Economics

22 June 2012 | 19 pages

China Macro View

2H Outlook: A Rebound in the Making

- **We expect a growth rebound in 2H with sustained policy easing** – Economic growth appears to have stabilized, although at a low level. 2Q growth may fall to 7.3% YoY in the absence of a strong lift from June. Meanwhile, inflation is likely to stay below 3% in the next few months, creating room for further policy easing. We expect the government to fully utilize this room under the current policy mix, which would facilitate a growth rebound in 3Q. We trim our 2012 annual economic growth forecast to 7.8% from 8.1% to reflect anemic domestic activity in 2Q and further weakening of EU demand.

- **More decisive policy easing, but no large-scale stimulus** – Unless the sovereign debt problem in Europe escalates to a full-blown economic and financial crisis and results in a deep recession in the continent, we think the Chinese government does not have the appetite to introduce a 2008-09 type of stimulus. The negative fallout from the last stimulus – such as LGFV debt and property bubble – still lingers. Instead, we expect two more rate cuts to boost demand; two more RRR cuts to bring money growth to 14%; expansionary fiscal policy within the limit of the budget; and targeted property policy easing to prevent an investment slump.

- **We are optimistic about new leaders' ability to deliver reform** – The current government has surprised the market by introducing reforms, including steps toward exchange rate and interest rate liberalization, in the last year of its tenure. The need for reform appears to have been recognized by the hopefuls of the new leadership. In making forecasts for 2013 and beyond, we assume the new government would tolerate slower growth for better quality, introduce reforms to correct cost distortions, and deregulate investment to encourage private-sector involvement.

- **Growth may stay below potential, but structure of economy may improve** – Cost normalization may increase inflationary pressures. To contain inflation, the new government may accept lower-than-potential growth. As a result, China's economy may not grow at full capacity in the near future. We expect growth to rebound slightly in 2013 to 7.9% benefiting from the spillover from 2012's policy easing, while medium-term growth may approach 7%. The correction of over-investment and government policies to boost consumption will likely slow investment more than consumption, causing investment-to-GDP ratio to decline as early as 2013-2014.

- **An escalation of European debt crisis may cause hard landing** – In a simplistic scenario where a full-blown debt crisis deepens the euro area's recession to -2%, weaker external demand – including spillover to China's other trading partners – may further erode China's growth by nearly 1ppt. This could trigger a second-round effect on domestic demand due to higher unemployment in export-oriented industries, resulting in growth below 7% in the absence of additional policy support.

Shuang Ding
+852-2501-2769
shuang.ding@citi.com

Minggao Shen
+852-2501-2485
minggao.shen@citi.com

Serena Wang
serena.wang@citi.com

Figure 1. China Quarterly Growth 2012E-13E

GDP	1Q12	2Q12E	3Q12E	4Q12E
YoY%	8.1	7.3	7.8	8.0
QoQ% saar	6.6	6.9	10.1	8.1
	1Q13E	**2Q13E**	**3Q13E**	**4Q13E**
YoY%	8.2	8.0	7.8	7.7
QoQ% saar	7.6	6.6	9.1	7.3

Source: CIRA estimates

See Appendix A-1 for Analyst Certification, Important Disclosures and non-US research analyst disclosures.

2H Outlook: A Rebound in the Making

Economic growth appears to have stabilized, although at a low level. 2Q growth may fall to 7.3% YoY in the absence of a strong lift from June. Meanwhile, inflation is likely to stay below 3% in the next few months, creating room for further policy easing. We expect the government to fully utilize this flexibility under the current policy mix, which would facilitate a growth rebound in 3Q. We trim our 2012 annual economic growth forecast to 7.8% from 8.1% to reflect anemic domestic activity in 2Q and further weakening of EU demand.

For 2013 and beyond, we assume the new government:

- would tolerate slower growth for better quality
- introduce reforms to correct cost distortions
- deregulate investment to encourage private-sector involvement

The correction of over-investment and continued external weakness may keep growth below potential in the next few years, but the structure of the economy will likely improve, and the investment-to-GDP ratio may decline as early as 2013-2014.

Economy Is Running Below Potential

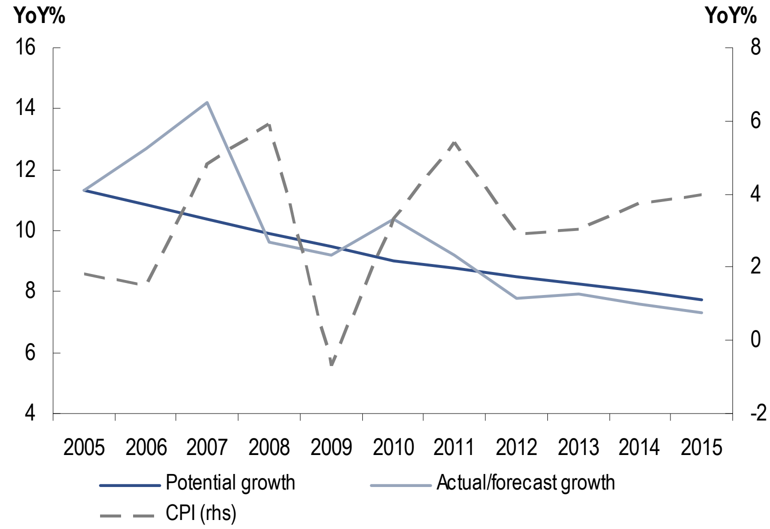
China's economy has the potential to grow by 8-9% at present – According to our estimate, China's potential growth will fall from an average of 10½% in 2001-10 to about 7¾% in 2015 (see: China Macro View - Distance to Collapse: How far is China from 5% Growth?) as growth rates for labor, capital stock and productivity are all expected to decline. In fact, potential growth at the end of the last decade may have fallen toward 9%, and when the policy stimulus boosted growth above that level, inflation intensified. We estimate current potential growth at around 8½%.

Figure 2. China: Growth Accounting and Potential Growth (In percent)

	1991-2000	2001-10	2015E
Real GDP growth	10.5	10.5	7.7
Factor accumulation 1/	5.8	4.9	3.9
Labor	1.1	0.5	0.2
Capital	10.3	9.1	7.5
Solow residual 2/	4.7	5.6	…
Total factor productivity	5.5	5.1	3.8
Cyclical factors	-0.9	0.5	…

1/ Accumulation of labor and capital, using factor shares of 0.49 and 0.51 respectively.
2/ Residual from the growth accounting exercise.
Source: Citi Investment Research and Analysis estimates

Figure 3. China – Growth Forecast Relative to Estimated Potential Growth



Source: NBS and Citi Investment Research and Analysis estimates

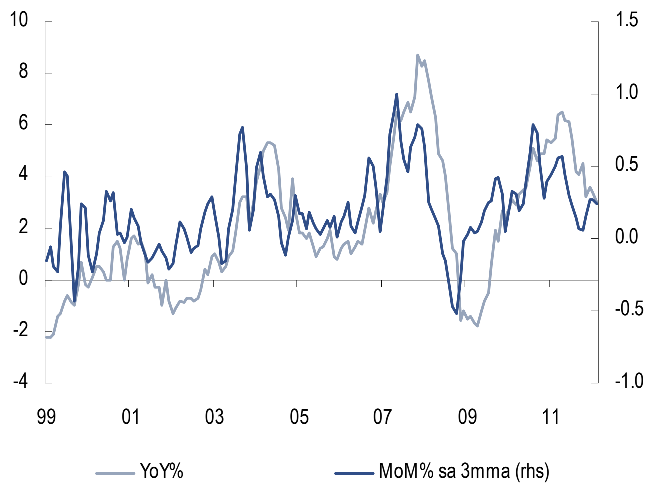
But weak demand is keeping growth below potential this year – Economic potential is a supply-side measure, suggesting how fast the economy can grow without accelerating inflation. Owing to weak external and domestic demand, the economy is not running at full capacity, and growth fell from 9.7% YoY in 1Q11 to 8.1% YoY in 1Q12.

- **Policy tightening last year led to a cyclical downturn** – Both monetary and fiscal policies were tightened last year, evidenced by a sharp deceleration of money and credit growth and decrease in fiscal deficit. Property policy tightening since the beginning of 2011, especially the restriction on lending and purchase, is regarded as the harshest ever. As a result, investment growth has dropped precipitously.

- **European debt crisis is hurting China's exports** – In the first five months, China exports and imports grew by 8.7% and 6.7% YoY, respectively, down from 25% and 29% YoY during Jan-May 2011. In particular, China's exports to EU fell by 0.8% YoY, while imports from EU grew by 4.6% YoY in the first five months. In the first quarter, the contribution of net export to growth was -0.8ppt, compared with -0.4ppt for Jan-Mar 2011.

