Citi Research

Equities

21 November 2012 | 24 pages

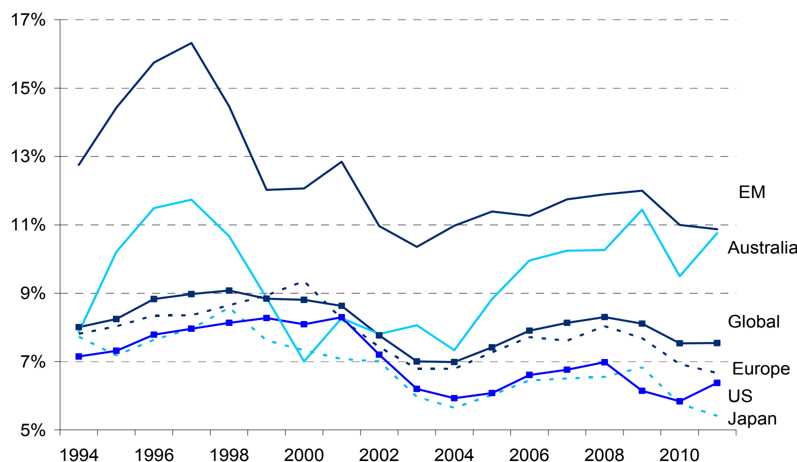
Equity Strategy (Citi)
Global

Global Equity Strategist

QE Isn't Working: An Equity Perspective

- **Ultra-low Interest Rates** — Policy-makers have adopted aggressive methods to push interest rates and bond yields down to unprecedented levels. It is hoped that these low rates will trigger a stronger recovery in corporate capex and jobs. Evidence of this remains sketchy.
- **Global Search For Yield** — Unprecedented monetary policy has created a global search for yield. Reasonable dividend yields have attracted some of this income-seeking capital into the global equity market.
- **Implications For Policy-Makers** — Income-seekers are more interested in dividends and share buybacks than financing capex and job creation. They may be reducing the pro-growth impact of QE.
- **Implications For Companies** — Those CEOs who do not give this income-seeking capital what it wants may find themselves replaced by a CEO who does.
- **Implications For Investors** — While the outlook for future economic growth remains uninspiring, global equities should remain supported by dividend yields and share buybacks. Subdued capex means that profitability mean-reversion is not imminent. Within the equity market, income strategies should remain popular.

Figure 1. Four Years of QE and Still No Meaningful Increase in New Capex. Listed Company Capex to Sales (Non-Financials)



Source: Factset, Citi Research

■ Equities

Robert Buckland
+44-20-7986-3947
robert.buckland@citi.com

Geoffrey Dennis
+1-212-816-8391
geoffrey.dennis@citi.com

Mert C Genc
+44-207-986-4087
mert.genc@citi.com

Beata M Manthey, PhD
(On maternity leave)

Hasan S Tevfik, CFA
+44-20-7986-4110
hasan.tevfik@citi.com

US

Tobias M Levkovich

Scott T Chronert

Europe

Jonathan Stubbs

Adrian Cattley

Japan

Kenji Abe, PhD

Asia ex Japan

Markus Rosgen

Australia & New Zealand

Tony Brennan

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.

QE Isn't Working: An Equity Perspective

We think that QE may be having the opposite impact to that intended. Instead of encouraging capex and job creation, ultra low interest rates are bringing yield-starved capital into the global equity market. These investors are more interested in dividends and share buybacks than corporate expansion. Those CEOs who give them what they want should be rewarded by share price outperformance. Those who do not may find themselves replaced.

Financial Repression

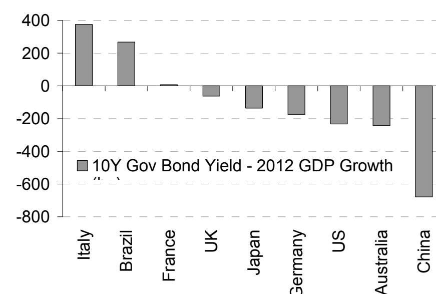
Race to the bottom for global interest rates

With inflationary pressures waning and the world economy slowing, the race to the bottom for global interest rates continued in 2012. Many of those countries with policy rates still high enough to make it worth cutting have done so. Those where rates were already rock-bottom have resorted to increasingly creative means to lower borrowing costs.

An old rule of thumb used to be that the equilibrium level for interest rates in any one country should be equal to nominal GDP growth. If a central bank wanted to slow the domestic economy then it would set rates above nominal GDP growth. If they wanted to speed it up then they would set rates below. Those days now seem a long way away. For example, US nominal GDP is growing by 4% but the Fed Funds rate is just 0-0.25% and 10 year yields are 1.7%. On this simple measure US treasury yields are 230bp too low. This is common across most major economies (Figure 2). One part of the world where policy looks tight on this measure is the EMU periphery.

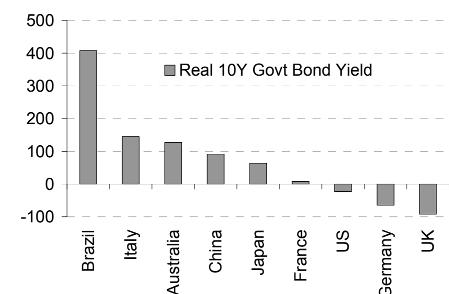
Government bond yields are less than nominal GDP and inflation

Figure 2. 10Y Govt Bond Yield less GDP (bps)



Source: Citi Research, Datastream

Figure 3. Real 10Y Govt Bond Yield (bps)



Source: Citi Research, Datastream

This "financial repression" helps governments inflate away the real value of their debt. It played an important part in reducing US government debt following WWII (Fiscal Deleveraging, Financial Repression, and Central Bank Independence—Lessons from the U.S. Experience after World War II). US real 10 year bond yields were negative for 10 years back then. They have only been negative for 18 months this time round. This is seen across much of the developed world (Figure 3).

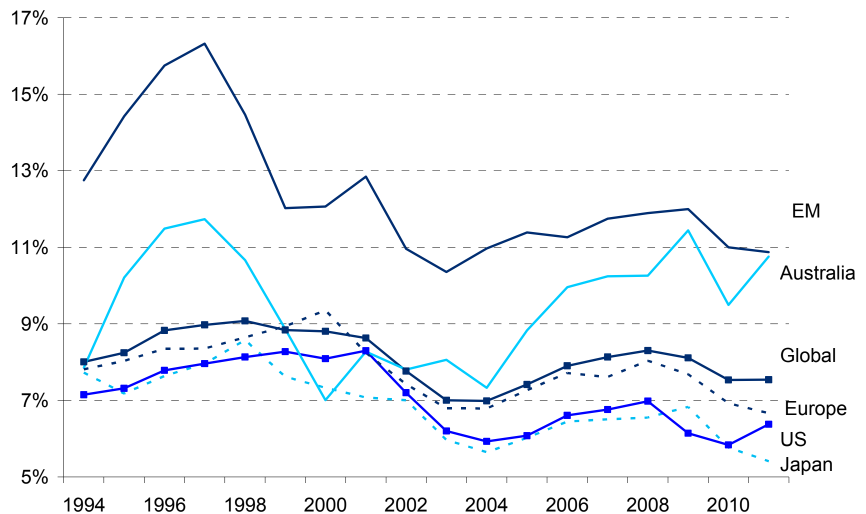
Low interest rates should help to support consumer spending through reduced mortgage and credit card costs. By purchasing sovereign debt, Quantitative Easing (QE) policies help to reduce market pressures for governments to pursue growth-sapping austerity policies. But lower rates for overleveraged consumers and governments look more like damage limitation than growth promotion.

