



GDP and earnings growth in emerging markets – a loose connection

September 2017

Emerging markets have become an integral part of institutional equity portfolios. Behind the decision to allocate to emerging markets, there is a common belief that the relatively strong GDP growth in those countries will lead to equally fast profits growth for listed firms. In this paper we show that this relationship is not as obvious as it seems. There are several reasons why growth rates might differ or even diverge. In addition, investors should expect profits growth in emerging markets to lag GDP growth over time. This is because of the way the growth is financed through IPOs and share issuance. We believe that navigating these factors to access the true sources of growth calls for a nuanced and sophisticated investment approach.

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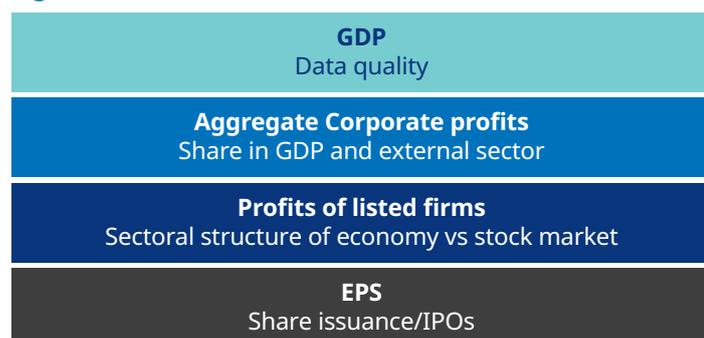
Apparent disconnect

In order to test the belief that fast economic growth leads to fast profits growth, we have looked at historical data. The table in Figure 2, overleaf, shows real GDP growth, real EPS growth and the gap between the two for 16 emerging market ("EM") and six developed market ("DM") countries. We use MSCI country indices for earnings per share (EPS) data, as these indices are the most common benchmarks for EM investors. We have only included those regional stock markets which contain more than 10 stocks¹ as, where the number of stocks is very small, stock-specific considerations dominate and the link between EPS growth and GDP growth will clearly be weaker. Nominal EPS growth is deflated by headline CPI. All analysis is in local currency terms.

When we look back over the past 10 years, real GDP growth has been noticeably faster in EM than in DM (4.2% vs 1.1%). However at the same time, real EPS growth has been very similar (-0.6% vs -1.0%). While the gap between real EPS and real GDP growth is negative for both EM and DM, it is much larger for EM. The table in the Appendix with 20-year numbers shows the same dynamics. This means that the higher economic growth in EM has failed to translate into the profits growth of listed firms, a slippage that seems to be larger in EM than in DM.

What could cause such a disconnect? Figure 1 shows how a unit of GDP flows through to a unit of EPS.

Figure 1: Flow from GDP to EPS



Source: Schroders

In each of the four steps there are pitfalls that could potentially distort the relationship.

- 1 The GDP number itself may suffer from measurement issues.
- 2 The share of corporate profits in GDP can change over time if profits grow faster or more slowly than other components, such as wages or taxes. Economy-wide aggregate profits can therefore move at a different pace from GDP. This is especially relevant in countries that have a large external sector (high export-to-GDP ratio), as corporate profits are driven by global rather than domestic demand.
- 3 If the difference between the sectoral composition of the economy and stock market is large enough, we cannot expect the EPS growth of listed firms to be highly correlated with GDP growth. For example, if the consumer sector is growing rapidly, but there are no consumer oriented firms in the stock market, then the stock market will not capture this growth.
- 4 The EPS of a stock market depends not only on the numerator (total profits), but also on the denominator (total number of shares). As both IPOs and stock issuance dilute the stake of existing shareholders, the actual EPS growth might lag GDP growth even if the total profits growth is in line with GDP growth (a reduction in shares as a result of buybacks would have the opposite effect). Although many of the points made so far could equally apply in DM, relatively large dilution in EM might be one of the main reasons for the large EPS shortfall there.

We now look at each of these issues in turn.

Data quality

There is a common perception that GDP data is of poorer quality in EM than in DM. Problems arise from poor reporting standards or outright manipulation. In recent years, many investors have questioned the validity of Chinese economic data in particular, suspecting it that overstates actual growth.

1. Excluded countries are (number of stocks): UAE (10), Greece (9), Colombia (9), Pakistan (6), Czech Republic (4), Hungary (3), Egypt (3) and Peru (3).