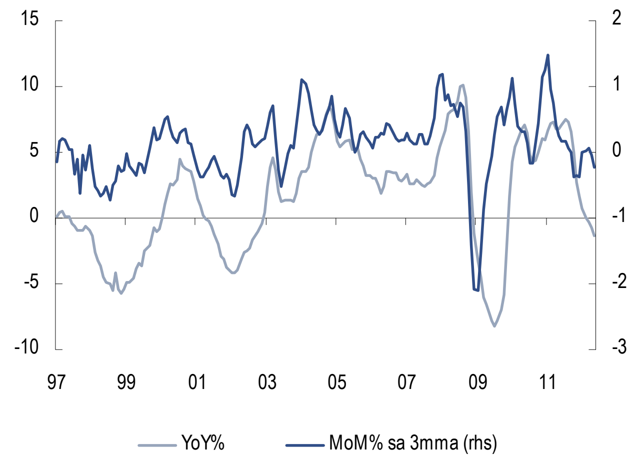
Rapid disinflation appears to confirm negative output gap – When the economy is not running at full capacity, inflationary pressure tends to ease. CPI inflation has exhibited a downward trend since reaching 6.5% YoY in July 2011, and fell to 3.0% YoY in May, below what we think is the new normal (4%) given rising labor cost and the price reform agenda. More strikingly, PPI turned from a 7.5% YoY inflation last July to a deflation of 1.4% in May, indicating weak production activity.

Figure 4. China CPI Is on Track to Fall Below 3%



Source: NBS and Citi Investment Research and Analysis

Figure 5. China PPI Deflation Underscores Weak Production Activity



Source: NBS and Citi Investment Research and Analysis

We expect the economy to grow by 7.8% in 2012 – As discussed below, in response to sharp economic slowdown, the government has made stabilizing growth the top priority. We believe the approach taken by the government is to make full use of the policy room under the current policy mix instead of rolling out large-scale stimulus, in recognition of the negative fallout from the 2008-09 stimuli as well as diminishing room for policy maneuver. We expect these policies to produce a mild upturn from 3Q12. For the year as a whole, growth will likely fall below 8%, but still beat the official growth target of 7.5%.

We are optimistic about new leaders' ability to deliver much-needed reform from 2013 – The Chinese government reshuffle takes place amidst prolonged global financial crisis. It's critical whether the new leaders view the crisis as a cyclical bump or a structural shift. The visibility will likely remain low until early December when the annual Central Economic Work Conference under the supervision of the new leadership lays out the policies for 2013. Here are our assumptions that lay the foundation of our forecasts for the next year and beyond:

- **Tolerance of slower growth.** The growth target for 2013 could be further reduced from 7.5% this year to 7%. If true, this suggests that China will enter into a new era of slower but better quality growth.

- **Cost normalization.** China may gradually eliminate cost distortions in capital, labor, resources and environment to rebalance the economy and make growth more sustainable. Interest rate liberalization, FX regime flexibility, QFII quota increase, and the Wenzhou financial reform are critical steps towards a new economy.

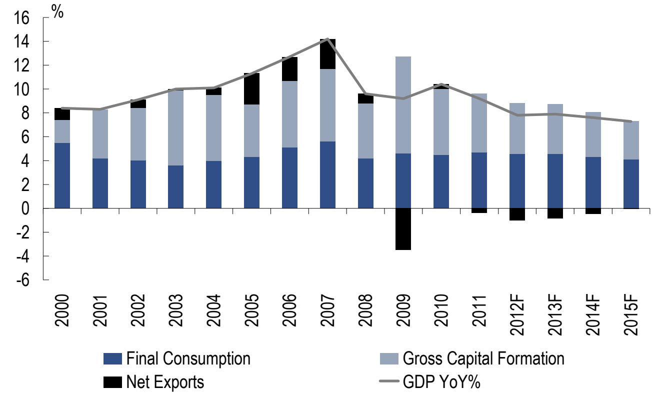
- **Deregulation.** Alongside the cost normalization, China may open up investment opportunities for individuals and the private sector in infrastructure, manufacturing and services. The need for these moves is recognized by this government, in our view, and reforms may be implemented by its successor.

Growth may rebound slightly to 7.9% in 2013 – The lagged effect of policy easing in 2012 is expected to spill over into 1H13. However, the upside will likely be constrained by less accommodative macro policies in 2013 and introduction of

reforms that may depress growth in the short run (such as increasing the cost of capital), as well as external headwinds (we forecast recession of 0.6-0.7% in EU in both 2012 and 2013). As a result, YoY growth may fall again following acceleration in 1Q.

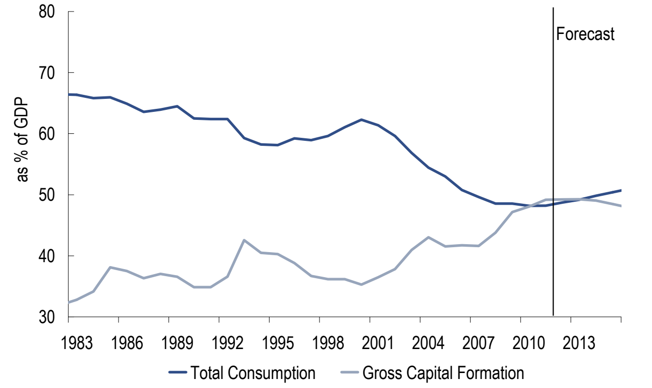
Growth may stay slightly below potential for a few years, but structure may improve – Cost normalization may increase inflationary pressures. To contain inflation, the new government may accept lower-than-potential growth. In addition, the ongoing debt crisis may dim Europe's growth prospect for the next few years and undermine market confidence elsewhere. As a result, China's economy may not grow at full capacity in the near future. We expect growth to approach 7% in 2015. The correction of over-investment in recent years and government policies to support consumption will likely decelerate investment more than consumption. Slower investment growth would help curb commodity price increases and investment deflator, causing the investment-to-GDP ratio to decline as early as in 2013-2014.

Figure 6. China – Consumption May Become the Biggest Contributor to Growth



Source: NBS and Citi Investment Research and Analysis estimates

Figure 7. China – Investment/GDP Ratio May Peak in 2012-13



Source: NBS and Citi Investment Research and Analysis estimates

2H Rebound in the Making

Growth appears to have stabilized, although at a low level – There are signs that the economy is not deteriorating further.

- Industrial production (in real terms) accelerated slightly from 9.3% YoY in April to 9.6% in May, indicating the sharp downward momentum was bridled. According to NBS, seasonally adjusted MoM growth picked up from 0.36% in April to 0.89% in May. Electricity consumption and cement production picked up speed, although steel production decelerated.

- FAI appears to have sped up in real terms. FAI – in nominal terms – grew 20.1% YoY in Jan-May, slowing marginally from 20.2% YoY in Jan-Apr. Given the close correlation between PPI/industrial purchase price index and FAI price index, we believe YTD FAI inflation declined more than 0.1ppt from April to May (industrial purchase price inflation fell from an average 0.6% YoY in Jan-Apr to 0.1% in Jan-May), implying FAI has accelerated in real terms. Infrastructure projects launched recently are expected to buffer the downside risks.

- In particular, property investment grew 18.2% YoY in May (in nominal terms), a significant improvement from 9.2% YoY in April. We expect tight property policies – although eased for first home purchase – will continue to weigh on property investment, but the recent pickup in floor space sold would improve developers' funding conditions. This, together with policies to penalize land hoarding, may support a more sustained turnaround in property investment later this year.[1]

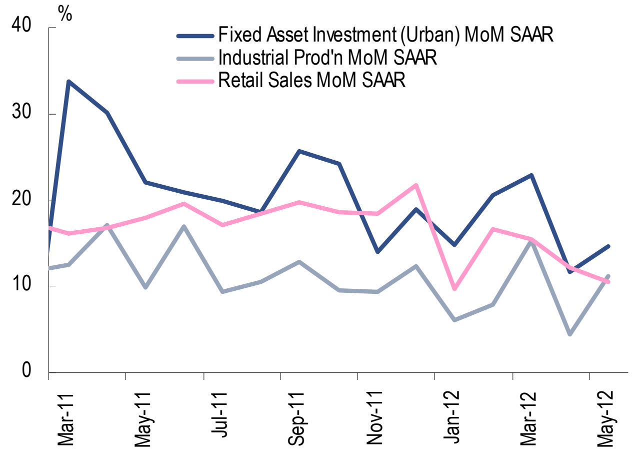
- Retail sales accelerated in real terms. Retail sales grew 13.8% YoY in May, relative to 14.1% YoY in April. Growth in real terms sped up from 10.7% to 11.0%, benefiting from declining inflation.

- Money and credit growth accelerated. New RMB loans in May increased to almost RMB 800bn, beating expectation and on track to reach the implicit RMB 8tn annual target. In particular, the share of medium- and longer-term loans started to rise, suggesting more loans were made to fund longer-term projects approved recently. Increased loan extension and RRR cut in May pushed M2 growth to 13.2%. An improving liquidity condition is instrumental in preventing further economic downturn.

- Fiscal revenue and trade growth rebounded, but likely reflecting one-off factors. Fiscal revenue grew 13.1% YoY in May, relative to 6.9% YoY in April. But according to MOF, if increase in profit tax from the banking system is excluded, fiscal revenue growth in May would have been around 5% only, underscoring continued weakness of economic activity. Export and import growth in May significantly beat expectation, but may reflect one more working day this May as well as low base of last year.

