

Indonesia Macro View

Is Indonesia 'Overheating'?

- **Debate has surfaced recently over whether or not Indonesia is overheating** — Strong credit growth, rising real asset prices and recent trade deficits have been cited as evidence of the economy growing above potential. On the other hand policymakers have downplayed the notion of overheating, citing that inflation remains well-anchored.
- **We think that credit growth has so far been well-managed and has not deviated yet from sustainable levels** — Aside from credit penetration being still at a low base, credit disbursement is also not concentrated to any single sector. The portion of "productive" lending i.e. loans channeled to businesses (instead of consumers) is also higher this time compared to previous credit cycles.
- **Strong credit growth helps bolster imports, but the composition of import growth has also improved** — The bulk of imports is still raw materials; yet the contribution to growth of capital goods imports to total imports has been higher vs. previous cycles in '07 and '05. (This is true even after excluding mobile phone imports). Any corresponding increase to domestic capacity in the medium term should lead to more import substitution which may help put a lid on trade balance pressures. In spite of this, the CA deficit does have structural elements thus still must be managed at levels which do not jeopardize macroeconomic stability.
- **Lack of core inflation momentum has been surprising, but not totally unexplained** — Benign inflation of tradeable goods (non-food, non-administered) can be attributed to imported deflation and productivity increases to a lesser extent. However, reasons behind benign inflation in the non-tradeables, despite high inflation expectations and rising property prices, needs to be further explored and possibly double checked.
- **Property price increases in certain areas suggest real interest rates may be too low** — BI's surveys show double-digit annualized price increases for various property in certain areas. Real interest rates on time deposits appear close to zero or even negative on an after-tax basis.
- **Monetary policy implications** — Even though credit growth is still well managed and no pent-up momentum on core inflation is visible, we think modest policy adjustments will still be needed, in consideration of the external imbalance as well as property prices. The extent of any such policy response will likely be data dependent, with particular focus on the trade and current account balances. We think BI's order of preference on policy instrument usage now is first on FX, second on macroprudential regulations, and then thirdly the FasBI rate. However, eventually we expect all three instruments may be further utilized.

Helmi Arman
+62-21-5290-8960
helmi.arman@citi.com

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

Citi Research is a division of Citigroup Global Markets Inc. (the "Firm"), which does and seeks to do business with companies covered in its research reports. As a result, investors should be aware that the Firm may have a conflict of interest that could affect the objectivity of this report. Investors should consider this report as only a single factor in making their investment decision.

Is Indonesia 'overheating'?

Figure 1. Composition of YoY import growth

	Cons. goods	Raw mat.	Capital goods
2012 (up to Aug)	5%	62%	33%
2007	9%	76%	15%
2005	7%	77%	16%

Source: BPS, Citi Research

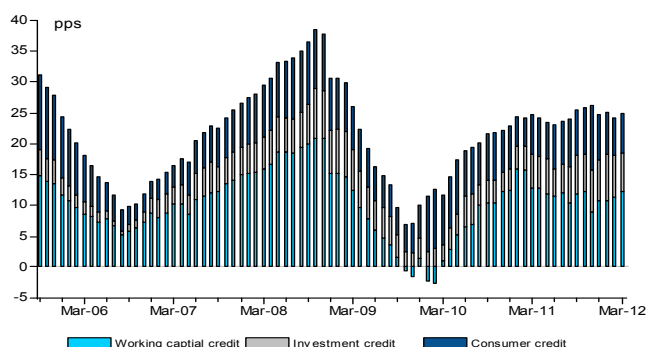
Debate has surfaced recently over issues such as economic bubbles and overheating in Indonesia. In our view, credit growth has generally been well-managed and has not deviated yet from sustainable levels. Neither do we see any pent-up momentum on core inflation, apart from perhaps some modest upside from gradual IDR depreciation. However, these should not mean business as usual for policymaking. Strong increases in property prices in surveyed areas may be indicative that real interest rates are too low. Furthermore, economic policy must take into account both the internal and external balances. One may welcome the strong growth of capital goods imports which in the medium term may result in further capacity increases and import substitution; yet the size of present day external imbalances must not be overlooked. We think policymakers will aim to manage and maintain it at levels that are more consistent with macro stability.

