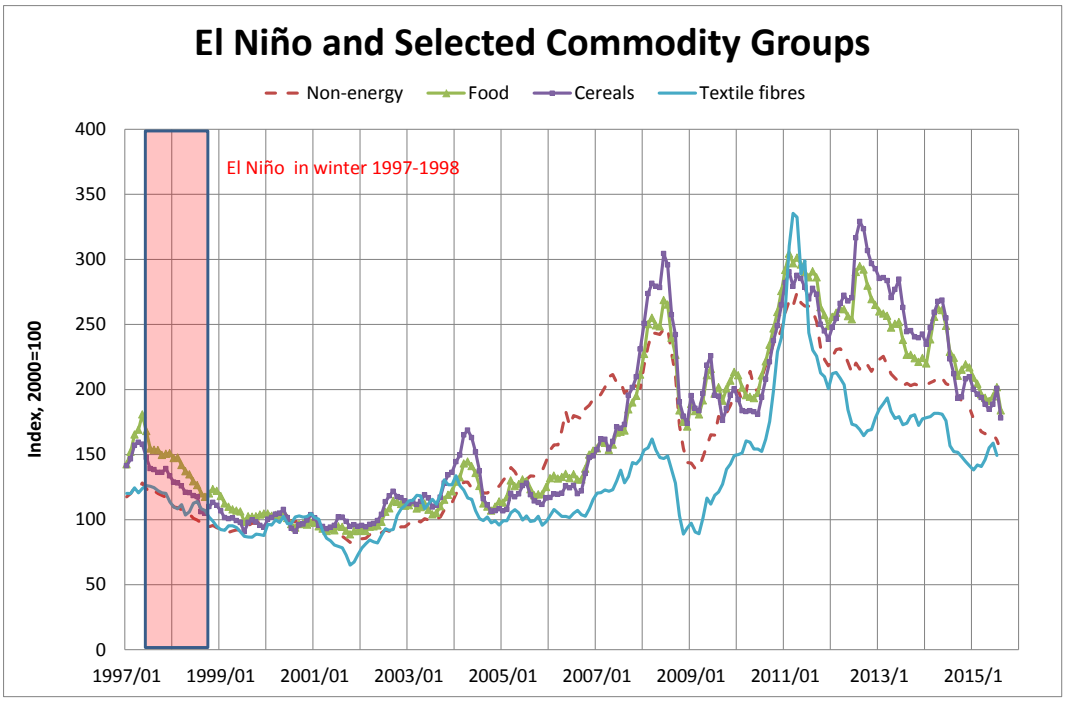
Box 3: Risks to the agricultural commodities price forecast due to El Niño by Klaus-Jürgen Gern

There are indications that an extraordinarily strong El Niño phenomenon is developing (although this was predicted last year already, but failed to materialize). This weather abnormality leads to unusually dry weather in some places (mainly Northeast Brazil, Australia, and Southeast Asia) and abnormally wet conditions in other parts of the world (the West and South of North America, Southern Brazil and Northern Argentina). As these regions produce a significant share in global agricultural production (wool, natural rubber, grains, sugar, coffee) there is a potential impact on world markets for these products.

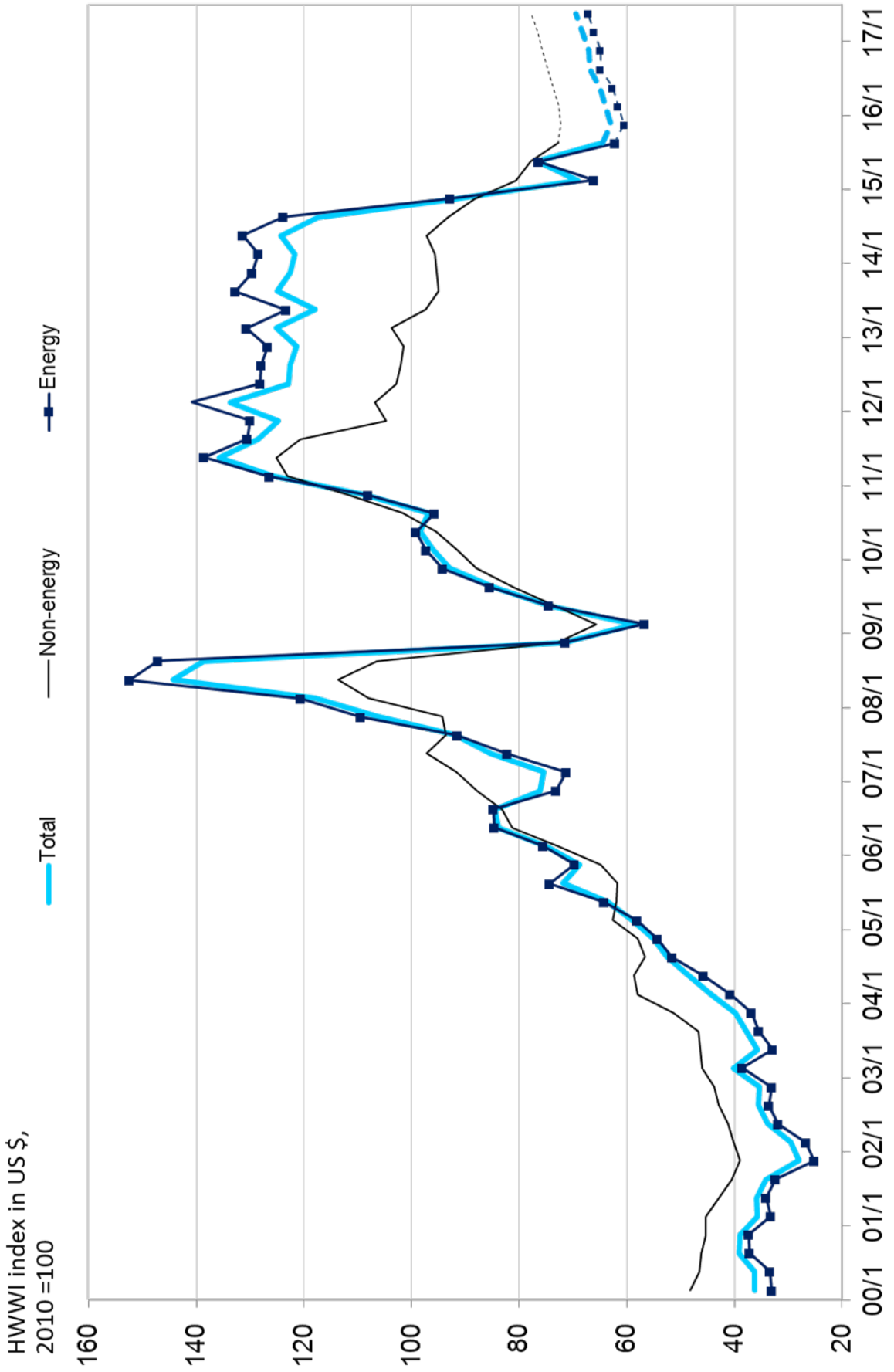
As the grain markets are concerned, the main region negatively affected is Australia which is a major wheat exporter. In 1997/98, the last time a strong El Niño occurred, Australian wheat production dropped from 24 million tons to 19 million tons. Global wheat production, however, at the same time did increase as conditions in most other parts of the wheat producing regions did improve rather than deteriorate. Also this time around, California and the US American South would benefit from increased rainfalls as rain has been lacking for a long time now.

Production of other grains also did not suffer significantly on a global scale (although substantial regional effects have been observed) during previous major El Niño episodes. World market prices also did not increase but rather declined in the years 1997 to 1999, according to the HWWI index. Also the sugar market seems not to have been negatively affected by the El Niño as prices declined substantially during the late 1990s.

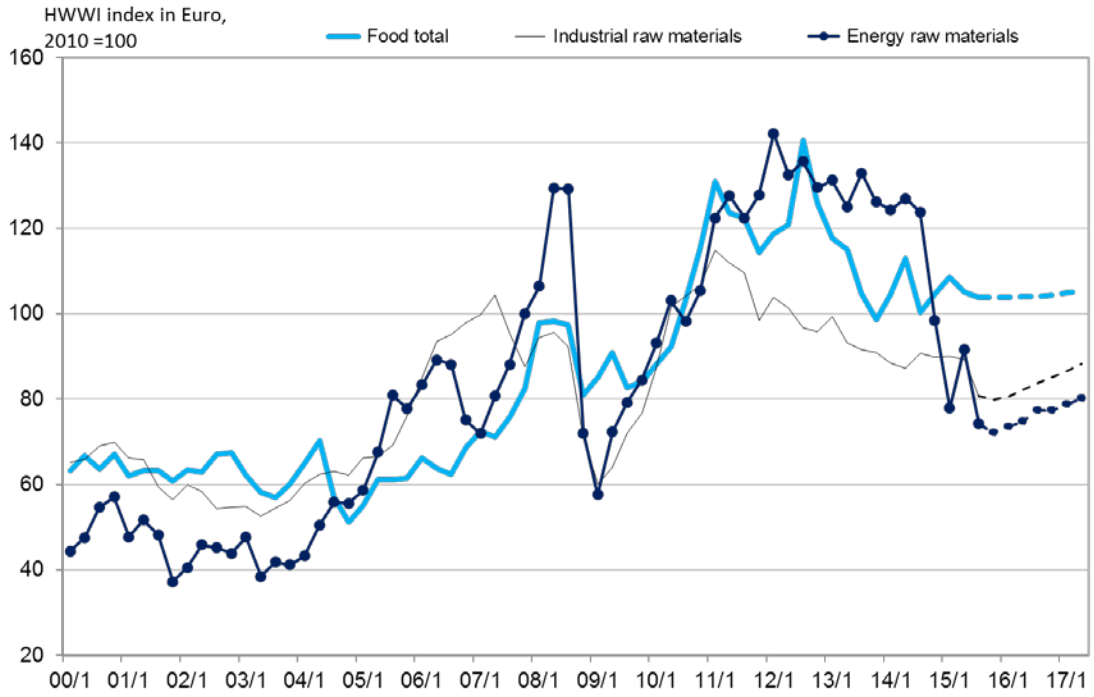
El Niño is seen as an upward risk in the forecast of weather related commodities like grains, oil seeds, beverages and textile fibres. On the other hand this weather phenomenon may cause problems not only in the agricultural markets. Storms in Chile and drought in Indonesia may impact their mining industries due problems with hydro-based electricity. On the other hand, there may be also positive effects. Bauxite production Malaysia, nickel production in Philippines, iron ore and coal production in Australia would be easier in dry weather conditions.



Graph 3.3 Aggregate price developments up to 2016.



Graph 3.4 Price forecasts for commodity groups in euro



Graph 3.5 Price forecasts for commodity groups in dollars

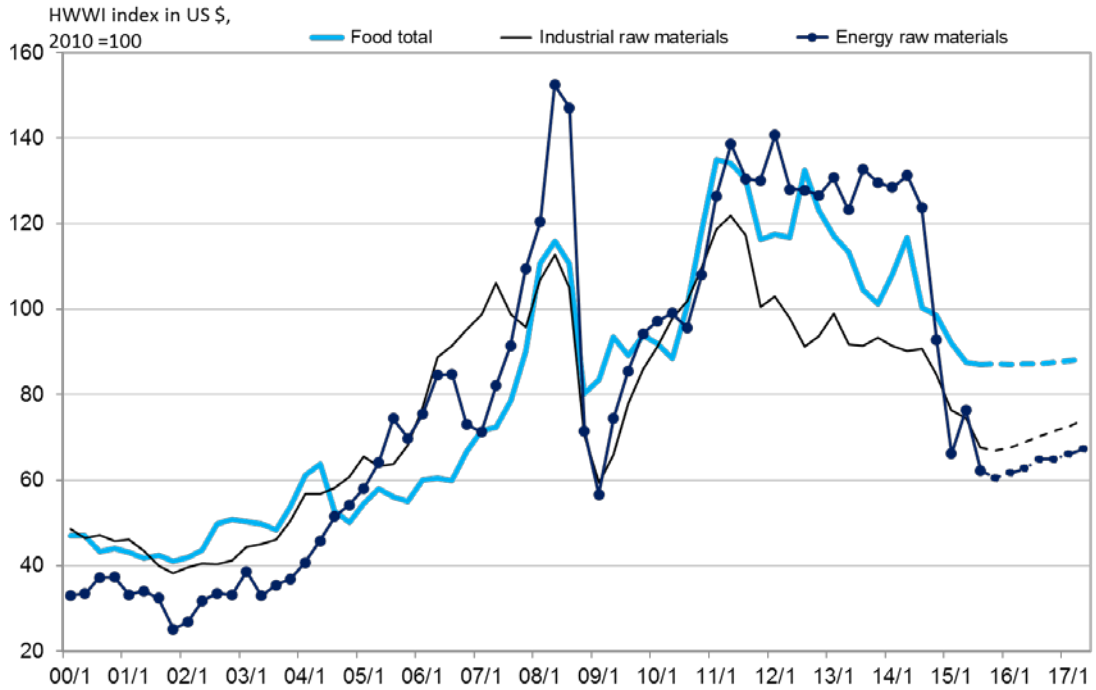
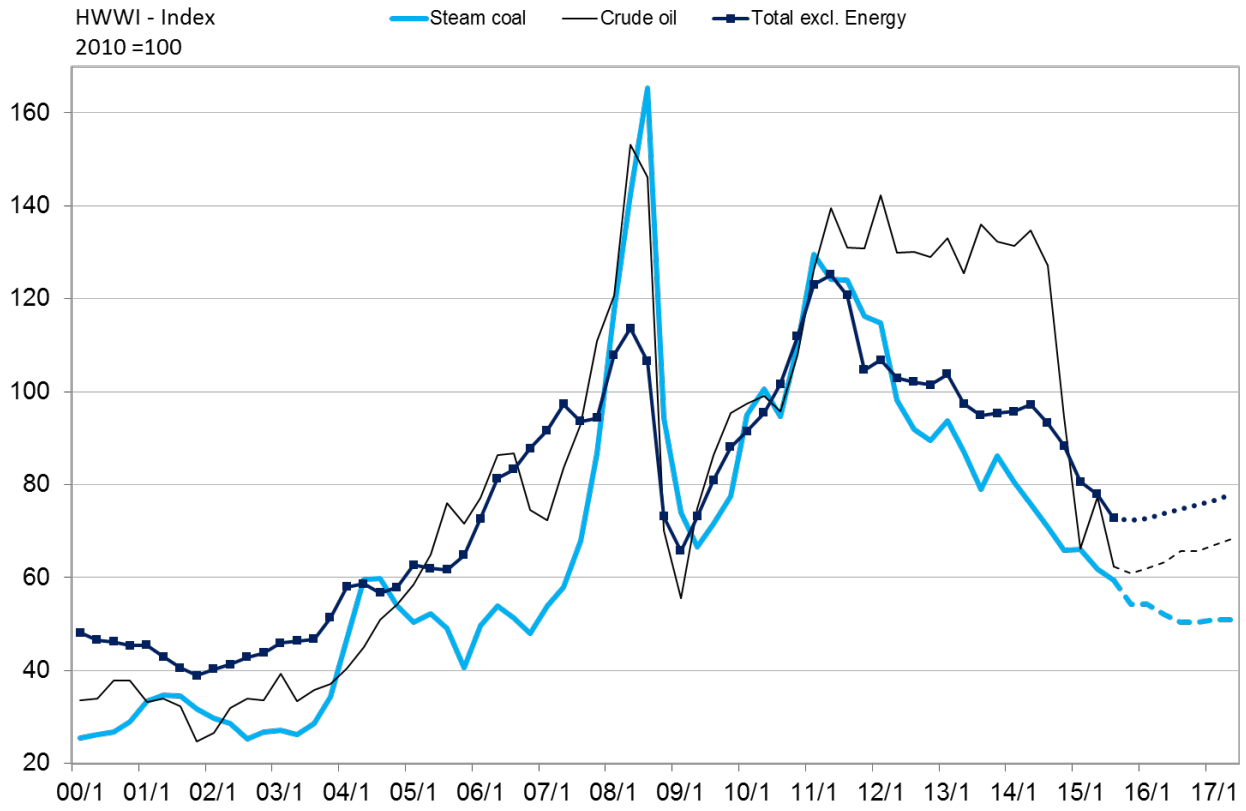


Table 2 Aggregate development 2012-2016				
Commodity indices in US$ terms Index values 2010=100 and % change	2013	2014	2015	2016
All commodities	**123**	**114**	**68**	**66**
	-2	***-7***	***-40***	***-4***
Total excl. energy	**98**	**94**	**76**	**74**
	-5	***-4***	***-19***	***-2***
Food total	**109**	**106**	**88**	**87**
	-11	***-3***	***-16***	***-1***
Industrial raw materials	**94**	**89**	**71**	**70**
	-3	***-5***	***-20***	***-3***
Agricultural raw materials	95	94	78	75
	2	*-1*	*-17*	*-4*
Non-ferrous metals	88	88	75	77
	-8	*0*	*-15*	*2*
Ferrous raw materials	107	86	53	45
	3	*-20*	*-39*	*-15*
Energy raw materials*	**129**	**119**	**66**	**64**
	-1	***-8***	***-44***	***-4***
Crude oil	132	122	67	64
	-1	*-7*	*-45*	*-4*
Memorandum				
Indices in euro terms	2013	2014	2015	2016
All commodities	**122**	**113**	**81**	**78**
	-5	***-8***	***-28***	***-4***
Total excl. energy	**98**	**93**	**90**	**88**
	-8	***-4***	***-3***	***-2***
Food total	**109**	**106**	**105**	**104**
	-14	***-3***	***0***	***-1***
Industrial raw materials	**94**	**89**	**85**	**83**
	-6	***-5***	***-5***	***-2***
Agricultural raw materials	95	94	93	89
	-1	*-1*	*-1*	*-4*
Non-ferrous metals	88	88	89	91
	-11	*0*	*2*	*2*
Ferrous raw materials	107	85	63	54
	0	*-20*	*-26*	*-15*
Energy raw materials*	**129**	**118**	**79**	**76**
	-5	***-8***	***-33***	***-4***
Crude oil	131	121	79	77
	-4	-8	-34	-4
* Steam coal and crude oil				

3.3 OUTLOOK FOR INDIVIDUAL COMMODITY PRICES

Graph 3.6 Energy raw materials price forecasts



3.3.1 CRUDE OIL

The rebound observed in the first half of 2015 proved short-lived. Having risen from the January lows to nearly 70 Us$/b. in mid-May, the oil price subsequently lost momentum, setting the stage to the steep decline observed in the third quarter of the year. Crude oil Brent reached its 6-years low in the last days of August, at a time when it was traded close to 40 US$/b, before some improvements in the market economics led to a tentative rebound in September. At time of writing oil is traded slightly above 50 US$/barrel, in a still high volatility environment. All in all, the market continues to discount the influence of several variables, working both on the supply side and the demand side, whose assessment (and prospects about their future evolution) is still surrounded by a high degree of uncertainty.

The main question we asked ourselves early in the Spring (i.e. what is the minimum price beyond that the US production would stop growing?) eventually found an answer. Indeed, the descent of the US crude price benchmark (WTI) below the 55 US$/b. threshold triggered a sharp drop in drilling activity in the US oil industry: albeit with some delay, the rig count slowdown halted the growth of US oil production, which in June and July flattened, before showing a slight decline in August.

According to Baker Hughes, the active oil-rig count stood at 614 in early October, the lowest overall level since 2002. To be clear, this “supposed” breakeven price shall be considered with a pinch of salt: as the fracking techniques are relatively young technologies, there is still room for an increase in oil extracting efficiency, and in all likelihood this bound level is intended to further fall in the future. In any case, it represents an appropriate implicit floor to the oil price in our forecast horizon, below which the reaction of the producers is expected to underpin a recovery towards a more balanced (i.e. higher) level.

Along with an answer to the breakeven price question, the summer of 2015 also brought a new wave of uncertainty, shaping the high volatility profile that characterized the oil price between the second and the third quarter of 2015. Two elements, in particular, deserve to be explored more in detail.

On the supply side, the lift of sanctions against Iran (following the sealing of an accord to curb the nuclear program) paved the way for the return of the Gulf state to the global oil market. Teheran has ambitious plans for the development of its oil industry. Even though the government 5 million barrels/day objective for 2020 (from the current 3.4 million barrels/day) is probably an overly optimistic target, there are good chances that the Iranian oil supply will increase more than half million barrel/day, on average, in 2016. Moreover, further progresses are expected to come from Iraq, whose oil export rose to a 35-year high in the first half of 2015, particularly from the Kurdish oil fields located in the North of the country.

Whereas OPEC (led by Saudi Arabia) is not showing any willingness to give up from its policy stance, aimed at preserving its output share (and our hypothesis involves that the cartel will maintain the current stance in the future), these incremental volumes should necessarily find a place in the global oil market. Whether this is going to happen at the expense of other oil producers (further amplifying the current mammoth 2 million b/d surplus), or, rather, the additional supply will be offset by an increase in global consumption (and will therefore have a more neutral effect on prices) primarily depends on the strength of Emerging Markets demand.

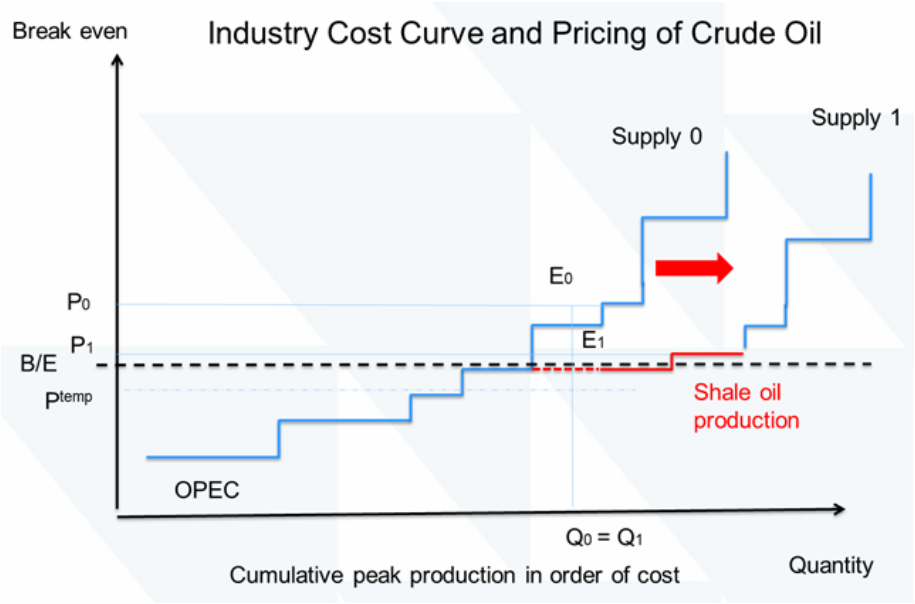
The collapse of the stock market (combined with disappointing foreign trade numbers, declines in industrial activity and plummeting property prices) is a clear consequence of the Chinese economy slowdown, and greatly contributed to amplify the magnitude of the oil price decline between July and August. China share of global oil demand is not comparable to that for other commodities, however, it contributed more than half of global oil demand growth in the last decade: a stronger-than-expected slowdown of Chinese economy would have a deep direct (via lower domestic demand) and indirect (via lower demand from commodity-producing countries, whose economies are dependent from China) recessionary impact on global oil consumption growth. In this sense, the devaluation of the Yuan (and the promise to let the currency float to levels "more consistent with the market") in a structurally less energy intensive model (due to the consolidation of the shift from an investment-led economy to a consumption-dominated one) are bearish signals for the Chinese oil demand growth perspectives. According to Platts estimates, China apparent oil demand remained remarkably resilient from January to August, averaging at 11.19 million b/d, a 10.2% increase from the same period of 2014. It’s nevertheless worth noting that a part of the increase is due to SPR stockpiling: the public discretionary purchases, which probably tempered the oil’s summer slump, perhaps masks a comparatively weaker performance of actual oil demand.

Our baseline scenario is relatively conservative. The proposed forecast for future oil supply is based on a drop in US production of oil visible, on annual average, from 2016, and (thanks above all to Iran and Iraq efforts) on a simultaneous increase of the OPEC market share. OPEC countries will contribute the most to the global oil output increase in 2016, however, the incremental supply will be completely offset by the projected fall of North America production. On yearly average, we estimate that the global oil market will be supplied by approximately 96.1 million b/d in 2016, a 0.1% increase compared to 2015. On the other side of the price equation, following the 2014 slowdown, the global oil demand growth is expected to accelerate in 2015 (+1.7% to 94.2 million b/d, mostly thanks to the lower products price environment) before slightly decelerating in 2016 (to 95.7 million b/d). In a nutshell, as global demand is expected to overcome supply, we expect to observe another global inventories accumulation (by approx. 0.5 mb/d) in 2016 average. Starting from 2017 we expect to observe an increasing deficit, however, its bullish impact on prices will be mitigated by the enormous volume of inventories accumulated during the previous years. The Brent benchmark is expected to gradually move towards US$ 55/b. at the end of 2016.