But Capex Subdued

Lower rates have not boosted capex/sales

That leaves the corporate sector as policymakers' best hope. This is where the scope for re-leveraging looks greatest. Balance sheets are strong, profitability is high and the cash is piling up. Add ultra-low rates to the mix and surely CEOs will kick off a capex and hiring binge. But this has not really been happening, in the listed corporate sector at least. In fact, capex/sales ratios for publicly listed companies across the world have been heading downwards for much of the past decade (Figure 4). This is against a backdrop of progressively lower interest rates. It seems that the sensitivity of CEO investment decisions to a given level of interest rates has been falling for some time. Perhaps an exception here is the rise in US investment in 2011. This was fuelled by government incentives to bring forward capex, but the growth rate does not look likely to be sustained in 2012 (see report from Tobias Levkovich Monday Morning Musings - Tending to Capital Spending). Australian capex has been boosted by the Mining sector.

Figure 4. Listed Company Capex To Sales (ex Financials)



Source: Citi Research, Factset, Worldscope

Corporate caution is usually blamed on global economic uncertainties. Amongst these, the US fiscal cliff, China slowdown and the ongoing EMU crisis look most obvious. But we can't help feeling that there is something more fundamental going on here. The economic outlook is always uncertain at weak points in the cycle. Nevertheless, low interest rates usually prod CEOs into action.

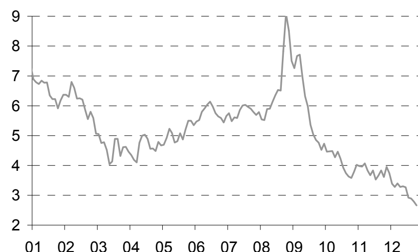
Transmission Mechanisms

That got us thinking about the transmission mechanisms. Could these help us understand why CEOs don't seem to be acting in the way that policymakers would like them to?

As central banks pour freshly minted cash into their domestic government bond markets via QE, so it is hoped that private sector capital will be flushed out into riskier assets in search of higher returns. These markets should then, in theory, provide risk-taking capital to risk-taking corporates who will use it to build factories and, most importantly of all, employ staff to work in those factories.

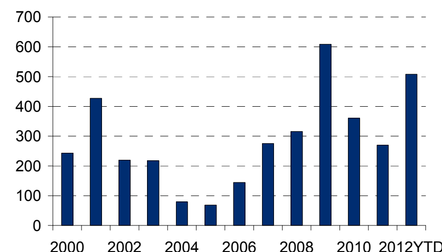
QE has clearly helped to push corporate bond borrowing costs down to all-time lows (Figure 5). This has triggered a wave of new issuance (Figure 6). So far, so good – this part of the transmission mechanism seems to be working well enough.

Figure 5. US Inv Grade Bond Yield (%)



Source: Citi Research, Datastream

Figure 6. Non-fins Inv Grade Net Issuance ($bn) *



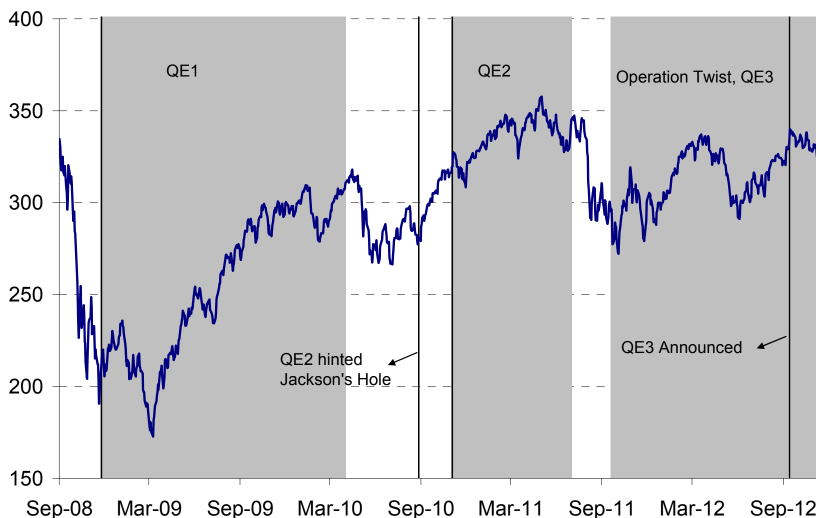
Source: Citi Research, Dealogic *Europe + US

Refinancing not expansion

However, our fixed income colleagues point out that much of this issuance reflects companies refinancing existing bank loans. CFOs were shocked by the virtual disappearance of bank financing back in 2008. Ultra-low corporate bond yields offer an opportunity to reduce future dependence. This burst of issuance doesn't seem to reflect a confident corporate sector borrowing heavily to fund expansionary capex.

It also seems that one of the Fed's indirect aims for QE is to boost the equity market. Indeed, it looks like QE policies have helped to boost equity prices (Figure 7). Again, this part of the transmission mechanism seems to have worked. The subsequent wealth effect should help to support consumer spending.

Figure 7. MSCI AC World Performance During US QE



Source: Citi Research, MSCI, Datastream

Equity Now The Yield Asset

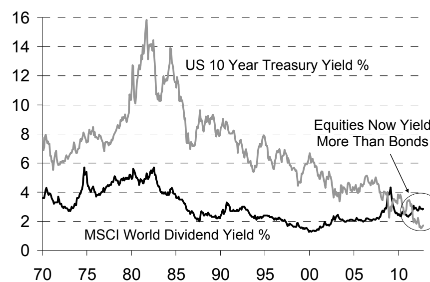
While there is evidence that low interest rates/QE have boosted riskier asset prices, including equities, this does not seem to have fed into more expansive corporate behaviour. Why should this be?

We think one answer to this conundrum can be found in considering the transmission mechanisms through which low interest rates affect equity markets. Most importantly, equities now look like an increasingly attractive income asset. With aggressive monetary policy having pushed interest rates to all-time lows, the global equity market now consistently trades on a dividend yield above treasuries for the first time in over 50 years (Figure 8). The eight largest global equity markets now all trade on dividend yields higher than their government bond markets (Global Equity Strategist - Historic Yield Crossover).

Accordingly, dividend funds have taken over from more growth-oriented EM funds as the best-selling equity products (Figure 9). These new equity investors are more interested in dividends and share buy-backs than sponsoring CEO growth aspirations. They'll take a bigger dividend over a new factory, anytime. Policymakers may succeed in forcing capital into equities but, from their perspective, it is the wrong kind of capital: income-seeking rather than growth-seeking.

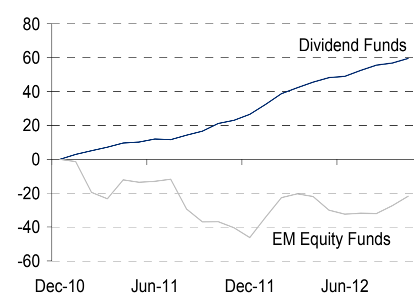
Rise of the yield investor

Figure 8. Dividend Yield and US 10Y Treasury



Source: Citi Research, Datastream, MSCI

Figure 9. Dividend and EM Equity Fund Flows



Source: Citi Research, EPFR, Cumulative $bn

A beleaguered equity asset management industry is unlikely to complain. There is now a great opportunity to sell equity income product to yield-starved investors. Any fresh inflows represent a lifeline compared to the ongoing outflows of recent years. The importance of this opportunity is reflected in requests from clients this year. Our most popular charts are those that show equities yield more than bonds. Our most popular global stock screen has been for CDS-adjusted dividend yields. All Citi's regional strategists report strong demand for equity income ideas.

This should all be seen in the context of the extreme pressures on the equity asset class over the past decade. For a number of reasons which we have covered in previous reports (Global Equity Strategist - Equity Cult Still Dying), trillions of dollars of capital have left global equities for global bonds. The equity cult that peaked with the Tech bubble of the late 1990s has now been replaced by a bond cult. Equities have derated and bonds have rerated. Extreme monetary policy since the 2008-09 financial crisis has exacerbated these trends.