Credit growth, though strong, has generally been well managed and has not deviated from sustainable levels. Domestic credit growth has been close to 25% YoY and money supply (M1) close to 20% YoY. However, the impact of this has not yet led to inflation or strong concerns of resource misallocation. Credit growth has been well-diversified and not concentrated to any single sector. And the balance of lending to households and to businesses has improved. Consumption lending only contributed around 26% of YoY loans growth, with the rest going to businesses. This is lower than 40% in 2005 and even 28% in 2008 (pre-Lehman). What's also noticeable is the contribution of investment credit to YoY credit growth which is now at around 25%, versus only 14% in 2005 and 16% in 2008.

Stronger growth of productive credit accompanied by improvement in import growth composition. The bulk of imports are still raw materials (incl. oil); however around 33% of import growth over the past year was contributed by capital goods; this is higher compared to around 16% in both the credit cycles of 2007 and 2005. The number is still robust even after excluding the growth in imports of dual-use capital goods (which could be for household use) such as cellular phones and portable computers.

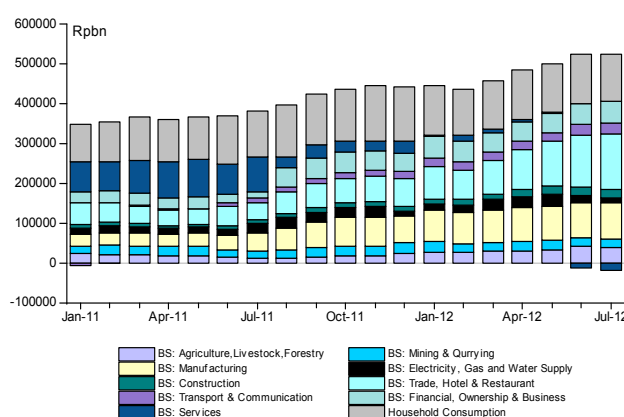
Lack of momentum on core inflation a bit puzzling, but not totally unexplainable. Core inflation surprisingly hasn't seen any noticeable pick-up despite rates of money supply growth being strong and minimum-wage growth having accelerated this year (average +10%). Our proxies for both the non-tradeable and non-food tradeable components of the CPI show benign year on year increases.

Figure 2. Credit growth (YoY) breakdown, by function



Source: BI, Citi Research

Figure 3. Credit growth YoY difference, breakdown by sector



Source: BI, Citi Research

Figure 4. Indicative market sizes and domestic production (mn tons), selected industries

	Domestic market	Domestic production
Steel*	9 - 10	6 - 6.5
Aluminium ingot *	0.6 - 0.8	0.3
Fertilizers*	24.2	16.6
Cement **	53	57
Asphalt*	1.2	0.6

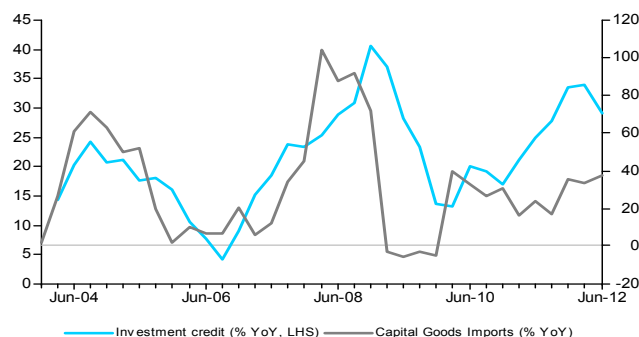
Source: *Reported estimates from Ministry of Industry (2011-2012), **Citi Research

Due to high import penetration in markets of many products, imported deflation may have helped suppress tradeable goods inflation. In many industries, domestic capacity falls short of domestic demand. Markets of many items from clothing, electronics to basic industries such as steel, fertilizers are highly penetrated by imports. And the inflation rate of many imported items has been relatively muted, as shown by the wholesale price index of imported goods. Relevant export price and producer price index changes of Indonesia's main Asian trading partners have been negative YoY amid rising excess capacity thereat as well as benign prices of global commodities. (See Indonesia Macro Flash: The Slow Response of Imported Inflation: FX Policy Implication, 14-Sep-12).

Domestic productivity increases may have also played a role. Apart from imported deflation, another notion that makes sense though cannot yet be strongly corroborated by the data is that labor productivity, as well as total factor productivity, has increased. This would be the natural result of new investments and use of newer and more efficient machinery in the production processes. Unfortunately data on worker productivity is lagged. However 2009 data do show early signs of a productivity increase in selected med-large manufacturing industries.

