



# Slower growth in China

August 18, 2011

How much of a drag on the global economy?

**Recent indicators point to slowing growth in China.** Over the past four months, China's official purchasing managers' index (PMI) has steadily declined towards 50 points – the threshold commonly marking the boundary between expansion and contraction – and the HSBC/Markit's PMI fell below that threshold in July already. However, other leading indicators like electricity consumption and steel production do not point to a sharp slowdown ahead.

**Soft landing is the most likely scenario for 2011 and 2012.** China's real GDP growth is expected to slow from 10.3% yoy in 2010 to 8.9% this year and 8.3% in 2012, mostly due to the effect of monetary tightening. This would be a mild slowdown compared with 2008, although a more pronounced one compared with the 11% average annual pre-crisis growth (2002-08). Moreover, downside risks have increased due to possible knock-on effects of current global market turbulences.

**Lower import demand from the G3.** The expected slowdown in Chinese growth will likely lead to a decline in export growth from Germany to 18% on average in 2011-12 (vs 34% in 2010), from the US to 14% (vs 32% in 2010) and from Japan to 6.5% (vs 37% in 2010). The direct impact on real GDP growth in the G3 should be manageable but indirect effects via lower investment, rising unemployment, and thus weaker private consumption will probably be more pronounced. Overall, Germany and Japan are likely to be more affected than the US.

**Moderating global commodity price growth and negative impact on world stock index.** Growth in commodity prices looks set to slow to 6-8% in 2011-12 (vs 26% in 2010 and 12% in 2002-08). The net effect on the global economy would be positive since it would reduce inflationary pressures in both developed and emerging economies, but it would be negative for shares of commodity-linked companies (20% of the global index). Moreover, one-third of the MSCI-World index is accounted for by companies which derive substantial revenues from China. Taken together, global stock markets will likely be negatively impacted by a Chinese slowdown.

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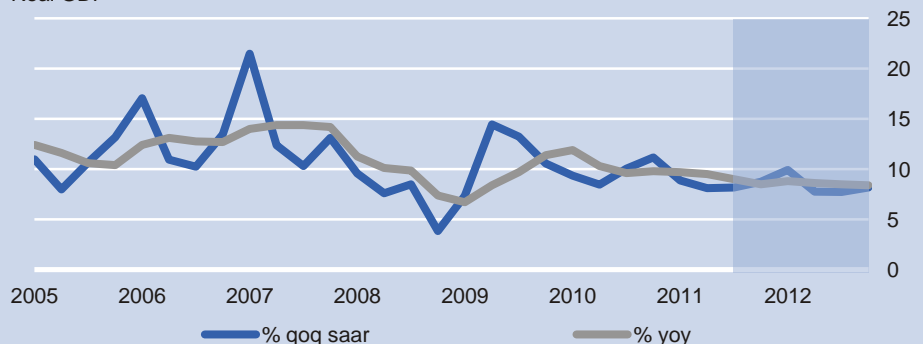
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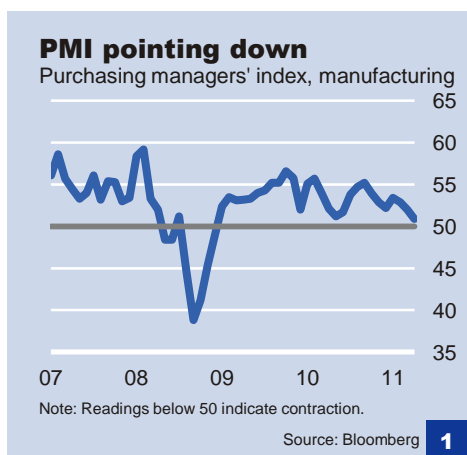
### China: Growth slowdown but no hard landing