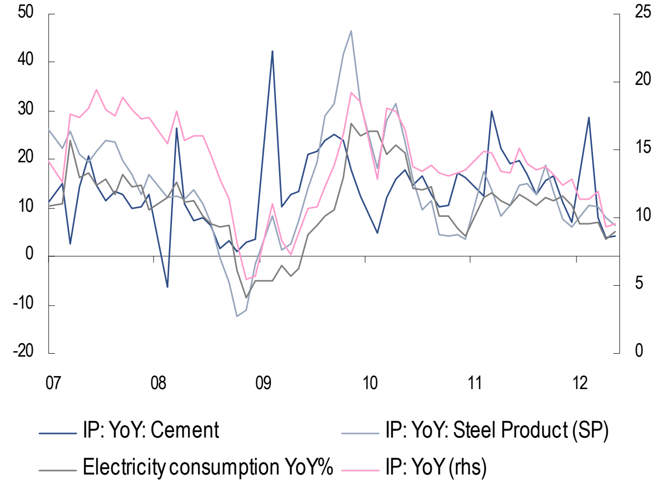
[1] Government has the right to reclaim the land not developed two years after the acquisition by developers. Effective July 1, government will impose 20% fees on land not developed one year after the acquisition.

Figure 8. China Seasonally Adjusted IP and FAI Growth Rebounded in May



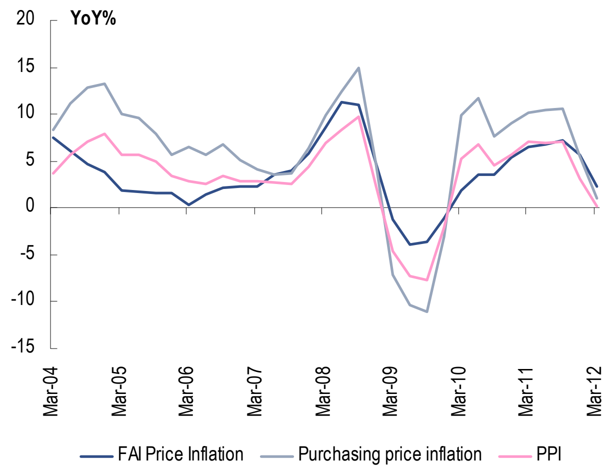
Source: NBS and Citi Investment Research and Analysis

Figure 9. China IP Growth Stopped Falling for Now



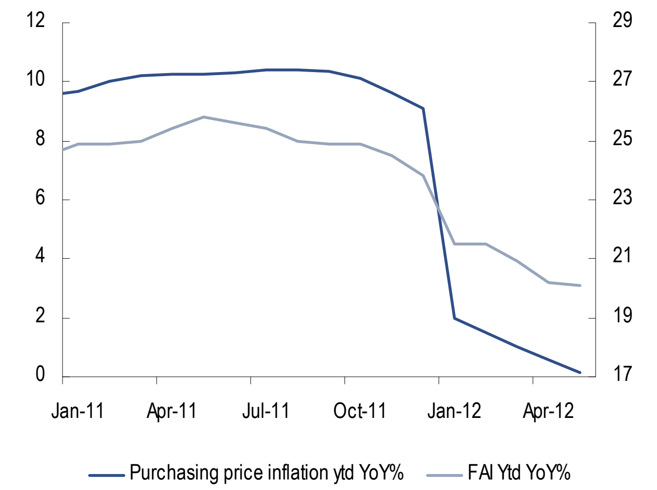
Source: NBS and Citi Investment Research and Analysis

Figure 10. China FAI Inflation Closely Related to PPI and Purchase Price Inflation



Source: NBS and Citi Investment Research and Analysis

Figure 11. China's Lower Inflation Contributed to Nominal FAI Slowdown



Source: NBS and Citi Investment Research and Analysis

Figure 12. China 2Q Growth May Have Slowed Further to Below 7.5%

Source: NBS and Citi Investment Research and Analysis

However, it would be risky to extrapolate the monthly uptick – Growth appears to have stabilized in May, but evidence of a turning point is scarce. In fact, just in April almost all the economic data pointed to further slowdown. Given the fluid situation, it would take at least another month's data to discern the underlying trend.

Figure 13. China Quarterly Growth 2012E-13E

GDP	1Q12	2Q12E	3Q12E	4Q12E
YoY%	8.1	7.3	7.8	8.0
QoQ% saar	6.6	6.9	10.1	8.1
	1Q13E	**2Q13E**	**3Q13E**	**4Q13E**
YoY%	8.2	8.0	7.8	7.7
QoQ% saar	7.6	6.6	9.1	7.3

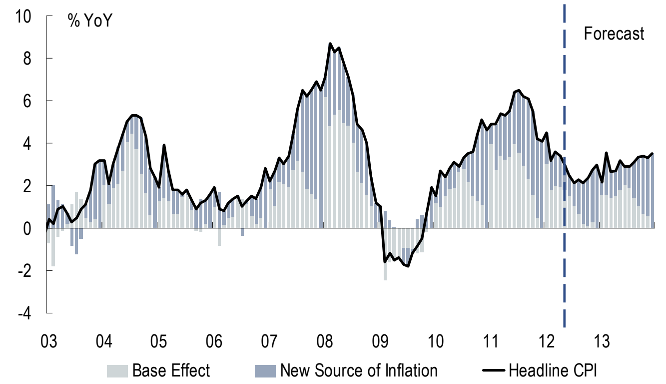
Source: Citi Investment Research and Analysis estimates

2Q growth may be falling below 7.5% barring a strong lift from June – In general, economic activity in April and May was weak by historical standards. In particular, IP growth was close to the level of early 2009. Based on correlation between IP and GDP growth, even assuming a moderate improvement in IP in June, we estimate that GDP growth in 2Q would be about 7.3% YoY, down from 8.1% in 1Q.

Inflation is likely to fall and stay below 3% in the next few months – Food prices tend to fall in June, and the fuel price cut early this month should help contain non-food prices. YoY inflation will most likely fall below 3% in June. More generally, agricultural production has been normal so far this year, and international commodity prices may remain weak due to sluggish global recovery. In addition, negative output gap in China may keep non-food inflation subdued, despite incoming electricity tariff hikes.[2] These factors, together with favorable base effect, will likely keep CPI inflation below 3% for most of the remaining months this year.

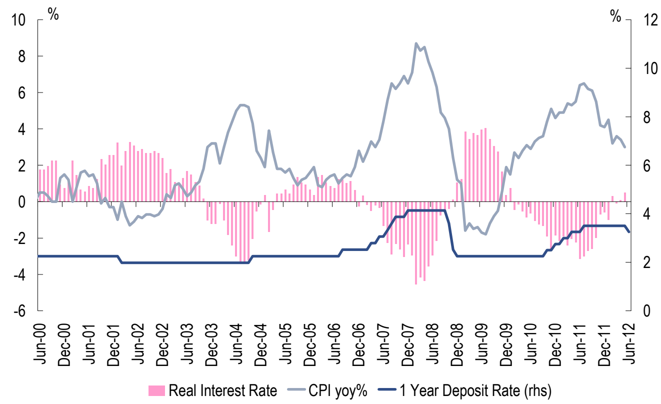
[2] The tier-based residential electricity pricing mechanism will be introduced nationwide from July 1, 2012. Residential power consumption will be broken down into three categories: (i) basic consumption; (ii) normal consumption; and (iii) luxury consumption, and tiered tariffs will be applied in order to charge higher prices on consumption above specified levels. Tariff for basic consumption volume will remain at the current level (average Rmb0.53/KWH); tariff for second tier will be increased by Rmb0.05/KWH; and tariff for the top tier will be increased by Rmb0.30/KWH. According to our estimate, the reform will increase headline CPI by 0.1-0.2ppt at most.

Figure 14. China's Inflation May Fall and Stay Below 3% in the Next Few Months



Source: NBS and Citi Investment Research and Analysis

Figure 15. China's Deposit Rate Has Turned Positive in Real Terms



Source: PBOC, NBS and Citi Investment Research and Analysis

Subdued inflation creating room for further policy easing – As the downward trend of inflation is established and deposit rates are turning positive in real terms, the government has recently been more aggressive in taking measures to boost domestic demand, including frontloading investment projects under the 12th Five-Year Plan and cutting interest rate for the first time since end-2008. YoY CPI inflation may approach 2% in some of remaining months, making it possible to further cut benchmark rates to lower borrowing costs and increase loan demand.

We expect more decisive policy easing, but no large-scale stimulus – Unless the sovereign debt problem in Europe escalates to a full-blown economic and financial crisis and results in a deep recession in the continent, we think the Chinese government does not have the appetite to introduce a 2008-09 type of stimulus. The negative fallout of the last stimulus – such as LGFV debt and property bubble – still lingers. However, in a year of leadership transition, we think the government would not accept a growth rate lower than the official target of 7.5%, and has every incentive to facilitate a growth rebound ahead of the National Party Congress in the fall. We expect the government to make full use of the policy room under the policy framework set at the beginning of the year, including:

- **Two more rate cuts to increase demand.** Following the recent rate cuts, most banks took advantage of the upward floating flexibility and kept deposit rates essentially unchanged. Competition among banks for deposits should keep one-year deposit rate above 3% with two additional benchmark rate cuts, positive in real terms if inflation stays below 3%. On the lending side, two additional cuts in benchmark rates would significantly lower the borrowing cost and increase demand for loans, making 8tn new lending feasible this year.

- **Two more RRR cuts to bring money growth to 14%.** FX inflow since the beginning of the year has been markedly lower compared with last year. As PBOC buys less FX from the market, base money growth has stagnated. According to our estimate, two more RRR cuts would be necessary to increase money multiplier and achieve PBOC's forecast of M2 growth of 14%.