Box 4. Shale oil production, crude oil prices and industry cost curve by Paavo Suni, ETLA

Shale oil production has changed the oil pricing in world markets with a profound way. In this box, we try to illustrate the changes in the pricing in oil markets with a simplified way using industry cost curves*.

First, in the case before the sale oil production entered the markets, industry cost curve was Supply 0, equilibrium price in the competitive markets was P0 and quantity Q0 and the equilibrium was defined in E0. The price P0 is a bit below the break–even costs of the least units needed in production. All active producers are profitable, the low-cost producers like OPEC has largest profits and the firms producing beyond Q0 are unprofitable and idled in the market solution.



* Industry cost curve is a sum of single producers cost curves, which are may differ much with respect to the costs, while they produce fairly similar products. When different capacity productions are ordered by in increasing costs, we get the stepwise production function like Supply 0 in the attached chart.

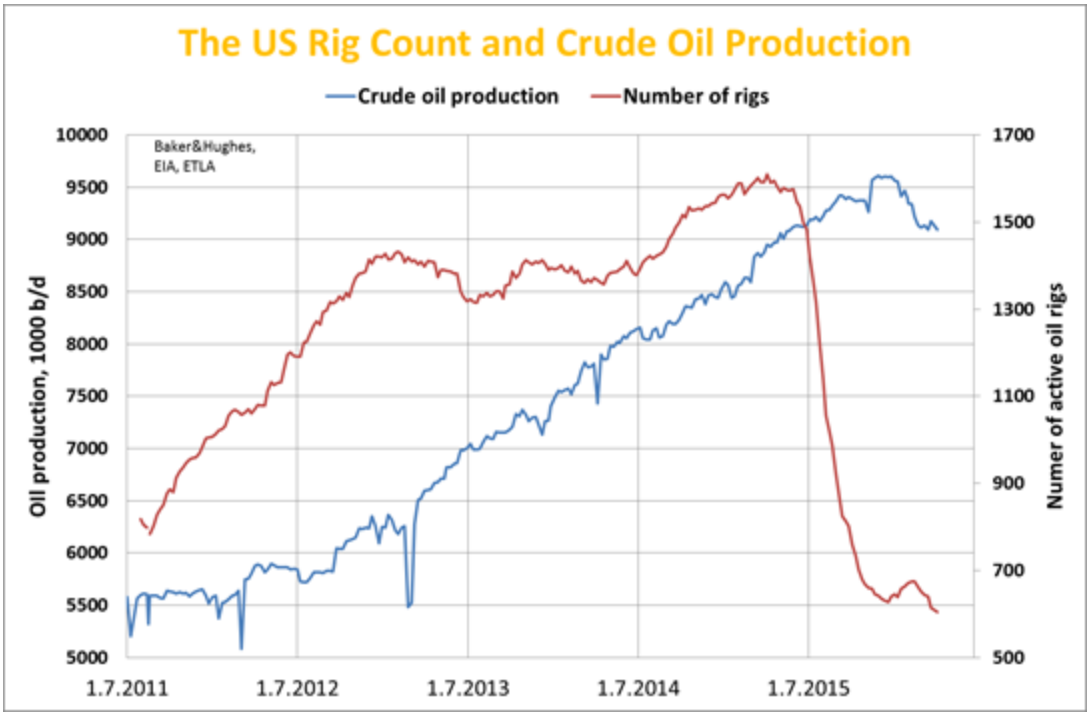
Box 4 continues

Rapidly increasing US oil production thanks to new rather high cost shale oil has shifted the short run industry cost curve to the right (Supply 1), made it flatter and pushed prices downwards. The new equilibrium is defined in E1 with price P1 and quantity Q1=Q0 in short run. Lower price makes some of the previously profitable production unprofitable. If the new unprofitable production id not shut down, the price would be temporarily in Ptemp, but before long they have to finish production.

This analysis helps to understand the change in the pricing strategy of OPEC from supporting prices market based pricing. If OPEC had continue its old policies, it had lost markets shares and its profits had been shrinking rather rapidly as the sale oil production was increasing fast. Instead of supporting the price, they could increase it a bit, pushing E1 below the break-even costs of shale oil producers of new rigs. While the life-span of the shale oil production is rather short, the production should start declining after some time, although production can still continue as sunk costs has been paid so long, when the price is below the average costs of production.

On the other hand the beak-even is not so clearly known. In recent years, the productivity of shale oil production has risen markedly, which has rapidly lowered the average break-even price of shale oil production. One indicator is the share of rigs with horizontal drilling of total rigs. The share has increased from 13 per cent in 2005 to 68 per cent in 2014 and to 76 per cent in July 2015. The risen productivity of rigs has deteriorated the quality of number of rigs as an indicator of oil production, which can be seen in the attached graph.

Anyway, the rise of oil production in the US turned to a decline in June 2015. This will support the price given demand to close to the average break-even price, which could serve as a roof for the price. In the forecast, we have assumed that the price will hover in 50-55 UDS/bbl in the forecast years.



3.3.2 STEAM AND COKING COAL

Coal prices continued their downturn this spring and summer. The price of Australian steam coal declined by 10 per cent from March to September and the South African price by as much as 16 per cent in the same period. The benchmark price of hard coking coal in deliveries from Australia to the Japanese steel mills was cut by 6 per cent in the 2nd quarter of 2015, by 15 per cent in the 3rd quarter, and the contact negotiations for the 4th quarter of this year concluded with another price reduction – by 4 per cent, to US$ 89/mt. The slump on international coal markets started five years ago and recent price quotations (i.e. September averages) in Australian deliveries represent less than a half of their 2011 peak for steam coal and below 30 per cent of the record high coking coal contract price reached in the 2nd quarter of 2011. The bearish sentiment also characterizes next year's outlook with prospects for gradual re-balancing of the market and a reversal in price trends generally awaited no earlier than in 2017.

The slump on coal markets is mainly related to the slowdown in the Chinese economy and consequently its diminishing demand for coal used both for power generation (steam coal) and for steel production (coking coal). The effects have been augmented by a shift in the Chinese energy policy towards diversifying the fuel mix and anti-pollution measures as well as recent strengthening in hydropower generation. According to the Australian Department of Industry, Innovation and Science (DIIS), the China's coal imports would decrease by 29 per cent this year, in which the imports of steam coal by over 31 per cent and of coking coal by 21 per cent. The scale of the fall, which started already last year sharply contrasts with double-digit growth rates that distinguished the China's coal imports in the previous decade and supported the boom on the world coal markets. A slight fall (by 2.6 per cent) is also expected in this year's steam coal imports outside China, mainly attributed to lower imports by the EU and Japan and to a substantial slowdown in the imports of India. On the other hand, the imports of coking coal excluding China would rise by 3.6 per cent in 2015, supported by still increasing deliveries to India. Consequently, the world coal imports (steam and coking coal together) would decline by 6.9 per cent this year, much stronger the imports of steam coal (by 8.4 per cent) than of coking grades (by 1.2 per cent).

The DIIS expects a moderate strengthening of coal import demand in 2016-2017, with the world imports rising by a 2 per cent annually (in which the imports of steam coal by a 2.5 per cent p.a. and coking coal imports by a 1 per cent). Nevertheless the Chinese imports would remain nearly stagnant and that of the EU would show a further decline. Their global rise would stem mainly from India and to a lesser extent from other Asian consumers, like South Korea.

The reaction of coal supply on sharply decreasing the US$-denominated world market prices has been only moderate so far as falling oil price and exchange rate effects (i.e. the US$ strengthening against the currencies of major coal exporters) helped to maintain the coal exports viable. According to Bloomberg Intelligence, at least 60 per cent of coking coal seaborne deliveries is still generating a return, despite the fall in price by over 70 per cent from its 2011' peak. Consequently, coal supplies remain ample against the background of softening demand and prices. Deutsche Bank projects that the world seaborne supply of steam coal would grow by 1.2 per cent this year with parallel demand shrinkage, which would produce the market surplus of 10 million tons.

The DIIS projection for 2016-2017 indicates a further rise in coal deliveries from Australia, Colombia, South Africa and Russia with their fall expected only in the case of Indonesia and the USA. Moreover, Mozambique could emerge as a large coking coal exporter. The market would remain well supplied and stronger supply adjustments are required to bring it back into balance. Such adjustments could materialize as the effects of productivity improvements in coal industry together with oil price effect and exchange rate effect would gradually vanish.

According to the AIECE forecast, the turnaround on coal markets could be expected no earlier than at the end of 2016 or in 2017. The yearly average price quotations of Australian and South African steam coal would decrease by 18 per cent this year and by 14 per cent in 2016, while the benchmark price of Australian coking coal would fall by 19 per cent and 17 per cent respectively.

3.3.3 NATURAL GAS

Western European import prices published by the World Bank are average import border prices or unit values (the value of imports divided by the quantity of natural gas imported). This is a combination of spot and contract prices. In the past the price of natural gas was pegged to the price of competing fuels such as crude oil and oil products. Oil-indexed gas was traded under long-term supply contracts that ensured the security of supply for the buyers and guaranteed demand for producers. In the case of this type of contract, the seller bore the price risk since it could not control the dynamics of crude oil prices. The buyer bore the volume risk with committing to pay the whole contracted volume regardless of the growth of demand, and it was prohibited to sell any excess amount due to destination clauses.

However, the maturing of the European natural gas market as well as some other factors (unfolding production of shale gas in the US, increasing supply of LNG and the global financial and economic crisis in 2008 and 2009) had an impact on the market. Since 2005 wholesale price formation in Europe has been characterized by a continuous move away from oil-indexation towards more gas-on-gas competition. At present, about 60 per cent of Europe's imported gas is priced on a spot- or hub-basis. Nevertheless, long-term LNG import contracts are indexed to oil prices, but with a lag.

In 2014 apparent or gross consumption (indigenous production plus imports minus exports and changes in stocks) of natural gas in OECD Europe was down by 11.1 per cent. This was the combined result of a 6.5 per cent fall in indigenous production and an increase in the foreign trade surplus of natural gas due to the higher growth rate of exports relative to imports. The figures for the first half of 2015 are not adequate since they are not adjusted for seasonal effects. Anyway, the increase of apparent consumption was nurtured by the reduction of stocks and to some extent by the increase of imports, whereas domestic production practically stagnated.

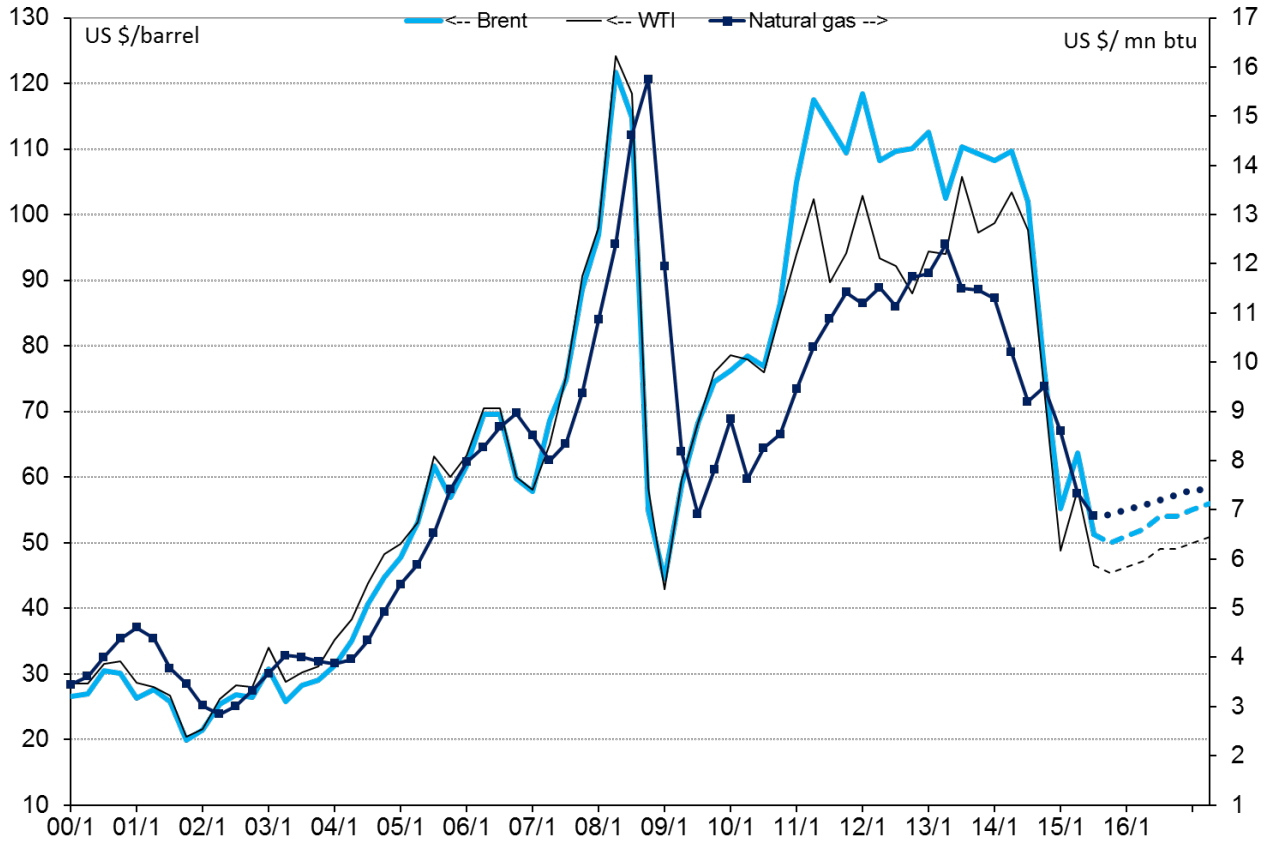
There is limited space for gas demand increase; therefore demand is expected to remain depressed in the coming years. There has been a robust deployment of renewables in electricity generation, this is likely to continue. Coal is cheap. As a consequence, it is difficult for gas to compete with renewables whose price is decreasing and cheap coal. This could be counterweighted to some extent by the increased use of natural gas in producing petrochemicals, at least in the medium-term. Oil was used in the past – but now ethane (a type of natural gas) demand is expected to grow by more than 600,000 barrels per day by 2018, to 1.6 million bpd.

As far as supply is concerned, lower oil prices and stricter self-imposed caps on Dutch production will result in faster decline of indigenous production in OECD Europe than previously forecast. As a consequence, OECD Europe's natural gas import dependency is likely to grow. Nevertheless, in spite of the increase of LNG imports, no significant reduction of imports from Russia is likely.

LNG markets look oversupplied over the next two to three years. As long as prices are high enough to cover operating and transportation costs, LNG plants will run at full capacity since operators try to recover the investment and other costs. If current low prices (including those of crude oil) persist, some of the LNG projects may be delayed. (At present, there are 17 new LNG projects under construction in the world.) It is worth noting that most of the EU's LNG import capacity is concentrated in Spain, Portugal, France and the U.K., but around 75 percent of it is unused.

Weak demand and abundant supply have been reflected in decreasing natural gas prices. The average annual import price was down by 14 per cent in 2014 and another fall of 26 per cent is anticipated in 2015 on an annual basis, whereas a slight, 1 per cent increase is likely in 2016. The average monthly price fell from late 2013 until August 2014 continuously, and then it rebounded somewhat in the rest of the year. The first three quarters of 2015 saw the continuation of the falling trend. Due to decreasing crude oil prices, oil indexed natural gas prices declined from June 2014 on. Spot LNG prices halved since 2014. In the subsequent months of 2015 and in 2016 the average monthly import prices are likely to recover somewhat from the former lows, but the average annual import price is expected to remain USD7.5/ mn btu.

Graph 3.7 Crude Oil and Natural Gas price forecasts



Graph 3.8 Steam and Coking Coal price forecasts

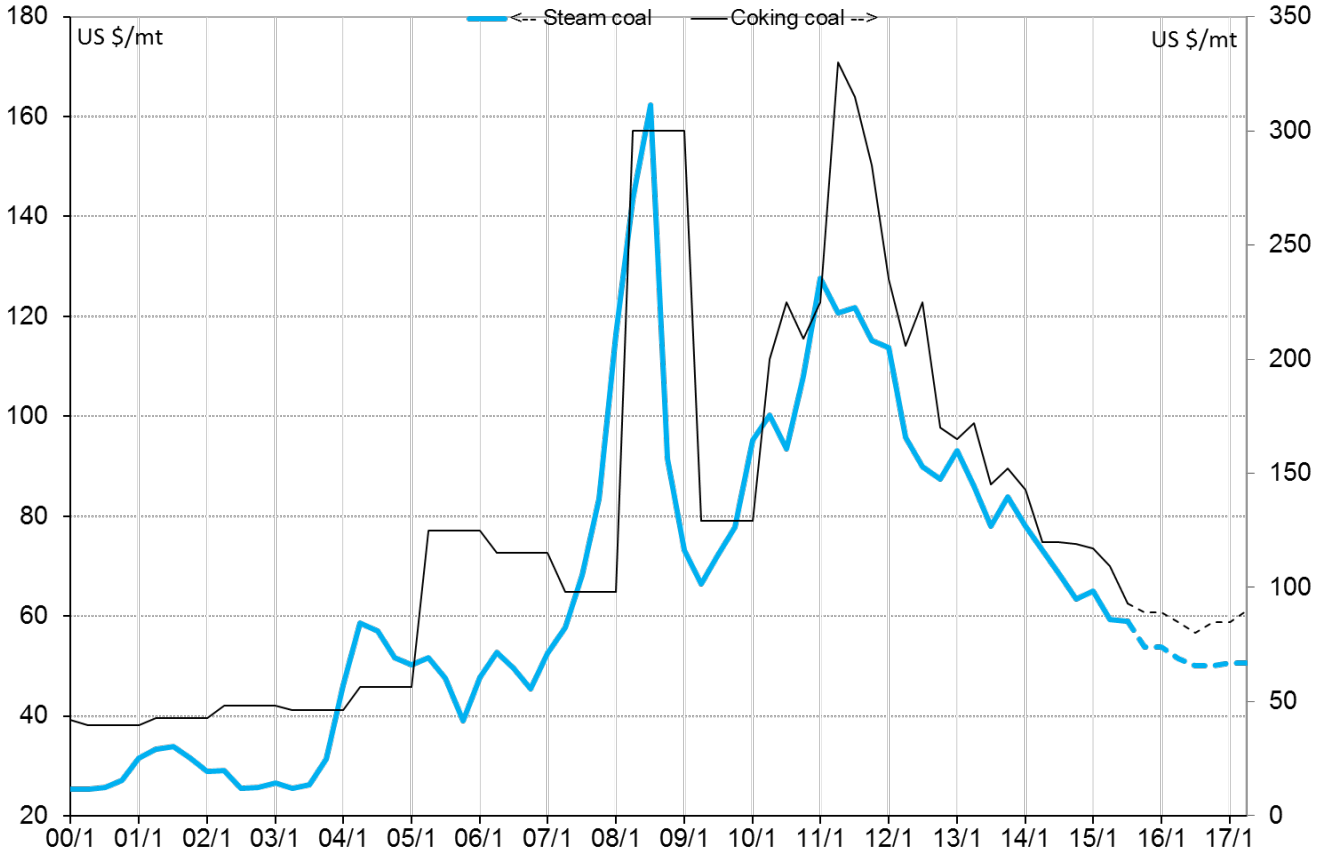


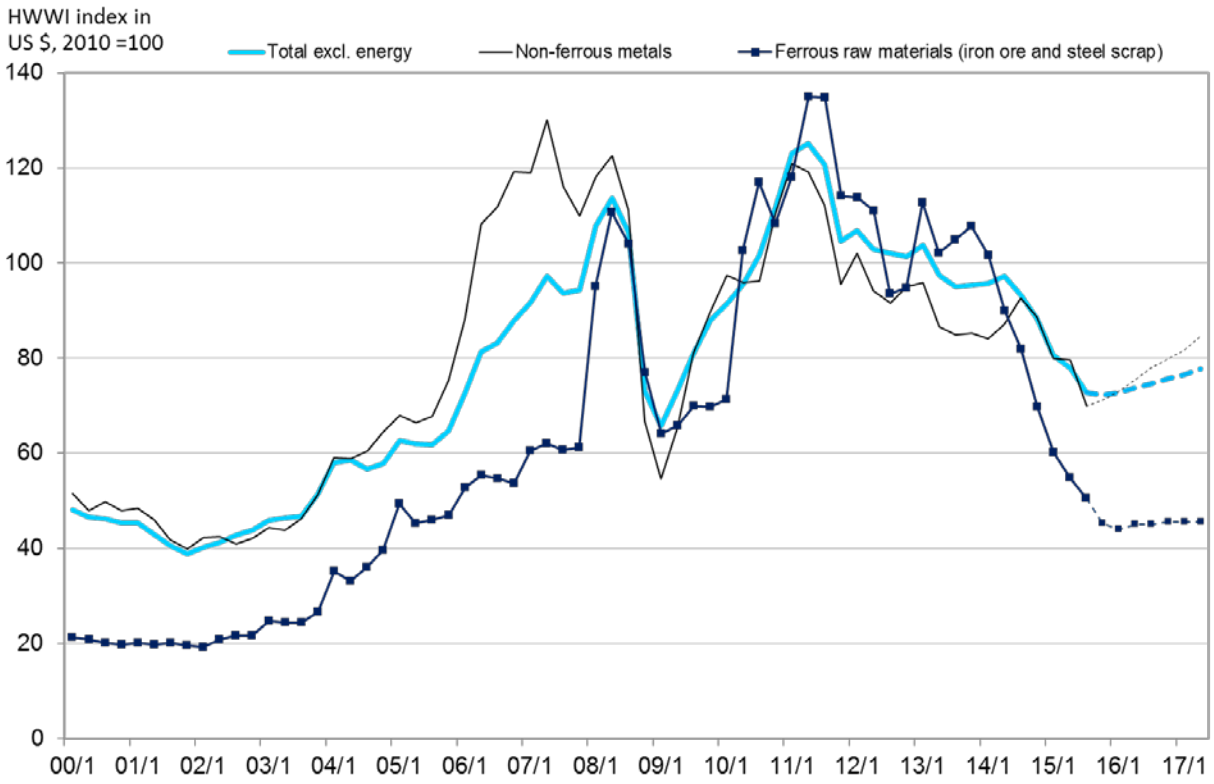
Table 3 Energy raw materials (US$ terms)

Commodity	14/3	14/4	15/1	15/2	15/3	15/4	16/1	16/2	16/3	16/4	17/1	17/2	2013	2014	2015	2016
Energy raw materials*	**124**	**93**	**66**	**76**	**62**	**60**	**62**	**63**	**65**	**65**	**66**	**67**	**129**	**119**	**66**	**64**
	-6	***-25***	***-29***	***15***	***-19***	***-3***	***2***	***2***	***3***	***0***	***2***	***2***	***-1***	***-8***	***-44***	***-4***
Crude oil	127	94	66	77	62	61	62	63	66	66	67	68	132	122	67	64
	-6	*-26*	*-30*	*17*	*-19*	*-3*	*2*	*2*	*4*	*0*	*2*	*2*	*-1*	*-7*	*-45*	*-4*
Steam coal	71	66	66	62	59	54	54	52	50	50	51	51	86	73	60	52
	-7	*-7*	*0*	*-6*	*-4*	*-9*	*0*	*-4*	*-3*	*0*	*1*	*0*	*-12*	*-15*	*-18*	*-14*
Coking coal	63	62	61	57	49	47	47	45	42	45	45	47	83	66	54	44
	0	*-1*	*-2*	*-6*	*-15*	*-4*	*0*	*-4*	*-6*	*6*	*0*	*6*	*-24*	*-21*	*-19*	*-17*
Natural gas	111	114	103	88	83	83	84	85	87	88	89	89	142	121	89	86
	-10	*3*	*-9*	*-15*	*-6*	*0*	*1*	*1*	*1*	*1*	*1*	*0*	*4*	*-15*	*-26*	*-4*

* Crude oil and steam coal only

3.4 OUTLOOK FOR METALS AND MINERALS

Graph 3.9 Metals and Minerals price forecasts



3.4.1 NON FERROUS METALS

Between April and September 2015, **aluminium** LME prices have decreased by 12%, due to weaker demand and oversupply. In late July, prices dropped beneath the US$1,600/tonne-mark for the first time since July 2009. Prices also decreased in August, after China devalued its currency.