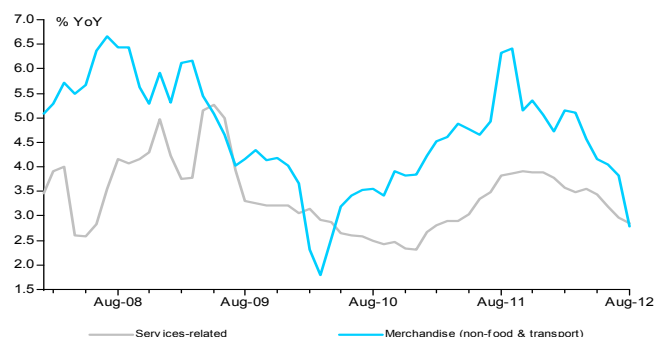
Reason behind soft inflation on non-tradeables needs to be explored; could it be underestimated? Among the non-tradeable CPI items that are not administered by the government, several should be given extra attention due to their high weights; i.e. housing contract and rents (approx. 10%), phone tariffs (3%) and household worker wages (3%). Benign inflation on phone tariffs is well-understood, given the competitive nature of the telecom industry and continued investment in network apparatus. However, house worker and rent price data collection is quite tricky, as the deviation could be large and there is no transparent benchmark to double check against.

Figure 5. Robust capital goods imports amid high growth of inv. credit



Source: BPS, BI, Citi Research

Figure 6. Benign CPI inflation in both tradeables and non-tradeables



Source: BPS, Citi Research

Figure 7. Change in productivity (output per worker) for med-large manufacturing industries

	2002	2003	2004	2005	2006	2007	2008	2009
F&B	14%	16%	-6%	37%	5%	33%	41%	-8%
Tobacco	-13%	-1%	-2%	9%	2%	34%	22%	-18%
Textile	18%	14%	17%	5%	10%	11%	7%	104%
Garments	7%	18%	-4%	20%	-5%	16%	-2%	86%
Leather	43%	-5%	1%	27%	-10%	7%	51%	59%
Wood	6%	27%	-4%	13%	-11%	34%	10%	-6%
Paper	51%	-25%	2%	19%	0%	20%	11%	37%
Printing	46%	28%	69%	19%	-31%	35%	-13%	81%
Coal, oil and gas	91%	70%	0%	14%	247%	-38%	109%	35%
Chemicals	17%	-5%	6%	16%	34%	15%	67%	24%
Rubber products	19%	12%	51%	46%	-2%	7%	43%	-38%
Non-metal quarrying	3%	10%	43%	2%	-8%	21%	21%	99%
Basic metals	-1%	14%	26%	34%	-11%	34%	5%	63%
Metal products	748%	-78%	17%	-9%	47%	10%	0%	141%
Machinery	-61%	43%	9%	17%	8%	11%	33%	15%
Office appliances	94%	-24%	11%	1368%	-77%	-28%	278%	-90%
Electrical machinery	-27%	11%	91%	-27%	27%	3%	174%	7%
Radio, TC, communication eq.	11%	-13%	76%	-65%	62%	-5%	5%	-3%
Clocks	-15%	29%	16%	16%	75%	-25%	-32%	48%
Motor vehicles	64%	-50%	57%	28%	-7%	11%	16%	26%
Other vehicles	-7%	31%	-2%	18%	4%	32%	17%	-5%
Furniture	33%	-4%	18%	9%	12%	57%	-7%	6%

Source: BPS, Citi Research

Benign rent price inflation obviously not consistent with signs of strong property price increases in Jakarta and other big cities. Rent inflation in the CPI last surged back in 2008, amid high inflation in construction materials and domestic fuel prices. These factors have indeed been absent of late. But on the other hand, the 2-3% recorded rent inflation rates in the CPI do not seem consistent with recent signs of property price surges. BI's survey shows a strong annualized selling price increase of almost 15% in 2Q12 for landed houses in the Jakarta area. The YoY increase in apartment prices is also close to 38% YoY (with rent inflation at 15% YoY). Separately rent data collection in the CPI is done nationwide through simple random sampling. We think the data could be reflecting conditions in the lower end or remote areas; or it is simply underestimated. If rent inflation nationwide were also in double digit region, inflation could be at least 0.7pps higher by our estimates.