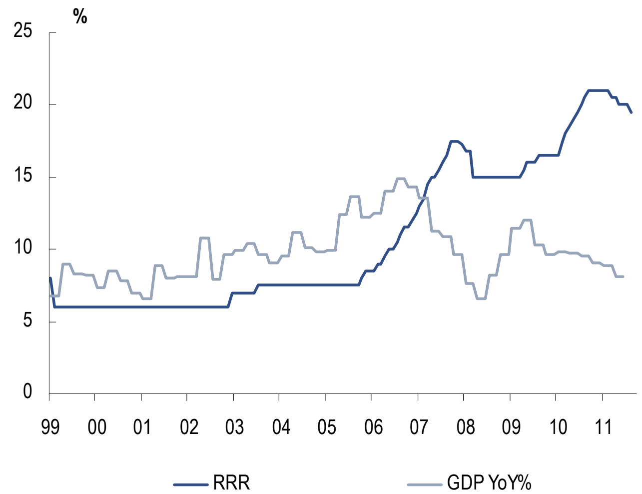
- **Expansionary fiscal policy to support domestic demand.** With fiscal revenue growth falling with economic slowdown and fiscal expenditure in high gear (especially on social housing and infrastructure), the automatic stabilizer appears

to be working. If room under the current budget is utilized fully, this year's deficit can be 1ppt of GDP higher than last year, delivering a boost to the economy.

- **Property policy easing to prevent an investment slump.** Given the possibility of a rebound in home prices, the current administration may not be ready to loosen the overall property policy (especially the purchase restriction). However, the policy easing targeted at first home purchase is expected to continue and expand (in the form of lower mortgage rate and more generous use of the housing provident fund), and policy easing covering second home purchase (for upgrading purpose) can be a backup in case property investment falls sharply. Interest rate cuts would make mortgages more affordable and boost demand.

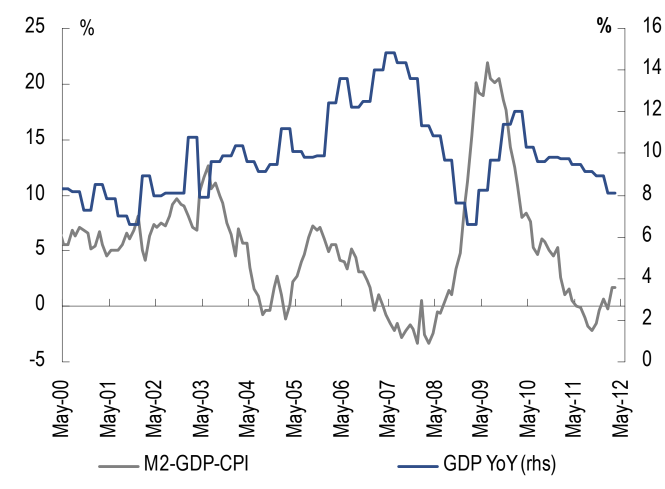
2H rebound increasingly likely with sustained policy easing – After raising RRR 10 times during 2010-11, PBOC started to cut RRR in late 2011, signaling the beginning of policy easing. It usually takes 6-9 months for monetary policy to show tangible impact in China, which makes a rebound in 3Q quite likely. In addition, the monetary condition (M2 growth – GDP growth – CPI inflation) has turned accommodative (above zero) since February, suggesting a possible rebound in 3Q based on the experience in 2008-09. More importantly, the dose of policy easing is accumulating since the beginning of the year, and more powerful tools (including rate cut) are being employed. 3Q growth would also benefit from a low base in 3Q11, and a rebound is technically less challenging if the policy easing continues.

Figure 16. China RRR Cuts Herald Growth Rebound



Source: NBS, PBOC and Citi Investment Research and Analysis

Figure 17. China Monetary Condition Is Supportive of a Rebound



Source: PBOC, NBS and Citi Investment Research and Analysis

We expect annual growth to settle slightly below 8% – While the above policy mix should support above 8% growth, we expect deterioration of growth momentum in Europe for the rest of the year.

- We forecast FAI growth to decelerate to 17.5% this year, and property investment would be the main drag. In real terms, the slowdown is less dramatic due to falling investment inflation. The real growth of fixed capital formation is estimated at about 9.0%, down from 10.7% for 2011.

- Growth contribution of consumption may exceed investment for the first time since 2001. Consumption remains resilient in Q1, and we expect consumption growth to slow slightly from 9.7% in 2011 to 9.4%.

- Contribution of net export to growth will likely become more negative. While the euro area managed to avoid a contraction in Q1, we expect fiscal tightening and bank deleveraging to push the economy back to recession for the rest of the year. Weak external demand may shed GDP growth by 1ppt in 2012.

Figure 18. China Fixed-Asset Investment, 2010-15. (In RMB bn, unless indicated otherwise)

	2010	2011	2012E	2013E	2014E	2015E
Fixed Asset Investment, Total	24141	30193	35486	41627	48389	55634
(Growth, %)	24.4	23.8	17.5	17.3	16.2	15.0
Infrastructure	6830	7081	7670	8427	9165	9964
(Growth, %)	18.3	7.3	8.3	9.9	8.8	8.7
Of which: railway	843	586	550	524	534	544
Power generation and grid	705	776	853	938	1032	1136
Water and irrigation	275	341	365	365	365	365
Property and Construction	5989	7894	9321	10910	12760	14796
(Growth, %)	33.2	30.2	18.1	17.0	17.0	16.0
Manufacturing	5396	7488	9210	11236	13483	15910
(Growth, %)	27.6	32.9	23.0	22.0	20.0	18.0
Services	1895	2319	2899	3566	4315	5092
(Growth, %)	16.9	28.1	25.0	23.0	21.0	18.0
Resources	3022	3953	4664	5457	6330	7280
(Growth, %)	22.8	26.5	18.0	17.0	16.0	15.0
Other	1009	1458	1721	2031	2335	2592
	21.2	26.7	18.0	18.0	15.0	11.0
Memorandum item:						
Fixed capital formation (Growth, %)						
Real	11.8	10.7	9.0	8.8	7.8	6.7
Nominal	18.5	17.3	11.6	11.5	10.7	9.9

Source: NBS and Citi Investment Research and Analysis estimates

Figure 19. China Main Economic Indicators

	2009	2010	2011	2012E	2013E	2014E	2015E
Real GDP YoY%	9.2	10.4	9.2	7.8	7.9	7.6	7.3
Total Consumption YoY%	9.4	9.2	9.7	9.4	9.2	8.7	8.1
GFCF YoY%	22.6	11.8	10.7	9.0	8.8	7.8	6.7
Net Exports (GNFS) (contrib to growth)	-3.5	0.4	-0.4	-1.0	-0.8	-0.5	0.0
Total Counsumption (as % of GDP)	48.5	48.2	48.2	48.7	49.2	49.8	50.4
Total Investment (as % of GDP)	47.2	48.1	49.2	49.2	49.2	49.0	48.5
Exports YoY%	-16.0	31.3	20.3	6.3	10.7	11.0	12.0
Imports YoY%	-11.2	38.8	24.9	8.3	13.0	13.0	12.0
Trade Balance (bn US)	195.7	181.5	155.1	130.3	102.5	71.1	79.6
Current Account as % of GDP	5.1	4.0	2.8	2.0	1.5	1.0	1.0
Fiscal Balance as % of GDP	-2.2	-2.2	-1.3	-2.4	-1.5	-1.0	-1.0
CPI YoY%	-0.7	3.3	5.4	2.9	3.1	3.8	4.0

Source: Citi Investment Research and Analysis estimates

Risk Scenario

Our base scenario assumes mild recession in the euro area – Regardless of the outcome of the recent Greek elections, Citi economists see a 50-75% probability for Greece to leave the euro area in the next 18 months. Heightened uncertainty associated with Greece exit will likely undermine economic activity, and we now expect the euro area economy to contract by 0.6% in 2012 and 0.7% in 2013. In order to contain the contagion from Greece to the rest of the euro area, we expect governments and the ECB to take further actions, including the use of EFSF and ESM to support the sovereigns and banks, introduction of euro area wide deposit guarantee scheme, additional multi-year LTROs and rate cuts by the ECB. In such a scenario, we estimate contribution of net export to China's growth to become -1ppt, and -0.8ppt, respectively this year and the next.

An escalation of the European debt crisis may push China's growth below 7% in the absence of additional policy support – It is challenging to simulate the potential impact from a full-blown debt crisis in Europe, especially given its shock wave to the rest of the world and uncertainties about policy reactions. In a simplistic scenario where the euro area's recession reaches 2%, weaker external demand – including spillover to China's other trading partners – may further cut China's growth by nearly 1ppt, based on regression of net export contribution to China's growth over euro area's growth rate. This could cause a second-round effect on domestic demand due to higher unemployment in export-oriented industries, resulting in a hard landing of the economy (with growth below 7%).