Aluminium stocks in LME warehouses have fallen 17% between April and September 2015. Rotterdam aluminum premiums have continued to fall and have decreased by 63% between April and September 2015, trading near levels last seen in 2010. Meanwhile, queues in the LME warehouse system for metal delivery have shortened, encouraged by new rules, however much of the drawdown from LME warehouses are still going into financing deals.

World production excluding China has increased by 2% between January and August 2015 according to IAI (compared to Jan-Aug 2014), and by 18% in China at the same time-despite older and high-cost capacities closures. It seems that low-cost Chinese producers have been ramping up production, for instance in Xinjiang, where cheap hydropower and new coal have allowed for a massive increase in smelting capacity.

Outside China, capacity curtailments have been announced again: Rusal said it may idle 200,000 tonnes of smelter capacity in 2015, adding to the 800,000 tonnes of capacity it has cut over the past two years. Century

said it would curtail its Hawesville smelter, removing 255,000 mt of production. Further closures of smelting capacity outside China should happen in the coming months.

Aluminium remains one of the metals with the fastest-growing demand profiles and is gaining market share from copper and galvanised steel in the automotive sector. According to WBMS, demand for primary aluminium for January to July 2015 was 33.63 million tonnes, 4595 kt more than the first seven months of 2014.

In China, vehicles sales have slowed: the average increase in monthly new-auto sales is less than 2 percent, down from an average monthly growth of nearly 10 percent last year, China Association of Automobile Manufacturers said.

Meanwhile in the U.S, car and truck sales are robust and increased in August at the fastest pace in 10 years, lured by financing incentives, low fuel prices and optimism toward the economy.

The market deficit for primary aluminium for January to July 2015 was 487 kt, according to WBMS, which follows a deficit of 754 kt recorded for the whole of 2014.

World aluminium production is forecast to increase by 8% in 2015 according to BREE Australian Bureau, mainly in China, and by 4% in 2016, with new capacities opening in the Middle East and India.

Consumption should increase by 8% (BREE) or by 5% (Norsk Hydro) in 2015, then at a slower pace by +3% in 2016 (BREE).

The market could be in surplus in 2015, due to higher-than-expected oversupply in China. World slower mine production growth towards the end of the year could begin to tighten supply in 2016. Moreover, should the Indonesian bauxite ban remain in place, the supply shortage will persist in 2016.

Following a tentative rebound of **copper** prices in the first half of the year (copper peaked in mid-May, slightly above 6400 US$/ton.) in the summer months a number of bearish factors (mostly related to the Emerging Markets slowdown) paved the way for another price retrenchment. As the market distrust on the health of the Chinese economy expanded, price spiraled down, eventually falling below 5000 US$/ton in late August, the lowest level in 6 ½ years. Production cuts and workforce reduction announced by top producers, including Codelco, Glencore and Freeport-McMoran, and refiners, such as Jiangxi Copper, helped lifting the price in early September, however, the recovery was not strong enough to last for long. In a high volatile market the LME spot contract slid again to 5000 Us$/ton in the second half of September (i.e. 20% below the peak level observed in mid-May) before recovering again in early October. At the time of writing copper is selling at ar. 5300 US$/ton. On average it resulted one of the worst performer in the base metals complex from July to September, having left on the ground a 13% of his value quarter-on-previous-quarter.

The last-decade vicious cycle linking cheaply available capital, strong investments in new capacity and apparently endless growing demand, is clearly on a reversing path. Its legacy is in the excess of productive capacity, of which the drop of utilization rates and prices in ferrous and nonferrous markets, and the sharp declines in the equity value of the mining giants, are the most striking consequences. Even though - compared to other base metals - the EM copper demand is comparatively less sensitive to the industrial sector's troubles (due to the wide range of uses, ranging from manufacturing to housing and infrastructure) the impact of the current slowdown is nonetheless evident from the demand/supply balance, particularly in China.

Cumulated copper imports of the world biggest consumer were 8% lower* Jan. to Aug., compared to the same period in the previous year, while domestic production (mostly from scrap recovery rather than

concentrate refining) posted a 4.5% increase in the same period. Chinese copper exports were almost flat in the first 8 months of 2015, while apparent consumption grew 2.5%. (by approx. 170K ton) according to WBMS estimates. It is worth noting that the apparent Chinese demand numbers probably underestimate the actual consumption growth, and should then be revised higher (probably closer to +4%): indeed, due to the Yuan devaluation, the differentials between domestic and international prices widened in the summer months, and the expectations of rising import costs have arguably persuaded the importers to buy out inventories from (bonded) warehouses. Although adjusted taking into account the "unofficial" inventories drawdown, consumption growth estimate is nonetheless far weaker than a year ago (at that time consumption was running at double digit rate) and in the recent past (Chinese copper demand used to grow at 15% average annual rate in the last five years).

Globally, according to WBMS calculations, copper demand rose 0.3% January to July, far less compared to the average of the previous years. Combined to a reasonably positive performance from the supply side (global copper production grew 2.5% in the first 7 months of 2015, despite a poor performance of 2 top refined producers, Chile and Japan) resulted in an overall increase of industrial and market inventories. According to the International Copper Study Group estimates, in the first half of 2015 the world refined copper balance moved from a 430Kt deficit observed in the same period last year towards a 90Kt surplus – yet supporting the slowdown of price.

In the short term, slowing consumption, China macro concerns and low energy costs are expected to keep on dragging on market sentiment, staving off the chance for a lasting copper price recovery; LME price is expected to fluctuate around 5500 US$/ton until the end of 2015. High volatility is anyway expected to persist in the short term, due to the uncertainty regarding the health of the Chinese economy. Looking ahead to 2016, the price direction will be defined by the difference between the magnitude of the capacity adjustments and the speed of the demand growth slowdown. Generally speaking, following a slight surplus in 2015, we expect that the global copper market will maintain essentially balanced (or in a little deficit) in 2016, as the impact of the global demand slowdown will be fully compensated by the expected adjustments from the supply side, particularly in the SE/EW** processes, while the electrolytic production will keep on growing at a decent pace. All-in-all, global copper supply and demand are both expected to expand at a 2.5-3% rate in 2016. Price, albeit expected to slowly recover from the current lows, will maintain below 6000 us$/ton until the end of 2016.

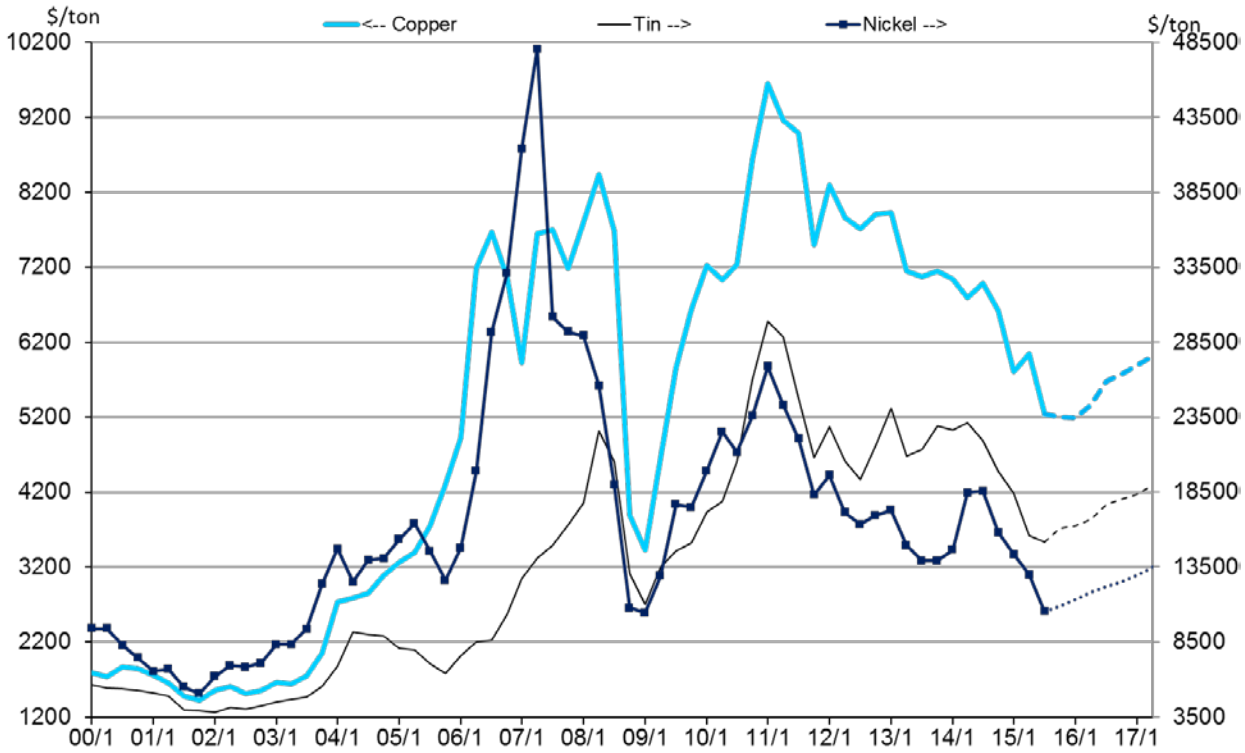
All in all, while recent production cuts have probably set the floor for copper price at 5000 US$/ton, long term perspectives looks relatively more constructive. While delays in project and capacity investments will result in slowing production growth, the EM demand, albeit at a slower pace than in the past years, is still expected to keep on growing at a decent rate (3-4%). We believe that a slight market deficit could emerge in 2017, adding upward pressures on copper quotes in the very last part of the forecast period**.**

The **LEAD** spot price has dropped 15% between April and September 2015, due to China slowdown concerns and has been sliding to US$1,690/tonne in July, its lowest level in five years. LME lead stocks have decreased by 5% between April and September 2015 and are at low levels.

Global lead mine supply during the first six months of 2015 was at a similar level to that in the first half of 2014 with increases in China and Peru being balanced by falls in Australia and Mexico according to ILZSG. A 2.1 percent decrease in world refined lead metal output was principally due to reductions in output in Canada, China, Peru and the United States.

Usage of lead metal decreased by 2.6 percent globally in H1 2015, by 8.6 percent in the United States and by 2.4 percent in China. Chinese auto industry, already under pressure from new regulations designed to deter ownership to cut dangerously high pollution levels, is suffering from reduced investment. In February, the

Graph 3.9 Copper, tin and nickel price forecasts



government introduced a 4% consumption tax on battery producers which will apply only to lead-acid battery producers from January 1st 2016.

Moreover, in China e-bike sales which accounts for over 30% of domestic lead metal, are expanding at the slowest pace in at least a decade and more batteries are being recycled or replaced with lighter ones made with lithium.

Nonetheless, the recent interest-rate cuts should help to stimulate sales in the coming months, particularly if they also ease credit constraints on businesses and CAAM projects that total vehicle sales in China will increase by 7% in 2015, to 25.1m units.

The global lead market has recorded a small surplus of 55,000 tonnes during January to July this year, as mentioned by the World Bureau of Metal Statistics (WBMS) after a deficit of 10,400 tonnes for the entire year 2014.

Global mine capacity additions will offset planned closures in 2015. Then in 2016, a lack of new mined supply outside China should happen. Lead being a byproduct of zinc, mine production will decrease as key lead mines such as the 55,000 tpy MMG Century mine will reach the end of their productive lives, adding to lost production from La Oroya in Peru. The closure of Lisheen mine could also take 23,000 tonnes of lead in concentrates out of the market.

Global lead mine production is forecast to fall by 5% in 2015 according to ILZSG then to increase by 1.2% in 2016, with expected rises in output in China, Mexico and Russia partially offsetting reductions in Australia and Ireland.

World refined lead metal production is expected to fall by 1% in 2015 according to ILZSG, then to increase by 3.5% in 2016, due to rises in Belgium, China, India, Korea.

ILZSG anticipates a fall in global usage of refined lead metal of 0.7% in 2015. However, as China's automotive market matures, the need for replacement batteries, coupled with weather events, will continue to provide a good source of demand. An expansion in the construction of 4g mobile phone base stations should also boost lead consumption. So demand should increase by 2.6% in 2016 (ILZSG).

The global lead market this year is likely to see a bigger surplus than previously expected due to falling consumption in China. In 2016, even if surplus could persist, demand should make prices rise.

Nickel prices have dropped 23% between April and September 2015, and hit near-six-year low at $9,100 in August. Nickel prices have fallen more than expected in 2015, because of the strengthening U.S. dollar, of concerns over the slowdown of Chinese economic growth rates and concerns that there will be too much production.

LME **NICKEL** stocks are at record levels (more than 450,000t or 12 weeks of consumption) and increased 4% between April and September 2015. They have been boosted, at least in part, by the Qingdao port scandal, in 2014 and are now equal to almost a quarter of annual supply.

Mine production during January to July was 1.11 million tonnes, according to WBMS, 53,000 tonnes below Jan-July 2014. The ban on exports by Indonesian administration has led to reduced mine output from the country and production cutbacks have been announced: Australian miner Mincor said it will slash production over the second half of this year, while Mirabela Nickel said it has slowed activity at its Brazilian mine.

Meanwhile, global nickel apparent demand was 103,000 tonnes higher than the previous year in Jan-July 2015 according to WBMS. Global stainless steel demand is slowing and increased only by 0.1% during Q1 2015, according to ISSF and decreased by 1.4 % in China.

Chinese stocks of Nickel Pig Iron (NPI) are depleting and the Indonesian ban has prompted investments, mainly from Chinese companies, to build up NPI facilities in Indonesia, which will be at full capacity only in 2017. Current stockpiles of nickel ore, refined nickel and ferro-nickel can only cover three months of the country's stainless steel production, according to Antaike..

The Nickel market was in deficit during January to July 2015 with apparent demand exceeding production by 16 kt, after a surplus of 241.8 kt in the whole of 2014 (WBMS).

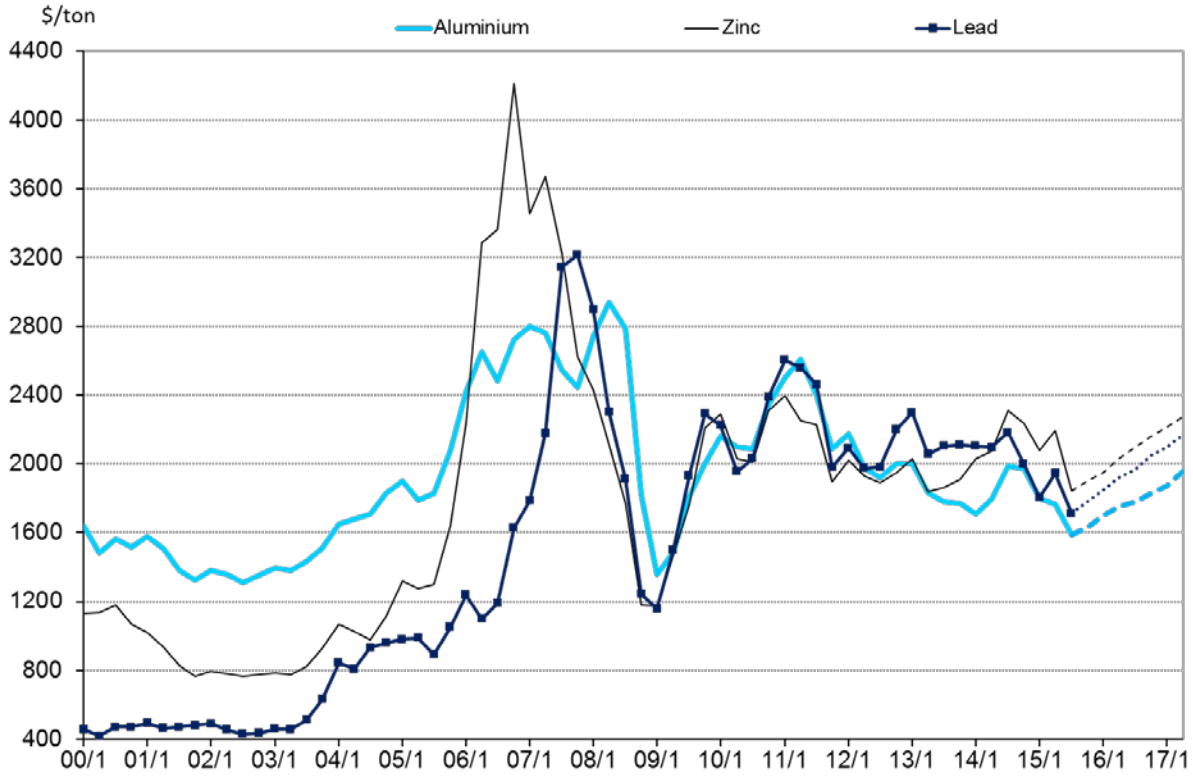
World mine production is forecast to increase by 1% in 2015 (BREE) as new mines begin operation and Australia and with high mine output in the Philippines, Russia and New Caledonia. Then production will increase by a further 4% in 2016. In New Caledonia, Koniambo mine should reach its production target of 60,000t/year at mid-2016. Refined production should increase by 1% in 2015 then be stable.

According to MEPS, the global stainless steel production is predicted to grow marginally by 1.2% year-on-year during 2015, after a significant growth of 8.3% in 2014, because of a slowdown in China. However, BREE sees the world nickel consumption to grow globally even moderately, by 3.1 % in 2015 then by 3.5% in 2016, because of automotive and infrastructure needs in China and India.

Sumitomo Metal Mining Co expects nickel supplies to swing into a deficit of 5,000 tonnes in 2015, the first shortfall in five years, due to lower output of nickel pig iron (NPI) by China, as Indonesian ore stockpiles at Chinese ports drop and as ore supplies from the Philippines are depleted

As NPI output slows in China and LME stocks are needed, more refined nickel should be consumed and prices are likely to trend higher in 2016.

Graph 3.11 Aluminium, zinc and lead price forecasts



Nickel prices are expected to recover globally in the second half of the year, on declining nickel pig iron production, stronger demand from the European stainless market and reduced nickel ore availability. Nickel could end in deficit during 2015 according to INSG, and the deficit could expand in 2016 However, stocks levels will remain high in 2015 and new supply could offset the slowdown in NPI production to a degree, limiting a material price rise in 2016.

The ZINC price has decreased by 22% between April and September 2015, weighed down by weak demand sentiments in China and production surplus. Zinc prices have also slumped in September due to the inventory increasing.

LME stocks have been continuously declining and are at historically low levels but they increased by 18% between April and September 2015, with an upsurge in its use as collateral for metal-backed financing deals.

Global **zinc** mine production rose 7.7% in Jan-June 2015 compared to Jan-June 2014 according to ILZSG, mainly in Australia, China, India, Peru and Sweden. Antamina mine in Peru has begun operating at more than 90% rate as the technical issues and labor issues were sorted out coming into this year. ILZSG said global production of refined zinc metal increased by a significant 9.4% in H1 2015. This was mainly due to higher output in China and India.

World usage of refined zinc metal increased by 2.9% in H1 2015 (ILSZG) with demand rising by 3.4% in China and 0.9% in Europe but decreasing by 3.3% in the United States. European passenger-vehicle sales were up by 8.2% year on year in the first half of 2015.

As per WBMS data, the global zinc market recorded small surplus of 219 kt during the initial seven months of the year in 2015 compared to a deficit of 142 kt during the entire year 2014.

In 2015, global demand for refined zinc metal is forecast to rise by 1.1% (ILZSG) or by 3% (BREE), then by 3.3% (ILZSG) in 2016 or by 2% (BREE). Chinese usage in China is expected to rise more modestly this year. However, in China numerous infrastructure projects, together with government willingness to support the economy, ought to result in rising zinc consumption in 2015-16.

In the US, homebuilders have remained optimistic in September about the conditions and outlook in the residential real estate market. The National Association of Home Builders/Wells Fargo builder sentiment index rose to 62 this month, the highest level since October 2005.

Supply of zinc will tighten, but later than expected. The Century Zinc Mine in Australia with capacity of some 500,000 tonne per year will not shut down until 3Q this year, according to MMG, one quarter later than market estimate. In addition, Vedanta Resources said to postpone the closure of Lisheen mine to year-end of 2015 from earlier's mid-2015. Overall, mining production should grow by +4% in 2015 (BREE) and by 2% in 2016.

Global refined zinc metal production is expected to rise by +3% in 2015 and +5% in 2016, mainly as a consequence of a further expansion of output in China. In October, Glencore has announced that it will be shutting 500ktpa of zinc capacity - this is a sizeable amount representing around a third of its total capacity or about 3.5% of global demand.

There could be a supply-demand deficit in 2016 due to the closure of big mines such as Century in Australia and Lisheen in Ireland. Tight supply and decreasing stocks should make prices rise in 2016.

The downward price trend of the **tin** that started in early 2014 steadily went on until the first half of 2015, before stabilizing in the summer months: eventually, after having fluctuated in the 14K-15K Us$/ton bandwidth between July and August (almost 20% below the January level) the LME tin price posted a moderate recovery in late September. At the time of writing the metal is traded at around 16K Us$/t (however still 25% below than 12 months ago). All in all, on quarterly basis it resulted the best performer in the beleaguered metal complex, having left on the ground just a 2.5% (q-o-q) of its value, on average, from July to September.

The main catalyst for the recent price stabilization should be found on the supply side, particularly in the latest of a long list of efforts put in place by Indonesian government to crack down on environmental damages and smuggling (and, possibly, to artificially shore up the price). Following the producers self-imposed 4000 ton/month cap on exports introduced earlier in 2015 (which eventually failed to work, as export numbers in May and June exceeded that quota) starting from August 1st the mining companies operating in the world’s top exporter of tin have been required to conform to a new standard of rules. The latter resulted in virtually no shipments from Indonesia through August, as companies awaited for a longer than expected permit release process. Adding to that, starting from November 1st a new set of environmental certifications will be imposed on the mining companies operating in Indonesia: official tin export from Indonesia is likely to fall in the coming months, as many producers will probably struggle to cope with the new standards (and will be subsequently forced to cease production). In the first 8 months of 2015 shipments fell to about 46K ton from 53K ton a year earlier; Indonesia will export 70K ton of tin this year, almost eight percent less than last year, according to Trade Ministry. As a consequence of lower availability, the LME future curved moved to backwardation, and inventories withdrawal accelerated.

It is worth noting that the Indonesian authorities efforts has failed, in the last two years, to create an ample shortfall in the world tin market. In recent years the impact of lower official export volumes (2014 refined

flows from Indonesia were 30% lower than in 2012)* were almost completely compensated by massive smuggled shipments and higher production levels in other countries, notably Myanmar and China, which ultimately balanced the global market (and sent the LME price to a 6 years low in mid-2015). There is a chance that this time would however be different, as the projected Indonesian drop is unlikely to be matched by an equal increase of tin ore production in other countries. Indeed, the concentrate output from world top mines showed sharp declines in recent months: tin concentrate production at San Rafael (Peru) mine has dropped significantly during the first eight month of 2015, totaling 13K ton, a 15% contraction when matched with the output volumes recorded in the corresponding period last year. Overall concentrate production in African and South America tin mines fell by 30 and 9%, respectively, in the first 7 months of the year. Moreover, even though Myanmar domestic mining activity considerably grew in 2014, the decline of the ore grade is posing several challenges for the Chinese refiners, and so will do in the nearby future.

All in all, global cumulated mine production decreased 7.7% in the first 7 months of 2015, while refined tin production fell to 193K ton (a 12.3% drop), comparing to the same period last year. Even though the global demand of electronic goods should have experienced a positive, albeit moderate, growth in the first half of 2015 (World Semiconductor Trade Statistics, WSTS, anticipates the world semiconductor market– a proxy for electronic goods demand - to post a 2.3% expansion in the current year) Jan to July global tin apparent consumption is estimated 5% lower, y-o-y, to 211K ton, mostly on decreased European consumption and Chinese inventory destocking. The global tin market recorded a 18.5 k tons cumulate deficit in the first 7 months of 2015, which looks consistent with the concurrent steep slowdown of inventories in the LME warehouses.