Throw Out The Text Books

So the current focus on income and capital return looks like a logical response from a global equity market that has been struggling to remain relevant in the wake of two devastating global bear markets. The survival instinct has kicked in. The absence of yield opportunities elsewhere means that the equity market has reinvented itself as an alternative bond market.

Equities used to be the growth asset class

This has profound implications for companies and, ultimately, policymakers. The text books suggest that investors should buy equities for growth and bonds for income. But low rates and QE have turned that traditional mantra on its head. Investors are increasingly looking to equities to fulfill their income requirements. And as the global equity market becomes dominated by these income-seeking investors so we would expect companies to become increasingly sensitive to their requirements.

The text books also say that the equity market exists to bring those who have and those who require capital together. Equity investors provide the riskiest capital to a company. They give up security of return in order to participate in the future growth of the business. Again that looks less appropriate in current capital markets. Rather than providing new capital to companies, equity investors now seem more interested in extracting existing capital.

Another basic premise of financial theory – that lower discount rates should put a higher value in future corporate cashflows – is also being questioned by present circumstances. Low interest rates should encourage companies to invest more for the future because shareholders will value the resultant cashflows more highly. It is partly why policymakers have now set rates so low. But, again, these theoretical transmission mechanisms do not seem to be working. For the past ten years, a rising equity risk premium (ERP) has negated the supposedly positive impact of lower interest rates. The ERP has now risen so far that equities have become an income asset, so attracting investors who are more interested in the next dividend than funding a new mine, drug or microchip.

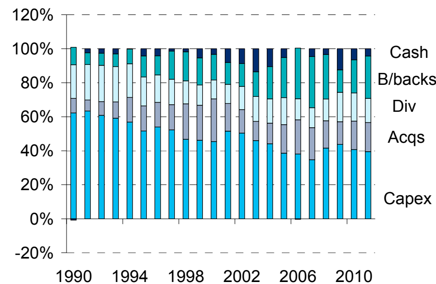
Shareholders want income, not growth

This brings us to the basic point of this report: companies remain reluctant to expand because increasingly income-obsessed shareholders don't want them to. If anything, ultra-low interest rates have exacerbated this theme. Policy-makers should take note.

Distributions Crowd Out Capex

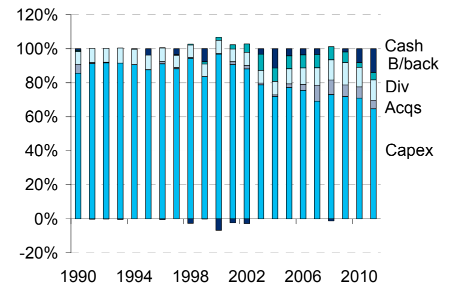
As we have already seen, listed company capex (as % of sales) has been on a downward trend for many years. This is also shown in Figure 10 which breaks the annual cashflow statements of the US listed corporate sector into its five key constituents. Two reflect capital retention within the company (capex and cash). The other three represent a distribution (acquisitions, dividends and buybacks). Despite the structural drop in interest rates over the period, there has been a clear shift away from capex towards distributions since 1990.

Figure 10. US Corporate Uses of Cashflow



Source: Citi Research, Factset, Worldscope

Figure 11. Japan Corporate Uses of Cashflow



Source: Citi Research, Factset, Worldscope

This is not just about dividends. US companies have also chosen to return capital through share buybacks. This partly reflects investor and CEO frustration with low valuations. CEOs have also returned cash to other companies' shareholders through acquisitions. In effect, they are choosing to buy another factory rather than build their own. Share buybacks and bids have helped to soak up some of the institutional equity selling as the equity cult has waned. While this is supportive of share prices, it does not help other stakeholders who would presumably prefer the capital to be spent on new investment and jobs. Our US strategy team highlight that in 2011, US companies spent $650bn on share buybacks and dividends compared to $580bn on capex.

Japan model is good for workers, bad for shareholders

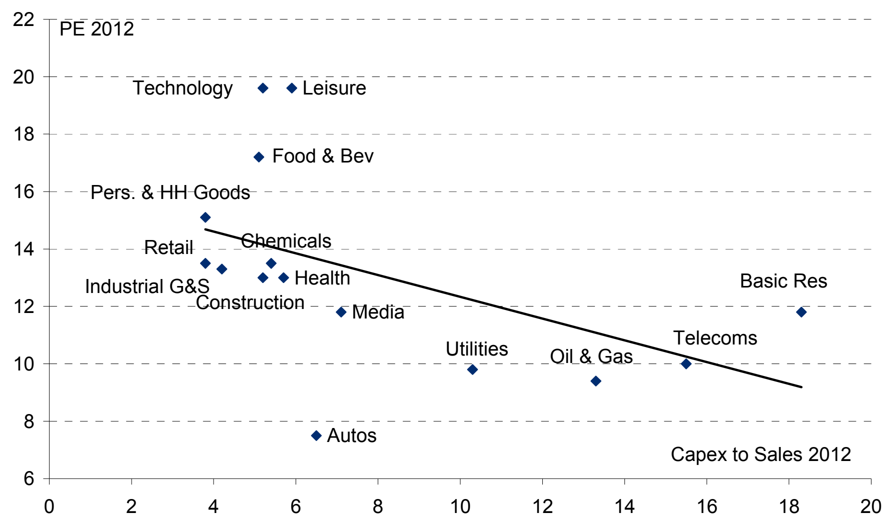
Maybe policymakers would prefer to see a cashflow statement more like Japan (Figure 11). Here, capex has stayed higher and distributions lower relative to cashflow. This has added excess capacity and depressed shareholder returns. But it also helps to support employment. Even after two decades of depressed economic growth, Japanese unemployment is still only 4.2%. Capex and jobs have been protected even as shareholder returns have languished. By contrast, US unemployment was 4.4% at the peak of the economic boom in 2006, rose rapidly to 10% by 2009 and is still high at 8%.

Excess shareholder-funded capex in Japan has attracted the interest of activist investors. Surely cutting back on that capex would help enhance returns but also free up capital for dividends or buybacks. In effect, activists want to make Figure 11 look more like Figure 10. But they have found that the transmission mechanisms between share prices and corporate strategy work very differently in Japan. Changing management behaviour is especially difficult.

Suspicious Of Capex

In markets where shareholder requirements have a greater influence upon companies, the suspicion of capex and preference for distributions is evident. Our European strategists identified an intriguing relationship between capex and valuations in their market. Those sectors that invested the most were given lower valuations (Figure 12). In the US, share buyback and dividend ETFs have outperformed handsomely in recent years. It seems that the market is sending clear signals to companies: "if you want your shares to outperform then distribute, don't invest."

Figure 12. PE vs Capex to Sales (Europe)



Source: Citi Research, Datastream

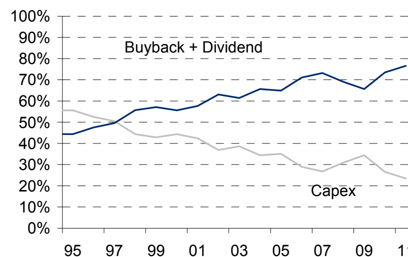
Reshaping Industries

Healthcare moves from capex to cash cow

This pressure is reshaping whole industries. Figure 13 shows the capex (R&D) and distribution profile of the global Healthcare industry. Back in the glory days, big Pharma invested heavily amounts in R&D. But disappointing returns on that spending have led to cutbacks. This has freed up cashflow to fund dividends or share buybacks. The change in corporate strategy has helped to turn around the share price performance of the stocks. Big Pharma companies have also spent some of this cash on acquisitions, a form of ready-made R&D but not new job creation.