Figure 20. China Market Snapshot

	22-Jun	1 Week change	YTD change	12 months Change
Foreign Exchange				
USD/CNY	6.36	(0.01)	0.07	(0.10)
EUR/CNY	7.99	(0.05)	(0.14)	(1.32)
100JPY/CNY	7.93	(0.16)	(0.26)	(0.12)
1M Vol, USD/CNY	1.89	(0.24)	(0.92)	(0.13)
3M Vol, USD/CNY	1.99	(0.21)	(1.11)	(0.31)
Forward				
USD/CNY 3M Forward, onshore	6.38	(0.01)	0.07	(0.10)
USD/CNY 12M Forward, onshore	6.40	(0.01)	0.07	(0.10)
USD/CNY 3M NDF	6.36	(0.00)	0.07	(0.18)
USD/CNY 12M NDF	6.41	(0.00)	0.10	(0.07)
PBOC Benchmark Rate, %				
Demand Deposit	0.40	-	(0.10)	(0.10)
3M Deposit	2.85	-	(0.25)	-
6M Deposit	3.05	-	(0.25)	-
1Y Deposit	3.25	-	(0.25)	-
2Y Deposit	4.10	-	(0.30)	(0.05)
3Y Deposit	4.65	-	(0.35)	(0.10)
5Y Deposit	5.10	-	(0.40)	(0.15)
6M Lending	5.85	-	(0.25)	-
1Y Lending	6.31	-	(0.25)	-
1-3Y Lending	6.40	-	(0.25)	-
3-5Y Lending	6.65	-	(0.25)	-
5+Y Lending	6.80	-	(0.25)	-
Govn Bond, %				
PBOC 3M	2.55	-	-	1.15
PBOC 6M	2.55	-	-	0.95
CGB 1Y	2.20	0.04	(0.42)	(1.37)
CGB 2Y	2.44	0.04	(0.42)	(1.11)
CGB 5Y	2.95	0.06	(0.13)	(0.64)
CGB 10Y	3.41	0.01	(0.03)	(0.57)
Govn Bond Yield Curve, bp				
2Y-3M	(11.00)	4.00	-	(226.00)
5Y-2Y	51.00	2.00	29.00	47.00
10-2Y	97.00	(3.00)	39.00	54.00
10-5Y	46.00	(5.00)	10.00	7.00

	22-Jun	1 Week change	YTD change	12 months Change
Interbank Rate, %				
1D SHIBOR	3.59	1.03	0.18	(3.55)
7D SHIBOR	4.31	1.59	(1.27)	(4.02)
1M SHIBOR	4.28	1.08	(1.71)	(3.28)
3M SHIBOR	4.05	0.01	(1.42)	(1.79)
6M SHIBOR	4.44	(0.02)	(0.98)	(0.64)
1Y SHIBOR	4.77	(0.03)	(0.46)	(0.27)
Repo Rate, %				
1D Interbank Repo Rate	3.63	1.08	0.22	(3.53)
7D Interbank Repo Rate	4.34	1.64	(1.41)	(2.66)
1M Interbank Repo Rate	4.32	1.32	(1.67)	(3.24)
3M Interbank Repo Rate	4.20	0.70	(1.25)	(2.80)
IRS, %				
3M IRS	3.03	0.37	(0.63)	(1.42)
1Y IRS	2.68	0.11	(0.24)	(1.26)
2Y IRS	2.68	0.12	0.01	(1.24)
5Y IRS	2.85	0.06	0.04	(1.15)
10Y IRS	3.01	0.07	0.07	(1.23)
IRS Curve, bp				
2Y-3M	267.75	11.75	0.50	(124.25)
5Y-2Y	17.00	(6.00)	3.25	9.00
10-2Y	33.25	(4.75)	6.00	1.25
10-5Y	16.25	1.25	2.75	(7.75)
Stock Market				
Shanghai Composite	2,261	(35)	61	(388)
- Turnover, RMB bn	55	(14)	12	(19)
Shenzhen Composite	943	(11)	76	(145)
- Turnover, RMB bn	23	(5)	6	(6)
HSCEI	9,544	(201)	(392)	(2,605)
- Turnover, HKD bn	2	(14)	(3)	(12)
Other Indicator				
5Y Sovereign CDS	119.98	3.70	(22.01)	34.39
Required Reserve Ratio	19.50	-	(1.00)	(1.50)

Source: Bloomberg and Citi Investment Research and Analysis estimates

Figure 21. Interest Rate / FX Forecast

	22-Jun	2012 1Q	2012 2Q F	2012 3Q F	2012 4Q F	2013 1Q F
PBOC 1-Year Deposit Rate, % eop	3.25	3.50	3.25	2.75	2.75	2.75
5Y Government Bond Yeild	2.95	3.12	2.87	2.37	2.37	2.37
USD/CNY	6.36	6.30	6.36	6.33	6.34	6.35
US Fed Fund Rate	0.17	0.25	0.25	0.25	0.25	0.25
10 Treasury	1.62	2.21	2.25	1.90	2.20	2.50

Source: Bloomberg and Citi Investment Research and Analysis estimates

Figure 22. China Macro Data Overview

Monthly Data	Oct-11	Nov-11	Dec-11	Jan-12	Feb-12	Mar-12	Apr-12	May-12
Urban Fixed Asset Investment, % yoy	25.0	20.8	18.4	-	18.4	20.5	19.2	21.0
Retail Sales, Value % yoy	17.2	17.3	18.1	-	14.7	15.2	14.7	13.8
Industrial Production, % yoy	13.2	12.4	12.8	-	11.4	11.9	11.4	9.6
CPI, % yoy	5.5	4.2	4.1	4.5	3.2	3.6	3.4	3.0
PPI, % yoy	5.0	2.7	1.7	0.7	0.0	(0.3)	(0.7)	(1.4)
Exports, US$ bn	157	174	175	150	114	166	163	181
Imports, US$ bn	140	160	158	123	146	160	145	162
Trade Surplus, US$ bn	17	15	17	27	(31)	5	18	19
M1, % yoy	8.4	7.8	7.9	3.2	4.3	4.4	3.1	3.5
M2, % yoy	12.9	12.7	13.6	12.4	13.0	13.4	12.8	13.2
Loan Growth, % yoy	15.8	15.6	15.8	15.0	15.2	15.7	15.4	15.7
PMI	50.4	49.0	50.3	50.5	51.0	53.1	53.3	50.4
Quarterly Data	**2011 3Q**	**2011 4Q**	**2012 1Q**	**2012 2Q** F	**2012 3Q** F	**2012 4Q F**	**2013 1Q F**	**2013 2Q F**
Nominal GDP, RMB bn	11,491	15,087	10,800	12,021	12,661	16,734	12,012	13,363
Nominal GDP, US$ bn	1,791	2,373	1,712	1903.9	2000.3	2641.5	1894.6	2106.0
Real GDP, % yoy	9.1	8.9	8.1	7.3	7.8	8.0	8.2	8.0
Fixed Asset Investment (Urban), % yoy	25.1	24.4	20.9	-	-	-	-	-
Retail Sales, Value % yoy	17.3	15.8	14.8	-	-	-	-	-
Industrial Production, % yoy	13.8	12.8	11.6	10.0	11.2	11.5	12.0	12.2
CPI, % yoy	6.3	4.6	3.8	3.0	2.2	2.7	2.8	2.9
PPI, % yoy	7.1	3.1	0.1	-	-	-	-	-
Exports, US$ bn	518	507	430	516	546	526	456	563
Imports, US$ bn	455	458	429	455	492	512	468	505
Trade Surplus, US$ bn	63	48	1	62	54	14	(12)	58
M1, % yoy eop	8.9	7.9	4.4	-	-	-	-	-
M2, % yoy eop	13.0	13.6	13.4	-	-	-	-	-
Annual Data	**2006**	**2007**	**2008**	**2009**	**2010**	**2011**	**2012 F**	**2013 F**
Real Sector: In Real Terms								
Real GDP, % yoy	12.7	14.2	9.6	9.2	10.4	9.2	7.8	7.9
Real Private Consumption, % yoy	11.3	11.1	9.2	10.3	8.4	10.0	9.6	9.4
Real Government Consumption, % yoy	5.8	10.7	6.5	7.0	11.2	8.9	8.8	8.6
Real Gross Fixed Capital Formation, % yoy	12.7	13.6	9.7	22.6	11.8	10.7	9.0	8.8
Unemployment Rate, % eop	4.1	4.0	4.2	4.3	4.1	4.1	4.2	4.1
Real Sector: In Nominal Terms								
Nominal GDP, RMB bn	22,224	26,583	31,490	34,632	40,151	47,156	52,545	58,581
Nominal GDP, US$ bn	2,787	3,495	4,544	5,071	5,932	7,295	8297.9	9287.3
Fixed Asset Investment, % yoy	23.9	24.8	25.9	30.0	23.8	23.6	-	-
Retail Sales,% yoy	13.7	16.8	21.6	15.5	23.3	17.1	-	-
CPI,% yoy	1.5	4.8	5.9	(0.7)	3.3	5.4	2.9	3.1
PPI,% yoy	3.0	3.1	6.9	(5.4)	5.5	6.1	-	-
External Sector								
Exports, US$ bn	969	1,220	1,431	1,202	1,578	1,899	2,018	2,235
Exports, % yoy	27.2	26.0	17.2	(16.0)	31.3	20.3	6.3	10.7
Imports, US$ bn	791	956	1,133	1,006	1,396	1,743	1,888	2,132
Imports, % yoy	19.9	20.8	18.5	(11.2)	38.8	24.9	8.3	13.0
Trade Balance,US$ bn	178	262	298	196	182	155	130	102
FDI, net US$ mn	103	143	122	70	125	171	139	138
Current Account, % of GDP	8.4	10.1	9.1	5.1	4.0	2.8	2.0	1.5
International Reserve ex. Gold, US$ bn	1,066	1,528	1,946	2,399	2,847	3,181	3,423	3,544
Monetary/Fiscal Indicators								
M1, % yoy eop	17.5	21.0	9.1	32.4	21.2	7.9	-	-
M2, % yoy eop	17.0	16.7	17.8	27.7	19.7	13.6	14.0	13.0
Loan Growth, % yoy eop	15.1	16.1	18.7	31.7	19.9	15.8	-	-
PBOC 1-Year Deposit Rate, % eop	2.52	4.14	2.25	2.25	2.75	3.50	2.75	3.25
Required Reserve Rate,%	9.00	14.50	15.00	15.00	18.00	20.50	-	-
Fiscal Balance,% of GDP	(1.0)	0.6	(0.4)	(2.2)	(2.2)	(1.3)	(2.4)	(1.5)
Public Debt ,% of GDP	15.8	19.6	17.0	17.7	16.8	15.3	16.1	15.9
Other Development Indicators								
Population, persons million	1,314	1,321	1,328	1,335	1,340	1,347	1,353	1,359
Urbanization, % of Total Population	44	46	47	48	50	51	-	-