Real GDP

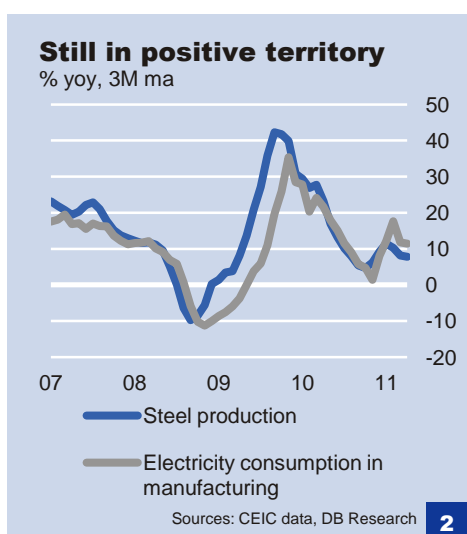


Sources: IHS Global Insight, DB Research





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## Introduction

Until fears of a new global crisis grabbed the headlines, one of investors' key concerns was to what extent China was slowing down and what consequences this would have for the rest of the world. Indeed, quarterly real GDP growth on a seasonally adjusted and annualised basis was markedly lower at 7.4% in Q2 2011 compared with 12% in Q4 2010. The latest China purchasing managers' indices (PMI) also seem to support this view, with the official index pointing towards 50 points (see chart 1) – the threshold commonly marking the boundary between expansion and contraction – and HSBC/Markit's PMI already below 50 points (49.3 in July). However, some other leading indicators do not point to a sharp slowdown ahead: while growth rates in electricity consumption and steel production have been trending down over recent months, they are nevertheless still in positive territory and the magnitude of the slowdown is far from the levels seen in mid-2008 and early 2010 (see chart 2). Against this background it makes sense to a) take a more in-depth look at how important China really is for the rest of the world, b) detect potential speed bumpers ahead that might lead to lower-than-expected growth in China and c) assess how this could in turn affect other major economies, commodity prices and financial markets.

## China's growing economic weight

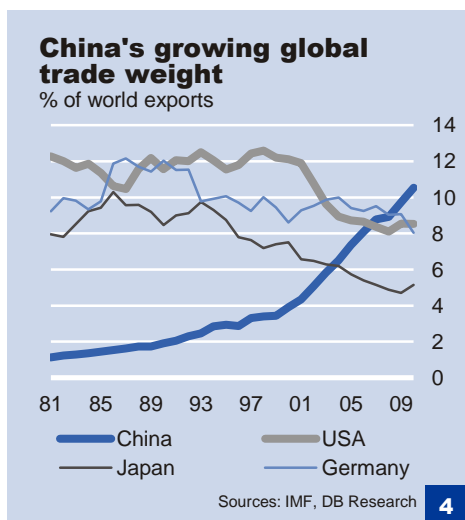
China's global weight has risen significantly since the early 1980s, accounting for more than 9% of global GDP in 2010 up from less than 2% in 1980, making it the second-largest economy in the world. Moreover, China has contributed over 25% to global growth between 2004 and 2007, with that contribution rising sharply in the global crisis years 2008-09. Given the sluggish growth rates in industrialised countries this share is set to surpass 30% over the coming years (see chart 3). At the same time China has become an integral part of global trade flows (see chart 4). China now accounts for 10.5% of world trade, up from 1% in 1980, and is among the top trading partners for countries ranging from Australia to Zambia.

## Growth rates & contribution to global growth

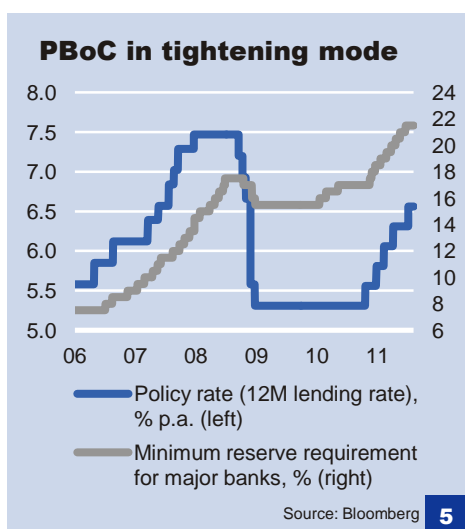
	2006		2007		2008		2009		2010		2011		2012	
	Growth rate, % yoy	Contribution, %-points	Growth rate, % yoy	Contribution, %-points	Growth rate, % yoy	Contribution, %-points	Growth rate, % yoy	Contribution, %-points	Growth rate, % yoy	Contribution, %-points	Growth rate, % yoy	Contribution, %-points	Growth rate, % yoy	Contribution, %-points
USA	2.7	0.6	1.9	0.4	0.0	0.0	-2.6	-0.5	2.8	0.6	2.8	0.5	2.9	0.6
EU-27	3.5	0.8	3.2	0.7	0.7	0.2	-4.1	-0.9	1.8	0.4	1.8	0.4	2.1	0.4
Germany	3.6	0.2	2.8	0.1	0.7	0.0	-4.7	-0.2	3.5	0.1	2.5	0.1	2.1	0.1
Japan	2.0	0.1	2.4	0.2	-1.2	-0.1	-6.3	-0.4	3.9	0.2	1.4	0.1	2.1	0.1
G3		0.9		0.7		0.0		-1.1		0.9		0.7		0.8
Brazil	4.0	0.1	6.1	0.2	5.2	0.1	-0.6	0.0	7.5	0.2	4.5	0.1	4.1	0.1
Russia	8.2	0.2	8.5	0.3	5.2	0.2	-7.8	-0.3	4.0	0.1	4.8	0.1	4.5	0.1
India	9.7	0.4	9.9	0.4	6.2	0.3	6.8	0.3	10.4	0.5	8.2	0.5	7.8	0.4
China	12.7	1.2	14.2	1.4	9.6	1.1	9.2	1.1	10.3	1.3	9.6	1.3	9.5	1.4
BRIC		2.0		2.3		1.7		1.1		2.2		2.0		2.1
World, % yoy	5.2		5.4		2.9		-0.5		5.0		4.4		4.5	