Looking ahead, even if the global tin demand is not expect to grow at a brilliant pace (according to WSTS the global semiconductors market is expected to grow at a modest 3% rate both in 2016 and in 2017, reflecting the ongoing weakness of Chinese economy) we expect that the supply-related issues will continue keeping the global metal balance under tension. The huge amounts of inventories accumulated by Indonesian tin producers over the summer months will weight on global tin balance, when the latters would be finally granted with the export licenses. Combined with the persistent uncertainty about the extent of China's slowdown and, more in general, about the health of global economy, will continue to weight on tin price in the remainder of the year, delaying the price recovery. Starting from 2016 the global tin price is however expected to rise from the current lows, climbing above US$ 18K/ton – a level which appears more consistent with the demand-supply outlook - in the last part of the forecast period.

3.4.2 STEEL AND FERROUS STEEL RAW MATERIALS

World **STEEL** consumption growth decelerated in 2014 to 0.7 per cent from nearly 6 per cent in 2013 at about 1.5 billion tonnes on basis of finished steel production according to the Worldsteel. The steel consumption reached, however, a new record supported by the strong growth in the EU (5 %), the US (11.8%) and emerging markets excluding China (2.6%). In China, the consumption declined by 3.3 per cent in 2014 ending the strong average Chinese demand growth after the global recession in winter 2008/2009. A turn in the Chinese steel demand in 2014 reflected the weakening domestic growth in industrial production, car production and construction – key users of steel and moderate growth of demand in industrial countries.

The Chinese consumption is expected to continue declining in 2015-2016, although the government has started to support steel-intensive infrastructure building to strengthen the weakening economic growth. Chinese consumption is expected to decline this year markedly by 3.5 per cent and in 2016 by 2 per cent by Worldsteel. The forecasts have been strongly revised downwards since spring.

In spite of declining consumption, China continues, to be overwhelmingly largest steel consumer with 46 per cent share of world finished steel use in 2014. Shares of the three next largest consumers were the EU (10 %), Japan (6.7 %) and the US (5.3 %).

World crude steel production increased in 2014 by 1.2 per cent, but turns into 1 per cent decline in 2015 driven by weaker consumption and prices. Production stabilises in 2016 and is expected to turn to a slow rise afterwards supported by the stronger growth in the world economy. In China the production was stable in 2014, but is expected to decline in 2015-16 by 1-2 per cent and stabilising later. On the other hand steel production is increasing in Russia and India.

The outlook of the steel industry is shadowed by a significant overcapacity. According to the OECD, it has risen strongly since the financial and economic crisis in winter 2008-2009 and may have reached up to 600 mt, close to a quarter of steel capacity. Above half of it is in China The overcapacity seems to melt slowly as steel production is a matter of national interest and is an important employer. In August 2015, the capacity utilization rate in the world steel industry decreased to 68 per cent from the 71.6 per cent a year earlier and from close to 90 per cent in 2007.

The overcapacity of steel industry across the world is changing the usual trading patterns. With significant excess capacity, China has become more active in foreign steel trade. Chinese steel trade with foreign partners used to be relatively modest during the strong growth years until the growth began to weaken after the global recession in 2008-2009. In 2014 exports of Chinese steel products increased by 53 per cent and in the first eight months of this year exports has grown further by close to 30 per cent. Import of steel to China has continued on a low level. The rapid rise of Chinese steel exports reflects the decrease in domestic steel demand and an especially large over capacity in China. Many countries have reacted with requesting protection.

While the large overcapacity calls for substantial cuts in capacity of steel production, it seems to happen slowly. Consequently, strongly rising Chinese exports puts pressure on the prices of steels. In case of reinforcing rounds in the US, the price was rather flat in 2013-214. The price has declined since strongly supported by the declining price of ferrous scrap, which contains around three quarters of costs of rebars. The price declines of steels varied but they were in September 25-30 per cent lower than in 2014, while the price of scrap declined by 40 per cent. The price of rebars stabilises in winter 2015-2016 on a low level supported by some shutdowns of steel mills and slowly reviving demand. In China, the government stimulus packages target much steel-intensive infrastructure building. The price of the rebar is expected to decline this year on average by 20 per cent and in 2016 still 7 per cent, although the price development starts stabilizing.

Risk to even more pronounced decline is large due to large and persistent overcapacity in the steel markets

STEEL SCRAP (Heavy Melting scrap no 1, HMS1) demand is based mostly on the steel production using electric arc furnaces, which make about the quarter of world steel production. However, while the iron-ore intensive blast oxygen furnace production dominates steel production, it uses also 10-15 per cent of scrap in fine-tuning the production process.

Demand for scrap turned to a decrease in 2015 due to decrease in steel production world-wide excluding India and Russia. The price of scrap turned, however, to a decline already in the second quarter of 2014. The decline accelerated in the first three quarters of 2015 to a 10 per cent average decline per quarter. Price decline has been reinforced by a competition of the cheap substitutes like direct reduced iron and billets due to a sharp decline of coking coal and iron ore. The price of scrap was in September 40 per cent lower than a year ago, while the price of ore was 30 per cent lower and coking coal almost a quarter cheaper.

In 2016-2017 scrap demand will be supported by the strengthening US economy in particular, where the share of scrap-intensive steel production is high (63%). The reviving steel consuming sectors like car production and construction add to the demand for scrap in the US. The shale energy boom, on the other hand, which used to support scrap prices due to strong demand for scrap-based pipe and tube steels, has lost its momentum due to sharply decreased crude oil prices and subsequently investments on drilling. The demand from China will decrease, but the effect is smoothened by the small share of electric arc furnace technology in steel production (6 %).

The supply of scrap is very price sensitive. Sharply reduced prices imply lower collection of scrap and put upward pressure on the price of scrap. On the other hand, rising cheap competitive imports of scrap, its substitutes and scrap-based steel are expected to continue their pressure on the scrap prices.

Scrap prices (HMS1, USA) will decrease this year by around third. Scrap prices are expected to stay relatively stable on the low level like the price of rebar, supported by the strengthening US demand. While the bottom of the prices will be reached in winter 2015-2016, prices will still decrease in 2016 by 14 per cent on average. Price risk is downwards and rather large because of large and persistent overcapacity in the steel markets.

IRON ORE prices have declined strongly from 135 US$/t in the last quarter of 2013 to 54 US$/t in the third quarter of 2015. The reason for the sharp decline was first a strongly risen low-cost production particularly in Australia, second the decline was reinforced by the turn of global and particularly Chinese steel production downwards in 2015.

China is a key producer of steel with a share of half of world crude steel production and a key importer of iron ore with over 60 per cent import share of world iron ore imports. World steel production, demand for iron ore, has decreased in the first nine months of 2015 by about 2.4 per cent from a year earlier. In China, steel production declined by two per cent. Decline in steel production is partly reflecting a necessary adjustment to necessary cuts of overcapacity.

Iron ore markets are currently oversupplied due to both changes in iron ore supply and demand. First, iron ore production has increased as a delayed response to high prices in 2008-2014. Second, market balance has deteriorated due strong China-led increase in demand in 2000s up to 2014, when demand turned declining reflecting the decrease in steel demand globally and particularly in China. A necessary need for consolidation is taking place slowly like in steel industry, however.

The price of iron ore (Steel import price in Tianjin, CIF) has declined in September 2015 64 per cent from the peak in February 2013 and 32 per cent from a year earlier mostly as a response to increased supply of

iron ore. The strategy adopted by especially low-cost Australian mining companies is to raise their market shares by increasing ore production irrespective of rapidly declining prices.

Iron ore exports are rising especially fast in the main producer countries Australia. The exports of Australia rose last year nearly by a quarter, while exports from the other dominant producer Brazil rose by 4 per cent. The growth of exports will moderate in 2016-2017, but it is expected to continue in the forecast years.

Price path in 2016-2017 depends on the sustainability of high cost production of iron, of which much is unprofitable. Low-cost producers Rio Tinto and BHP Billiton in particular have breakeven costs at about 30 USD per ton. Third largest producer Fortescue Metals Group has a breakeven of close to 40 US dollars per ton. Producers, who have higher break-evens than Fortescue are close to be positioned as a marginal producer, while higher cost production is unprofitable.

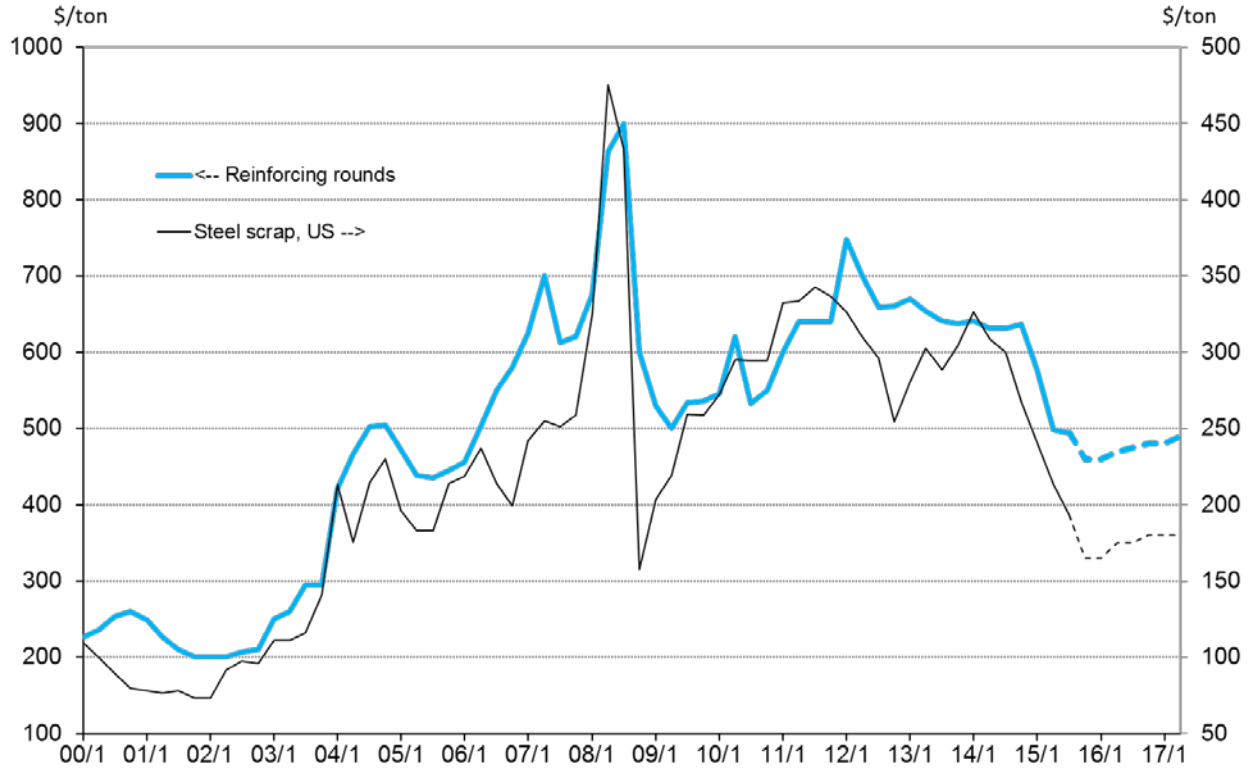
The high volatility of the price of the iron ore will decline once the industry cost curve or the iron ore will flatten and the high cost production will diminish. The price will be low for an extended period as growth of demand will be rather weak and seaborne iron ore supply is rising. The price of ore is expected to fluctuate in 45-55 dollars per tonne in 2016-17 and turning in the into rise in 2017, when high-cost production are expected to decrease markedly and the demand for ore will increase. The price risk is downwards due to a

Table 4 Metals and minerals (US$ terms)

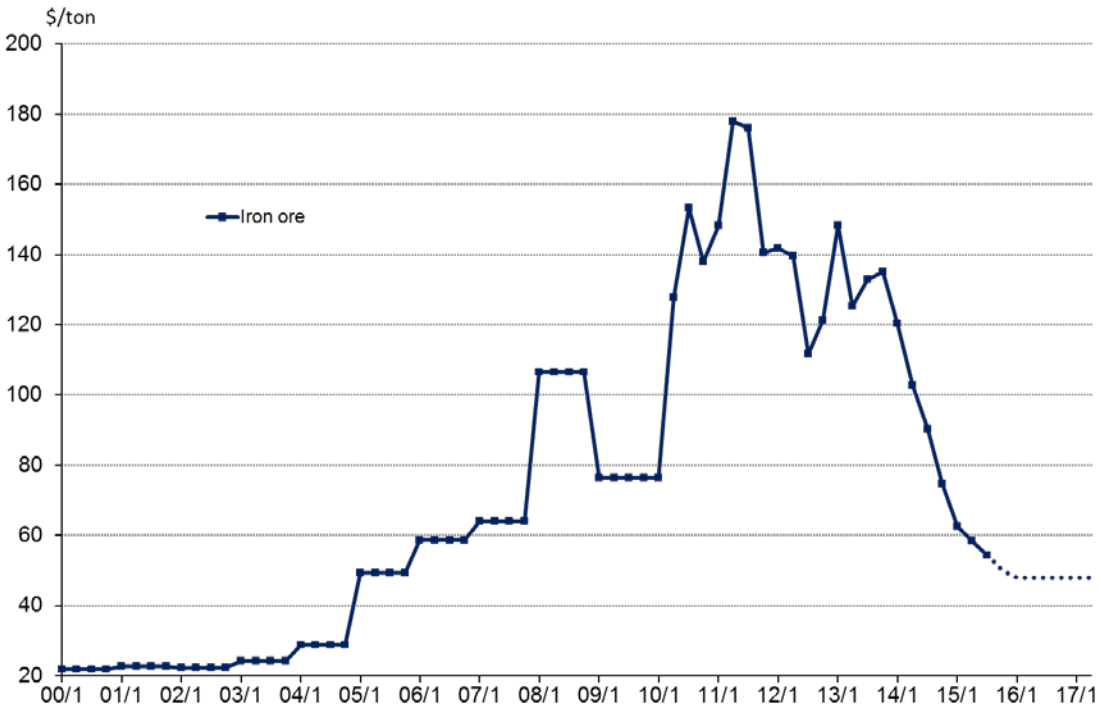
Commodity		14/3	14/4	15/1	15/2	15/3	15/4	16/1	16/2	16/3	16/4	17/1	17/2	2013	2014	2015	2016
Non-ferrous metals		**93**	**89**	**80**	**80**	**70**	**71**	**73**	**75**	**78**	**80**	**82**	**85**	**88**	**88**	**75**	**77**
		6	***-4***	***-10***	***0***	***-12***	***2***	***3***	***3***	***3***	***2***	***2***	***4***	***-8***	***0***	***-15***	***2***
Aluminium	GB	92	91	83	81	73	75	78	81	82	84	86	90	85	86	78	81
		11	*-1*	*-9*	*-2*	*-10*	*3*	*4*	*3*	*2*	*3*	*2*	*5*	*-8*	*1*	*-9*	*4*
Copper	GB	93	88	77	80	70	69	69	71	75	77	78	80	97	91	74	73
		3	*-5*	*-12*	*4*	*-13*	*-1*	*0*	*3*	*6*	*2*	*2*	*2*	*-8*	*-6*	*-19*	*-1*
Lead	GB	102	93	84	91	80	83	86	89	92	95	98	101	100	98	84	91
		4	*-8*	*-10*	*8*	*-12*	*4*	*4*	*4*	*3*	*4*	*2*	*3*	*4*	*-2*	*-14*	*8*
Nickel	GB	85	73	66	60	48	50	52	54	56	57	59	62	69	77	56	55
		1	*-15*	*-9*	*-9*	*-19*	*4*	*4*	*4*	*3*	*2*	*4*	*4*	*-14*	*13*	*-28*	*-2*
Tin	GB	107	97	90	76	74	79	80	82	86	88	90	93	109	107	80	84
		-5	*-9*	*-8*	*-15*	*-3*	*6*	*1*	*3*	*6*	*2*	*2*	*3*	*6*	*-2*	*-25*	*5*
Zinc	GB	107	104	96	102	85	88	90	94	97	100	103	106	88	100	93	95
		12	*-3*	*-7*	*5*	*-16*	*3*	*3*	*4*	*3*	*3*	*2*	*3*	*-2*	*13*	*-7*	*3*
Ferrous raw materials		**82**	**70**	**60**	**55**	**51**	**45**	**44**	**45**	**45**	**46**	**46**	**46**	**107**	**86**	**53**	**45**
		-9	***-15***	***-14***	***-9***	***-8***	***-11***	***-3***	***2***	***0***	***1***	***0***	***0***	***3***	***-20***	***-39***	***-15***
Iron ore	BRA	73	60	50	47	44	40	39	39	39	39	39	39	109	78	45	39
		-12	*-17*	*-16*	*-6*	*-7*	*-8*	*-4*	*0*	*0*	*0*	*0*	*0*	*5*	*-28*	*-42*	*-15*
Steel scrap	US	104	92	83	74	67	57	57	61	61	62	62	62	101	104	70	60
		-3	*-11*	*-10*	*-11*	*-9*	*-15*	*0*	*6*	*0*	*3*	*0*	*0*	*-1*	*3*	*-33*	*-14*
Steel scrap	EU	104	93	84	74	67	57	57	60	60	62	62	62	101	104	70	60
		-3	*-11*	*-10*	*-12*	*-9*	*-15*	*0*	*6*	*0*	*3*	*0*	*0*	*-1*	*3*	*-33*	*-15*
Steel		**112**	**113**	**103**	**89**	**88**	**82**	**82**	**84**	**84**	**85**	**85**	**87**	**116**	**113**	**90**	**84**
		0	*1*	*-9*	*-14*	*-1*	*-7*	*0*	*2*	*1*	*1*	*0*	*2*	*-6*	*-2*	*-20*	*-7*

large uncertainty relating to the China, which is the largest iron ore consumer and importer. Iron ore swap prices in London and futures prices in London point to a decreasing ore prices ending at 40 USD/ton in 2017.

Graph 3.12 Steel and steel scrap price forecsts

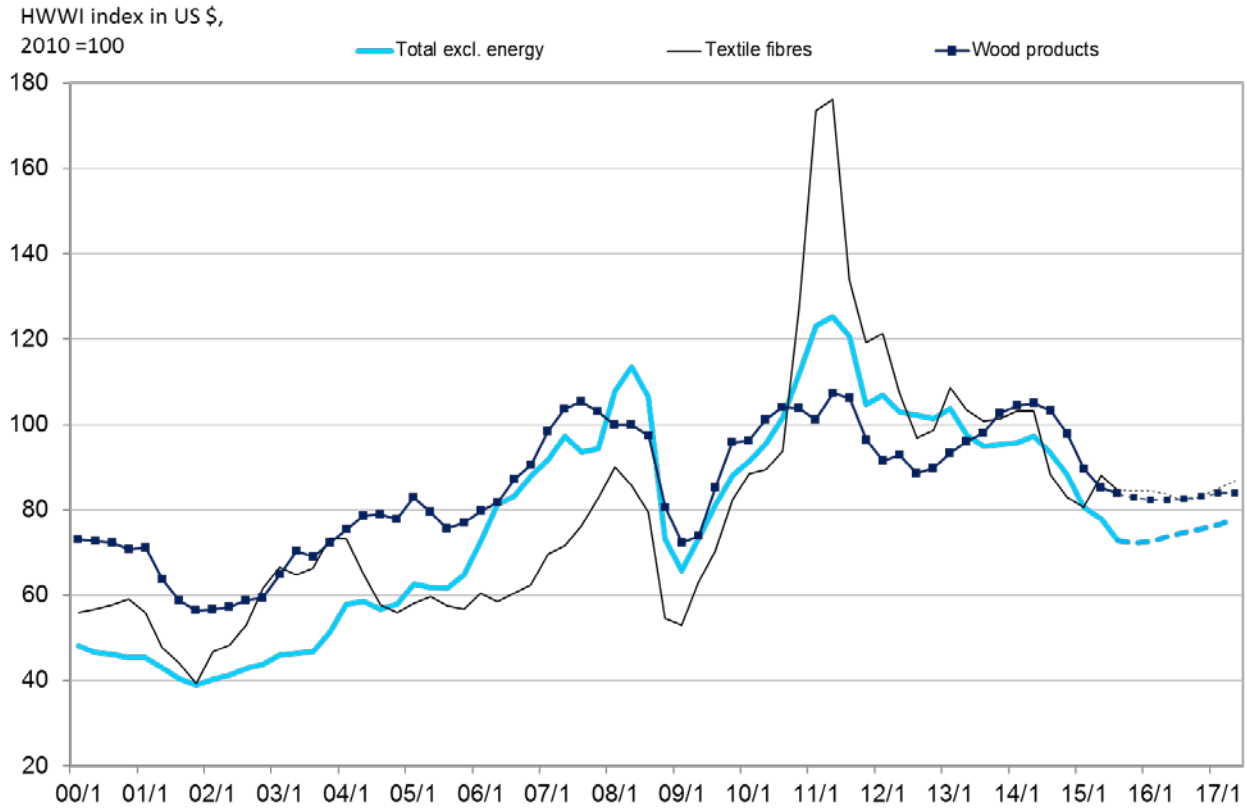


Graph 3.13 Iron Ore price forecast



3.5 OUTLOOK FOR AGRICULTURAL RAW MATERIALS

Graph 3.14 Agricultural raw materials price forecasts



3.5.1 TEXTILE FIBRES

In 2015-2016, **COTTON** prices are projected to decrease moderately. Prices are currently under pressure due to competitiveness with synthetic fibres whose are low as they are derived from oil. The decrease should trail off in 2016-2017. This price forecast corresponds to a transitory situation before a dynamic cotton market in a long term perspective. The transition process corresponds to a gradual dwindling of the Chinese massive stocks, as well as the catch-up of production toward consumption.

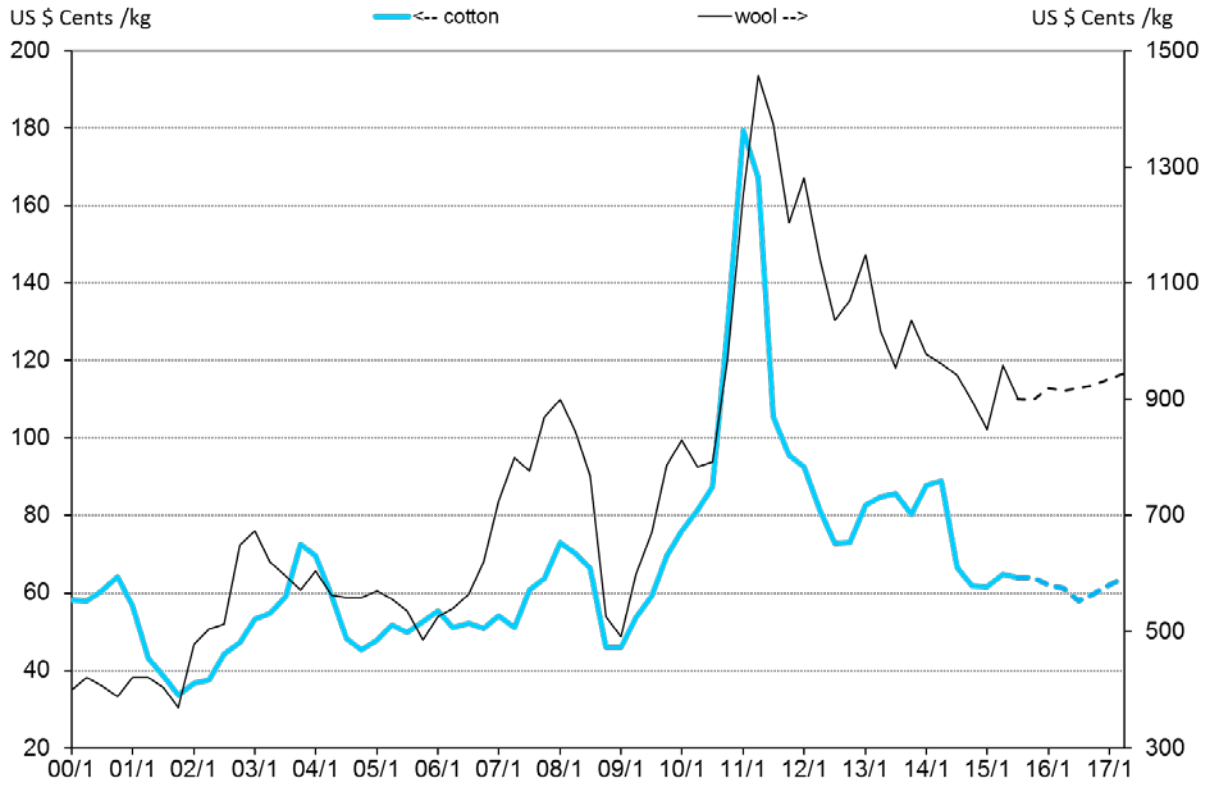
World cotton consumption is forecast to increase steadily in the next years at an average rate about to reach about 26 million tonnes in 2016-2017. The annual growth rate is 3%. This consumption pattern is marked by a constant, or slightly decrease, from China (at 7.4 million tonnes). The current slowdown of Chinese economy accounts for this stabilisation in the short-term, while in the middle-term the textile Chinese industry may decline in favour of others non-OCDE countries (for instance, India, Pakistan or Vietnam).