Source: Bloomberg, CEIC, Haver and Citi Investment Research and Analysis estimates

Recent Publications

Topic	Date
Policy Easing? Definitely. New Stimulus? Not Yet	1-June-2012
Interest Rate Liberalization May Beat Low Expectation	16-May-2012
Still Hopeful of Above 8% Growth	14-May-2012
When Will The Economy Bottom Out?	19-Apr-2012
Why Is Money Growth Losing Momentum?	26-Mar-2012
Takeaways from China Policy Day	18-Mar-2012
What to Expect from the NPC Meeting?	27-Feb-2012
Entering the Year of Long: Threefold Policy Easing to Counter a Soft Patch	5-Feb-2012
How Proactive Can Fiscal Policy Be in 2012?	10-Jan-2012
Is Recent RMB Weakness Structural?	14-Dec-2011
Economic Prospects: Hitting a Soft Patch in 2012	1-Dec-2011
Revisiting Near-Term Macro Policies—Is an RRR or Rate Cut Imminent?	21-Nov-2011
Total Financing – Fall in Flow Disguises Growth in Stock	24-Oct-2011
Takeaways from Greater China Investor Conference 2011	18-Oct-2011
Distance to Collapse: How Far is China From 5% Growth?	9-Oct-2011
Can Investment Continue to Support Growth?	20-Sep-2011
RMB: More Flexibility Likely Amidst Self-Motivated Appreciation	18-Aug-2011
2H Outlook: Inflation to Fall Slowly Amid Growth Moderation	5-Jul-2011
Local Government Debts: An Overview	29-Jun-2011
Takeaways from the Macro Trip in Beijing	20-Jun-2011
Power Shortage Calls for Tariff Hike	23-May-2011
Short-term Slowdown in RMB Appreciation	20-May-2011
Gradual Appreciation Still Preferred	29-Apr-2011
Macro Update: Tightening Takes Longer to Show Effect	19-Apr-2011
If Only as Simple as Minimum Wage…	15-Apr-2011
Reform of Individual Income Tax: Likely Outcome and Impact	22-Mar-2011
Oil Price's Impact on China	8-Mar-2011
What to Expect from the NPC Meeting?	2-Mar-2011
Total Financing (TF): What Is It and How Might It Change?	25-Feb-2011
Fencing in the RABBIT	14-Feb-2011
Policy Update: Tighter But Not Austere	13-Jan-2011
Takeaways from Conference Call on 2011 Economic Outlook	11-Jan-2011
CNH: Short-term Opportunities & Long-term Potential	5-Jan-2011
"Chinese Medicine" for Chinese Banking	23-Dec-2010
Economic Prospects: 2011 and Beyond	29-Nov-2010
Higher Inflation, Faster Appreciation	28-Oct-2010
The 12th Five Year Plan: Breakthrough or Blend in?	24-Sep-2010
China's Struggle with Capital Flows	9-Sep-2010
Trip Notes: After the Slowdown	3-Aug-2010
2H Economic Outlook: Normalizing Not Double Dipping	26-Jul-2010
The RMB Journey: Old Scheme, New Environment	2-Jul-2010
Wage Inflation May Creep Up, but Unlikely to Be Excessive	14-Jun-2010
Rate Hikes Suppressed But Rate Cuts Unlikely	21-May-2010
How Does Greece Matter to China?	7-May-2010
The Property Bubble: To Burst or to Last?	3-May-2010
Takeaways from China Policy Day	26-Apr-2010
No Quick Exit for UDIVs	12-Mar-2010
Sector Impacts of Policy Unwind	4-Mar-2010
What to Expect from the NPC Meeting?	25-Feb-2010
The Quarrelling Couple	12-Feb-2010
Restructuring China: RMB A Regional Currency by 2020	5-Feb-2010
Liquidity or Rate Tightening?	1-Feb-2010
The Beginning of Exit and Its Possible Path	15-Jan-2010
The Service Sector-Centered GDP Revision	5-Jan-2010
Towards A Greener GDP	17-Dec-2009

Appendix A-1

Analyst Certification

The research analyst(s) primarily responsible for the preparation and content of this research report are named in bold text in the author block at the front of the product except for those sections where an analyst's name appears in bold alongside content which is attributable to that analyst. Each of these analyst(s) certify, with respect to the section(s) of the report for which they are responsible, that the views expressed therein accurately reflect their personal views about each issuer and security referenced and were prepared in an independent manner, including with respect to Citigroup Global Markets Inc and its affiliates. No part of the research analyst's compensation was, is, or will be, directly or indirectly, related to the specific recommendation(s) or view(s) expressed by that research analyst in this report.

IMPORTANT DISCLOSURES

Within the past 12 months, Citigroup Global Markets Inc. or its affiliates has acted as manager or co-manager of an offering of securities of China.

Citigroup Global Markets Inc. or its affiliates has received compensation for investment banking services provided within the past 12 months from China.

Citigroup Global Markets Inc. or its affiliates expects to receive or intends to seek, within the next three months, compensation for investment banking services from China.

Citigroup Global Markets Inc. or an affiliate received compensation for products and services other than investment banking services from China in the past 12 months.

Citigroup Global Markets Inc. currently has, or had within the past 12 months, the following as investment banking client(s): China.

Citigroup Global Markets Inc. currently has, or had within the past 12 months, the following as clients, and the services provided were non-investment-banking, securities-related: China.

Citigroup Global Markets Inc. currently has, or had within the past 12 months, the following as clients, and the services provided were non-investment-banking, non-securities-related: China.

Analysts' compensation is determined based upon activities and services intended to benefit the investor clients of Citigroup Global Markets Inc. and its affiliates ("the Firm"). Like all Firm employees, analysts receive compensation that is impacted by overall firm profitability which includes investment banking revenues.

For important disclosures (including copies of historical disclosures) regarding the companies that are the subject of this Citi Investment Research & Analysis product ("the Product"), please contact Citi Investment Research & Analysis, 388 Greenwich Street, 28th Floor, New York, NY, 10013, Attention: Legal/Compliance [E6WYB6412478]. In addition, the same important disclosures, with the exception of the Valuation and Risk assessments and historical disclosures, are contained on the Firm's disclosure website at https://www.citivelocity.com/cvr/eppublic/citi_research_disclosures. Valuation and Risk assessments can be found in the text of the most recent research note/report regarding the subject company. Historical disclosures (for up to the past three years) will be provided upon request.

NON-US RESEARCH ANALYST DISCLOSURES

Non-US research analysts who have prepared this report (i.e., all research analysts listed below other than those identified as employed by Citigroup Global Markets Inc.) are not registered/qualified as research analysts with FINRA. Such research analysts may not be associated persons of the member organization and therefore may not be subject to the NYSE Rule 472 and NASD Rule 2711 restrictions on communications with a subject company, public appearances and trading securities held by a research analyst account. The legal entities employing the authors of this report are listed below:

Citigroup Global Markets Asia	Shuang Ding; Minggao Shen; Serena Wang

OTHER DISCLOSURES

For securities recommended in the Product in which the Firm is not a market maker, the Firm is a liquidity provider in the issuers' financial instruments and may act as principal in connection with such transactions. The Firm is a regular issuer of traded financial instruments linked to securities that may have been recommended in the Product. The Firm regularly trades in the securities of the issuer(s) discussed in the Product. The Firm may engage in securities transactions in a manner inconsistent with the Product and, with respect to securities covered by the Product, will buy or sell from customers on a principal basis.