Property surges in a number of areas indicate monetary policy may be too accommodative. We think that recent property price increases is a function of low deposit interest rates. A depositor obtaining the maximum guaranteed deposit 5.75% would effectively get a 4.6% return after tax, which is below Citi's expected inflation rate for 2013 (5.0%). The real rate could be even more negative in the event, however low in probability, that fuel prices are increased. BI has signaled it favors macro-prudential regulations over rate hikes to avoid policy overkill. However recent regulations on minimum loan to value (LTV) ratios anecdotally have not yet had a discernible impact to property demand. Furthermore we think that worries of policy overkill should not be overemphasized; as orderly policy rate adjustments usually have a lagged impact to bank rates and the real economy.

Figure 8. Indicative property price increase in 2Q12 (% YoY)

	Sale	Rent
Landed house, Jakarta (annualized)	14.8	NA
Apartments	38.1	14.6
Retail space	3.4	6.6
Industrial	99.6	12.4

Source: BI, Citi Research

The CA deficit: It has structural elements, but no upward spiral is due. Another concern often highlighted is that the capital goods imports seen now may not necessarily lead to any strong increase exports in the future, while FDI inflows may eventually prop up dividend repatriation.¹ Yet in our view, such concerns should not be overemphasized. The continued increase in domestic industrial capacity will eventually lead to import substitution. New capacity will be coming online over the medium term in various industries e.g. metals, chemicals, fertilizers which still significantly rely on imports. Eventual capacity increases will help manage the balance between export and import growth, though it will probably not be able to fully keep up pace with domestic demand growth.

Policy implications: Even though credit growth is still well managed and no pent up momentum on core inflation is visible, we think policy adjustments will still be needed, in consideration of the external imbalance and possibly property price increases. Micro-sectoral policies are needed to address the structural factors underlying the CA deficit (e.g. through lengthening domestic production chains, targeted industrial revitalization for capital goods producing industries, etc.) Yet again these are medium term policies; and to the extent that fuel price increases are not politically feasible before 2014, policies to manage the deficit in the short term would mostly be carried out by BI. In this regard the extent of any policy response will likely be data dependent, particularly on the trade and current account balances. We think BI's preferred order of policy instrument usage is firstly the exchange rate, secondly macroprudential regulations, and finally the FasBI rate. Yet eventually we expect all three instruments may be further utilized. Our current view is for BI to allow further depreciation of the IDR (6-12M fcast: 9,850/US\$). We also expect the FasBI rate to be raised to 4.25% by YE12 and 4.50% by end 1Q13.

¹ BI's real sector survey (2012) shows that around 80% of business investment is to cater for the domestic market.