World cotton production is projected to decrease in 2015-2016 down to 24 million tonnes. Farmers from North countries were deterred to seed as price was relatively low for substitute crops (such as peanuts). US lands for cotton have shrunk by 18% in 2015. Moreover, Chinese government has shifted its agricultural policy for cotton: instead of floor price, farmers seeding cotton are now directly subsidized. This policy change in China makes planting cotton less profitable. Areas planted to cotton have decreased down to 34% in some Chinese regions. This drop in world production is temporary. Chinese cotton stocks have been on a

rise due to the floor price policy, which is not sustainable in a long-run, which would drive back production. US producers would no longer suffer from hard seasonal conditions as in the previous years. India should benefit from better lint yield through agricultural infrastructure improvements.

Cotton stocks are forecast to be on a downward trend. In the short-term, consumption increases while production stall. This time interval between supply and demand should be the occasion to diminish stocks smoothly. In the long-term, the world cotton stock should reach 21.5 million tonnes.

Graph 3.15 Price forecasts for textile fibers



WOOL prices stay almost stable in the years 2015-2016.Since 2007, world wool prices have been affected by a downward trend (about -1.7% monthly), except a pick up in the second quarter of 2015. This downward trend is partly explained by a depreciation of the Australian dollar against the US dollar since 2013. The average Eastern Market Indicator (EMI) is forecast to increase by 9.6 per cent to reach 963 USD/kg. This increase is supported by a fall in wool production in Australia and New-Zealand.

Wool production is forecast to fall during 2015-2016. Australian flock should shrink in 2015-2016 at 71.3 million heard, its minimum over the last five years. In comparison with 2014-2015, Australian sheep flock has reduced by 2%. This construction of sheep flock combined with a decrease in average fleece weight implies to forecast a decrease of 5 per cent of shorn wool production from 428 000 tonnes in 2013-2014 down to 407 000 tonnes in 2015-2016. As flock will rebuild, the production is expected to increase slightly after 2015-2016.

Moreover, New-Zealand sheep flock are also forecast to decrease annually by about 1% in the next years. This flock trend should lead to a decline in the world wool production in the next years.

Wool demand is forecast to decrease in 2015-2016. Wool faces competition with synthetic fibres and cotton as inputs for textiles manufacturing industry. Low oil price and cotton prices under pressure should keep world wool demand at bay. In volumes, China is one of the most important buyer of wool for domestic as well as for international demand as a raw material for textile industry. The dull dynamics of China should lead to a decrease of wool demand reinforced by, e.g., slowing imports of textiles to the US.

3.5.2 OTHER AGRICULTURAL RAW MATERIALS

Natural RUBBER production is forecast to growth only slightly in 2015 and keeps growing in 2016. The International Rubber Study Group (IRSG) expects a growth rate of 2.5% in 2015 (to be compared to +6.8 in 2014) and a growth rate of 3.2% in the subsequent year. This production forecast may be jeopardized by climatic disturbances. The production of two major world producers of natural rubber, Thailand and Indonesia, occur between October and January when El Nino can severely impact the outcome.

The slowdown of the Chinese economy put world demand under pressure. Moreover, competition between natural and synthetic rubber is also a downward pressure for demand of natural rubber. Low oil prices make synthetic rubber a cheap substitute to natural rubber. The key industrial sector determining the world demand is the car industry. US car making industry is strong, as well as domestic demand for cars. Chinese car industry is also on an upward trend. These strong car productions imply a strong demand for tires that turns itself into demand for rubber.

The price of natural rubber is forecast to decrease by 11.1 per cent by the end of 2015 and by 8.2 per cent in 2016 (Q-o-Q change). This slight decline in the next years is due to a gap between production and demand. Stocks are also relatively high (about one quarter of world production) so that a brutal peak of prices is unlikely.

Indeed a significant increase in oil price would lower the price pressure due to a loss of price-competitiveness of synthetic rubber. And a severe drop in production, such as one that may be generated by El Nino, would also push prices up.

Sawn **WOOD** prices have fallen by 15 % in the course of the year 2015. The fall in prices was especially apparent in the first quarter, when prices dropped to 230 US-Dollar per m3. However, prices declined further in Q2 and Q3, but not with the same intensity. Comparing the recent price level to the second quarter of 2014 - when prices for sawn wood Swedish pine reached a three-year-high - the price decline in US-Dollar terms accounts to nearly 30 %. This price decline was mainly driven by the strengthening of the US-Dollar and weakening demand. By now, prices are at their lowest level since 2009.

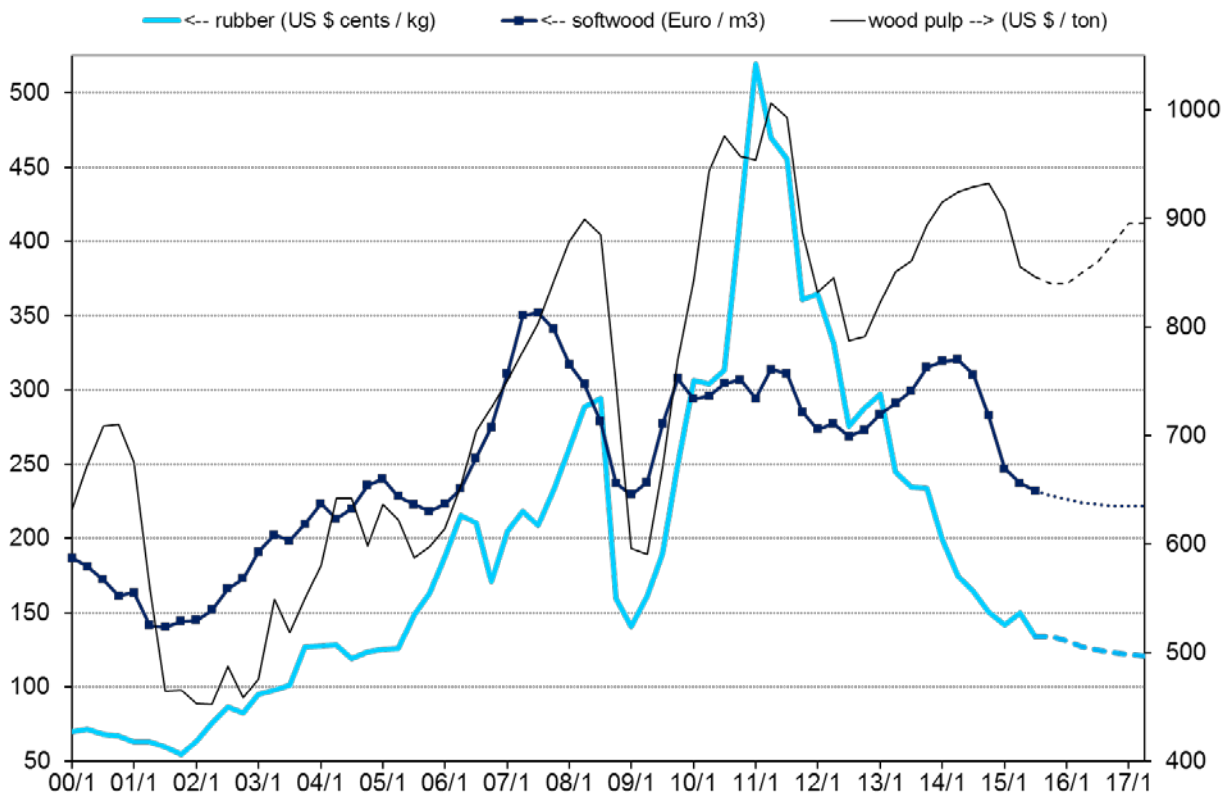
Lumber exports to China had expanded substantially from 2010 to 2014. However, according to Wood Resources International LLC, the Chinese demand has been significantly lower in 2015. Moreover, reduced demand in the US, Europe and Asia added to the situation.

According to Wood Resources International LLC, the lumber production in the USA - one of the major international producers - was slightly higher in Q2/2015 than in the previous quarter. In combination with uncertainty concerning US housing construction these developments had a dampening effect on global wood prices.

Furthermore, the competitiveness of the northern Europe producers Finland and Sweden - due to the strong US-Dollar - increased their exports volumes during the first five month of 2015 by 1.5% and 4.6% respectively compared to the same period in 2014.

The supply and demand imbalance resulted in downward price pressure on the world market. Concerning the outlook for 2016 it is likely that prices will decline further due to uncertainties concerning the world economy and the possible economic slowdown in China.

Graph 3.17 Rubber, softwood and pulp price forecasts



Soft wood **PULP** prices (Northern bleached softwood kraft, NBSK) continued in September 2015 its continuous monthly decline since December 2014. In September the price was one per cent lower than in previous month and 10 per cent lower than a year ago.

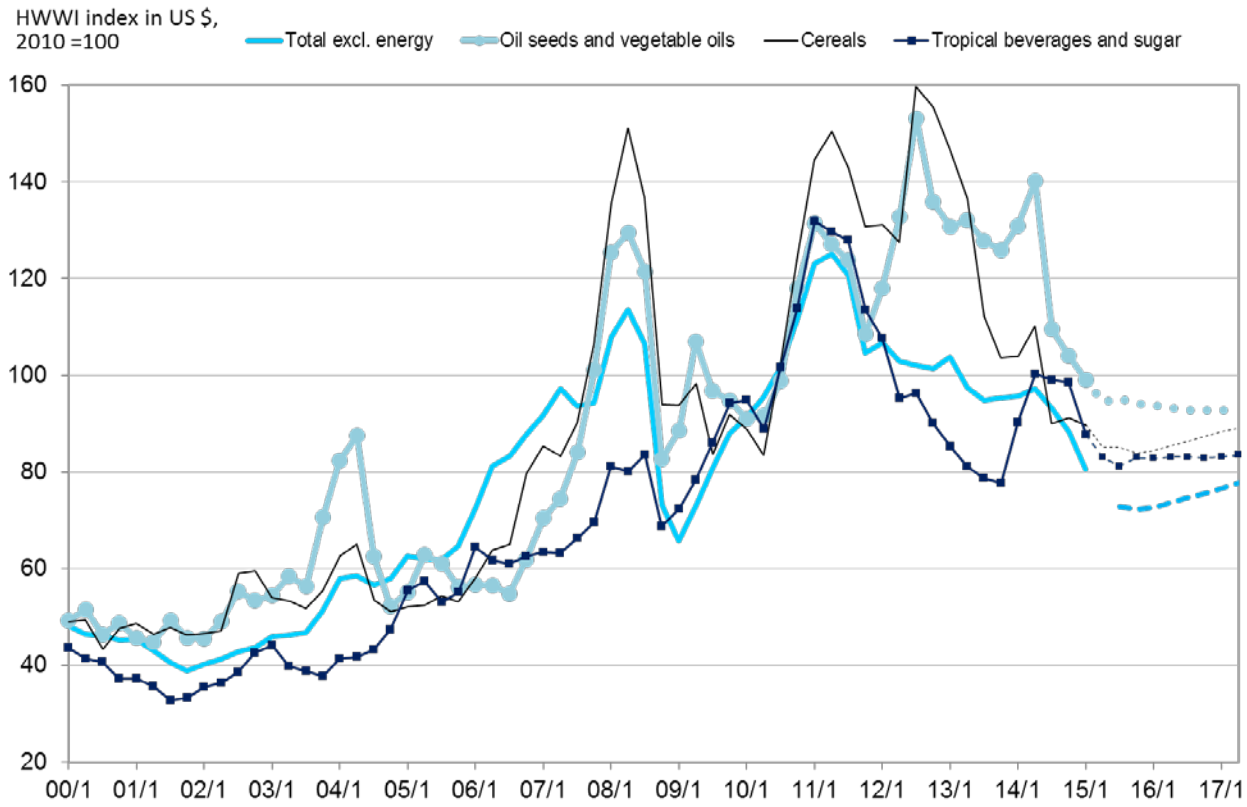
A price decline was driven by the continuous decrease in demand for paper products in industrialised countries as, e.g., the print versions of newspapers and periodicals continue evaporating, along with advertising revenues. Also an unusually large price difference – up to 200 US$/ton - between hard and soft wood pulp prices in 2014 put pressure on the more expensive soft wood pulp price. On the other hand, the price decline was dampened by the growing demand for paper-based packaging as the surging popularity of ecommerce continued to boost shipping.

A price outlook for the NBSK pulp is improving. The world economic growth will accelerate in 2016-2017 from a low growth in 2015, which will increase the demand for pulp. Euro Area economies are getting more strength adding to a relatively strong US growth. The price of NBSK is expected to be stable in the winter 2015-2016 following a slight rise in 2016 given the strengthening of the world economy. The price rise is cushioned by increasing capacity and production of the NBSK and the intensifying competition of still less expensive hardwood pulp. The US$ price of the NBSK is forecast to decrease by 7 per cent in 2015. In 2016, the price turn slow rise, but on average the price decrease by a per cent.

Table 5 Agricultural raw materials (US$ terms)																	
Commodity		14/3	14/4	15/1	15/2	15/3	15/4	16/1	16/2	16/3	16/4	17/1	17/2	2013	2014	2015	2016
Agricultural raw		**94**	**89**	**82**	**79**	**76**	**75**	**75**	**75**	**75**	**75**	**76**	**76**	**95**	**94**	**78**	**75**
materials		***-3***	***-5***	***-8***	***-3***	***-4***	***-1***	***-1***	***0***	***0***	***0***	***1***	***0***	***2***	***-1***	***-17***	***-4***
Textile fibres		88	83	81	88	85	84	84	84	82	83	85	87	104	94	84	83
		-14	*-6*	*-3*	*9*	*-4*	*0*	*0*	*-1*	*-2*	*2*	*2*	*2*	***-2***	***-9***	***-11***	***-1***
Cotton	US	71	66	66	69	68	68	66	66	62	64	66	68	89	81	68	65
		-25	*-7*	*0*	*5*	*-1*	*0*	*-3*	*-1*	*-5*	*3*	*3*	*3*	*4*	*-9*	*-16*	*-5*
Wool	AUS	112	106	101	114	107	107	109	108	109	110	111	112	123	112	107	109
		-2	*-5*	*-5*	*13*	*-6*	*0*	*2*	*-1*	*1*	*1*	*1*	*1*	*-8*	*-9*	*-5*	*2*
Natural rubber	THAI	49	45	42	45	40	40	39	38	37	37	36	36	75	51	42	38
		-6	*-8*	*-6*	*6*	*-11*	*0*	*-2*	*-3*	*-2*	*-2*	*-1*	*-1*	*-20*	*-32*	*-19*	*-10*
Wood products		103	98	89	85	84	83	82	82	83	83	84	84	97	103	85	83
		-2	*-5*	*-8*	*-5*	*-2*	*-1*	*-1*	*0*	*0*	*1*	*1*	*0*	*7*	*5*	*-17*	*-3*
Softwood	S	103	94	82	79	77	76	75	75	74	74	74	74	99	103	79	74
		-3	*-9*	*-13*	*-4*	*-2*	*-1*	*-1*	*-1*	*-1*	*0*	*0*	*0*	*9*	*4*	*-23*	*-5*
Woodpulp	FIN	100	100	97	92	91	90	90	91	92	94	96	96	92	99	93	92
		0	*0*	*-3*	*-6*	*-1*	*-1*	*0*	*1*	*1*	*2*	*2*	*0*	*5*	*8*	*-7*	*-1*

3.6 OUTLOOK FOR FOOD AND TROPICAL BEVERAGES

Graph 3.18 Food and tropical beverages price forecast



3.6.1 GRAINS

International **MAIZE** prices have been relatively stable in the course of the year, fluctuating at relatively low levels between 375 and 400 US-ct/bushel in recent months. Availability of maize appears comfortable: despite the forecast of a lower production in 2015/16 no significant market deficit is expected in the foreseeable future. Barley prices at the same time showed signs of weakness as output in the US and Canada is expected to recover from the recent weather related losses of output.

Global maize production in 2015/16 is currently expected to drop by 4 per cent to 967 million tons, down from last year's 1005 million tons record level. The decline of production reflects both reduced acreage as a result of lower profitability and diminishing yields on the assumption of a return to average weather conditions. Regionally the decline is broad based, with output falls in the major producing countries ranging from 6 per cent in the US to 8 per cent in Brazil to 15 per cent in the Ukraine and even 25 per cent in the EU. Increasing production is expected for South Africa and for China, where the IGC forecasts output to rise by 5 per cent to 227 million tons as more farmers switch to corn in response to the government having implemented a floor price for corn but not for competing crops such as cotton and soybeans.

Maize consumption is forecast to decline marginally reflecting a loss in competitiveness of maize relative to wheat and soy beans. Additional demand from industrial use will fail to materialize given that the drop in oil prices reduces incentives to produce biofuels and the so-called blend wall in the US (the limit implied by the current regulation on the share of ethanol required to be blended into gasoline gasoline) is approached. Maize

consumption has increased by 40 per cent since 2005 with industrial uses (especially for fuel production and starch products) on the rise, but growth for this purpose has slowed markedly already in the previous two years. As demand for direct human consumption – representing little more than 10 per cent of total consumption – shows little momentum, changes in maize demand are currently driven by developments in animal feed. In 2014/15, competitively priced maize found markets at the expense of other feed ingredients, whereas projections for 2015/16 expect reduced availabilities to result in lower feed consumption, especially in the EU and the US.

After another year of substantial market surplus in 2014/15, the market is expected to be more or less balanced in the new season. Given that the stocks-to-use ratio is currently at 22 per cent, the highest in 10 years, and no meaningful reduction is in sight on present forecasts of demand and production, we do not expect significant upward pressure on prices over the forecast horizon, although some support to the current level of prices is likely. On an annual average, maize prices in 2016 could be 3 per cent higher after the dramatic decrease of 27 per cent in 2014 and a 9 per cent in 2015.

International **RICE** prices have been relatively stable over the past two years, although overall displaying a gentle downward trend. In summer our benchmark price – the Thai 5 % broken variety – broke through the 400 US-dollar threshold and prices hovered between 360 and 400 dollar per ton in recent weeks. Availability of rice in the market is still high, despite the decline of global stocks experienced in the past two of years, as exporter competition for markets remains high. Several of the major supplying countries try to reduce stocks. Especially the Thai government continues to work down its inventories accumulated with the rice pledging scheme aimed at higher domestic producer prices that was effective until early 2014.

Global rice production in the market year 2015/16 (August/July) is forecast to decline slightly from the previous year's record level of 479 million tons. Output in the 5 main exporting countries, which has already decreased somewhat in the last season, is expected to fall further by 3 million tons on reduced production in India, the US and Thailand. Notable production increases are at the same time projected for China and Indonesia. With lower availability in India and continued efforts of Thai authorities to reduce stocks, Thailand is expected to regain its traditional position as the world's largest exporter that had been held by India in the past three years.

Consumption is forecast to continue to grow, although at a somewhat slower pace. With most of the rice going to direct human consumption, population growth, and income growth are major factors influencing demand. While per capita consumption in Asia is slowing as income growth enables an increasing number of people to raise the share of wheat-based food and meat in its diet, rice is getting increasingly important elsewhere, especially in Africa. All in all, rice consumption growth is projected to decline to 0.7 per cent from 1 per cent in 2014/15.

In the last market year demand outpaced production and the market that had been almost balanced in 2013/14 slipped into deficit. The market deficit will widen in 2015/16 given the outlook for continued growth in consumption and somewhat lower production and this should fundamentally support prices. The question is at which point the level of stock will imply reduced availability in the world market, leading to significant upward pressure on prices. Currently the overall level of stocks is still relatively high, and the Thai government remains eager to unload inventories on the world market. Thus we expect it to use any sustained period of higher prices or increased demand on the world market to increase exports, thereby limiting the upside to prices. All in all, we expect rice quotations to remain flat in 2016 on an annual average comparison following a decrease by 18 per cent and 8 per cent in 2014 and 2015, respectively.

SOYBEAN prices were considerable low in 2015 and hit a more than five-year-low in September (8.61 US-Dollar per 60lb bushel). Therefore, soybeans prices nearly halved since summer 2014 where prices reached

levels around 15 US-Dollar. This price decline since last summer was initiated by a worldwide record crop caused by significant production increases in major producing countries.

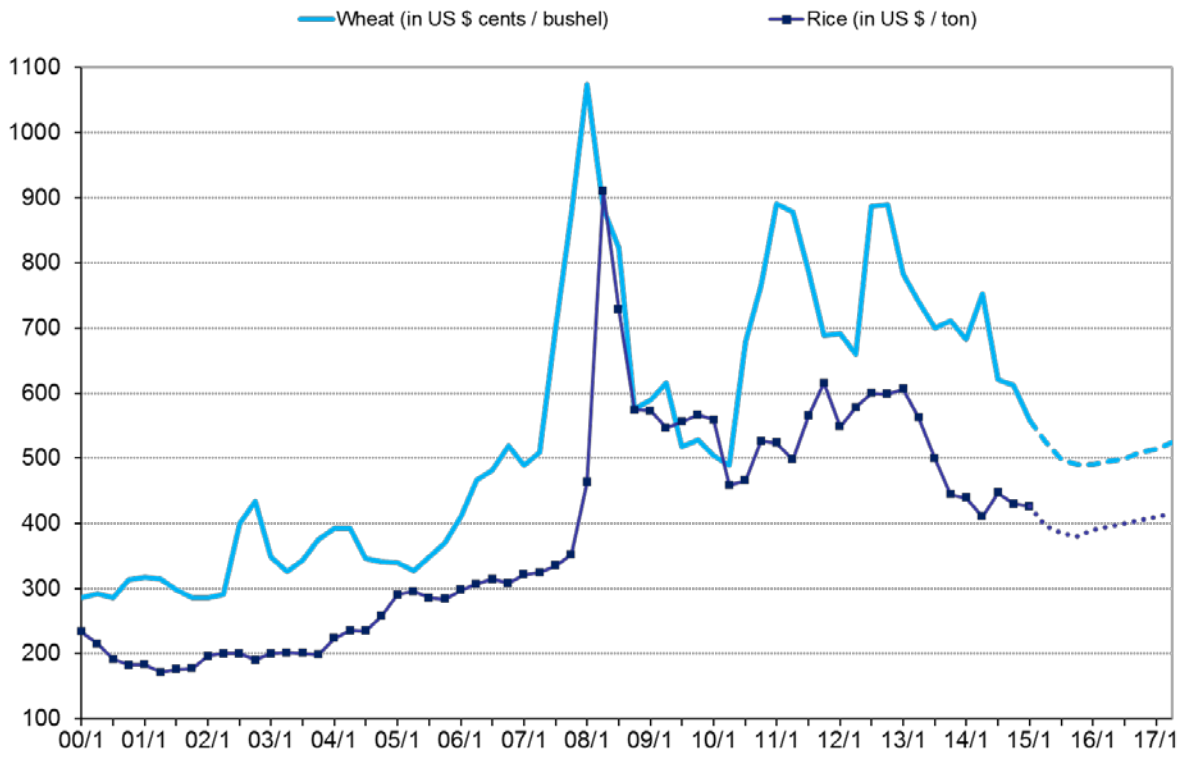
The current supply situation appears to be more than sufficient. Based on the most recent WASDE report of the US Department of Agriculture the 2014/15 season was an all-time record season. Accordingly, the global production grew by 35.8 million metric tonnes to a total production of 319 million tonnes compared to last season. This corresponds to an increase of 12.6 %.

However, the total worldwide use only grew by 8.2 % in the same period of time and reached 298 million metric tonnes. Consequently, the supply surplus led the global stocks rise massively. Furthermore, this supply pattern is likely to maintain during the next season but not as strong as last season. The most recent USDA projections expect another record harvest in the upcoming season 2015/16. Worldwide production is expected to grow by moderate 1.5 million tonnes (+0.4 %) and worldwide use is expected to grow by 12.5 million tonnes (+4.2 %). Although this should ease the situation of oversupply, the market will still be characterized by a supply surplus. Therefore, global stocks will presumably increase further.