Securities recommended, offered, or sold by the Firm: (i) are not insured by the Federal Deposit Insurance Corporation; (ii) are not deposits or other obligations of any insured depository institution (including Citibank); and (iii) are subject to investment risks, including the possible loss of the principal amount invested. Although information has been obtained from and is based upon sources that the Firm believes to be reliable, we do not guarantee its accuracy and it may be incomplete and condensed. Note, however, that the Firm has taken all reasonable steps to determine the accuracy and completeness of the disclosures made in the Important Disclosures section of the Product. The Firm's research department has received assistance from the subject company(ies) referred to in this Product including, but not limited to, discussions with management of the subject company(ies). Firm policy prohibits research analysts from sending draft research to subject companies. However, it should be presumed that the author of the Product has had discussions with the subject company to ensure factual accuracy prior to publication. All opinions, projections and estimates constitute the judgment of the author as of the date of the Product and these, plus any other information contained in the Product, are subject to change without notice. Prices and availability of financial instruments also are subject to change without notice. Notwithstanding other departments within the Firm advising the companies discussed in this Product, information obtained in such role is not used in the preparation of the Product. Although Citi Investment Research & Analysis (CIRA) does not set a predetermined frequency for publication, if the Product is a fundamental research report, it is the intention of CIRA to provide research coverage of the/those issuer(s) mentioned therein, including in response to news affecting this issuer, subject to applicable quiet periods and capacity

constraints. The Product is for informational purposes only and is not intended as an offer or solicitation for the purchase or sale of a security. Any decision to purchase securities mentioned in the Product must take into account existing public information on such security or any registered prospectus.

Investing in non-U.S. securities, including ADRs, may entail certain risks. The securities of non-U.S. issuers may not be registered with, nor be subject to the reporting requirements of the U.S. Securities and Exchange Commission. There may be limited information available on foreign securities. Foreign companies are generally not subject to uniform audit and reporting standards, practices and requirements comparable to those in the U.S. Securities of some foreign companies may be less liquid and their prices more volatile than securities of comparable U.S. companies. In addition, exchange rate movements may have an adverse effect on the value of an investment in a foreign stock and its corresponding dividend payment for U.S. investors. Net dividends to ADR investors are estimated, using withholding tax rates conventions, deemed accurate, but investors are urged to consult their tax advisor for exact dividend computations. Investors who have received the Product from the Firm may be prohibited in certain states or other jurisdictions from purchasing securities mentioned in the Product from the Firm. Please ask your Financial Consultant for additional details. Citigroup Global Markets Inc. takes responsibility for the Product in the United States. Any orders by US investors resulting from the information contained in the Product may be placed only through Citigroup Global Markets Inc.

Important Disclosures for Morgan Stanley Smith Barney LLC Customers: Morgan Stanley & Co. LLC (Morgan Stanley) research reports may be available about the companies that are the subject of this Citi Investment Research & Analysis (CIRA) research report. Ask your Financial Advisor or use smithbarney.com to view any available Morgan Stanley research reports in addition to CIRA research reports.
Important disclosure regarding the relationship between the companies that are the subject of this CIRA research report and Morgan Stanley Smith Barney LLC and its affiliates are available at the Morgan Stanley Smith Barney disclosure website at www.morganstanleysmithbarney.com/researchdisclosures.
For Morgan Stanley and Citigroup Global Markets, Inc. specific disclosures, you may refer to www.morganstanley.com/researchdisclosures and https://www.citivelocity.com/cvr/eppublic/citi_research_disclosures.
This CIRA research report has been reviewed and approved on behalf of Morgan Stanley Smith Barney LLC. This review and approval was conducted by the same person who reviewed this research report on behalf of CIRA. This could create a conflict of interest.

The Citigroup legal entity that takes responsibility for the production of the Product is the legal entity which the first named author is employed by. The Product is made available in **Australia** through Citigroup Global Markets Australia Pty Ltd. (ABN 64 003 114 832 and AFSL No. 240992), participant of the ASX Group and regulated by the Australian Securities & Investments Commission. Citigroup Centre, 2 Park Street, Sydney, NSW 2000. The Product is made available in Australia to Private Banking wholesale clients through Citigroup Pty Limited (ABN 88 004 325 080 and AFSL 238098). Citigroup Pty Limited provides all financial product advice to Australian Private Banking wholesale clients through bankers and relationship managers. If there is any doubt about the suitability of investments held in Citigroup Private Bank accounts, investors should contact the Citigroup Private Bank in Australia. Citigroup companies may compensate affiliates and their representatives for providing products and services to clients. The Product is made available in **Brazil** by Citigroup Global Markets Brasil - CCTVM SA, which is regulated by CVM - Comissão de Valores Mobiliários, BACEN - Brazilian Central Bank, APIMEC - Associação dos Analistas e Profissionais de Investimento do Mercado de Capitais and ANBID - Associação Nacional dos Bancos de Investimento. Av. Paulista, 1111 - 11º andar - CEP. 01311920 - São Paulo - SP. If the Product is being made available in certain provinces of **Canada** by Citigroup Global Markets (Canada) Inc. ("CGM Canada"), CGM Canada has approved the Product. Citigroup Place, 123 Front Street West, Suite 1100, Toronto, Ontario M5J 2M3. This product is available in **Chile** through Banchile Corredores de Bolsa S.A., an indirect subsidiary of Citigroup Inc., which is regulated by the Superintendencia de Valores y Seguros. Agustinas 975, piso 2, Santiago, Chile. The Product is made available in **France** by Citigroup Global Markets Limited, which is authorised and regulated by Financial Services Authority. 1-5 Rue Paul Cézanne, 8ème, Paris, France. The Product is distributed in **Germany** by Citigroup Global Markets Deutschland AG ("CGMD"), which is regulated by Bundesanstalt fuer Finanzdienstleistungsaufsicht (BaFin). CGMD, Reuterweg 16, 60323 Frankfurt am Main. Research which relates to "securities" (as defined in the Securities and Futures Ordinance (Cap. 571 of the Laws of Hong Kong)) is issued in **Hong Kong** by, or on behalf of, Citigroup Global Markets Asia Limited which takes full responsibility for its content. Citigroup Global Markets Asia Ltd. is regulated by Hong Kong Securities and Futures Commission. If the Research is made available through Citibank, N.A., Hong Kong Branch, for its clients in Citi Private Bank, it is made available by Citibank N.A., Citibank Tower, Citibank Plaza, 3 Garden Road, Hong Kong. Citibank N.A. is regulated by the Hong Kong Monetary Authority. Please contact your Private Banker in Citibank N.A., Hong Kong, Branch if you have any queries on or any matters arising from or in connection with this document. The Product is made available in **India** by Citigroup Global Markets India Private Limited, which is regulated by Securities and Exchange Board of India. Bakhtawar, Nariman Point, Mumbai 400-021. The Product is made available in **Indonesia** through PT Citigroup Securities Indonesia. 5/F, Citibank Tower, Bapindo Plaza, Jl. Jend. Sudirman Kav. 54-55, Jakarta 12190. Neither this Product nor any copy hereof may be distributed in Indonesia or to any Indonesian citizens wherever they are domiciled or to Indonesian residents except in compliance with applicable capital market laws and regulations. This Product is not an offer of securities in Indonesia. The securities referred to in this Product have not been registered with the Capital Market and Financial Institutions Supervisory Agency (BAPEPAM-LK) pursuant to relevant capital market laws and regulations, and may not be offered or sold within the territory of the Republic of Indonesia or to Indonesian citizens through a public offering or in circumstances which constitute an offer within the meaning of the Indonesian capital market laws and regulations. The Product is made available in **Israel** through Citibank NA, regulated by the Bank of Israel and the Israeli Securities Authority. Citibank, N.A, Platinum Building, 21 Ha'arba'ah St, Tel Aviv, Israel. The Product is made available in **Italy** by Citigroup Global Markets Limited, which is authorised and regulated by Financial Services Authority. Via dei Mercanti, 12, Milan, 20121, Italy. The Product is made available in **Japan** by Citigroup Global Markets Japan Inc. ("CGMJ"), which is regulated by Financial Services Agency, Securities and Exchange Surveillance Commission, Japan Securities Dealers Association, Tokyo Stock Exchange and Osaka Securities Exchange. Shin-Marunouchi Building, 1-5-1 Marunouchi, Chiyoda-ku, Tokyo 100-6520 Japan. If the Product was distributed by SMBC Nikko Securities Inc. it is being so distributed under license. In the event that an error is found in an CGMJ research report, a revised version will be posted on the Firm's Citi Velocity website. If you have questions regarding Citi Velocity, please call (81 3) 6270-3019 for help. The Product is made available in **Korea** by Citigroup Global Markets Korea Securities Ltd., which is regulated by the Financial Services Commission, the Financial Supervisory Service and the Korea Financial Investment Association (KOFIA). Citibank Building, 39 Da-dong, Jung-gu, Seoul 110-180, Korea. KOFIA makes available registration information of research analysts on its website. Please visit the following website if you wish to find KOFIA registration information on research analysts of Citigroup Global Markets Korea Securities Ltd. http://dis.kofia.or.kr/fs/dis2/fundMgr/DISFundMgrAnalystPop.jsp?companyCd2=A03030&pageDiv=02. The Product is made available in **Malaysia** by Citigroup Global Markets Malaysia Sdn Bhd (Company No. 460819-D) ("CGMM") to its clients and CGMM takes responsibility for its contents. CGMM is regulated by the Securities Commission of Malaysia. Please contact CGMM at Level 43 Menara Citibank, 165 Jalan Ampang, 50450 Kuala Lumpur, Malaysia in respect of any matters arising from, or in connection with, the Product. The Product is made available in **Mexico** by Acciones y Valores