Sources: IMF, DB Research

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4



5

Another well documented fact is that, over the past couple of years, China's financial prowess has increased significantly. The country is the world's largest holder of foreign exchange reserves – standing at USD 3,197 bn as of June 2011 or around 30% of global FX reserves – and although the exact composition is unknown, the bulk of this is likely to be held in US Treasuries, followed by other developed market countries' sovereign instruments. Aside from official foreign exchange reserves, China is reaching out globally via sovereign wealth funds, and outward direct investments by Chinese firms are also rising strongly.

**Short-term outlook: Soft oder hard landing?**

Our baseline forecasts for China's real GDP growth are 8.9% in 2011 and 8.3% in 2012. This would be lower than the 10.3% registered in 2010, and can be attributed to a large extent to the effect of monetary tightening (chart 5). This can be considered a mild slowdown, or a "soft landing", although it would be significantly lower growth than the 11% average between 2002 and 2008. By contrast, a "hard landing" could see growth falling below 8% in 2011 and below 6% in 2012. Of course, there is no precise definition of what is a soft or a hard landing but this should serve as a point of reference.

A hard landing could be caused, for example, by over-tightening by China's central bank and an ensuing sharp housing market correction. Monetary tightening since late 2010 included five interest rate hikes and twelve increases in banks' minimum reserve requirement ratio (see chart 5).

Fears of a housing market correction are justified considering that China's average house prices increased by 19% in 2010 and by 25% in 2009. In some cities average house price growth has been as high as 34% p.a. Even though strong income growth and ongoing urbanisation trends justify rapidly rising prices, the latest momentum has probably been too strong. Moreover, affordability has become increasingly challenging, making controlling house prices a political imperative. Since 2010 the Chinese government has enacted a number of measures that aim at cooling down the property market. In general, two types of measures were imposed: first, measures aiming at suppressing the demand for second and luxury homes, for example by imposing taxes or raising minimum down-payment rates, and second, supply-side support measures, aiming at increasing supply of affordable and social housing.<sup>1</sup>

A sharp property market correction would have negative implications for domestic investment and business confidence. Ensuing unemployment in the construction and related machinery sectors would dampen private consumption. But a sharp correction need not happen. The policy mix of reducing speculation on the one hand and providing for more affordable housing on the other hand, coupled with pent-up demand and supportive medium-term demand factors should help to avoid a sharp slump in house prices.<sup>2</sup>

<sup>1</sup> See Clemens, Dyck, Just (2011). China's housing markets – Regulatory interventions mitigate risk of severe bust. DB Research. Current Issues. 28 April 2011, p. 11.

<sup>2</sup> See Clemens, Dyck, Just (2011).



### G20 exposed to China

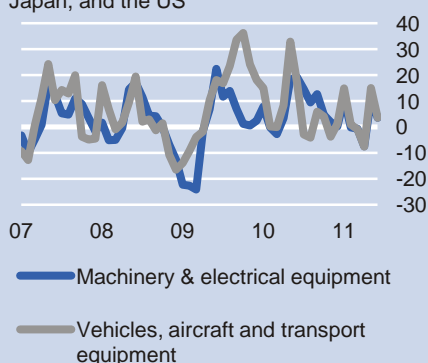
China's share in G20 countries' total exports/imports, %