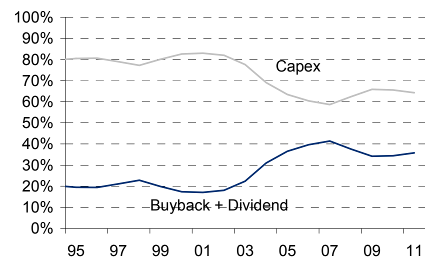
The global Telecom sector looks similar (Figure 14). Telecom companies spent heavily a decade ago as they purchased licenses and built infrastructure to support new spectrum. However, since then shareholders have pressured them to cut new investment in favour of returning capital. The Global Telecoms sector now has the world's highest dividend yield and payout ratio. The TMT boom seems a very long time ago.

Figure 13. Global Health Care Use Of Cashflow



Source: Citi Research, Factset, Worldscope

Figure 14. Global Telco Use Of Cashflow

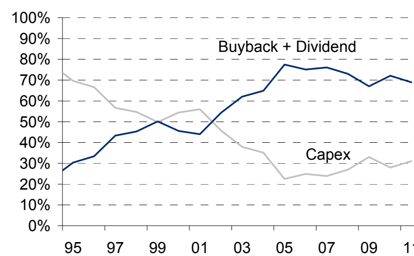


Source: Citi Research, Factset, Worldscope

We can also look at the different behaviour of the US and Asian tech stocks. US companies have actually seen their capex fall as a percentage of cashflow. They

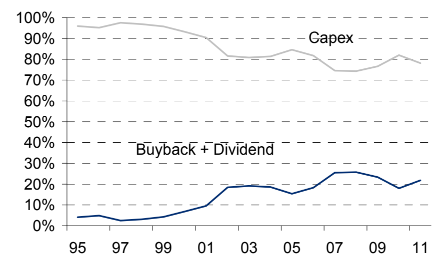
have returned large amounts of cash to shareholders via buybacks. By contrast, the Asian tech sector seems to be pursuing a more capital-intensive Japan-style strategy consistent with their sales maximising business models. Again, this may support stronger employment growth but can produce weaker returns for shareholders.

Figure 15. US Tech Use Of Cashflow



Source: Citi Research, Factset, Worldscope

Figure 16. EM Asia Tech Use Of Cashflow

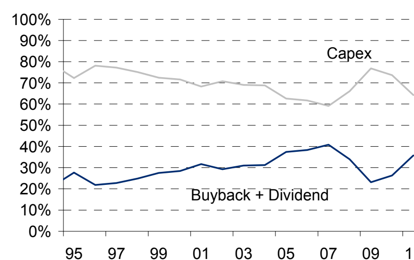


Source: Citi Research, Factset, Worldscope

Could commodity stocks be next?

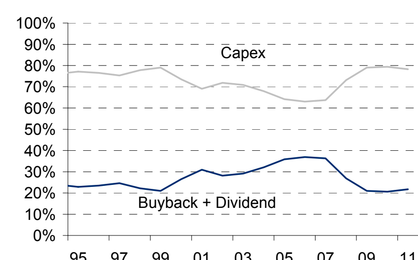
Of course, the global stock market has not become totally dividend and buyback-obsessed. There are still areas where the growth opportunities look better. In recent years, the commodity sectors have defied the general pressure to raise distributions to shareholders (Figure 17 and Figure 18). However, recent evidence that the commodity supercycle is waning has led to a derating, especially for the mining stocks. Accordingly, the pressure is now building on management to cut back on capex and increase distributions. This might be tough to swallow for many incumbent CEOs who are more used to pro-growth shareholders. If previous capex-hungry sectors such as Telecom or Pharma are good examples, then it might take significant management change before the mining companies adopt a more market-friendly cash-distributive strategy.

Figure 17. Global Materials Use Of Cashflow



Source: Citi Research, Factset, Worldscope

Figure 18. Global Energy Use Of Cashflow



Source: Citi Research, Factset, Worldscope

There is still enough growth-oriented capital around to give higher multiples (and therefore competitive equity financing) to select EM-exposed companies. In developed markets, mid-cap tech and mid-cap healthcare can trade on meaningful multiples. But the largest companies that make up most of the capitalisation in the key equity markets may increasingly be seen as a source of income by investors. Those CEOs who do not accept this might find themselves replaced by someone who does.

What Does This Mean For Policymakers?

If policy-makers really do want to encourage stronger economic growth (and especially higher employment) then we would suggest that they take a closer look at the equity market's part in driving corporate behaviour. Despite high profitability, strong balance sheets and ultra-low interest rates, any stock market observer can see daily evidence of why the listed sector is unlikely to kick-start a meaningful acceleration in the global economy. A recent Reuters headline says it all: "P&G Plans to Cut More Jobs, Repurchasing More Shares".

Maybe central banks should buy the stock market

If anything, low interest rates are increasingly part of the problem rather than the solution. Perversely, they may be turning the world's largest companies into capital distributors rather than investors. Perhaps rates should be allowed to rise back to more natural levels. This might be painful at first, but it could stop equity investors being so income-obsessed. Or maybe the real problem here is depressed equity valuations. Low PEs and high dividend yields reflect the long slow death of the equity cult. At the margin, current valuations encourage CEOs to distribute through buybacks or dividends. They discourage capex and job creation. Perhaps instead of buying government bonds, the next round of freshly minted QE cash should be used to buy the stock market instead.

This still seems a very long way off. The Bank Of Japan has bought ETFs and J-Reits but not in a significant way. The ideological barriers to direct intervention in the equity market seem insurmountable. It looks too much like nationalization. Despite our misgivings outlined in this report, for now it seems that policy will remain focused on keeping rates low. Purchases of riskier assets will remain confined to the fixed income markets in our view.

Alternatively, and more menacing for equity markets, policymakers might use the tax system to clamp down on capital returns to shareholders. "Investors are forcing companies to overdistribute and underinvest" has a certain populist ring to it. This was exactly the argument used to justify the removal of the dividend tax credit for UK investors back in 1997. Another, more equity-friendly, policy might be to give greater tax breaks to capex.

Unlisted companies may be different

Even if economic uncertainties and shareholder constraints mean that listed companies are unlikely to embark on a capex binge soon, maybe low rates can have a more text-book impact upon unlisted companies. Having no stock listing could make them less aware of investor pressures and more willing to adopt expansive strategies. Perhaps these are the companies that offer the best hope for a pick-up in employment.

What Does This Mean For Investors?

If policymakers hope that listed companies can help drive down current high levels of unemployment then it could be a long wait. Corporate expansion plans are likely to remain constrained by uncertainties about the global economy and a shareholder base that is more interested in share buybacks and dividends than capex and job creation. Despite our misgivings about their effectiveness, interest rates are likely to remain very low for some time. What are the implications for investors?

1. Equity markets supported despite weak growth

While subdued corporate activity might be discouraging for the performance of the world economy, it is not necessarily bad news for equity returns. Income-seeking

capital should help to support global equities. De-equitisation through share buybacks and cash bids should help to shrink global equity supply back down towards demand. With borrowing rates so low, buybacks and bids should be accretive. This means that even if earnings growth is held back by weak economic growth, EPS can still expand.

Another positive impact of capex constraint could be that a much-predicted collapse in profitability is not imminent. Of course, profit margins should ultimately be mean-reverting but that will only occur if the conventional transmission mechanisms are able to work. We would normally expect a combination of high profitability and low interest rates to drive a sharp increase in capacity. This would eventually compete those high profits away. However, in the listed sector at least, shareholders are not allowing that to happen.

2. Inflation may come back sooner than expected

Shareholder reluctance to sponsor corporate expansion may lead to output gaps closing faster than many expect. Just as equity-market sponsored over-investment during the Tech bubble created deflationary excess capacity, so perhaps under-investment may now be creating the potential for future inflation. Bond investors should take note. They clearly benefited from equity investor profligacy back then, they may eventually suffer from frugality now. Bond investors would clearly prefer a deflationary capex profile like in Japan. But shareholders are unlikely to let that happen in other markets.