Figure 2: 10-year annualized real GDP and real EPS growth

	Real GDP	Real EPS	Gap
Brazil	1.6%	-8.7%	-10.3%
Chile	3.0%	0.5%	-2.5%
China	8.5%	2.0%	-6.5%
India	7.0%	-0.5%	-7.5%
Indonesia	5.6%	2.5%	-3.1%
Korea	3.2%	2.3%	-0.9%
Malaysia	4.8%	0.7%	-4.1%
Mexico	2.1%	-1.6%	-3.7%
Philippines	5.5%	2.1%	-3.4%
Poland	3.3%	-5.8%	-9.1%
Qatar	9.8%	2.0%	-7.8%
Russia	1.2%	-4.8%	-6.0%
South Africa	1.7%	-1.4%	-3.1%
Taiwan	2.9%	1.1%	-1.8%
Thailand	3.0%	0.2%	-2.8%
Turkey	4.5%	-0.1%	-4.6%
Canada	1.6%	-1.2%	-2.8%
France	0.7%	-3.0%	-3.7%
Germany	1.1%	0.3%	-0.8%
Japan	0.4%	0.2%	-0.2%
UK	1.1%	-3.6%	-4.7%
US	1.4%	1.5%	0.1%
Average EM	4.2%	-0.6%	-4.8%
Average DM	1.1%	-1.0%	-2.0%

Source: Schroders, MSCI, IBES, Oxford Economics. Data 10 years up to 31 March 2017. Real EPS growth is calculated by deflating nominal EPS by headline CPI. Gap is real EPS growth minus real GDP growth.

The gap between real GDP and real EPS growth in China shown in the table in Figure 2 is indeed notably large at 6.5% and it is possible that overstatement of GDP is part of the explanation. Unfortunately, there is no easy way to tell if and how much of this is due to mismeasurement. Still, it is difficult to argue that there is a large and widespread upward bias in GDP numbers across EM countries, leading to persistent overestimation of growth. On the assumption that official GDP numbers generally reflect actual growth rates, we can next have a closer look at the relationship between corporate profits and GDP growth.

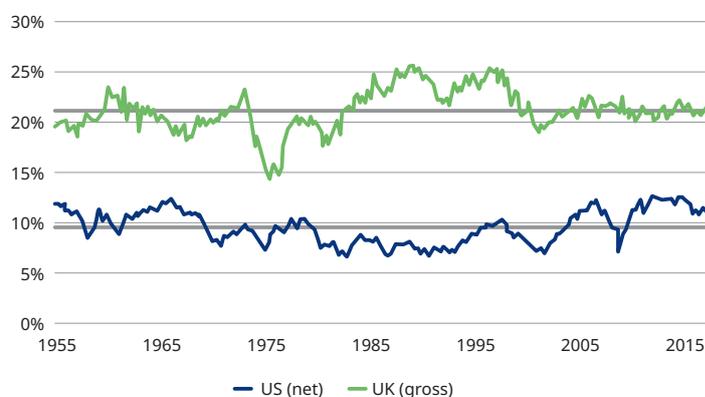
Share of corporate profits in GDP

The growth rate of corporate profits relative to GDP, which are both measured in national accounts, provides an indication of how much economic growth is flowing through to the corporate sector. When analysing the corporate profits-GDP relationship, it is useful to look at the breakdown of income data in the national accounts. The income approach, as it is

known, is a way of aggregating economic activity by adding wages, taxes, corporate profits, interest payments and rents. Usually the largest component in national income is wages, followed by corporate profits. The relationship between wages and profits determines how GDP growth accrues between labour suppliers (via wages) and capital owners (via corporate profits). If wages grow faster than other components, labour suppliers gain. If corporate profits grow faster, capital owners gain. Should the former be the case in EM, it could offer a partial explanation for the large gap between GDP and EPS growth seen in Figure 2.

Starting with developed markets due to their longer data history, Figure 3 displays the history of corporate profits as a percentage of GDP in the US and the UK since 1955. The US ratio is lower as it is net of capital consumption allowance, whereas the UK figure is gross², but the difference is irrelevant for this stage of our analysis where we are concerned with movements in the profit share rather than the absolute level. Leaving aside cyclical swings, the profit shares of GDP in both countries have tended to revert to long term averages over time. At present, the US profit share is high as a result of anaemic wage growth over the last decade, whereas the UK figure is closer to historic norms (the sharp fall in corporate profits in the UK in the 1970s was due to rapid inflation and wage growth). Put slightly differently, corporate profits have grown broadly in line with GDP over the very long run. Since 1955, US nominal GDP has grown 6.3% annualised and net corporate profits 6.4% annualised. In the UK the figures are 7.9% and 7.8% for GDP and gross profits, respectively.