	Exports		Imports	
	2000	2010	2000	2010
EU	1.0	2.6	2.6	7.2
US	2.1	6.9	8.6	19.3
JP	6.3	19.1	14.5	22.0
DE	1.6	4.8	3.4	7.9
FR	1.0	2.7	2.3	5.1
GB	0.8	2.1	2.2	9.1
IT	0.9	2.5	2.7	7.9
BR	1.8	15.8	2.2	14.0
CA	0.9	3.0	3.2	10.9
RU	5.1	5.9	2.8	13.9
IN	1.8	8.2	2.9	12.8
AU	5.6	24.3	7.8	18.3
MX	0.1	2.0	1.6	6.8
KR	10.7	28.5	8.0	18.1
TR	0.3	2.0	2.5	9.4
ID	4.5	9.8	6.0	15.9
SA	2.4	13.4	3.9	11.3
ZA	1.5	12.3	3.7	13.8
AR	3.0	9.9	4.6	11.6

Sources: IMF, DB Research **6**

### G3 economies: Slowing momentum in China exports

% change, simple average for Germany, Japan, and the US



Sources: CEIC data, DB Research **7**

## How does slower growth in China affect the world economy?

Slowing growth in China would dampen global growth via reduced demand for imports but it would also have some beneficial effects: lower Chinese demand for raw materials would exert downward pressure on global commodity prices, or at least moderate the strong increases seen over the past year, thus helping to keep in check inflation in both developed and emerging countries.

Additionally, a slowdown in China would moderate wage hikes, which some see as an additional source of inflationary pressure for the world (although empirical evidence is not straightforward, more on this below).

### 1. Lower Chinese imports – a drag on global demand

Over the past thirty years, China's trade openness measured as exports and imports over GDP has increased significantly, from an average 20% during the 1980s to more than 50% for most of the 2000s. All of the G20 economies show high exposure to China in their total exports and imports, with strong increases over the past decade (see chart 6). Especially for neighbouring countries in Asia – like Korea or Japan – export shares to China have risen strongly. Commodity producers like Australia, Brazil or South Africa also saw strong increases in their exports to China.

Japan, the US and Germany have seen very strong growth in exports to China of advanced manufactured goods in 2010 and early 2011. In the first half of 2011, China's imports of German machinery, for instance, grew by 40% yoy on average. However, momentum<sup>3</sup> is declining (see chart 7) and this downtrend will likely intensify in line with slowing GDP growth in China. Several German industrial sectors are highly dependent on China, including automobiles, iron and steel, as well as mechanical engineering.<sup>4</sup> In the past, the average downward cycle in export momentum lasted 4-5 months from peak to trough. This means that, judging from current export momentum, slowing economic activity in China will negatively affect key trading partners' export performance over the next 12 to 18 months.

Looking at historical correlations between Chinese quarterly real GDP growth and Chinese demand for imports from the US, Japan, and Germany we estimate export growth from the G3 economies to China to slow to an average 15% in 2011 and to 7% in 2012 (given a baseline scenario of China's GDP growth slowing to 9% yoy in 2011 and 8.5% in 2012). This compares to almost 35% growth in 2010 and long-term average growth since 1994 of around 15%. In a downside, hard-landing scenario – with China's real GDP growth falling to less than 8% this year and below 6% next year, we see G3 exports to China growing more slowly, around 8% in 2011, and actually declining by 10% in 2012 (see chart 8). This outcome would be slightly more severe than during the global recession in 2008-09,

<sup>3</sup> Measuring export momentum: we take data from China customs which differentiate China's imports by country and commodity group according to the Harmonized System (HS) classification. All data are in current USD m. In order to calculate a momentum indicator we look at the percentage change of the past three months' average over the previous three months' average. For example, the June 2011 value is the percentage change of the average import value in category X over the three months from April to June 2011 against the average of January to March 2011.

<sup>4</sup> See Schemm-Gregory (2010). Strong trade partners – Which sectors of European industry are dependent on the US and Chinese markets? DB Research. Current Issues. 2 November 2010.

**China slowdown will dampen G3 exports**

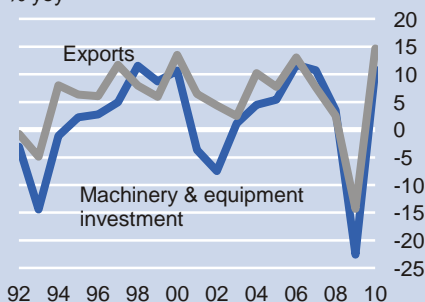
% yoy (aop)

	China's imports from			
	G3	DE	JP	US
2008	16.2	24.2	13.1	17.0
2009	-8.0	-0.1	-12.8	-4.4
2010	34.9	34.3	37.1	32.1
<i>Baseline</i>				
2011F	15.2	22.3	10.2	18.9
2012F	6.7	13.3	2.9	9.0
<i>Downside</i>				
2011F	8.4	11.3	-5.4	6.2
2012F	-10.6	-1.4	-16.6	-6.4

Sources: China Customs, DB Research **8**

**German exports and investment move in tandem**

% yoy



Sources: Statistisches Bundesamt, DB Research **9**

when G3 exports to China shrank by 8% on average. The reason for this outcome is that a hard-landing scenario as described above would imply a deeper and longer downturn in China than during 2008-09.