3. Equity income and de-equitisation strategies still key

Premium yields relative to bonds should continue to attract income-seeking investors to the equity asset class. This will keep the appetite for equity income strategies strong. Those companies that offer progressive dividend policies should be rewarded by outperformance, in our view. Those companies, especially amongst the big caps, which cannot or will not attract income investors may see their share prices languish.

In the absence of top-line growth, companies will need to find other ways to boost returns to shareholders. This might be through cash or debt-funded buybacks or bids, which should be highly accretive with share valuations low and financing cheap. Alternatively, with valuations staying low companies that issue equity will be treated with suspicion.

4. Smaller growth stocks can trade at premiums

It’s not all gloom for growth investing. Despite current strange circumstances, equity financing is still best suited to fund longer term growth projects. But the limited amount of capital available to sponsor these projects means that growth premiums are likely to remain focused in companies down the market cap scale. The current fashionable idea that we may see a reincarnation of the “nifty fifty” seems unlikely to us. Back in the early 1970s bull market, the largest US stocks moved to trade at big premiums. But we don’t see that happening this time round. The capital coming into this equity market is more interested in buying big cap stocks for their dividend yields than their growth characteristics.

5. Activism here to stay

Expansionary strategies will continue to be treated with suspicion by the market. Subsequent share price underperformance may attract the attentions of activist shareholders. Activist proposals invariably involve a corporate contraction. They

may suggest cost-cutting, capex reduction or spin-offs with the funds returned to shareholders. Those CEOs, particularly at the largest companies, who do not give this income-seeking market what it wants may find themselves replaced by a CEO who does.

Could this change?

Our analysis helps explain the impact that shifts in capital markets are having upon corporate behaviour and the global economy. But could that all change if markets move again?

If the bond bubble bursts

For example, many investors think that bonds are in a bubble and ready to burst. We suspect that a sharp upturn in yields would initially be painful for the global equity market, but may help to reverse capital flows over the longer run. A bear market in bonds may be the equity market's best hope of attracting back some of the capital lost over recent years. Higher bond yields might eventually reduce the income obsession and make equity investors more sympathetic to corporate growth strategies. Bond yields would need to move quite a lot higher to cross back above equity yields.

For now, we think that this outcome is unlikely. Policymakers remain committed to keeping bond yields artificially low. If private sector selling were to put upward pressure on yields, then the public sector could use further QE to absorb that selling. Yields seem likely to remain low for now.

And maybe our analysis is wrong. Perhaps it is just a matter of time before ultra-low interest rates do have the intended impact and growth accelerates. This seems more likely in the less indebted EM economies. In these circumstances, we might expect policymakers to allow rates to drift up. A better global economy might even encourage a more growth-oriented outlook from CEOs and investors.

Strategy Outlook

Global corporate balance sheets are strong and profitability is high. When combined with ultra-low interest rates, this should be driving a capex and job creation boom. But that is not happening. This is partly because CEOs remain cautious about the economic outlook. It is also occurring because increasingly income-obsessed equity investors prefer to see share buybacks and dividends. They remain suspicious of more growth-oriented corporate strategies.

For policymakers, this may help to explain why QE is not working as intended. For companies, it helps to explain why CEOs are under pressure to return more capital to shareholders. For investors, it helps to explain why the global equity market has found support despite ongoing EPS downgrades. With interest rates likely to remain very low, income-seeking equity investors are likely to remain a powerful force for some time to come.