Figure 9. Indonesia Economic Indicators

	2005	2006	2007	2008	2009	2010	2011	2012F	2013F
Summary Data									
Nominal GDP, US\$ bn	285.8	364.4	432.2	510.7	538.6	708.7	846.3	869.8	933.9
Nominal GDP, local currency bn	2,774,281	3,339,217	3,950,893	4,948,688	5,606,203	6,436,271	7,427,086	8,318,564	9,545,103
GDP per capita, US\$	1,294	1,625	1,900	2,212	2,298	2,982	3,517	3,572	3,787
Population, mn	220.9	224.2	227.5	230.9	234.4	237.6	240.6	243.5	246.6
Unemployment, % of labour force	11.2	10.3	9.1	8.4	7.9	7.1	6.6	6.1	5.9
Economic Activity									
Real GDP, % yoy	5.7	5.5	6.3	6.0	4.6	6.2	6.5	6.2	6.1
Real investment growth % yoy	12.4	1.3	1.9	12.4	2.4	11.1	10.6	11.6	10.4
Real consumption growth % yoy	4.3	3.9	4.9	5.9	6.2	4.1	4.5	5.9	5.2
private consumption growth % yoy	4.0	3.2	5.0	5.3	4.9	4.7	4.7	5.1	4.5
Real export growth, % yoy	16.6	9.4	8.5	9.5	-9.7	15.3	13.6	4.3	6.0
Real import growth, % yoy	17.8	8.6	9.1	10.0	-15.0	17.3	13.3	7.1	7.9
Prices, Money & Credit									
CPI, % yoy	17.1	6.6	5.8	11.1	2.8	7.0	3.8	4.8	5.0
CPI, % avg	10.5	13.1	6.3	9.9	4.8	5.1	5.4	4.4	4.7
Nominal wages, % yoy	0.2	15.0	8.2	7.5	6.5	8.3	9.2	10.0	9.0
Credit extension to private sector, % yoy	24.6	14.1	26.4	30.7	10.6	22.8	25.0	23.0	25.0
Policy interest rate, % eop	7.75	4.75	3.00	8.75	6.00	5.50	4.50	4.25	4.50
1 month inter-bank rate, % eop	12.75	9.75	8.00	10.83	6.46	6.35	4.95	4.55	4.85
Long term yield, % eop	13.62	10.18	10.02	11.89	10.06	7.61	6.03	6.00	6.50
lc/US\$, eop	9830	8994	9393	10900	9425	9010	9068	9680	9767
lc/US\$, avg	9712	9171	9140	9673	10376	9078	8763	9455	9797
Balance of Payments, US\$ bn									
Current account	0.3	10.9	10.5	0.1	10.6	5.1	1.7	-20.4	-15.9
% of GDP	0.1	3.0	2.4	0.0	2.0	0.7	0.2	-2.3	-1.7
Trade balance	17.5	29.7	32.8	22.9	30.9	30.6	34.8	12.4	17.8
Exports	87.0	103.5	118.0	139.6	119.6	158.1	200.8	196.2	219.1
Imports	69.5	73.9	85.3	116.7	88.7	127.4	166.0	183.9	-201.3
Service balance	-9.1	-9.9	-11.8	-13.0	-9.7	-9.3	-10.6	-10.2	-11.0
Income balance	-12.9	-13.8	-15.5	-15.2	-15.1	-20.8	-26.6	-26.4	-26.5
FDI, net	5.3	2.2	2.3	3.4	2.6	11.1	11.5	11.5	13.0
International reserves	34.7	42.6	56.9	51.6	66.1	96.2	110.1	109.2	111.8
Total Amortisations	22.7	35.4	31.5	40.2	36.7	37.6	38.1	40.3	41.0
Public Finances, % of GDP									
Consolidated government balance	-0.5	-0.9	-1.3	-0.1	-1.6	-0.6	-1.2	-2.1	-1.5
Consolidated gov primary balance	1.8	1.5	0.8	1.7	0.1	1.1	0.1	0.9	0.1
Public debt	47.3	39.0	35.2	33.0	28.0	26.0	25.5	25.0	24.0
of which Domestic	23.1	18.9	17.4	16.4	15.3	14.0	13.5	13.0	12.0
Foreign Assets & Liabilities, US\$ bn									
External debt	134.5	132.6	141.2	155.1	172.9	202.4	224.8	250.0	285.0
Private	54.3	56.8	60.6	68.5	73.6	83.8	106.1	116.5	146.5
Public	80.2	75.8	80.6	86.6	99.3	118.6	118.6	133.5	138.5
External debt / GDP	47.0	36.4	32.7	30.4	32.1	28.6	26.6	28.7	30.5
External debt / XGS	134.6	115.3	108.2	100.1	130.2	115.8	101.5	108.9	105.7
Short-term debt	11.0	12.2	12.8	14.6	18.1	25.1	28.7	27.5	27.5
Short-term debt/International Reserves (%)	31.7	28.7	22.4	28.2	27.5	26.1	26.1	25.2	24.6
Quarterly Economic Indicators									
	2011 Q4	2012 Q1	2012 Q2	2012 Q3F	2012 Q4F	2013 Q1F	2013 Q2F	2013 Q3F	2013 Q4F
GDP, % yoy	6.5	6.3	6.4	6.2	6.1	6.1	6.0	6.2	6.2
CPI, % yoy	3.8	4.0	4.5	4.3	4.8	4.6	5.4	4.9	5.0
Policy interest rate, % eop	4.50	3.75	3.75	4.00	4.25	4.50	4.50	4.50	4.50
1 month inter-bank rate, % eop	4.95	3.75	4.00	4.62	4.55	4.85	4.85	4.85	4.85
Long term yield, % eop	6.03	5.93	6.50	5.97	6.00	6.30	6.50	6.50	6.50
lc vs USD, eop	9068	9144	9393	9591	9680	9773	9843	9805	9767

Source: CEIC Data Company Limited and Citi Research estimates

*Note: Public debt is central government debt and external debt is based on the residency of the holder of the debt (not by currency denomination).