Banamex, S.A. De C. V., Casa de Bolsa, Integrante del Grupo Financiero Banamex ("Accival") which is a wholly owned subsidiary of Citigroup Inc. and is regulated by Comision Nacional Bancaria y de Valores. Reforma 398, Col. Juarez, 06600 Mexico, D.F. In **New Zealand** the Product is made available to 'wholesale clients' only as defined by s5C(1) of the Financial Advisers Act 2008 ('FAA') through Citigroup Global Markets Australia Pty Ltd (ABN 64 003 114 832 and AFSL No. 240992), an overseas financial adviser as defined by the FAA, participant of the ASX Group and regulated by the Australian Securities & Investments Commission. Citigroup Centre, 2 Park Street, Sydney, NSW 2000. The Product is made available in **Pakistan** by Citibank N.A. Pakistan branch, which is regulated by the State Bank of Pakistan and Securities Exchange Commission, Pakistan. AWT Plaza, 1.1. Chundrigar Road, P.O. Box 4889, Karachi-74200. The Product is made available in the **Philippines** through Citicorp Financial Services and Insurance Brokerage Philippines, Inc., which is regulated by the Philippines Securities and Exchange Commission. 20th Floor Citibank Square Bldg. The Product is made available in the Philippines through Citibank NA Philippines branch, Citibank Tower, 8741 Paseo De Roxas, Makati City, Manila. Citibank NA Philippines NA is regulated by The Bangko Sentral ng Pilipinas. The Product is made available in **Poland** by Dom Maklerski Banku Handlowego SA an indirect subsidiary of Citigroup Inc., which is regulated by Komisja Nadzoru Finansowego. Dom Maklerski Banku Handlowego S.A. ul.Senatorska 16, 00-923 Warszawa. The Product is made available in the **Russian Federation** through ZAO Citibank, which is licensed to carry out banking activities in the Russian Federation in accordance with the general banking license issued by the Central Bank of the Russian Federation and brokerage activities in accordance with the license issued by the Federal Service for Financial Markets. Neither the Product nor any information contained in the Product shall be considered as advertising the securities mentioned in this report within the territory of the Russian Federation or outside the Russian Federation. The Product does not constitute an appraisal within the meaning of the Federal Law of the Russian Federation of 29 July 1998 No. 135-FZ (as amended) On Appraisal Activities in the Russian Federation. 8-10 Gasheka Street, 125047 Moscow. The Product is made available in **Singapore** through Citigroup Global Markets Singapore Pte. Ltd. ("CGMSPL"), a capital markets services license holder, and regulated by Monetary Authority of Singapore. Please contact CGMSPL at 8 Marina View, 21st Floor Asia Square Tower 1, Singapore 018960, in respect of any matters arising from, or in connection with, the analysis of this document. This report is intended for recipients who are accredited, expert and institutional investors as defined under the Securities and Futures Act (Cap. 289). The Product is made available by The Citigroup Private Bank in Singapore through Citibank, N.A., Singapore Branch, a licensed bank in Singapore that is regulated by Monetary Authority of Singapore. Please contact your Private Banker in Citibank N.A., Singapore Branch if you have any queries on or any matters arising from or in connection with this document. This report is intended for recipients who are accredited, expert and institutional investors as defined under the Securities and Futures Act (Cap. 289). This report is distributed in Singapore by Citibank Singapore Ltd ("CSL") to selected Citigold/Citigold Private Clients. CSL provides no independent research or analysis of the substance or in preparation of this report. Please contact your Citigold//Citigold Private Client Relationship Manager in CSL if you have any queries on or any matters arising from or in connection with this report. This report is intended for recipients who are accredited investors as defined under the Securities and Futures Act (Cap. 289). Citigroup Global Markets (Pty) Ltd. is incorporated in the **Republic of South Africa** (company registration number 2000/025866/07) and its registered office is at 145 West Street, Sandton, 2196, Saxonwold. Citigroup Global Markets (Pty) Ltd. is regulated by JSE Securities Exchange South Africa, South African Reserve Bank and the Financial Services Board. The investments and services contained herein are not available to private customers in South Africa. The Product is made available in **Spain** by Citigroup Global Markets Limited, which is authorised and regulated by Financial Services Authority. 29 Jose Ortega Y Gasset, 4th Floor, Madrid, 28006, Spain. The Product is made available in the **Republic of China** through Citigroup Global Markets Taiwan Securities Company Ltd. ("CGMTS"), 14 and 15F, No. 1, Songzhi Road, Taipei 110, Taiwan and/or through Citibank Securities (Taiwan) Company Limited ("CSTL"), 14 and 15F, No. 1, Songzhi Road, Taipei 110, Taiwan, subject to the respective license scope of each entity and the applicable laws and regulations in the Republic of China. CGMTS and CSTL are both regulated by the Securities and Futures Bureau of the Financial Supervisory Commission of Taiwan, the Republic of China. No portion of the Product may be reproduced or quoted in the Republic of China by the press or any third parties [without the written authorization of CGMTS and CSTL]. If the Product covers securities which are not allowed to be offered or traded in the Republic of China, neither the Product nor any information contained in the Product shall be considered as advertising the securities or making recommendation of the securities in the Republic of China. The Product is for informational purposes only and is not intended as an offer or solicitation for the purchase or sale of a security or financial products. Any decision to purchase securities or financial products mentioned in the Product must take into account existing public information on such security or the financial products or any registered prospectus. The Product is made available in **Thailand** through Citicorp Securities (Thailand) Ltd., which is regulated by the Securities and Exchange Commission of Thailand. 18/F, 22/F and 29/F, 82 North Sathorn Road, Silom, Bangrak, Bangkok 10500, Thailand. The Product is made available in **Turkey** through Citibank AS which is regulated by Capital Markets Board. Tekfen Tower, Eski Buyukdere Caddesi # 209 Kat 2B, 23294 Levent, Istanbul, Turkey. In the **U.A.E**, these materials (the "Materials") are communicated by Citigroup Global Markets Limited, DIFC branch ("CGML"), an entity registered in the Dubai International Financial Center ("DIFC") and licensed and regulated by the Dubai Financial Services Authority ("DFSA") to Professional Clients and Market Counterparties only and should not be relied upon or distributed to Retail Clients. A distribution of the different CIRA ratings distribution, in percentage terms for Investments in each sector covered is made available on request. Financial products and/or services to which the Materials relate will only be made available to Professional Clients and Market Counterparties. The Product is made available in **United Kingdom** by Citigroup Global Markets Limited, which is authorised and regulated by Financial Services Authority. This material may relate to investments or services of a person outside of the UK or to other matters which are not regulated by the FSA and further details as to where this may be the case are available upon request in respect of this material. Citigroup Centre, Canada Square, Canary Wharf, London, E14 5LB. The Product is made available in **United States** by Citigroup Global Markets Inc, which is a member of FINRA and registered with the US Securities and Exchange Commission. 388 Greenwich Street, New York, NY 10013. Unless specified to the contrary, within EU Member States, the Product is made available by Citigroup Global Markets Limited, which is regulated by Financial Services Authority.

Pursuant to Comissão de Valores Mobiliários Rule 483, Citi is required to disclose whether a Citi related company or business has a commercial relationship with the subject company. Considering that Citi operates multiple businesses in more than 100 countries around the world, it is likely that Citi has a commercial relationship with the subject company.

Many European regulators require that a firm must establish, implement and make available a policy for managing conflicts of interest arising as a result of publication or distribution of investment research. The policy applicable to CIRA's Products can be found at https://www.citivelocity.com/cvr/eppublic/citi_research_disclosures.

Compensation of equity research analysts is determined by equity research management and Citigroup's senior management and is not linked to specific transactions or recommendations.

The Product may have been distributed simultaneously, in multiple formats, to the Firm's worldwide institutional and retail customers. The Product is not to be construed as providing investment services in any jurisdiction where the provision of such services would not be permitted.

Subject to the nature and contents of the Product, the investments described therein are subject to fluctuations in price and/or value and investors may get

back less than originally invested. Certain high-volatility investments can be subject to sudden and large falls in value that could equal or exceed the amount invested. Certain investments contained in the Product may have tax implications for private customers whereby levels and basis of taxation may be subject to change. If in doubt, investors should seek advice from a tax adviser. The Product does not purport to identify the nature of the specific market or other risks associated with a particular transaction. Advice in the Product is general and should not be construed as personal advice given it has been prepared without taking account of the objectives, financial situation or needs of any particular investor. Accordingly, investors should, before acting on the advice, consider the appropriateness of the advice, having regard to their objectives, financial situation and needs. Prior to acquiring any financial product, it is the client's responsibility to obtain the relevant offer document for the product and consider it before making a decision as to whether to purchase the product.
With the exception of our product that is made available only to Qualified Institutional Buyers (QIBs), CIRA concurrently disseminates its research via proprietary and non-proprietary electronic distribution platforms. Periodically, individual CIRA analysts may also opt to circulate research posted on such platforms to one or more clients by email. Such email distribution is discretionary and is done only after the research has been disseminated via the aforementioned distribution channels. CIRA simultaneously distributes product that is limited to QIBs only through email distribution.
The level and types of services provided by CIRA analysts to clients may vary depending on various factors such as the client's individual preferences as to the frequency and manner of receiving communications from analysts, the client's risk profile and investment focus and perspective (e.g. market-wide, sector specific, long term, short-term etc.), the size and scope of the overall client relationship with Citi and legal and regulatory constraints.
CIRA product may source data from dataCentral. dataCentral is a CIRA proprietary database, which includes Citi estimates, data from company reports and feeds from Reuters and Datastream.

ADDITIONAL INFORMATION IS AVAILABLE UPON REQUEST