Global Market Intelligence

Figure 19. Global Market Intelligence by Region

16 Nov 12	Free MC	Wgt	P/E			EPS YoY %			P/B	ROE	Div Yld	EV/ Sales	EV/ EBITDA	CAPE	Perf % (local)	
	US$bn	%	12E	13E	14E	12E	13E	14E	13E	13E	13E	11	11	10Yr	Weekly	YTD
Global	**27,469**	**100**	**12.6**	**11.4**	**10.2**	**3.4**	**12.2**	**11.7**	**1.5**	**13.0**	**3.1**	**1.5**	**7.4**	**16.8**	**-1.5**	**6.4**
Developed World	23,970	87.3	12.9	11.6	10.5	3.9	12.0	11.8	1.5	12.9	3.2	1.5	7.6	16.8	-1.5	6.4
Emerging World	3,499	12.7	11.3	10.0	8.9	0.6	13.8	11.0	1.4	13.6	3.1	1.4	6.3	17.2	-1.6	6.3
North America	**13,998**	**51.0**	**13.4**	**12.2**	**11.0**	**5.8**	**10.2**	**11.6**	**1.8**	**15.0**	**2.5**	**1.7**	**8.0**	**19.8**	**-1.6**	**7.4**
USA	12,806	46.6	13.4	12.2	11.0	6.6	9.8	11.6	1.9	15.3	2.5	1.7	8.1	20.0	-1.5	8.2
Canada	1,192	4.3	13.9	12.1	11.6	-2.2	14.5	10.8	1.5	12.6	3.2	2.4	7.7	18.4	-2.6	-0.5
Europe	**6,472**	**23.6**	**11.6**	**10.5**	**9.4**	**-1.4**	**11.2**	**10.8**	**1.3**	**12.6**	**4.3**	**1.3**	**6.7**	**13.2**	**-2.6**	**4.7**
United Kingdom	**2,283**	**8.3**	**10.9**	**10.1**	**9.2**	**-5.3**	**8.4**	**9.1**	**1.5**	**14.5**	**4.4**	**1.3**	**6.7**	**13.2**	**-2.8**	**0.6**
Europe ex UK	**4,189**	**15.3**	**11.9**	**10.7**	**9.6**	**1.1**	**12.9**	**11.8**	**1.3**	**11.7**	**4.3**	**1.3**	**6.7**	**13.3**	**-2.4**	**7.2**
France	927	3.4	11.1	10.1	9.0	-5.6	12.0	11.9	1.1	10.4	4.4	1.1	5.9	12.8	-2.3	6.9
Switzerland	879	3.2	13.9	12.3	11.2	7.5	13.4	9.8	1.9	15.7	3.9	2.3	10.4	18.5	-3.0	9.5
Germany	840	3.1	10.1	9.9	8.9	14.8	2.1	11.2	1.2	12.3	3.9	1.0	6.1	16.0	-3.0	14.4
Sweden	309	1.1	13.5	12.0	10.7	-0.7	12.7	11.8	1.7	14.0	4.6	1.5	8.1	17.4	-2.4	4.4
Spain	288	1.0	13.0	9.7	8.5	-37.1	51.1	13.0	1.0	10.2	7.0	1.7	6.9	8.7	-0.4	-11.7
Netherlands	249	0.9	12.1	10.2	9.3	1.0	18.5	9.6	1.3	12.5	3.5	1.3	8.6	12.9	-3.1	7.8
Italy	220	0.8	9.7	8.7	7.5	13.3	11.6	15.1	0.7	7.7	4.9	1.3	5.7	7.9	-1.9	-1.2
Denmark	117	0.4	17.7	14.5	12.3	27.4	22.1	17.6	2.2	14.9	2.4	1.7	6.7	25.9	-2.7	23.1
Belgium	114	0.4	14.2	12.9	11.6	40.7	10.1	11.3	1.5	12.0	3.4	2.8	8.2	11.6	-1.4	26.6
Norway	95	0.3	10.2	9.6	8.7	6.6	6.6	10.4	1.3	13.8	5.2	1.2	3.7	13.2	-1.0	4.2
Finland	75	0.3	20.6	14.1	11.4	-43.8	46.1	23.1	1.4	9.7	5.1	1.6	7.7	9.7	-2.1	-2.2
Austria	28	0.1	10.3	9.2	8.0	86.8	11.4	15.1	0.8	9.2	3.8	0.7	5.7	8.8	-1.2	8.4
Ireland	26	0.1	22.8	16.2	13.2	-10.8	41.5	22.5	1.5	9.1	2.6	1.1	11.0	5.8	-3.2	-4.0
Portugal	17	0.1	12.3	11.3	9.5	6.3	9.4	18.9	1.1	9.5	5.6	1.5	7.1	9.3	-3.5	-11.2
Greece	6	0.0	9.2	15.0	11.5	-11.9	-38.5	30.4	1.8	11.7	2.9	0.8	5.3	2.3	-0.8	-8.8
Japan	**2,019**	**7.3**	**13.4**	**11.7**	**10.1**	**21.4**	**32.5**	**18.2**	**0.9**	**7.5**	**2.8**	**1.0**	**7.9**	**16.5**	**3.1**	**3.5**
Asia Pac ex Jp	**3,557**	**12.9**	**12.5**	**11.1**	**10.0**	**3.0**	**13.1**	**11.4**	**1.4**	**12.8**	**3.5**	**1.4**	**7.0**	**17.9**	**-1.9**	**8.2**
Pacific ex Jp	**1,422**	**5.2**	**14.0**	**12.8**	**11.7**	**-3.5**	**8.9**	**9.8**	**1.5**	**11.3**	**4.6**	**1.8**	**8.3**	**17.1**	**-2.2**	**10.1**
Australia	898	3.3	13.6	12.3	11.3	-1.6	10.3	8.9	1.6	13.0	5.3	1.8	8.0	16.1	-2.8	7.1
Hong Kong	325	1.2	15.8	14.5	13.0	-12.1	8.4	12.4	1.2	8.3	3.1	2.1	10.0	21.9	-0.3	19.2
Singapore	186	0.7	13.1	12.7	11.5	1.7	2.8	9.6	1.3	10.4	3.9	1.6	8.4	16.0	-2.2	10.3
New Zealand	13	0.0	16.3	14.6	12.9	-2.4	11.5	13.3	1.6	11.0	5.4	1.2	6.6	15.2	-0.2	13.2
Em Asia	**2,135**	**7.8**	**11.8**	**10.2**	**9.1**	**7.0**	**15.4**	**12.3**	**1.4**	**13.7**	**2.7**	**1.3**	**6.6**	**18.2**	**-1.7**	**7.1**
China	648	2.4	10.1	9.1	8.2	0.4	10.8	11.0	1.3	14.6	3.4	1.4	6.0	18.4	-1.7	8.8
Korea	531	1.9	9.4	8.1	7.2	17.2	18.4	12.3	1.0	12.8	1.4	0.9	6.4	15.8	-2.0	2.7
Taiwan	375	1.4	17.2	13.6	11.8	-0.2	26.2	14.9	1.5	11.2	3.6	1.7	7.7	17.3	-2.3	0.7
India	238	0.9	15.1	13.4	11.7	10.4	12.8	14.8	2.1	15.8	1.7	1.7	9.0	26.8	-1.4	20.4
Malaysia	132	0.5	15.0	13.9	12.7	8.5	8.9	9.2	1.9	13.6	3.6	2.2	9.4	22.5	-0.7	3.8
Indonesia	101	0.4	15.7	13.7	11.9	5.3	14.2	15.8	3.0	21.9	2.8	2.3	7.9	29.5	0.4	10.6
Thailand	78	0.3	12.3	10.7	9.6	12.8	15.7	11.2	1.9	17.5	4.0	1.1	6.9	19.6	-1.1	16.5
Philippines	33	0.1	18.1	16.1	14.7	10.7	12.3	9.3	2.5	15.5	2.5	2.5	9.7	27.7	-0.2	25.4
Latin America	**739**	**2.7**	**13.9**	**11.8**	**10.4**	**-11.6**	**17.8**	**12.9**	**1.5**	**12.8**	**3.2**	**1.9**	**6.8**	**17.9**	**-1.6**	**2.1**
Brazil	428	1.6	11.9	10.1	9.0	-18.8	17.6	12.8	1.3	11.9	3.9	1.8	6.2	14.2	-2.3	-1.1
Mexico	178	0.6	18.4	15.6	13.6	29.2	18.2	14.6	2.6	16.5	1.9	2.1	8.4	29.1	0.2	10.3
Chile	65	0.2	19.6	15.6	13.8	-14.4	26.2	12.7	2.0	12.8	2.8	2.2	10.3	27.1	-1.5	-5.2
Colombia	45	0.2	18.9	17.4	14.7	-3.9	8.8	10.7	1.9	11.9	2.8	3.0	8.6	36.4	-0.1	13.4
Peru	23	0.1	12.6	11.0	10.2	-5.3	14.5	8.2	2.5	22.0	2.8	4.7	8.7	24.2	-3.4	5.1
CEEMEA	**625**	**2.3**	**8.3**	**7.8**	**7.3**	**-4.0**	**6.9**	**6.1**	**1.1**	**13.9**	**4.1**	**1.2**	**4.3**	**14.8**	**-1.3**	**9.6**
South Africa	269	1.0	13.6	11.5	10.5	10.6	18.0	10.1	2.0	17.6	4.0	1.6	7.2	24.1	-1.6	13.7
Russia	201	0.7	4.9	4.8	4.7	-10.4	2.2	2.4	0.6	12.8	4.2	1.0	3.0	8.7	-1.6	-1.9
Turkey	65	0.2	11.4	10.1	9.0	11.1	12.3	12.4	1.5	14.8	3.1	1.2	7.9	17.9	-1.7	38.0
Poland	52	0.2	10.1	11.0	10.4	-18.8	-8.2	6.0	1.2	10.7	4.8	1.3	3.5	13.1	1.6	9.5
Egypt	13	0.0	10.9	9.7	8.4	14.0	20.8	15.0	1.4	14.5	4.2	1.7	5.2	17.4	0.9	58.8
Hungary	11	0.0	9.6	8.0	6.8	8.9	20.6	17.6	0.8	10.5	4.4	0.8	5.9	9.4	-3.3	9.8
Czech Republic	10	0.0	10.1	10.3	10.2	8.2	-1.4	1.3	1.5	14.9	7.2	2.6	6.2	13.3	-2.1	-4.7
Morocco	3	0.0	12.2	11.0	10.1	3.5	10.7	8.5	2.2	19.8	4.8	4.2	7.8	18.5	1.3	-13.3
Israel	**60**	**0.2**	**8.2**	**7.7**	**7.2**	**3.5**	**6.3**	**6.0**	**1.3**	**16.6**	**2.5**	**2.6**	**9.3**	**15.7**	**-3.0**	**-2.8**