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

Citigroup Global Markets Inc. owns a position of 1 million USD or more in the debt securities of Indonesia

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

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 Indonesia.

Citigroup Global Markets Inc. or an affiliate received compensation for products and services other than investment banking services from Indonesia 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): Indonesia.

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: Indonesia.

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: Indonesia.

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 Research product ("the Product"), please contact Citi Research, 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:

PT Citigroup Securities Indonesia

Helmi Arman

OTHER DISCLOSURES

Citigroup Global Markets Inc. and/or its affiliates has a significant financial interest in relation to Indonesia. (For an explanation of the determination of significant financial interest, please refer to the policy for managing conflicts of interest which can be found at www.citiVelocity.com.)

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 Research does not set a predetermined frequency for publication, if the Product is a fundamental research report, it is the intention of Citi Research 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 Research research report. Ask your Financial Advisor or use smithbarney.com to view any available Morgan Stanley research reports in addition to Citi Research research reports.

Important disclosure regarding the relationship between the companies that are the subject of this Citi Research 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 Citi Research 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 Citi Research. 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 Citi 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 100-180, 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 Korea by Citibank Korea Inc., which is regulated by the Financial Services Commission and the Financial Supervisory Service. Address is Citibank Building, 39 Da-dong, Jung-gu, Seoul 100-180, Korea. 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 Comisión Nacional Bancaria y de Valores. Reforma 398, Col. Juárez, 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 Büyükdere 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 Citi Research 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 Citi Research'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) and other product that is made available through other distribution channels only to certain categories of clients to satisfy legal or regulatory requirements, Citi Research concurrently disseminates its research via proprietary and non-proprietary electronic distribution platforms. Periodically, individual Citi Research 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. Citi Research simultaneously distributes product that is limited to QIBs only through email distribution.

The level and types of services provided by Citi Research 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. Citi Research product may source data from dataCentral. dataCentral is a Citi Research proprietary database, which includes Citi estimates, data from company reports and feeds from Reuters and Datastream.

© 2012 Citigroup Global Markets Inc. Citi Research is a division of Citigroup Global Markets Inc. Citi and Citi with Arc Design are trademarks and service marks of Citigroup Inc. and its affiliates and are used and registered throughout the world. All rights reserved. Any unauthorized use, duplication, redistribution or disclosure of this report (the "Product"), including, but not limited to, redistribution of the Product by electronic mail, posting of the Product on a website or page, and/or providing to a third party a link to the Product, is prohibited by law and will result in prosecution. The information contained in the Product is intended solely for the recipient and may not be further distributed by the recipient to any third party. Where included in this report, MSCI sourced information is the exclusive property of Morgan Stanley Capital International Inc. (MSCI). Without prior written permission of MSCI, this information and any other MSCI intellectual property may not be reproduced, disseminated or used to create any financial products, including any indices. This information is provided on an "as is" basis. The user assumes the entire risk of any use made of this information. MSCI, its affiliates and any third party involved in, or related to, computing or compiling the information hereby expressly disclaim all warranties of originality, accuracy, completeness, merchantability or fitness for a particular purpose with respect to any of this information. Without limiting any of the foregoing, in no event shall MSCI, any of its affiliates or any third party involved in, or related to, computing or compiling the information have any liability for any damages of any kind. MSCI, Morgan Stanley Capital International and the MSCI indexes are services marks of MSCI and its affiliates. The Firm accepts no liability whatsoever for the actions of third parties. The Product may provide the addresses of, or contain hyperlinks to, websites. Except to the extent to which the Product refers to website material of the Firm, the Firm has not reviewed the linked site. Equally, except to the extent to which the Product refers to website material of the Firm, the Firm takes no responsibility for, and makes no representations or warranties whatsoever as to, the data and information contained therein. Such address or hyperlink (including addresses or hyperlinks to website material of the Firm) is provided solely for your convenience and information and the content of the linked site does not in anyway form part of this document. Accessing such website or following such link through the Product or the website of the Firm shall be at your own risk and the Firm shall have no liability arising out of, or in connection with, any such referenced website.

ADDITIONAL INFORMATION IS AVAILABLE UPON REQUEST