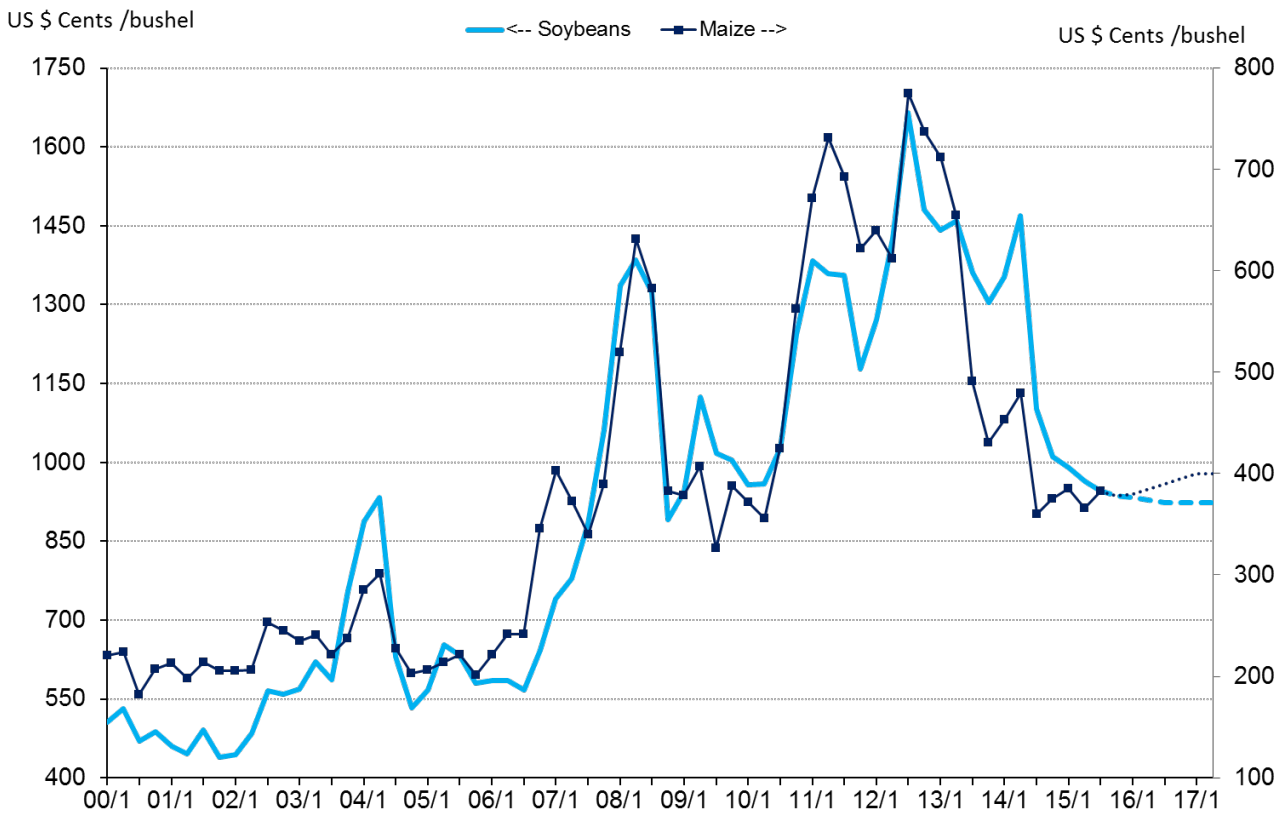
These developments point to rather declining than increasing soybeans prices. Therefore, throughout the next harvest season prices will likely decrease slightly but stay near current levels.

Soybean meal and soybean oil are soybeans products - 60lb bushel generally equates to 11lb soybean oil and 48lb soybean meal (+1lb waste). Soybean meal is an essential source of protein in animal feeding while soybean oil plays an important role in biodiesel production. Since there are currently no signs of a singular demand push of these distinct utilizations, prices for these products are expected to follow soybeans prices as described above.

Graph 3.19 Wheat and Rice price forecast



Graph 3.20 Soybeans and Maize price forecast



3.6.2 TROPICAL BEVERAGES AND SUGAR

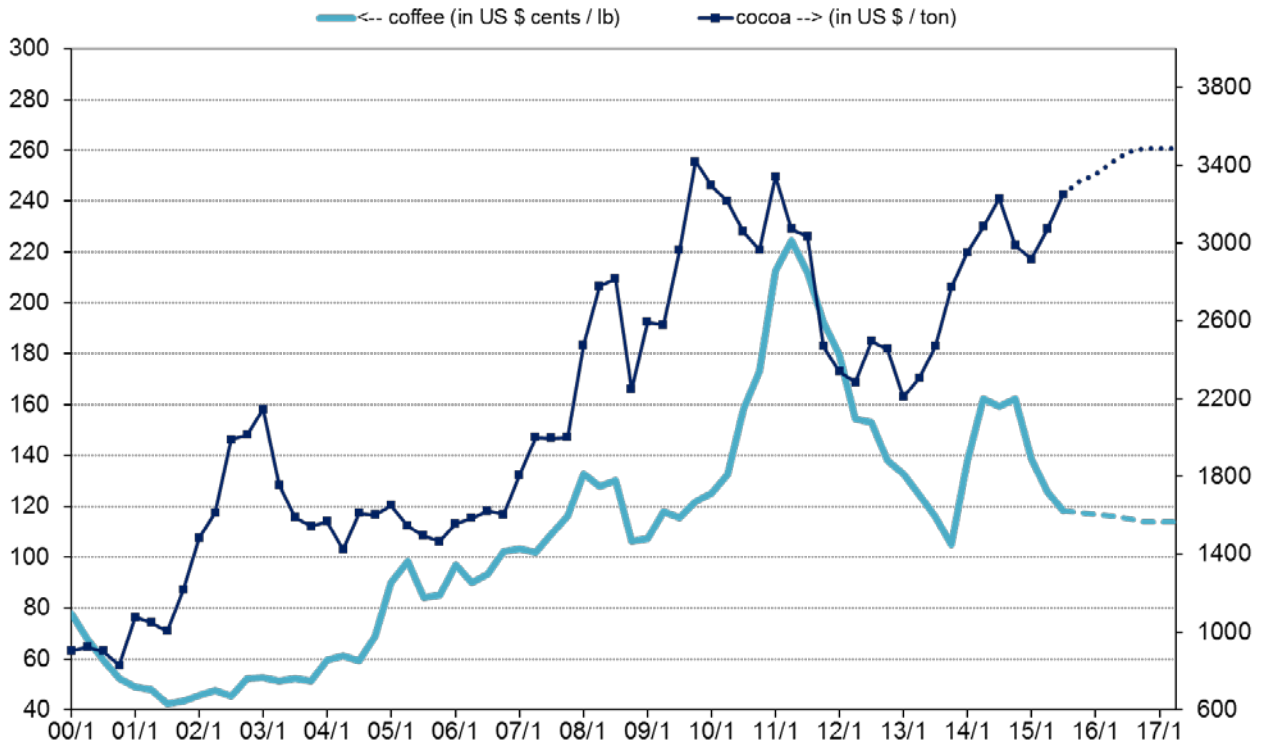
While worldwide **COFFEE** production fell sharply in season 2014/15 due to a prolonged drought in Brazil followed by increasing prices, the 2015/16 season production is expected to increase inducing a price decline. Consequently, since October 2014, when coffee prices hit an over three years high (185.1 US¢/lb), prices have been falling by more than 30 %. After a short recovery in August, prices continued their downward trend. In September, the monthly average of the ICO composite average indicator price fell by 6.7 % to its lowest level since January 2014, even though Brazil reduced their crop estimates about 2 million bags for season 2015/16 . One of the main reasons was the depreciation of several currencies of producing countries against the US-Dollar. Most notably the Brazilian Real and the Colombian peso underwent a sharp decline in value since the end of 2014. Since these countries are the largest and third largest world producers of coffee and the devaluated currencies are an incentive for farmers and exporters to release more coffee to the international market, coffee exports increased and therefore prices declined.

For season 2015/16worldwide production is expected to rise about 4 % from the previous season, according to USDA estimates. The Brazilian production is anticipated to rise by 2.3 %. Favorable weather during most of the growing period supports the status of coffee plants. In addition, the Colombian crop is estimated to grow by 4 % (+500,000 bags of 60kg) and will likely reach 13 million bags which would be the highest level in decades. Furthermore, the Indonesian harvest is estimated to rise by even 25 % on account of supportive weather in the fruit set and flowering period. Despite these outlooks, a potential threat to the estimates could evolve from the El Niño phenomenon which has a significant impact on worldwide rainfall patterns and can therefore notably influence coffee harvests.

On the demand side, global coffee consumption is estimated to grow by 1.1 % (USDA). The imports of the European Union are expected to increase by 500 thousand bags (60kg) to a record of 45.5 million bags which is nearly the half of the current worldwide imports. The United States imports are expected to raise about 500 thousand bags to 24 million bags.

Even though worldwide coffee consumption is expected to increase further, the production growth is estimated to overcompensate demand growth. Hence, coffee prices are likely to fall to some extent, but stay near current levels.

Graph 3.21 Coffee and Cocoa price forecast

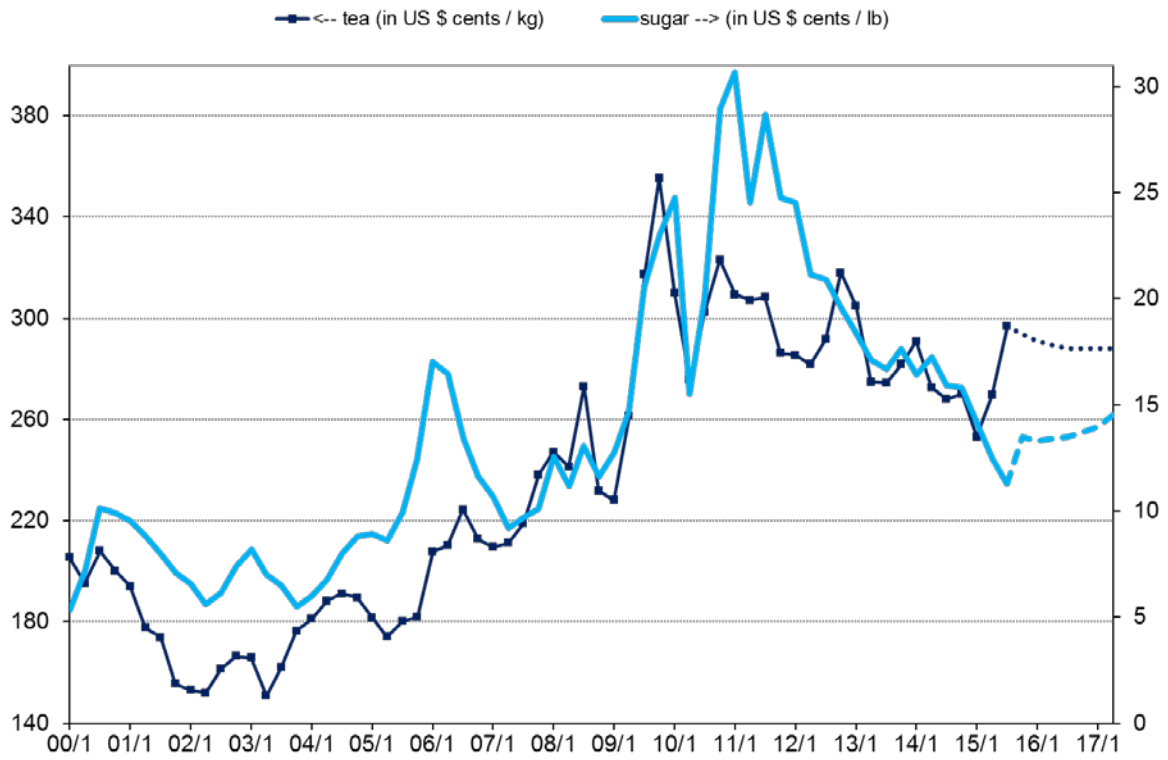


With over 3,100 US-Dollar per tonne **COCOA** prices are currently at a high level compared to recent years. Cocoa prices increased by 60% since March 2013. In the middle of July 2015 prices reached its highest level since four years; cocoa was traded for more than 3,400 US-Dollar per tonne. This corresponds to an increase of 23% compared to the low in January 2015. Thereafter prices declined until the end of August following the global downward trend in commodity prices, coupled with an announcement in Côte d'Ivoire – the world top producer - that additional 200,000 tonnes of cocoa beans had been made available for the international market. Beginning in the first week of September, cocoa prices started rising again due to fears concerning possible supply losses due to unfavourable weather in Western Africa connected to the upcoming El Niño season.

According to the International Cocoa Organisation (ICCO) the cocoa supply situation in season 2014/15 is slightly tenser than in previous years. The estimated worldwide cocoa production decreased from around 212 thousand tonnes in the last season to an overall production of 4,158 thousand tonnes this season. While Côte d'Ivoire, hit an all-time record of 1,794 thousand tonnes this season, Ghana the second largest producer

experienced a sharp fall in production of about 162,000 tones. This corresponds to a decrease of 18% compared to last season.

Graph 3.22 Tea and Sugar price forecast



On the demand side of the cocoa market the overall grindings are expected to fall by 4 % compared to last season to 4,131 thousand tonnes. This would be the first year-on-year decrease in grindings since seven years.

Despite this fall in grindings, the decrease in production will presumably overcompensate the lower demand, resulting in a slight market deficit of 15,000 tonnes for season 2014/2015. Therefore, the stocks-to-use ratio will rise to 38.8%. Hence, cocoa prices are more likely to increase even further in the near future. .

However, there are several risks for the upcoming season that could induce further price increases. Most notably, this year's strong El Niño event could disrupt the timing and volume of rainfall in West Africa and therefore decrease cocoa production. Consequently, Côte d'Ivoire and Ghana both increased their farm-gate prices for the 2015/16 season by 18% and 22% respectively. Even though the global economic outlook, especially in the emerging countries is likely to temper demand, the overall price perspective for the upcoming season is upward.

World **SUGAR** prices have continued to decline during the summer months, but recovered more recently. At the end of October, the benchmark price (sugar No. 11 New York) was around 14ct per pound, which was almost the level seen at the start of the year. In a longer term perspective, prices are on a declining trend prevailing since 2011 in response to persistent excess production and inventories having risen to historically high levels. Despite the substantial decline of prices from the 32ct record level registered in January 2011 production has only levelled off. Global sugar output is still high and the market is only starting to move into deficit.

Global raw sugar production in the 2015/16 market year (October to September) is currently estimated to remain largely unchanged at 182 million tons, close to the record production of 185 million tons achieved in 2012/13. This is only a small adjustment after an increase of almost 25 per cent in the previous four years. From a regional perspective, the decline is mainly due to lower production in Europe and China, whereas output in the largest producer countries, Brazil and India, will be largely unchanged and output in Thailand and the United States is expected to increase.

Sugar consumption is forecast to grow by just over 2 per cent per year over the forecast horizon, slightly less than the 2.5 per cent growth estimated for 2014/15. Consumption growth is influenced by a number of factors, including consumer preferences, government policies and the price of sugar relative to alternative sweeteners, but the main drivers are population growth and per capita income. The bulk of consumption growth takes place in the developing world, where economic momentum has been diminishing in recent years. A major uncertainty is the effect of the slowdown in China on the country's sugar demand, although the impact so far seems to be small. With prices having moderated substantially and the outlook of an improvement in global economic growth in 2016, global sugar consumption should accelerate over the forecast horizon. However, as the strengthening of income growth is assumed to take place in the advanced economies mainly where sugar markets are almost saturated – per capita consumption of sugar is actually on a secular declining trend in the developed world –the potential for global sugar consumption growth seems limited for the time being.

According to this forecast, 2015/16 will see the first deficit in the global sugar market in six years. Five consecutive years of excess production have led to the accumulation of stocks to comfortable levels of 45 per cent, from historically relatively low levels of little more than 35 per cent in 2010/11. Given ample inventories, the small market deficit expected for the current year should not lead to a major increase in prices. The market balance will be influenced by government policy in Brazil, where the mandatory blending ratio of cane-based ethanol was raised from 25 per cent to 27 per cent in order to mitigate the adverse effects of lower oil prices on ethanol consumption. This has led to a strong increase in domestic consumption of ethanol and led mills to allocate more cane to ethanol production. As a result the ethanol share has risen to a historically high level of 57 per cent in 2014/15 and is expected to increase further to 59 per cent in the current season, close to historical records. In the event of a higher sugar share than implied in this forecast, availability of sugar on the world market would increase with probably negative impact on prices. Based on our forecast of only a small deficit in the global sugar market in an environment of ample inventories, we forecast that world sugar prices will basically remain at current low levels over most of the forecast horizon, rising by 5 per cent on average in 2016, following more than 20 per cent decline in the current year.

Table 6 Food and tropical beverages (US$ terms)																	
Commodity		14/3	14/4	15/1	15/2	15/3	15/4	16/1	16/2	16/3	16/4	17/1	17/2	2013	2014	2015	2016
Food total		**100**	**99**	**92**	**88**	**87**	**87**	**87**	**87**	**87**	**88**	**88**	**88**	**109**	**106**	**88**	**87**
		-14	***-2***	***-6***	***-5***	***-1***	***0***	***0***	***0***	***0***	***0***	***0***	***0***	***-11***	***-3***	***-16***	***-1***
Cereals		**90**	**91**	**90**	**85**	**85**	**84**	**84**	**85**	**86**	**87**	**88**	**89**	**125**	**99**	**86**	**86**
		-18	***1***	***-2***	***-5***	***0***	***-1***	***1***	***1***	***1***	***1***	***1***	***1***	***-13***	***-21***	***-13***	***0***
Barley	CAN	76	85	96	104	97	94	95	95	92	89	89	89	127	79	98	93
		-5	*12*	*13*	*8*	*-6*	*-3*	*1*	*0*	*-3*	*-3*	*0*	*0*	*-16*	*-38*	*24*	*-5*
Maize	US	84	87	90	85	89	88	88	90	91	92	93	93	133	97	88	90
		-25	*4*	*3*	*-5*	*5*	*-1*	*0*	*1*	*1*	*1*	*1*	*0*	*-18*	*-27*	*-9*	*3*
Wheat	US	102	100	91	86	81	80	80	81	82	83	84	86	120	109	85	82
		-17	*-1*	*-9*	*-6*	*-5*	*-2*	*0*	*1*	*1*	*2*	*1*	*2*	*-6*	*-9*	*-22*	*-4*
Rice	THAI	89	86	85	79	77	76	78	79	80	81	82	83	105	86	79	79
		9	*-4*	*-1*	*-7*	*-3*	*-1*	*3*	*1*	*1*	*1*	*1*	*1*	*-9*	*-18*	*-8*	*0*
Tropical beverages, sugar		**99**	**98**	**88**	**83**	**81**	**83**	**83**	**83**	**83**	**83**	**83**	**84**	**81**	**97**	**84**	**83**
		-1	***-1***	***-11***	***-5***	***-2***	***2***	***0***	***0***	***0***	***0***	***0***	***0***	***-17***	***20***	***-14***	***-1***
Coffee	US,D,F	108	110	94	85	80	80	79	79	78	77	77	77	81	105	85	78
		-2	2	-14	-9	-6	-1	-1	-1	-1	-1	0	0	-24	30	-19	-8
Cocoa	US	103	95	93	98	104	106	107	109	111	111	111	111	78	98	100	110
		5	*-7*	*-2*	*5*	*6*	*2*	*1*	*2*	*2*	*0*	*0*	*0*	*2*	*26*	*2*	*9*
Tea (avg)	ALL	89	89	84	89	98	97	96	96	95	95	95	95	94	91	92	95
		-2	*1*	*-6*	*7*	*10*	*-1*	*-1*	*-1*	*-1*	*0*	*0*	*0*	*-4*	*-3*	*1*	*4*
Sugar	US	71	71	63	56	51	60	60	60	60	61	63	65	78	73	58	60
		-8	*-1*	*-10*	*-12*	*-9*	*20*	*-2*	*1*	*1*	*1*	*2*	*4*	*-19*	*-6*	*-21*	*5*
Oil seeds, vegetable oils		**110**	**104**	**99**	**95**	**95**	**94**	**94**	**93**	**93**	**93**	**93**	**93**	**129**	**121**	**96**	**93**
		-22	***-5***	***-5***	***-5***	***1***	***-1***	***0***	***0***	***-1***	***0***	***0***	***0***	***-4***	***-6***	***-21***	***-3***
Soybeans	US	105	96	94	92	90	89	89	89	88	88	88	88	133	117	92	88
		-25	*-8*	*-2*	*-3*	*-2*	*-1*	*0*	*-1*	*-1*	*0*	*0*	*0*	*-5*	*-11*	*-22*	*-3*
Soybean meal	US	125	121	113	105	112	111	110	110	109	109	109	109	142	138	110	110
		-22	*-3*	*-7*	*-7*	*6*	*-1*	*0*	*-1*	*0*	*0*	*0*	*0*	*0*	*-3*	*-20*	*-1*
Soybean oil	US	82	77	75	77	69	68	68	68	67	67	67	67	109	88	72	67
		-16	*-5*	*-3*	*3*	*-11*	*-1*	*0*	*-1*	*-1*	*0*	*0*	*0*	*-12*	*-20*	*-17*	*-7*

Appendix 1. World trade statistics

Table 1 *Import volumes of goods*					
(annual percentage change)					
	2012	*2013*	*2014*	*2015*	*2016*
World	**1.8**	**3.1**	**3.0**	**2.0**	**4.1**
Memo: world exports	**3.0**	**3.1**	**3.3**	**2.4**	**4.1**
Advanced economies	**-0.5**	**2.7**	**3.4**	**4.2**	**4.8**
Euro Area	**-2.0**	**0.8**	**3.8**	**5.1**	**4.5**
Austria	**0.0**	**-2.0**	**0.4**	**0.7**	**4.0**
Belgium	**-1.1**	**0.9**	**2.7**	**4.5**	**4.5**
Germany	**-1.4**	**2.2**	**4.0**	**5.7**	**5.5**
Spain	**-6.1**	**0.8**	**7.6**	**7.0**	**6.7**
Finland	**-2.0**	**0.9**	**0.0**	**-4.0**	**2.5**
France	**-0.7**	**-0.2**	**2.7**	**5.0**	**3.8**
Greece	**-8.1**	**0.4**	**4.8**	**-3.0**	**-0.5**
Ireland	**-2.7**	**0.8**	**11.3**	**11.0**	**3.2**
Italy	**-8.8**	**-2.8**	**2.8**	**6.4**	**3.6**
Luxembourg	**-3.0**	**0.1**	**0.0**	**0.0**	**-0.4**
Netherlands	**2.8**	**0.9**	**3.7**	**4.7**	**5.5**
Portugal	**-6.4**	**5.1**	**6.7**	**9.5**	**6.0**
Slovenia	**-4.3**	**2.5**	**3.7**	**4.9**	**5.0**
United Kingdom	**2.4**	**2.4**	**2.4**	**5.7**	**7.4**
Sweden	**-0.8**	**-1.7**	**4.6**	**3.4**	**5.8**
Denmark	**-0.2**	**3.6**	**2.1**	**-1.3**	**3.4**
Switzerland	**-5.7**	**16.6**	**-8.1**	**-0.9**	**3.3**
United States	**1.0**	**4.3**	**4.3**	**5.4**	**5.4**
Japan	**1.0**	**5.0**	**6.7**	**1.0**	**5.0**
Australia	**-3.0**	**-0.4**	**-1.7**	**1.7**	**0.7**
New Zealand	**6.7**	**9.0**	**7.9**	**7.6**	**6.1**
Canada	**1.9**	**2.4**	**2.4**	**0.9**	**3.5**
Norway	**0.2**	**4.2**	**-0.2**	**3.3**	**2.8**
Iceland	**2.3**	**-0.3**	**0.6**	**-12.3**	**5.2**
Emerging Economies	**4.4**	**3.5**	**2.5**	**-0.6**	**3.4**
C+E Europe	**0.0**	**0.0**	**1.0**	**-3.5**	**3.4**
Poland	**-1.7**	**1.7**	**10.4**	**5.3**	**6.1**
Hungary	**-3.4**	**5.7**	**9.2**	**7.5**	**7.3**
Czech Republic	**2.0**	**0.5**	**9.9**	**7.9**	**7.5**
Emerging Asia	**5.9**	**4.5**	**1.9**	**-1.2**	**3.4**
China	**9.7**	**4.6**	**6.7**	**0.0**	**6.0**
Other Asia	**0.0**	**0.0**	**-0.5**	**-1.4**	**1.6**
Latin America	**0.0**	**0.0**	**1.9**	**0.0**	**-0.5**
Africa + Middle East	**7.8**	**6.4**	**6.4**	**4.2**	**6.5**