Source: Citi Research, MSCI, Worldscope, Factset Consensus Estimates

Figure 20. Global Market Intelligence by Sector

16 Nov 12	Free MC	Wgt	P/E			EPS YoY %			P/B	ROE	Div Yld	EV/ Sales	EV/ EBITDA	CAPE	Perf % (local)	
	US$bn	%	12E	13E	14E	12E	13E	14E	13E	13E	13E	11	11	10Yr	Weekly	YTD
Global	**27,469**	**100**	**12.6**	**11.4**	**10.2**	**3.4**	**12.2**	**11.7**	**1.5**	**13.0**	**3.1**	**1.5**	**7.4**	**16.8**	**-1.5**	**6.4**
Sectors Level 1																
Energy	2,973	10.8	10.0	9.4	8.8	-6.4	6.0	6.9	1.2	13.0	3.4	1.2	5.1	13.0	-2.2	-4.8
Materials	2,029	7.4	13.8	11.2	9.7	-21.6	23.7	15.3	1.4	12.4	2.9	1.5	7.0	15.7	-3.5	-1.9
Industrials	2,824	10.3	13.1	11.7	10.4	5.3	11.3	12.4	1.7	14.1	3.0	1.3	8.2	17.6	-1.7	5.4
Consumer Disc.	2,906	10.6	13.9	12.5	10.7	17.1	18.9	16.6	1.9	15.1	2.3	1.3	7.8	22.3	-0.4	13.2
Consumer Staples	2,936	10.7	16.4	14.9	13.6	6.0	9.7	10.0	2.8	18.9	3.2	1.5	10.1	24.1	-1.1	8.0
Health Care	2,622	9.5	13.1	12.3	11.3	3.7	7.2	8.2	2.3	18.9	2.9	2.0	8.7	21.5	-1.4	11.1
Financials	5,635	20.5	11.3	10.0	9.0	10.8	13.3	10.7	0.9	9.4	3.7	NA	NA	11.2	-1.1	14.6
IT	3,364	12.2	13.1	11.5	10.3	8.5	13.8	14.2	2.1	18.1	1.9	1.8	7.8	25.2	-1.6	7.0
Telecoms	1,219	4.4	12.8	11.7	10.7	1.5	8.8	9.6	1.6	13.9	5.5	1.8	6.0	15.9	-1.6	-0.3
Utilities	961	3.5	13.3	13.5	11.7	8.4	11.5	20.0	1.2	8.6	4.9	1.6	8.9	13.6	-1.3	-5.3
Sectors Level 2																
Energy	2,973	10.8	10.0	9.4	8.8	-6.4	6.0	6.9	1.2	13.0	3.4	1.2	5.1	13.0	-2.2	-4.8
Materials	2,029	7.4	13.8	11.2	9.7	-21.6	23.7	15.3	1.4	12.4	2.9	1.5	7.0	15.7	-3.5	-1.9
Capital Goods	2,056	7.5	12.2	11.2	10.0	3.0	9.2	11.6	1.6	14.6	3.1	1.2	8.2	17.1	-1.6	5.6
Comm Svc & Supp	226	0.8	17.2	15.2	13.6	7.9	13.0	11.2	2.3	15.1	2.8	1.7	8.8	19.2	-1.8	7.6
Transport	541	2.0	15.7	13.0	11.2	17.3	20.8	16.2	1.6	12.1	2.6	1.6	8.2	19.3	-2.1	3.5
Autos	686	2.5	8.8	8.1	7.0	15.6	12.3	15.4	1.0	12.8	2.7	0.9	6.3	15.8	1.2	11.4
Consumer Durables	380	1.4	17.7	15.3	11.9	147.8	147.4	29.4	1.8	11.5	2.2	1.7	10.2	21.2	-0.6	7.6
Consumer Services	398	1.4	17.7	15.9	14.1	3.4	11.3	13.6	3.1	19.4	2.8	2.1	9.7	24.6	-1.7	1.2
Media	666	2.4	14.7	13.5	11.7	22.2	8.9	14.8	2.3	17.9	2.1	2.1	8.0	27.7	-1.2	23.0
Retailing	776	2.8	18.5	16.1	13.9	8.8	15.0	15.8	3.0	19.1	1.8	1.1	9.0	25.4	-0.3	17.0
Food & Staples	630	2.3	14.3	13.0	11.8	9.2	9.9	10.6	1.9	14.5	3.0	0.7	7.8	20.8	-2.6	5.4
Food Bev & Tobac.	1,818	6.6	16.8	15.3	13.9	5.1	10.1	10.0	3.2	21.0	3.3	2.3	11.0	25.2	-0.8	8.7
Household Products	488	1.8	18.0	16.7	15.3	4.9	7.8	9.1	3.4	20.5	3.0	2.0	11.0	25.3	-0.4	8.5
Health Care	633	2.3	13.6	12.4	11.3	10.3	9.8	10.0	1.9	15.4	1.4	1.2	8.1	22.3	-1.0	10.7
Pharma & Biotech	1,989	7.2	13.0	12.2	11.3	1.9	6.4	7.6	2.5	20.4	3.3	2.6	9.0	21.1	-1.5	11.2
Banks	2,527	9.2	9.9	9.0	8.0	3.3	11.3	10.8	1.0	10.7	4.4	NA	NA	9.7	-0.8	11.0
Div Financials	1,180	4.3	11.8	9.6	8.4	9.7	23.7	13.1	0.8	8.1	2.5	NA	NA	10.4	-2.1	19.8
Insurance	1,092	4.0	10.7	9.6	8.9	46.2	10.9	8.4	0.9	9.4	3.6	NA	NA	12.5	-1.1	14.5
Real Estate	835	3.0	20.1	18.9	17.1	-2.2	6.6	9.9	1.3	6.9	3.7	NA	NA	22.0	-0.8	19.3
Software & Services	1,477	5.4	14.6	13.1	11.6	10.9	11.8	12.7	3.0	23.1	1.4	2.8	9.7	29.7	-1.9	10.8
Tech	1,287	4.7	11.9	10.3	9.3	7.8	15.2	14.8	1.6	15.9	2.2	1.5	7.2	22.9	-0.9	5.3
Semi & Semi Equip	600	2.2	12.7	11.1	9.5	5.3	14.8	16.2	1.8	15.8	2.4	1.6	6.0	21.4	-2.4	1.9
Telecom	1,219	4.4	12.8	11.7	10.7	1.5	8.8	9.6	1.6	13.9	5.5	1.8	6.0	15.9	-1.6	-0.3
Utilities	961	3.5	13.3	13.5	11.7	8.4	11.5	20.0	1.2	8.6	4.9	1.6	8.9	13.6	-1.3	-5.3

Source: Citi Research, MSCI, Worldscope, Factset Consensus Estimates

Figure 21. 2012 P/E Estimates by Region and Sector

16 Nov 12 P/E 13E	Global	DM	GEM	US	Eur ex UK	UK	Jap	Dev Asia	Em Asia	Lat Am	CEEMEA
Region	**11.4**	**11.6**	**10.0**	**12.2**	**10.7**	**10.1**	**11.7**	**12.8**	**10.2**	**11.8**	**7.8**
Sectors Level 1											
Energy	9.4	10.2	6.7	10.7	8.3	7.8	9.0	13.8	9.4	8.9	4.5
Materials	11.2	11.4	10.3	12.0	12.3	9.4	12.9	11.6	11.1	10.4	8.9
Industrials	11.7	11.8	11.4	12.2	12.0	12.0	9.7	13.9	10.9	16.6	9.8
Consumer Disc.	12.5	12.8	10.4	14.3	10.1	12.1	11.2	15.1	8.9	15.5	16.2
Consumer Staples	14.9	14.5	20.3	14.6	15.1	13.5	13.9	14.3	19.4	21.7	19.2
Health Care	12.3	12.2	19.2	12.3	12.3	10.0	15.8	19.0	20.2	23.7	16.2
Financials	10.0	10.2	8.9	10.7	8.3	9.5	10.8	12.2	8.5	10.6	8.8
IT	11.5	11.7	10.5	11.3	17.0	25.8	12.5	18.3	10.4	15.4	9.3
Telecom Services	11.7	11.6	12.0	16.9	8.9	9.7	8.3	13.4	13.1	11.0	11.1
Utilities	13.5	14.0	10.8	14.1	9.0	12.3	-20.8	15.4	12.7	10.2	8.4
Sectors Level 2											
Energy	9.4	10.2	6.7	10.7	8.3	7.8	9.0	13.8	9.4	8.9	4.5
Materials	11.2	11.4	10.3	12.0	12.3	9.4	12.9	11.6	11.1	10.4	8.9
Capital Goods	11.2	11.2	10.4	11.9	11.7	10.7	8.9	12.0	10.3	13.2	10.0
Comm Svc & Supp	15.2	15.2	18.7	15.2	15.7	14.9	14.7	14.4	15.8	22.9	
Transport	13.0	12.8	15.4	12.2	12.4		12.3	17.1	14.0	19.2	8.8
Autos & Components	8.1	8.1	7.8	7.8	6.7	7.5	9.5		7.7		8.8
Consumer Durables	15.3	16.0	10.0	14.9	14.2	16.0	31.3	9.4	11.8	7.1	8.6
Consumer Services	15.9	16.0	13.8	16.3	15.5	14.6	16.4	16.4	13.4	17.4	
Media	13.5	13.2	20.1	13.6	11.8	11.6	15.8	13.9	21.7	16.8	21.9
Retailing	16.1	16.2	15.3	16.8	18.2	10.9	12.9	13.6	12.8	21.9	15.2
Food & Staples Retailing	13.0	12.3	21.4	13.0	10.6	9.3	11.7	14.6	19.6	22.4	21.8
Food Bev & Tobacco	15.3	15.0	19.1	14.8	15.7	14.6	14.0	13.1	17.8	21.4	14.4
Household Products	16.7	16.2	24.8	16.2	16.4	14.9	18.1		25.7	22.3	
Health Care Equip & Svc	12.4	12.3	20.2	11.5	17.0	12.9	16.3	17.5	22.4	23.7	15.7
Pharma & Biotech	12.2	12.1	18.6	12.7	11.9	9.9	15.7	19.8	19.4		16.5
Banks	9.0	9.3	8.1	9.3	8.1	9.1	8.1	11.0	7.8	9.7	7.9
Div Financials	9.6	9.4	12.0	9.2	8.8	9.7	12.0	16.1	11.3	18.2	10.4
Insurance	9.6	9.4	12.7	9.5	7.7	9.4	15.4	12.8	13.2	10.4	11.7
Real Estate	18.9	20.4	10.3	31.0	14.9	18.5	20.4	13.8	9.0	21.0	12.4
Software & Services	13.1	12.9	16.5	12.7	15.2	13.4	14.6	14.7	16.8	15.4	9.3
Tech Hardware & Equip	10.3	10.2	11.7	9.6	21.3		11.7	270.5	11.7		
Semi & Semi Equip	11.1	13.7	9.0	12.5	17.5	40.3	29.5	18.0	9.0		
Telecom	11.7	11.6	12.0	16.9	8.9	9.7	8.3	13.4	13.1	11.0	11.1
Utilities	13.5	14.0	10.8	14.1	9.0	12.3	-20.8	15.4	12.7	10.2	8.4