However, while export-dependent industries in the US, Japan and Germany will have to cope with weaker Chinese import demand, the direct export impact on the economy as a whole will likely remain limited. First, the overall contribution to real GDP growth from net exports in these countries is small, averaging 0.5 percentage points in the case of the US and Japan for the period 2005-10 and only 0.1 percentage points for Germany. Secondly, all G3 countries were net importers from China from 2005 to 2010. Therefore, the direct impact of (nominal) net exports to China on nominal GDP growth in Germany, Japan and the US has been rather small, and in some years even negative.

While direct effects might be small, the indirect effects of slowing growth in China are likely to be more pronounced. Over the past years strong Chinese demand for German cars, machinery and capital goods helped boost demand in supplying industries like chemicals and metals, supported investment activity and as a consequence generated jobs. In turn, the improved labour market situation lifted private consumption growth.

If China's economy slows down the feedback loop of exports – investment – jobs may shift from positive to negative. Then, German growth rates could fall back close to potential growth, which should be between 1% and 2%. In the US and Japan, similar feedback loops exist. In Japan, which has now very intensive and strongly growing trade relations with China, the impact would be even more severe than in Germany. By contrast, the US with its relatively small export sector and higher dependence on Canada and Mexico, should be less affected than Germany and Japan.

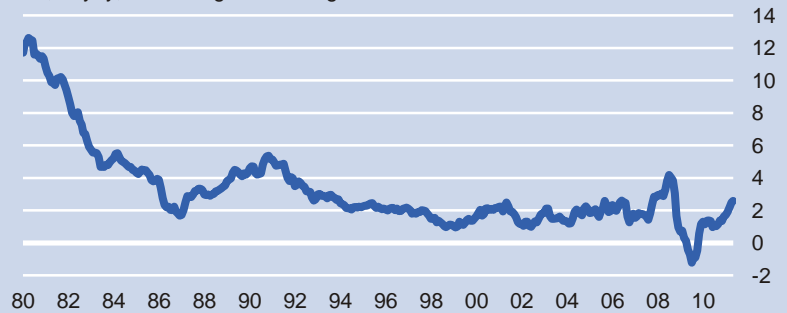
**2. Lower Chinese growth = global disinflationary effects?**

Conventional wisdom holds that China's (re)entry into the world economy helps to explain what is often dubbed the Great Moderation, i.e. the pre-crisis period of robust global growth and reduced growth volatility with, at the same time, low and relatively stable inflation rates. Indeed, since the early 1980s CPI inflation rates have come down in the industrial countries (see chart 10). Empirical research is, however, not supportive of the view that the phase of low inflation rates can be attributed to China's opening up since the early 1980s. Several papers find no evidence for the hypothesis that the role of import prices in explaining consumer price inflation has increased with growing trade openness.<sup>5</sup>

<sup>5</sup> See for instance Ihrig, Kamin, Lindner, and Marquez (2007). Some simple tests of the globalization and inflation hypothesis. Board of Governors of the Federal Reserve System. International Finance Discussion Papers. Number 891. April 2007. More specifically on Japan see Weinstein and Broda (2008). Exporting deflation? Chinese exports and Japanese prices. Federal Reserve Bank of San Francisco Working Paper 2008-29. April 2008.

**Moderating DM inflation - China related?**

CPI, % yoy, GDP-weighted average



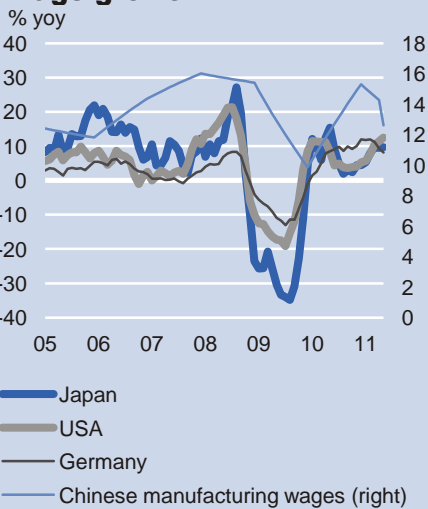
Sources: IHS Global Insight, DB Research

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Nevertheless, rising labour costs in China – minimum wages increased by 22% in 2010 alone – nurture concerns that they could exert inflationary pressures on a global scale. Average real wage growth was 12% per year between 2005 and 2010. And while in the past it seems that real wage growth broadly matched productivity growth, suggesting a sustainable development, real wage growth recently outperformed labour productivity.