Table 2: *Export volumes of goods*					
(annual percentage change)					
0.0000	*2012*	*2013*	*2014*	*2015*	*2016*
World	**3.0**	**3.1**	**3.3**	**2.4**	**4.1**
Memo: world imports	**1.8**	**3.1**	**3.0**	**2.0**	**4.1**
Advanced economies	**1.6**	**3.2**	**3.6**	**3.0**	**4.4**
Euro Area	**2.1**	**1.7**	**4.0**	**4.5**	**4.7**
Austria	**1.2**	**-0.3**	**2.0**	**0.6**	**4.7**
Belgium	**-0.9**	**1.5**	**3.8**	**3.5**	**5.0**
Germany	**2.4**	**1.3**	**4.2**	**5.1**	**5.2**
Spain	**1.3**	**6.4**	**4.4**	**4.0**	**5.0**
Finland	**0.9**	**2.2**	**1.6**	**0.5**	**4.5**
France	**1.4**	**1.3**	**2.1**	**6.0**	**4.7**
Greece	**6.5**	**2.5**	**5.7**	**-3.5**	**7.0**
Ireland	**-2.8**	**-1.8**	**16.1**	**11.0**	**5.5**
Italy	**1.8**	**0.9**	**3.4**	**4.4**	**3.3**
Luxembourg	**-5.4**	**7.0**	**1.9**	**3.9**	**5.1**
Netherlands	**3.6**	**1.6**	**3.2**	**3.8**	**4.8**
Portugal	**3.6**	**6.9**	**3.6**	**5.0**	**5.8**
Slovenia	**0.4**	**3.3**	**6.4**	**5.1**	**4.3**
United Kingdom	**-0.8**	**-0.6**	**0.5**	**3.3**	**4.7**
Sweden	**0.3**	**-2.9**	**2.3**	**2.7**	**4.7**
Denmark	**-1.6**	**1.8**	**-0.2**	**0.8**	**4.0**
Switzerland	**-1.0**	**18.9**	**-6.9**	**-2.3**	**4.2**
United States	**2.8**	**4.4**	**3.4**	**1.2**	**3.3**
Japan	**-1.5**	**4.9**	**8.4**	**1.4**	**4.5**
Australia	**6.6**	**6.9**	**6.7**	**4.1**	**3.5**
New Zealand	**0.9**	**2.4**	**3.0**	**5.3**	**5.5**
Canada	**2.1**	**6.0**	**6.0**	**2.0**	**5.6**
Norway	**-0.3**	**-4.7**	**1.8**	**1.4**	**3.0**
Iceland	**3.4**	**3.7**	**1.7**	**3.2**	**5.0**
Emerging Economies	**4.5**	**3.0**	**2.9**	**1.7**	**3.8**
C+E Europe	**0.0**	**0.0**	**2.1**	**2.0**	**2.4**
Poland	**3.6**	**5.5**	**6.1**	**4.8**	**5.3**
Hungary	**-2.0**	**5.8**	**6.8**	**6.4**	**6.0**
Czech Republic	**4.2**	**0.6**	**9.3**	**6.3**	**7.1**
Emerging Asia	**7.5**	**5.4**	**4.3**	**0.7**	**3.2**
China	**9.6**	**5.1**	**5.7**	**3.0**	**5.5**
Other Asia	**0.0**	**0.0**	**3.5**	**-0.8**	**2.1**
Latin America	**0.0**	**0.0**	**1.2**	**4.0**	**6.0**
Africa + Middle East	**2.7**	**0.4**	**0.4**	**3.5**	**5.5**

table 3: Changes in export market shares

(in percentage points)

		2012	2013	2014	2015	2016
Euro area (extra trade only)	Export growth	2.1	1.7	4.0	4.5	4.7
	Foreign demand	2.2	3.8	2.3	1.3	4.5
	Export market share	**0.0**	**-2.1**	**1.7**	**3.3**	**0.2**
UK	Export growth	-0.8	-0.6	0.5	3.3	4.7
	Foreign demand	0.4	2.5	3.4	3.5	4.5
	Export market share	**-1.2**	**-3.1**	**-2.9**	**-0.2**	**0.2**
Denmark	Export growth	-1.6	1.8	-0.2	0.8	4.0
	Foreign demand	0.1	1.7	3.1	3.4	4.7
	Export market share	**-1.7**	**0.1**	**-3.3**	**-2.6**	**-0.7**
Sweden	Export growth	0.3	-2.9	2.3	2.7	4.7
	Foreign demand	0.4	2.5	2.8	3.1	4.3
	Export market share	**-0.2**	**-5.4**	**-0.5**	**-0.4**	**0.4**
US	Export growth	2.8	4.4	3.4	1.2	3.3
	Foreign demand	1.9	2.6	2.6	1.2	3.1
	Export market share	**1.0**	**1.8**	**0.8**	**0.0**	**0.2**
Japan	Export growth	-1.5	4.9	8.4	1.4	4.5
	Foreign demand	3.6	3.9	2.5	1.0	3.8
	Export market share	**-5.1**	**1.1**	**5.9**	**0.4**	**0.7**
Switzerland	Export growth	-1.0	18.9	-6.9	-2.3	4.2
	Foreign demand	0.6	2.2	3.5	3.4	4.5
	Export market share	**-1.6**	**16.7**	**-10.4**	**-5.7**	**-0.3**
Emerging Asia	Export growth	7.5	5.4	4.3	0.7	3.2
	Foreign demand	0.0	0.0	0.0	0.0	0.0
	Export market share	**7.5**	**5.4**	**4.3**	**0.7**	**3.2**
China	Export growth	9.6	5.1	5.7	3.0	5.5
	Foreign demand	2.6	3.5	3.3	1.8	4.2
	Export market share	**7.0**	**1.7**	**2.4**	**1.2**	**1.3**
Latin America	Export growth	0.0	0.0	1.2	4.0	6.0
	Foreign demand	0.0	0.0	0.0	0.0	0.0
	Export market share	**0.0**	**0.0**	**1.2**	**4.0**	**6.0**
C+E Europe	Export growth	0.0	0.0	2.1	2.0	2.4
	Foreign demand	0.0	0.0	0.0	0.0	0.0
	Export market share	**0.0**	**0.0**	**2.1**	**2.0**	**2.4**
Africa and Middle East	Export growth	2.7	0.4	0.4	3.5	5.5
	Foreign demand	0.0	0.0	0.0	0.0	0.0
	Export market share	**2.7**	**0.4**	**0.4**	**3.5**	**5.5**

table 4: Changes in export market shares

(in percentage points)

		2012	2013	2014	2015	2016
Germany	Export growth	2.4	1.3	4.2	5.1	5.2
	Foreign demand	0.2	2.1	2.4	2.3	4.3
	Export market share	**2.2**	**-0.8**	**1.8**	**2.8**	**0.9**
France	Export growth	1.4	1.3	2.1	6.0	4.7
	Foreign demand	-0.1	2.5	3.4	3.7	4.9
	Export market share	**1.5**	**-1.3**	**-1.3**	**2.3**	**-0.2**
Italy	Export growth	1.8	0.9	3.4	4.4	3.3
	Foreign demand	0.4	2.8	2.9	2.8	4.6
	Export market share	**1.4**	**-1.9**	**0.5**	**1.6**	**-1.3**
Spain	Export growth	1.3	6.4	4.4	4.0	5.0
	Foreign demand	-0.6	2.1	3.3	4.2	4.5
	Export market share	**1.8**	**4.3**	**1.1**	**-0.2**	**0.5**
Netherlands	Export growth	3.6	1.6	3.2	3.8	4.8
	Foreign demand	-0.5	2.0	3.1	3.8	4.7
	Export market share	**4.1**	**-0.3**	**0.1**	**0.0**	**0.1**
Austria	Export growth	1.2	-0.3	2.0	0.6	4.7
	Foreign demand	-0.9	2.3	2.6	2.9	4.5
	Export market share	**2.2**	**-2.6**	**-0.6**	**-2.3**	**0.2**
Finland	Export growth	0.9	2.2	1.6	0.5	4.5
	Foreign demand	0.6	1.8	3.0	2.4	4.6
	Export market share	**0.3**	**0.4**	**-1.4**	**-1.9**	**-0.1**
Belgium	Export growth	-0.9	1.5	3.8	3.5	5.0
	Foreign demand	0.2	1.8	3.2	3.9	4.7
	Export market share	**-1.1**	**-0.3**	**0.6**	**-0.4**	**0.3**
Greece	Export growth	6.5	2.5	5.7	-3.5	7.0
	Foreign demand	0.1	1.8	3.1	2.7	4.7
	Export market share	**6.4**	**0.6**	**2.6**	**-6.2**	**2.3**
Ireland	Export growth	-2.8	-1.8	16.1	11.0	5.5
	Foreign demand	0.2	2.8	3.0	4.2	5.1
	Export market share	**-3.0**	**-4.6**	**13.1**	**6.8**	**0.4**
Luxembourg	Export growth	-5.4	7.0	1.9	3.9	5.1
	Foreign demand	-0.6	1.6	3.0	4.1	4.7
	Export market share	**-4.8**	**5.3**	**-1.2**	**-0.2**	**0.4**
Portugal	Export growth	3.6	6.9	3.6	5.0	5.8
	Foreign demand	-1.1	1.8	4.6	4.8	5.3
	Export market share	**4.6**	**5.1**	**-1.0**	**0.2**	**0.5**
Slovenia	Export growth	0.4	3.3	6.4	5.1	4.3
	Foreign demand	-1.2	0.6	2.4	2.0	4.3
	Export market share	**1.5**	**2.7**	**4.0**	**3.1**	**0.0**

Table 5: Import prices of goods (in national currency)					
(annual percentage change)					
	2012	*2013*	*2014*	*2015*	*2016*
World	**0.8**	**-1.3**	**-0.3**	**-3.8**	**0.8**
Memo: world export prices	***0.8***	***-1.3***	***0.1***	***-3.9***	***0.5***
Advanced economies	**1.5**	**-1.0**	**-0.7**	**-2.7**	**0.6**
Euro Area	**2.7**	**-1.9**	**-2.0**	**-2.8**	**0.6**
Austria	**1.7**	**-0.9**	**-0.8**	**-0.9**	**-0.3**
Belgium	**1.4**	**-1.0**	**-0.3**	**-4.5**	**1.4**
Germany	**2.0**	**-2.5**	**-1.9**	**-1.9**	**0.0**
Spain	**3.6**	**-2.6**	**-2.0**	**-2.4**	**0.9**
Finland	**2.0**	**-2.2**	**-2.5**	**-4.3**	**0.2**
France	**1.9**	**-1.7**	**-3.1**	**-3.3**	**0.7**
Greece	**4.9**	**-3.6**	**-2.8**	**-10.0**	**0.2**
Ireland	**11.4**	**-1.7**	**0.3**	**1.9**	**-0.7**
Italy	**3.3**	**-2.2**	**-3.3**	**-3.6**	**1.8**
Luxembourg	**2.7**	**-0.6**	**-2.0**	**0.4**	**0.8**
Netherlands	**3.2**	**-1.6**	**-2.3**	**-5.5**	**1.4**
Portugal	**1.0**	**-3.2**	**-2.1**	**-3.8**	**-0.5**
Slovenia	**2.0**	**-1.9**	**-0.7**	**-2.0**	**-0.5**
United Kingdom	**6.9**	**-4.3**	**-3.6**	**-3.0**	**-0.4**
Sweden	**1.8**	**-3.1**	**1.1**	**-0.3**	**-0.1**
Denmark	**2.6**	**-2.3**	**0.1**	**2.1**	**-0.6**
Switzerland	**6.0**	**-9.2**	**-3.1**	**-6.3**	**-1.9**
United States	**0.6**	**-1.1**	**-0.5**	**-3.1**	**0.1**
Japan	**-5.9**	**14.0**	**3.8**	**-5.0**	**1.5**
Australia	**-4.6**	**-2.1**	**4.1**	**2.8**	**5.2**
New Zealand	**-5.5**	**-5.3**	**-3.3**	**-3.2**	**0.7**
Canada	**0.0**	**-2.9**	**5.2**	**1.7**	**2.2**
Norway	**4.8**	**-2.0**	**4.3**	**3.8**	**5.5**
Iceland	**5.3**	**-2.7**	**0.3**	**1.6**	**1.5**
Emerging Economies*	**0.1**	**-1.7**	**0.2**	**-5.0**	**0.9**
C+E Europe*	**0.0**	**0.0**	**-1.2**	**-1.5**	**0.3**
Poland	**4.1**	**-1.5**	**-2.0**	**-1.5**	**0.5**
Hungary	**0.7**	**-3.2**	**0.2**	**-1.3**	**1.0**
Czech Republic	**1.5**	**-3.3**	**2.6**	**-1.6**	**-0.2**
Emerging Asia*	**0.2**	**-2.6**	**1.9**	**-6.4**	**1.2**
China	**-5.0**	**-3.3**	**-4.0**	**-11.0**	**4.0**
Other Asia*	**0.0**	**0.0**	**0.0**	**-2.0**	**-1.6**
Latin America*	**0.2**	**-0.2**	**-2.3**	**4.5**	**3.6**
Africa + Middle East*	**-0.1**	**-2.1**	**-2.3**	**-10.5**	**-1.3**
*** Prices in USD**					

Table 6. Export prices of goods (in national currency)					
(annual percentage change)					
	2012	*2013*	*2014*	*2015*	*2016*
World	**0.8**	**-1.3**	**0.1**	**-3.9**	**0.5**
Memo: world import prices	**0.8**	**-1.3**	**-0.3**	**-3.8**	**0.8**
Advanced economies	**1.3**	**-1.2**	**-0.4**	**-2.0**	**1.0**
Euro Area	**2.7**	**-1.9**	**-0.8**	**-0.5**	**0.6**
Austria	**1.0**	**-1.1**	**-0.8**	**-0.2**	**0.7**
Belgium	**1.6**	**-0.6**	**-1.5**	**-3.0**	**1.0**
Germany	**1.6**	**-0.7**	**-0.3**	**0.7**	**0.5**
Spain	**2.5**	**-1.6**	**-0.3**	**-1.3**	**0.0**
Finland	**0.7**	**-1.7**	**-1.4**	**-2.3**	**1.4**
France	**1.5**	**-0.5**	**-1.4**	**0.4**	**0.6**
Greece	**4.7**	**-2.0**	**-2.3**	**-19.3**	**1.6**
Ireland	**4.2**	**-1.4**	**0.1**	**5.2**	**0.0**
Italy	**1.9**	**-0.5**	**0.1**	**0.0**	**2.1**
Luxembourg	**2.7**	**-0.5**	**-1.4**	**0.1**	**0.8**
Netherlands	**3.0**	**-0.8**	**-1.8**	**-4.0**	**-0.2**
Portugal	**1.7**	**-1.6**	**-0.7**	**0.0**	**0.9**
Slovenia	**0.7**	**-1.2**	**-1.3**	**0.0**	**0.7**
United Kingdom	**6.6**	**-3.3**	**-2.1**	**-5.1**	**-0.1**
Sweden	**2.0**	**-2.6**	**2.1**	**1.7**	**0.2**
Denmark	**3.2**	**-0.6**	**-1.9**	**2.2**	**2.7**
Switzerland	**4.9**	**-8.5**	**-2.8**	**-1.3**	**2.1**
United States	**0.4**	**-0.5**	**-0.5**	**-4.0**	**0.5**
Japan	**-5.1**	**11.3**	**2.7**	**-0.2**	**2.3**
Australia	**-17.3**	**-5.6**	**-3.7**	**-8.9**	**6.8**
New Zealand	**-11.8**	**2.6**	**1.5**	**-5.6**	**4.0**
Canada	**-1.6**	**-2.2**	**4.2**	**-4.2**	**2.1**
Norway	**8.2**	**-2.5**	**-1.4**	**-6.9**	**2.7**
Iceland	**-0.6**	**-7.1**	**4.5**	**0.9**	**0.9**
Emerging Economies*	**0.3**	**-1.4**	**0.6**	**-5.8**	**0.0**
C+E Europe*	**0.0**	**0.0**	**0.5**	**-4.0**	**-0.7**
Poland	**2.8**	**0.2**	**0.3**	**0.7**	**0.9**
Hungary	**-0.6**	**-2.6**	**0.9**	**-1.5**	**0.3**
Czech Republic	**1.0**	**-1.7**	**4.2**	**-1.7**	**0.4**
Emerging Asia*	**0.6**	**-1.2**	**0.0**	**-3.2**	**-2.0**
China	**-2.3**	**-2.1**	**-1.0**	**-1.3**	**-3.0**
Other Asia*	**0.0**	**0.0**	**-5.0**	**-5.0**	**0.0**
Latin America*	**-0.9**	**-2.0**	**8.6**	**-7.7**	**3.0**
Africa + Middle East*	**0.6**	**-2.8**	**-2.3**	**-17.0**	**6.5**
*** Prices are in USD**					

APPENDIX 2. Commodity price index

Table A1 Actual and forecast commodity price indices (index in US$ terms, 2010=100, percentage change on previous period)

Commodity	Weight	14/3	14/4	15/1	15/2	15/3	15/4	16/1	16/2	16/3	16/4	17/1	17/2	2013	2014	2015	2016
All commodities[1]	100	**117**	**92**	**69**	**77**	**64**	**63**	**64**	**65**	**67**	**67**	**68**	**69**	**123**	**114**	**68**	**66**
		-5	*-22*	*-25*	*11*	*-16*	*-2*	*2*	*2*	*3*	*0*	*2*	*2*	*-2*	*-7*	*-40*	*-4*
Total excl. energy	20.8	**93**	**88**	**81**	**78**	**73**	**72**	**73**	**74**	**75**	**76**	**77**	**78**	**98**	**94**	**76**	**74**
		-4	*-5*	*-9*	*-3*	*-7*	*-1*	*1*	*1*	*1*	*1*	*1*	*2*	*-5*	*-4*	*-19*	*-2*
Food total	5.5	**100**	**99**	**92**	**88**	**87**	**87**	**87**	**87**	**87**	**88**	**88**	**88**	**109**	**106**	**88**	**87**
		-14	*-2*	*-6*	*-5*	*-1*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*-11*	*-3*	*-16*	*-1*
Cereals	1.4	90	91	90	85	85	84	84	85	86	87	88	89	125	99	86	86
		-18	*1*	*-2*	*-5*	*0*	*-1*	*1*	*1*	*1*	*1*	*1*	*1*	*-13*	*-21*	*-13*	*0*
Tropical beverages, sugar	2.1	99	98	88	83	81	83	83	83	83	83	83	84	81	97	84	83
		-1	*-1*	*-11*	*-5*	*-2*	*2*	*0*	*0*	*0*	*0*	*0*	*0*	*-17*	*20*	*-14*	*-1*
Oilseeds, vegetable oils	1.9	110	104	99	95	95	94	94	93	93	93	93	93	129	121	96	93
		-22	*-5*	*-5*	*-5*	*1*	*-1*	*0*	*0*	*-1*	*0*	*0*	*0*	*-4*	*-6*	*-21*	*-3*
Industrial raw materials	15.4	**91**	**85**	**76**	**74**	**68**	**67**	**68**	**69**	**70**	**71**	**73**	**74**	**94**	**89**	**71**	**70**
		1	*-7*	*-10*	*-3*	*-9*	*-1*	*1*	*2*	*2*	*2*	*2*	*2*	*-3*	*-5*	*-20*	*-3*
Agricultural raw materials	4.3	94	89	82	79	76	75	75	75	75	75	76	76	95	94	78	75
		-3	*-5*	*-8*	*-3*	*-4*	*-1*	*-1*	*0*	*0*	*0*	*1*	*0*	*2*	*-1*	*-17*	*-4*
Textile fibres	0.2	88	83	81	88	85	84	84	84	82	83	85	87	104	94	84	83
		-14	*-6*	*-3*	*9*	*-4*	*0*	*0*	*-1*	*-2*	*2*	*2*	*2*	*-2*	*-9*	*-11*	*-1*
Wood products	3.1	103	98	89	85	84	83	82	82	83	83	84	84	97	103	85	83
		-2	*-5*	*-8*	*-5*	*-2*	*-1*	*-1*	*0*	*0*	*1*	*1*	*0*	*7*	*5*	*-17*	*-3*
Non-ferrous metals	7.9	93	89	80	80	70	71	73	75	78	80	82	85	88	88	75	77
		6	*-4*	*-10*	*0*	*-12*	*2*	*3*	*3*	*3*	*2*	*2*	*4*	*-8*	*0*	*-15*	*2*
Ferrous raw materials[2]	3.2	82	70	60	55	51	45	44	45	45	46	46	46	107	86	53	45
		-9	*-15*	*-14*	*-9*	*-8*	*-11*	*-3*	*2*	*0*	*1*	*0*	*0*	*3*	*-20*	*-39*	*-15*
Energy raw materials	79.2	**124**	**93**	**66**	**76**	**62**	**60**	**62**	**63**	**65**	**65**	**66**	**67**	**129**	**119**	**66**	**64**
		-6	*-25*	*-29*	*15*	*-19*	*-3*	*2*	*2*	*3*	*0*	*2*	*2*	*-1*	*-8*	*-44*	*-4*
Coal[3]	4.5	71	66	66	62	59	54	54	52	50	50	51	51	86	73	60	52
		-7	*-7*	*0*	*-6*	*-4*	*-9*	*0*	*-4*	*-3*	*0*	*1*	*0*	*-12*	*-15*	*-18*	*-14*
Crude oil	74.6	127	94	66	77	62	61	62	63	66	66	67	68	132	122	67	64
		-6	*-26*	*-30*	*17*	*-19*	*-3*	*2*	*2*	*4*	*0*	*2*	*2*	*-1*	*-7*	*-45*	*-4*

[1] HWWI index, total [2] iron ore, steel scrap [3] steam coal

Table A2 Actual and forecast commodity price indices (index in euro terms, 2010=100, percentage change on previous period)

Commodity	Weight	14/3	14/4	15/1	15/2	15/3	15/4	16/1	16/2	16/3	16/4	17/1	17/2	2013	2014	2015	2016
All commodities[1]	100	**117**	**98**	**81**	**92**	**77**	**75**	**76**	**77**	**80**	**80**	**81**	**83**	**122**	**113**	**81**	**78**
		-2	*-17*	*-16*	*13*	*-16*	*-2*	*2*	*2*	*3*	*0*	*2*	*2*	*-5*	*-8*	*-28*	*-4*
Total excl. energy	20.8	**93**	**94**	**95**	**93**	**87**	**86**	**87**	**88**	**89**	**90**	**91**	**93**	**98**	**93**	**90**	**88**
		-1	*0*	*1*	*-1*	*-7*	*-1*	*1*	*1*	*1*	*1*	*1*	*2*	*-8*	*-4*	*-3*	*-2*
Food total	5.5	**100**	**105**	**109**	**105**	**104**	**104**	**104**	**104**	**104**	**104**	**105**	**105**	**109**	**106**	**105**	**104**
		-11	*4*	*4*	*-3*	*-1*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*-14*	*-3*	*0*	*-1*
Cereals	1.4	90	97	106	102	101	100	101	102	103	104	105	106	125	98	102	102
		-15	*7*	*9*	*-3*	*-1*	*-1*	*1*	*1*	*1*	*1*	*1*	*1*	*-16*	*-21*	*4*	*0*
Tropical beverages, sugar	2.1	99	104	103	100	97	99	99	99	99	99	99	100	81	97	100	99
		2	*5*	*-1*	*-4*	*-3*	*2*	*0*	*0*	*0*	*0*	*0*	*0*	*-20*	*20*	*3*	*-1*
Oilseeds, vegetable oils	1.9	110	110	117	113	113	112	112	111	111	111	111	111	129	121	114	111
		-19	*1*	*6*	*-3*	*0*	*-1*	*0*	*0*	*-1*	*0*	*0*	*0*	*-8*	*-7*	*-5*	*-3*
Industrial raw materials	15.4	**91**	**90**	**90**	**89**	**81**	**80**	**81**	**82**	**84**	**85**	**86**	**88**	**94**	**89**	**85**	**83**
		4	*-1*	*0*	*-1*	*-10*	*-1*	*1*	*2*	*2*	*2*	*2*	*2*	*-6*	*-5*	*-5*	*-2*
Agricultural raw materials	4.3	94	94	96	95	91	90	89	89	89	89	90	90	95	94	93	89
		1	*0*	*2*	*-1*	*-5*	*-1*	*-1*	*0*	*0*	*0*	*1*	*0*	*-1*	*-1*	*-1*	*-4*
Textile fibres	0.2	88	88	95	106	101	101	101	100	98	99	101	104	103	94	101	99
		-12	*0*	*8*	*11*	*-4*	*0*	*0*	*-1*	*-2*	*2*	*2*	*2*	*-5*	*-9*	*7*	*-1*
Wood products	3.1	103	104	105	102	100	99	98	98	98	99	100	100	97	102	102	98
		2	*0*	*2*	*-3*	*-2*	*-1*	*-1*	*0*	*0*	*1*	*1*	*0*	*4*	*5*	*-1*	*-3*
Non-ferrous metals	7.9	93	94	94	96	83	85	87	90	93	95	97	101	88	88	89	91
		10	*1*	*0*	*1*	*-13*	*2*	*3*	*3*	*3*	*2*	*2*	*4*	*-11*	*0*	*2*	*2*
Ferrous raw materials[2]	3.2	82	74	71	66	60	54	53	54	54	54	54	54	107	85	63	54
		-6	*-10*	*-4*	*-7*	*-9*	*-11*	*-3*	*2*	*0*	*1*	*0*	*0*	*0*	*-20*	*-26*	*-15*
Energy raw materials	79.2	**124**	**98**	**78**	**92**	**74**	**72**	**73**	**75**	**77**	**77**	**79**	**80**	**129**	**118**	**79**	**76**
		-2	*-20*	*-21*	*18*	*-19*	*-3*	*2*	*2*	*3*	*0*	*2*	*2*	*-5*	*-8*	*-33*	*-4*
Coal[3]	4.5	71	70	78	74	71	65	65	62	60	60	61	61	86	73	72	62
		-3	*-1*	*11*	*-5*	*-5*	*-9*	*0*	*-4*	*-3*	*0*	*1*	*0*	*-15*	*-15*	*-2*	*-14*
Crude oil	74.6	127	100	78	93	74	73	74	76	78	78	80	81	131	121	79	77
		-2	*-21*	*-22*	*19*	*-20*	*-3*	*2*	*2*	*4*	*0*	*2*	*2*	*-4*	*-8*	*-34*	*-4*