Source: Citi Research, MSCI, Worldscope, Factset Consensus Estimates

Notes

Notes

Notes

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

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.

Citi Research Ratings Distribution

	12 Month Rating			*Relative Rating*		
Data current as of 4 Oct 2012	**Buy**	**Hold**	**Sell**	**Buy**	**Hold**	**Sell**
Citi Research Global Fundamental Coverage	51%	38%	11%	7%	85%	7%
% of companies in each rating category that are investment banking clients	50%	47%	45%	59%	47%	50%

Guide to Citi Research Fundamental Research Investment Ratings:

Citi Research stock recommendations include an investment rating and an optional risk rating to highlight high risk stocks.

Risk rating takes into account both price volatility and fundamental criteria. Stocks will either have no risk rating or a High risk rating assigned.

Investment Ratings: Citi Research investment ratings are Buy, Neutral and Sell. Our ratings are a function of analyst expectations of expected total return ("ETR") and risk. ETR is the sum of the forecast price appreciation (or depreciation) plus the dividend yield for a stock within the next 12 months. The Investment rating definitions are: Buy (1) ETR of 15% or more or 25% or more for High risk stocks; and Sell (3) for negative ETR. Any covered stock not assigned a Buy or a Sell is a Neutral (2). For stocks rated Neutral (2), if an analyst believes that there are insufficient valuation drivers and/or investment catalysts to derive a positive or negative investment view, they may elect with the approval of Citi Research management not to assign a target price and, thus, not derive an ETR. Analysts may place covered stocks "Under Review" in response to exceptional circumstances (e.g. lack of information critical to the analyst's thesis) affecting the company and / or trading in the company's securities (e.g. trading suspension). As soon as practically possible, the analyst will publish a note re-establishing a rating and investment thesis. To satisfy regulatory requirements, we correspond Under Review and Neutral to Hold in our ratings distribution table for our 12-month fundamental rating system. However, we reiterate that we do not consider Under Review to be a recommendation.

Relative three-month ratings: Citi Research may also assign a three-month relative call (or rating) to a stock to highlight expected out-performance (most preferred) or under-performance (least preferred) versus the geographic and industry sector over a 3 month period. The relative call may highlight a specific near-term catalyst or event impacting the company or the market that is anticipated to have a short-term price impact on the equity securities of the company. Absent any specific catalyst the analyst(s) will indicate the most and least preferred stocks in the universe of stocks under consideration, explaining the basis for this short-term view. This three-month view may be different from and does not affect a stock's fundamental equity rating, which reflects a longer-term total absolute return expectation. For purposes of NASD/NYSE ratings-distribution-disclosure rules, most preferred calls correspond to a buy recommendation and least preferred calls correspond to a sell recommendation. Any stock not assigned to a most preferred or least preferred call is considered non-relative-rated (NRR). For purposes of NASD/NYSE ratings-distribution-disclosure rules we correspond NRR to Hold in our ratings distribution table for our 3-month relative rating system. However, we reiterate that we do not consider NRR to be a recommendation.

Prior to October 8, 2011, the firm's stock recommendation system included a risk rating and an investment rating. **Risk ratings,** which took into account both price volatility and fundamental criteria, were: Low (L), Medium (M), High (H), and Speculative (S). **Investment Ratings** of Buy, Hold and Sell were a function of the Citi Research expectation of total return (forecast price appreciation and dividend yield within the next 12 months) and risk rating. Additionally, analysts could have placed covered stocks "Under Review" in response to exceptional circumstances (e.g. lack of information critical to the analyst's thesis) affecting the company and/or trading in the company's securities (e.g. trading suspension). Stocks placed "Under Review" were monitored daily by management and as practically possible, the analyst published a note re-establishing a rating and investment thesis. For securities in developed markets (US, UK, Europe, Japan, and Australia/New Zealand), investment ratings were:Buy (1) (expected total return of 10% or more for Low-Risk stocks, 15% or more for Medium-Risk stocks, 20% or more for High-Risk stocks, and 35% or more for Speculative stocks); Hold (2) (0%-10% for Low-Risk stocks, 0%-15% for Medium-Risk stocks, 0%-20% for High-Risk stocks, and 0%-35% for Speculative stocks); and Sell (3) (negative total return). For securities in emerging markets (Asia Pacific, Emerging Europe/Middle East/Africa, and Latin America), investment ratings were:Buy (1) (expected total return of 15% or more for Low-Risk stocks, 20% or more for Medium-Risk stocks, 30% or more for High-Risk stocks, and 40% or more for Speculative stocks); Hold (2) (5%-15% for Low-Risk stocks, 10%-20% for Medium-Risk stocks, 15%-30% for High-Risk stocks, and 20%-40% for Speculative stocks); and Sell (3) (5% or less for Low-Risk stocks, 10% or less for Medium-Risk stocks, 15% or less for High-Risk stocks, and 20% or less for Speculative stocks).

Investment ratings are determined by the ranges described above at the time of initiation of coverage, a change in investment and/or risk rating, or a change in target price (subject to limited management discretion). At other times, the expected total returns may fall outside of these ranges because of market price movements and/or other short-term volatility or trading patterns. Such interim deviations from specified ranges will be permitted but will become subject to

review by Research Management. Your decision to buy or sell a security should be based upon your personal investment objectives and should be made only after evaluating the stock's expected performance and risk.

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 Ltd	Robert Buckland; Mert C Genc; Beata M Manthey, PhD; Hasan S Tevfik, CFA; Jonathan Stubbs; Adrian Cattley
Citigroup Global Markets Inc	Geoffrey Dennis; Tobias M Levkovich; Scott T Chronert
Citigroup Global Markets Japan Inc.	Kenji Abe, PhD
Citigroup Global Markets Asia	Markus Rosgen
Citicorp Pty Ltd	Tony Brennan

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 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 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 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, redisseminated 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

VISIT CITIVELOCITY.COM for access to Citi's cross-asset research, commentary, data and analytics. CitiVELOCITY℠