So far Chinese wages have only had a moderate impact on inflation in the industrialised countries. We performed three regressions in which we explained German, Japanese and US import prices with Chinese wages, exchange rates and commodity prices. As expected, commodity prices had the strongest impact in all regressions. In Germany and Japan the exchange rates (EUR/USD or USD/JPY) to a certain degree compensated for the effect of rising commodity prices. By contrast, while the FX coefficient (USD/CNY) was statistically insignificant in the US regression, the negative sign suggests that a US dollar depreciation raised US import prices. In all three regressions the coefficients of Chinese wages were positive but statistically insignificant. Chart 11 shows that the connection between import prices and Chinese wages is rather loose. To our knowledge, an import price series which captures the specific price development of imports from China is available only for the United States. While including this series in our regression markedly improves the explanatory power of our model, the coefficient of Chinese wages nevertheless remains insignificant at the standard level of significance.<sup>6</sup> For details on the regression see the following box.

**Weak correlation between import prices and Chinese wage growth**



Sources: CEIC data, Global Insight, DB Research

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German, Japanese and US Import prices are not cointegrated with Chinese wages. Therefore we estimated a dynamic model in first differences. Exemplary, the regression results of US import prices on Chinese wages, commodity prices and USD/CNY are shown (standard errors in parenthesis):

$$\text{Import price}_t = -0.003 + 0.26 \text{ Chinese wages}_t + 0.27 \text{ Commodity prices}_t + 0.63 \text{ Import price}_{t-1} - 0.20 \text{ USD/CNY}_t$$

(0.004) (0.39) (0.02) (0.14) (0.30)

Adjusted R2 = 0.81, Durbin-Watson = 2.28, monthly observation, 2005 Jan to 2011 Apr, N=75, standard errors are HAC adjusted

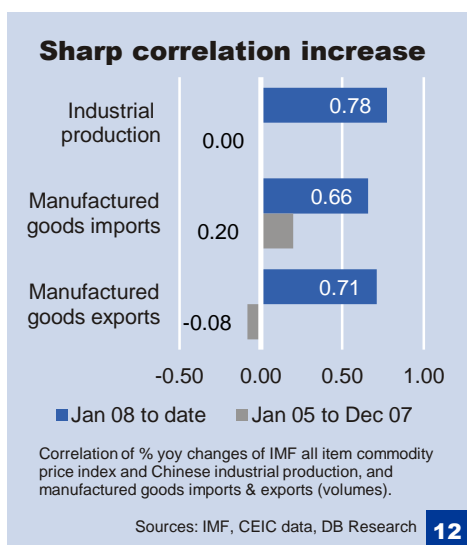
<sup>6</sup> The standard level of significance is often chosen at 5%. Here the p-value is 7.9%.

How can we explain our findings? First, it seems reasonable to assume that the share of Chinese wages relative to total production costs was and is still small. For instance, the share of manufacturing costs in total costs makes up only about 3.5% in the case of Apple's iPhone<sup>7</sup>, a number in line with estimates for the share of Chinese labour costs in total production in general. This could, to a certain extent, explain the consistently positive but statistically insignificant coefficients of the wage variable in our regressions. Another potential reason for our finding is that the emergence of China together with other emerging markets generally boosted the degree of competition, hampering price increases and contributing to the Great Moderation. If this was the case, the competition effect outstripped the impact of rising wages in China on inflation in developed market economies.

The impact of Chinese wages on inflation in developed countries may be more pronounced in the future. Demographic change in China, government plans to boost domestic demand, and the push for the service industry to become a more important growth driver point to rising wages over the medium term. As we expect that the Chinese economy will continue to grow strongly, wages should also develop very vibrantly. At that stage, Chinese wages may start to affect import prices in other countries in earnest.

### 3. Lower Chinese growth = slowdown in commodity prices

China's economic ascent has also made it the key player in global commodity markets (see chart 13) and the correlation between a range of Chinese economic indicators and developments in global commodity prices has increased over the past years (see chart 12). For instance, the correlation in annual changes between the IMF's all item commodity price index and Chinese industrial production has risen from zero to almost 80% and similar patterns can be observed for Chinese manufacture imports and exports. This observation supports the view that China has indeed been an important factor in global commodity price developments.