[1] HWWI index, total [2] iron ore, steel scrap [3] steam coal

Table A3 Actual and forecast prices of individual commodities

Index in US$ terms, 2010=100, percentage change on previous period

Commodity		14/3	14/4	15/1	15/2	15/3	15/4	16/1	16/2	16/3	16/4	17/1	17/2	2013	2014	2015	2016
Barley	CAN	76	85	96	104	97	94	95	95	92	89	89	89	127	79	98	93
		-5	*12*	*13*	*8*	*-6*	*-3*	*1*	*0*	*-3*	*-3*	*0*	*0*	*-16*	*-38*	*24*	*-5*
Maize	USA	84	87	90	85	89	88	88	90	91	92	93	93	133	97	88	90
		-25	*4*	*3*	*-5*	*5*	*-1*	*0*	*1*	*1*	*1*	*1*	*0*	*-18*	*-27*	*-9*	*3*
Rice	THAI	89	86	85	79	77	76	78	79	80	81	82	83	105	86	79	79
		9	*-4*	*-1*	*-7*	*-3*	*-1*	*3*	*1*	*1*	*1*	*1*	*1*	*-9*	*-18*	*-8*	*0*
Wheat	US	102	100	91	86	81	80	80	81	82	83	84	86	120	109	85	82
		-17	*-1*	*-9*	*-6*	*-5*	*-2*	*0*	*1*	*1*	*2*	*1*	*2*	*-6*	*-9*	*-22*	*-4*
Coffee	US,D,F	108	110	94	85	80	80	79	79	78	77	77	77	81	105	85	78
		-2	*2*	*-14*	*-9*	*-6*	*-1*	*-1*	*-1*	*-1*	*-1*	*0*	*0*	*-24*	*30*	*-19*	*-8*
Cocoa	US	103	95	93	98	104	106	107	109	111	111	111	111	78	98	100	110
		5	*-7*	*-2*	*5*	*6*	*2*	*1*	*2*	*2*	*0*	*0*	*0*	*2*	*26*	*2*	*9*
Tea	avg	89	89	84	89	98	97	96	96	95	95	95	95	94	91	92	95
		-2	*1*	*-6*	*7*	*10*	*-1*	*-1*	*-1*	*-1*	*0*	*0*	*0*	*-4*	*-3*	*1*	*4*
Sugar	US	71	71	63	56	51	60	60	60	60	61	63	65	78	73	58	60
		-8	*-1*	*-10*	*-12*	*-9*	*20*	*-2*	*1*	*1*	*1*	*2*	*4*	*-19*	*-6*	*-21*	*5*
Soybeans	US	105	96	94	92	90	89	89	89	88	88	88	88	133	117	92	88
		-25	*-8*	*-2*	*-3*	*-2*	*-1*	*0*	*-1*	*-1*	*0*	*0*	*0*	*-5*	*-11*	*-22*	*-3*
Soybean meal	US	125	121	113	105	112	111	110	110	109	109	109	109	142	138	110	110
		-22	*-3*	*-7*	*-7*	*6*	*-1*	*0*	*-1*	*0*	*0*	*0*	*0*	*0*	*-3*	*-20*	*-1*
Soybean oil	US	82	77	75	77	69	68	68	68	67	67	67	67	109	88	72	67
		-16	*-5*	*-3*	*3*	*-11*	*-1*	*0*	*-1*	*-1*	*0*	*0*	*0*	*-12*	*-20*	*-17*	*-7*
Cotton	US	71	66	66	69	68	68	66	66	62	64	66	68	89	81	68	65
		-25	*-7*	*0*	*5*	*-1*	*0*	*-3*	*-1*	*-5*	*3*	*3*	*3*	*4*	*-9*	*-16*	*-5*
Wool	AUS	112	106	101	114	107	107	109	108	109	110	111	112	123	112	107	109
		-2	*-5*	*-5*	*13*	*-6*	*0*	*2*	*-1*	*1*	*1*	*1*	*1*	*-8*	*-9*	*-5*	*2*
Natural rubber	THAI	49	45	42	45	40	40	39	38	37	37	36	36	75	51	42	38
		-6	*-8*	*-6*	*6*	*-11*	*0*	*-2*	*-3*	*-2*	*-2*	*-1*	*-1*	*-20*	*-32*	*-19*	*-10*
Softwood	S	103	94	82	79	77	76	75	75	74	74	74	74	99	103	79	74
		-3	*-9*	*-13*	*-4*	*-2*	*-1*	*-1*	*-1*	*-1*	*0*	*0*	*0*	*9*	*4*	*-23*	*-5*
Woodpulp	FIN	100	100	97	92	91	90	90	91	92	94	96	96	92	99	93	92
		0	*0*	*-3*	*-6*	*-1*	*-1*	*0*	*1*	1	2	2	0	*5*	*8*	*-7*	*-1*
Aluminium	GB	92	91	83	81	73	75	78	81	82	84	86	90	85	86	78	81
		11	*-1*	*-9*	*-2*	*-10*	*3*	*4*	*3*	*2*	*3*	*2*	*5*	*-8*	*1*	*-9*	*4*
Copper	GB	93	88	77	80	70	69	69	71	75	77	78	80	97	91	74	73
		3	*-5*	*-12*	*4*	*-13*	*-1*	*0*	*3*	*6*	*2*	*2*	*2*	*-8*	*-6*	*-19*	*-1*
Lead	GB	102	93	84	91	80	83	86	89	92	95	98	101	100	98	84	91
		4	*-8*	*-10*	*8*	*-12*	*4*	*4*	*4*	*3*	*4*	*2*	*3*	*4*	*-2*	*-14*	*8*
Nickel	GB	85	73	66	60	48	50	52	54	56	57	59	62	69	77	56	55
		1	*-15*	*-9*	*-9*	*-19*	*4*	*4*	*4*	*3*	*2*	*4*	*4*	*-14*	*13*	*-28*	*-2*
Tin	GB	107	97	90	76	74	79	80	82	86	88	90	93	109	107	80	84
		-5	*-9*	*-8*	*-15*	*-3*	*6*	*1*	*3*	*6*	*2*	*2*	*3*	*6*	*-2*	*-25*	*5*
Zinc	GB	107	104	96	102	85	88	90	94	97	100	103	106	88	100	93	95
		12	*-3*	*-7*	*5*	*-16*	*3*	*3*	*4*	*3*	*3*	*2*	*3*	*-2*	*13*	*-7*	*3*
Iron ore	BRA	73	60	50	47	44	40	39	39	39	39	39	39	109	78	45	39
		-12	*-17*	*-16*	*-6*	*-7*	*-8*	*-4*	*0*	*0*	*0*	*0*	*0*	*5*	*-28*	*-42*	*-15*
Steel scrap	US	104	92	83	74	67	57	57	61	61	62	62	62	101	104	70	60
		-3	*-11*	*-10*	*-11*	*-9*	*-15*	*0*	*6*	*0*	*3*	*0*	*0*	*-1*	*3*	*-33*	*-14*
Steel scrap	EU	104	93	84	74	67	57	57	60	60	62	62	62	101	104	70	60
		-3	*-11*	*-10*	*-12*	*-9*	*-15*	*0*	*6*	*0*	*3*	*0*	*0*	*-1*	*3*	*-33*	*-15*
Steam coal	AUS	69	64	66	60	60	54	54	52	50	50	51	51	86	71	60	52
		-7	*-7*	*2*	*-9*	*-1*	*-9*	*0*	*-4*	*-3*	*0*	*1*	*0*	*-12*	*-17*	*-16*	*-13*
Steam coal	SA	77	72	68	68	59	54	54	52	51	51	51	51	88	79	62	52
		-7	*-6*	*-6*	*0*	*-13*	*-8*	*0*	*-4*	*-3*	*0*	*1*	*0*	*-14*	*-10*	*-21*	*-17*
Crude oil	avg	127	94	66	77	62	61	62	63	66	66	67	68	132	122	67	64
		-6	*-26*	*-30*	*17*	*-19*	*-3*	*2*	*2*	*4*	*0*	*2*	*2*	*-1*	*-7*	*-45*	*-4*

Table A4 Actual and forecast prices of individual commodities

Index in euro terms, 2010=100, percentage change on previous period

Commodity		14/3	14/4	15/1	15/2	15/3	15/4	16/1	16/2	16/3	16/4	17/1	17/2	2013	2014	2015	2016
Barley	CAN	76	91	113	124	116	112	113	113	109	106	106	106	127	79	116	110
		-2	*19*	*25*	*10*	*-7*	*-3*	*1*	*0*	*-3*	*-3*	*0*	*0*	*-19*	*-38*	*47*	*-5*
Maize	USA	84	93	106	102	106	105	106	107	108	110	111	111	133	97	105	108
		-22	*10*	*14*	*-3*	*4*	*-1*	*1*	*1*	*1*	*1*	*1*	*0*	*-20*	*-28*	*8*	*3*
Rice	THAI	89	91	100	95	92	90	93	94	95	96	97	99	105	86	94	94
		13	*2*	*10*	*-5*	*-3*	*-1*	*3*	*1*	*1*	*1*	*1*	*1*	*-12*	*-18*	*9*	*0*
Wheat	US	102	106	107	103	97	96	96	97	97	99	100	102	120	109	101	97
		-15	*5*	*1*	*-4*	*-6*	*-2*	*0*	*1*	*1*	*2*	*1*	*2*	*-9*	*-9*	*-7*	*-3*
Coffee	US,D,F	108	116	110	102	95	95	94	94	93	92	92	92	81	105	101	93
		2	*8*	*-5*	*-8*	*-7*	*-1*	*-1*	*-1*	*-1*	*-1*	*0*	*0*	*-26*	*30*	*-4*	*-7*
Cocoa	US	103	101	110	118	124	126	127	130	132	133	133	133	78	98	119	131
		8	*-2*	*8*	*7*	*5*	*2*	*1*	*2*	*1*	*0*	*0*	*0*	*-2*	*26*	*22*	*9*
Tea	avg	89	95	98	107	117	116	115	114	113	113	113	113	94	91	109	114
		2	*7*	*4*	*9*	*9*	*-1*	*-1*	*-1*	*-1*	*0*	*0*	*0*	*-7*	*-3*	*21*	*4*
Sugar	US	72	76	75	67	61	73	71	72	73	74	75	78	79	74	69	72
		-5	*5*	*-1*	*-10*	*-10*	*20*	*-2*	*1*	*1*	*1*	*2*	*4*	*-22*	*-7*	*-6*	*5*
Soybeans	US	105	102	111	110	108	107	106	106	105	105	105	105	133	117	109	105
		-22	*-3*	*9*	*-1*	*-2*	*-1*	*-1*	*0*	*-1*	*0*	*0*	*0*	*-8*	*-12*	*-7*	*-3*
Soybean meal	US	125	128	133	126	133	132	131	131	130	130	130	130	142	138	131	131
		-20	*3*	*3*	*-5*	*6*	*-1*	*0*	*-1*	*0*	*0*	*0*	*0*	*-4*	*-3*	*-5*	*0*
Soybean oil	US	82	82	89	93	82	81	81	81	80	80	80	80	109	87	86	80
		-13	*0*	*8*	*5*	*-11*	*-1*	*0*	*-1*	*-1*	*0*	*0*	*0*	*-15*	*-20*	*-1*	*-7*
Cotton	US	71	70	78	83	82	81	79	78	74	77	79	82	89	81	81	77
		-23	*-1*	*11*	*7*	*-2*	*0*	*-3*	*-1*	*-5*	*3*	*3*	*3*	*1*	*-9*	*0*	*-5*
Wool	AUS	112	113	118	136	127	127	130	129	130	131	132	134	123	112	127	130
		1	*1*	*5*	*15*	*-7*	*0*	*2*	*-1*	*1*	*1*	*1*	*1*	*-11*	*-9*	*14*	*2*
Natural rubber	THAI	49	48	50	54	48	48	47	45	44	44	43	43	75	51	50	45
		-3	*-2*	*5*	*8*	*-11*	*0*	*-2*	*-3*	*-2*	*-2*	*-1*	*-1*	*-22*	*-32*	*-3*	*-9*
Softwood	S	103	100	97	95	92	91	90	89	88	88	88	88	99	102	93	89
		0	*-3*	*-3*	*-2*	*-3*	*-1*	*-1*	*-1*	*-1*	*0*	*0*	*0*	*5*	*4*	*-8*	*-5*
Woodpulp	FIN	99	106	114	110	108	107	107	108	110	112	114	114	92	99	110	109
		4	*6*	*8*	*-4*	*-2*	*-1*	*0*	*1*	*1*	*2*	*2*	*0*	*2*	*8*	*11*	*0*
Aluminium	GB	92	96	98	98	87	90	93	96	98	101	103	108	85	86	93	97
		15	*5*	*1*	*0*	*-11*	*3*	*4*	*3*	*2*	*3*	*2*	*5*	*-11*	*1*	*8*	*4*
Copper	GB	93	93	91	96	83	82	82	85	90	91	93	95	97	91	88	87
		7	*0*	*-3*	*6*	*-14*	*-1*	*0*	*3*	*6*	*2*	*2*	*2*	*-11*	*-6*	*-3*	*-1*
Lead	GB	102	99	99	109	95	99	103	107	110	114	117	121	100	98	101	108
		8	*-3*	*0*	*10*	*-13*	*4*	*4*	*4*	*3*	*4*	*2*	*3*	*1*	*-2*	*3*	*8*
Nickel	GB	85	77	77	72	58	60	62	65	67	68	71	74	69	77	67	65
		4	*-10*	*1*	*-8*	*-20*	*4*	*4*	*4*	*3*	*2*	*3*	*4*	*-17*	*12*	*-14*	*-2*
Tin	GB	107	103	106	92	89	94	95	97	103	105	107	111	109	107	95	100
		-2	*-4*	*3*	*-14*	*-3*	*6*	*1*	*3*	*6*	*2*	*2*	*3*	*3*	*-2*	*-11*	*5*
Zinc	GB	107	110	114	122	102	105	108	112	116	120	123	126	89	100	111	114
		15	*3*	*3*	*7*	*-16*	*3*	*3*	*4*	*3*	*3*	*2*	*3*	*-5*	*13*	*10*	*3*
Iron ore	BRA	72	63	59	56	52	48	46	46	46	46	46	46	108	77	54	46
		-9	*-12*	*-7*	*-5*	*-8*	*-8*	*-4*	*0*	*0*	*0*	*0*	*0*	*2*	*-29*	*-30*	*-15*
Steel scrap	US	103	98	98	88	79	68	68	72	72	74	74	74	101	103	83	71
		1	*-5*	*0*	*-10*	*-10*	*-15*	*0*	*6*	*0*	*3*	*0*	*0*	*-4*	*2*	*-19*	*-14*
Steel scrap	EU	104	98	98	88	79	68	68	72	72	74	74	74	101	104	83	71
		1	*-5*	*0*	*-10*	*-10*	*-15*	*0*	*6*	*0*	*3*	*0*	*0*	*-4*	*2*	*-19*	*-14*
Steam coal	AUS	69	68	77	72	71	64	64	62	60	60	61	61	86	71	71	62
		-3	*-2*	*14*	*-7*	*-1*	*-9*	*0*	*-4*	*-3*	*0*	*1*	*0*	*-15*	*-17*	*0*	*-13*
Steam coal	SA	76	76	80	81	70	65	65	62	60	60	61	61	88	79	74	62
		-3	*-1*	*5*	*2*	*-14*	*-8*	*0*	*-4*	*-3*	*0*	*1*	*0*	*-16*	*-10*	*-6*	*-17*
Crude oil	avg	127	100	78	93	74	73	74	76	78	78	80	81	131	121	79	77
		-2	*-21*	*-22*	*19*	*-20*	*-3*	*2*	*2*	*4*	*0*	*2*	*2*	*-4*	*-8*	*-34*	*-4*

Table A5 Commodities not included in the HWWI index

2010=100, percentage change on previous period

in US$ terms	14/3	14/4	15/1	15/2	15/3	15/4	16/1	16/2	16/3	16/4	17/1	17/2	2012	2013	2014	2015	2016
Coking coal	63	62	61	57	49	47	47	45	42	45	45	47	110	83	66	54	44
	0	*-1*	*-2*	*-6*	*-15*	*-4*	*0*	*-4*	*-6*	*6*	*0*	*6*	*-28*	*-24*	*-21*	*-19*	*-17*
Natural gas	111	114	103	88	83	83	84	85	87	88	89	89	137	142	121	89	86
	-10	*3*	*-9*	*-15*	*-6*	*0*	*1*	*1*	*1*	*1*	*1*	*0*	*8*	*4*	*-15*	*-26*	*-4*
Steel reinforcing rounds	112	113	103	89	88	82	82	84	84	85	85	87	123	116	113	90	84
	0	*1*	*-9*	*-14*	*-1*	*-7*	*0*	*2*	*1*	*1*	*0*	*2*	*10*	*-6*	*-2*	*-20*	*-7*
in euro terms																	
Coking coal	63	66	72	68	58	55	55	53	50	53	53	56	112	83	65	63	53
	3	*5*	*9*	*-5*	*-16*	*-4*	*0*	*-4*	*-6*	*6*	*0*	*6*	*-21*	*-27*	*-21*	*-3*	*-17*
Natural gas	111	121	122	106	99	99	100	102	103	105	106	106	141	142	121	106	103
	-7	*10*	*0*	*-13*	*-7*	*0*	*1*	*1*	*1*	*1*	*1*	*0*	*17*	*0*	*-15*	*-12*	*-3*
Steel reinforcing rounds	112	120	120	106	104	97	97	99	100	102	102	104	127	115	113	107	100
	3	*7*	*1*	*-12*	*-1*	*-7*	*0*	*2*	*1*	*1*	*0*	*2*	*19*	*-9*	*-2*	*-5*	*-7*

Table A6 Weights of commodities and commodity groups[1]

per cent share in:	total	excl. energy		total	excl. energy
HWWI index, total	100		**Industrial raw materials**	15.4	73.8
Total excl. energy	20.8	100	Agricultural raw materials	4.3	20.6
			- Cotton	0.1	0.6
Food total	5.5	26.2	- Wool	0.1	0.4
			- Hides	0.1	0.7
Cereals	1.4	6.9	- Natural rubber	0.8	3.9
- Barley	0.0	0.2	- Wood	1.8	8.9
- Maize	0.7	3.4	- Woodpulp	1.3	6.1
- Wheat	0.5	2.3			
- Rice	0.2	0.9	Non-ferrous metals	7.9	37.9
			- Aluminium	3.7	17.6
Oilseeds, vegetable oils	1.9	9.1	- Copper	2.5	12.2
- Soybeans	0.7	3.5	- Lead	0.2	0.8
- Soybean meal	0.8	3.7	- Nickel	0.9	4.4
- Soybean oil	0.1	0.2	- Tin	0.2	0.9
- Coconut oil	0.1	0.4	- Zinc	0.4	2.0
- Palm oil	0.2	0.8			
- Sunflower oil	0.1	0.5	Iron ore, steel scrap	3.2	15.3
			- Iron ore	2.2	10.8
Tropical beverages, sugar	2.1	10.3	- Steel scrap	0.9	4.5
- Coffee	1.2	5.6			
- Cocoa	0.5	2.2	**Energy raw materials**	79.2	
- Tea	0.2	0.7	- Coal	4.5	
- Sugar	0.4	1.8	- Crude oil	74.6	

[1] Based on world imports of OECD countries minus Intra-EU trade, 2005-2007

Table A7 Price quotations included in the HWWI Commodity Price Index			
	Variety	Market/ origin	Currency / units of quotation
Barley	Canadian No. 1 Western, nearest month	Winnipeg	CAD/t
Maize	US No. 2 yellow, nearest month	Chicago	US¢ / 56lb bushel
Rice	White Thai Long Grain, 100% B Grade, fob	Bangkok	US$/t
Wheat	US hard red winter, nearest month	Kansas City	US¢ / 60lb bushel
Soybeans	US No. 2 yellow, in bulk, nearest month	Chicago	US¢ / 60lb bushel
Soybean meal	48 percent protein, fob railroad cars at shipping plants, nearest month	Chicago	US$/sht
Soybean oil	Raw, ex warehouse, nearest month	Chicago	US¢/lb
Coconut oil	Philippines, bulk, cif Rotterdam	Rotterdam	US$/t
Palm oil	Malaysian, 5 %, cif England, nearest month	London	US$/t
Sunflower seed oil	All origins, ex tank Rotterdam, nearest month	Rotterdam	US$/t
Coffee	ICO composite average indicator price	NY,F,D	US¢/lb
Cocoa	ICCO price, average daily	London/NY	US$/t
Tea	Average price of Calcutta, Colombo and Kenia auctions		US¢/kg
Sugar	Raw, CSCE, contract No 11, nearest month	New York	US¢/lb
Cotton	Middling upland, 1 1/16 inches, contract No 2, nearest month	New York	US¢/lb
Hides	US, heavy domestic steers, ex warehouse	Chicago	US$/pc
Wood	Sawnwood, Swedish pine, 63 x 175 mm, cif NW Europe	NW Europe	EUR/m³
Rubber	Natural rubber, RSS 1, nearest month	Kuala Lumpur	Malays.¢/kg
Woodpulp	NBSK pulp benchmark index	Helsinki	US$/t
Aluminium	Primary High Grade, ex warehouse, cash	London	US$/t
Lead	Standard, ex warehouse, cash	London	US$/t
Copper	Grade A, ex warehouse, cash	London	US$/t
Nickel	Primary High Grade, ex warehouse, cash	London	US$/t
Zinc	Special High Grade, ex warehouse, cash	London	US$/t
Tin	Ex warehouse, cash	London	US$/t
Iron ore	China Import Iron Ore Fines 62% spot, CFR	Tianjin	US$/t
Steel scrap 1	No. 1 Steel (HMS1)	NE USA	US$/long ton
Steel scrap 2	No. 1 Steel	Europe	EUR/t
Coal 1	Australian steam coal, average spot price, fob	Newcastle	US$/t
Coal 2	South African steam coal, average spot price, fob	Richards Bay	US$/t
Crude oil 1	Dubai, 32% API, spot price, fob	London	US$/barrel
Crude oil 2	Brent, 38% API, spot price, fob	London	US$/barrel
Crude oil 3	West Texas Intermediate, 40% API, spot price, fob	USA	US$/barrel