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### China's weight in global commodity markets

2010

	Global consumption		Global imports		Global production	
	%-share	Rank	%-share	Rank	%-share	Rank
Oil	10.7	2	9.8	2	4.7	5
Copper	39.0	1	39.0	1	7.0	3
Nickel	37.0	1	29.0	1	5.0	7
Cotton	40.2	1	39.3	1	25.8	1
Rapeseed	25.3	2	18.8	3	21.9	2
Soybeans	26.8	1	59.8	1	5.8	4

Source: Deutsche Bank (2011). A User Guide to Commodities. May 2011

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The higher correlation is likely also due to the generally higher resource intensity of economic growth in Asian countries, which use twice as much commodities relative to OECD countries for every dollar they generate<sup>8</sup>. As China cannot satisfy its large demand for

<sup>7</sup> Xing, Y. and N. Detert (2010). How the iPhone widens the United States trade deficit with the People's Republic of China. ADBI Working paper 257. December 2010, p. 4.

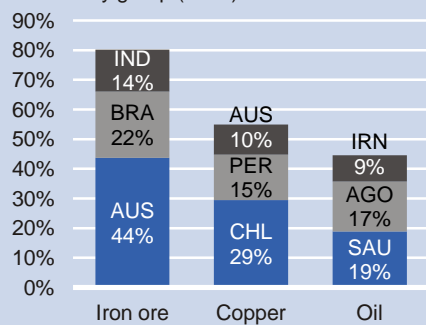
<sup>8</sup> Farooki, M. (2010). China's commodities demand, the financial crisis and economic recovery: What now for resource rich African economies? The annual conference of the Chinese Economic Association (UK) and CEA (Europe).





### Key import sources for hard commodities

Share in Chinese imports in respective commodity group (2010)

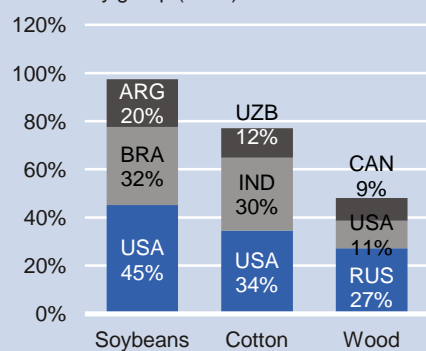


Sources: UN Comtrade, DB Research

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### ... and for soft commodities

Share in Chinese imports in respective commodity group (2010)



Sources: UN Comtrade, DB Research

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commodities from domestic sources, imports of raw materials make up a substantial part of China's total imports and import growth in these categories is highly correlated with developments in Chinese infrastructure investment and manufactured goods exports. Key trading partners for commodities are Saudi Arabia, Angola and Iran for oil, Australia, Brazil and India for iron ore, Chile, Peru and Australia for copper, Australia for coal, as well as Brazil, the US and Russia for agricultural commodities like soybeans, wood, and cotton (see charts 14 and 15).

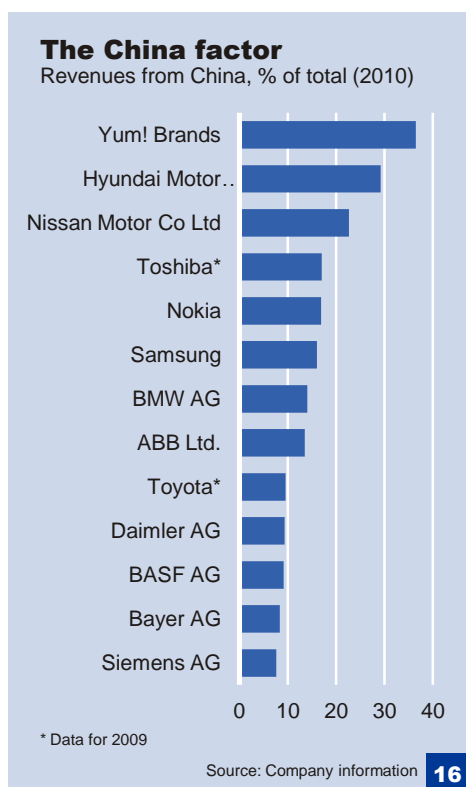
Accordingly, slowing growth in China could lead to slowing price rises for a wide array of commodity prices. While China's GDP growth averaged 11% between 2002 and 2008, commodity prices rose by 12%. In our baseline scenario, we assume GDP growth to be 2 pp lower than that in 2011. Based on a simple regression this could approximately halve the commodity price growth seen before, i.e. lowering global commodity price growth to 6-8% annually. This in turn could be positive for many countries: less expensive raw materials and energy would predominantly benefit industrial countries but would also have a positive impact on commodity importing countries from the EM world, like for instance Turkey or many Asian countries. Lower prices would lower production costs for firms, resulting in higher profit margins and/or higher sales. Especially firms in the metals sector are adversely affected by high commodity prices as up to 70% of their costs result from the use of energy, ores or metals. Furthermore, there would be a positive wealth effect: having to spend less money on energy and raw materials (or products thereof) consumers and businesses in commodity-importing countries could spend more money on other products or services, thereby increasing the domestic added value.

On the other hand, commodity exports are an important source of revenue and employment for many countries, especially but not only in the EM world, and China is often among the key export destinations for many of these countries. For instance, in 2010 nearly 40% of Chile's copper exports and over 50% of Sudan's and 40% of Oman's oil exports went to China. Furthermore, Australia ships 70% of its iron ore exports to China. Thus, growth in these commodity exporting countries would likely be negatively affected by constant or moderately falling commodity prices, although even commodity exporters could feel some positive effects as appreciation pressures for their currencies subside and thus the threat of catching the "Dutch disease" is mitigated.

#### 4. Lower Chinese growth = less CNY appreciation and lower world stock prices

All other things being equal, slowing Chinese growth would lead to falling or stabilising commodity prices, in particular energy prices, which in turn would not only reduce production costs but also prolong the cycle of low interest rates. At the same time, the recent appreciation of commodity-currencies, e.g. the Australian dollar and the Brazilian real, may moderate or even reverse in such a scenario.

A less vibrant Chinese economy could lead to a slower appreciation of the yuan versus the US dollar. During the Great Recession the yuan appreciation already came to a halt as Chinese authorities tried to protect export-dependent industry sectors. Re-pegging the yuan to the US dollar could be potentially harmful for other export-dependent economies, and it may lead to renewed tensions with China's trading partners, especially at a time when global growth is expected to slow down.



As regards the effect on global stock markets, the moderation or decline in commodity prices resulting from a Chinese slowdown will affect commodity-related companies, which account for around 20% of the MSCI World Index. On top of this, companies with a substantial share of revenues linked to China business (see chart 16) make up roughly 33% of the global index. Therefore, slowing growth in China – other things being equal – would negatively impact global stock market indices.

### Conclusion

Slowing growth in China as assumed in our baseline scenario – i.e. moderating to 8.9% this year and 8.3% in 2012 will only have a limited impact on the world economy. While Chinese import demand for exports from countries like the US, Germany and Japan will slow, we still expect growth rates for these countries' exports of around 15% in 2011 and 7% in 2012. Moreover, the direct impact on real GDP growth from slowing Chinese import demand should be manageable due to the fact that the growth contribution of net exports is small compared with domestic demand. The net effect of slowing growth in global commodity prices – to 6-8% in 2011-12 from its 12% annual growth average between 2002 and 2008 – will likely be positive for the global economy as it will reduce inflationary pressures for both developed and emerging economies, including commodity exporting countries. This should also help to keep key central bank policy rates low for longer. A potential re-pegging of the CNY to the USD would be problematic for China's export partners, leading to tensions. As for stock markets, the large share of China-dependent companies (be it due to the commodity link or via China-generated revenues) make the global index vulnerable to a Chinese slowdown. Clearly, a "hard-landing" scenario where Chinese growth drops to around 8% and 6% in 2011 and 2012, respectively, would magnify this effect, leading e.g. to substantial declines in exports to China from G3 countries next year.

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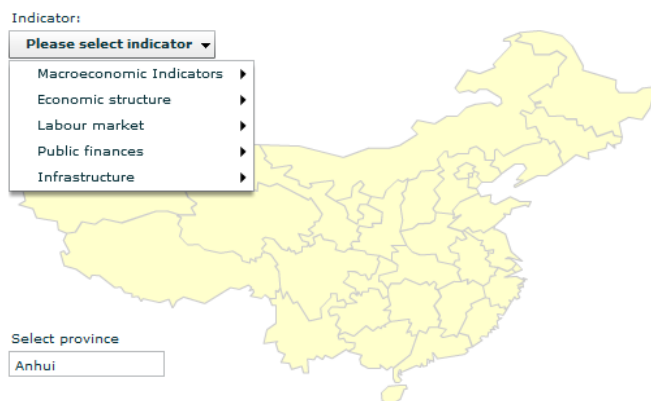
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