Figure 3: Corporate profits % GDP

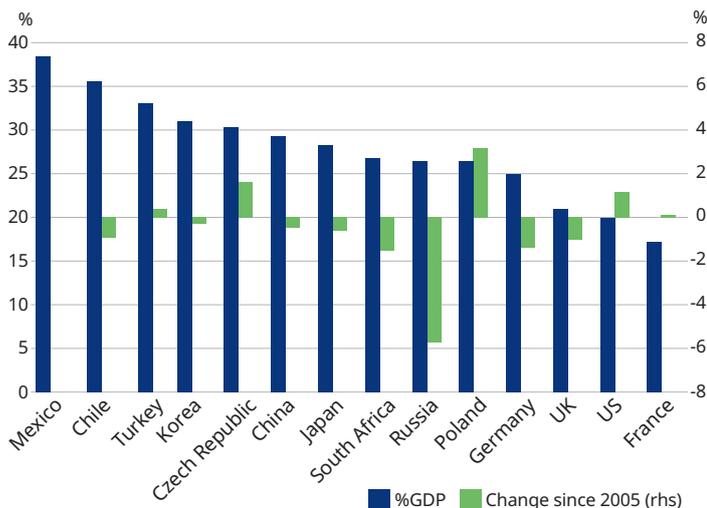


Source: Thomson Reuters Datastream. Net corporate profits exclude capital consumption allowance. Horizontal lines are long term averages. Data to March 2017.

In EM, such long-term corporate profits data is not available. Still, we can look at how EM compares to DM in more recent history. Figure 4 shows gross corporate profits as a percentage of GDP on the left hand scale and the change in ratio since 2005 on the right hand scale. For reasons of data availability, this analysis can only be performed for a more limited range of countries than set out in Figure 2. Overall, corporate profits seem to be a higher percentage of GDP in EM than in DM, ranging from 26% in Poland to 38% in Mexico. Looking at the change in profits, the share has fallen in some of the EM countries but risen in others. For most countries, the change since 2005³ has been relatively small.

2. We display net numbers, the reporting format of BEA, to show the longest possible history.
3. Ideally we would want to have the data for the last 10 years, as in Figure 2. Unfortunately the OECD corporate profits data is reported with a long lag and the latest data is for 2015 for most countries.

Figure 4: Gross corporate profits %GDP



Source: OECD. Latest data as of 2015 for all countries other than China, South Korea and South Africa, which are to 2014.

It is clear that while corporate profits' share of GDP can fluctuate, as seen in Figure 4, the large gap between EM EPS growth and GDP growth cannot be attributed to an EM-wide undershoot of corporate profits versus GDP.

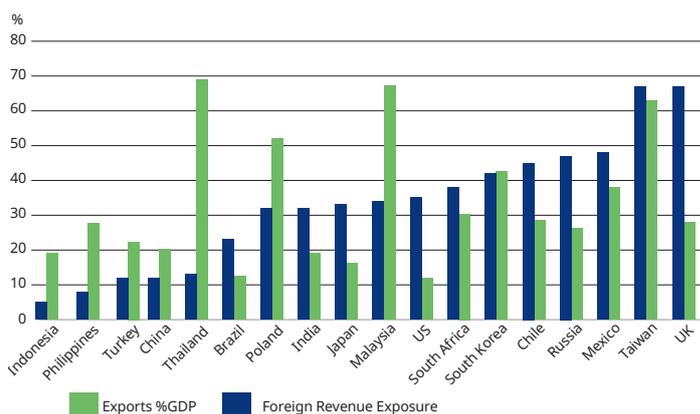
Domestic orientation

Both economies and stock markets can have varying sensitivities to domestic growth and growth overseas. In an economic sense, the external sector of an economy is the part which relates to overseas markets via exports and imports. In countries with a large external sector, corporate profit growth can be strongly influenced by the economic performance of their largest trading partners. It is therefore important to recognise which countries have a large exposure to overseas earnings, as this can potentially lead to corporate profit growth to diverge from GDP growth, at least temporarily.

Analogous to the domestic/overseas orientation of the economy, many equity markets are now much more international in nature than in the past. Constituents sell goods or services into domestic and overseas markets in varying degrees. The UK equity market is a well known DM example, with around 70% of sales derived from overseas. To the extent that a stock market derives a large percentage of its revenues from overseas, then it naturally follows that the relationship with the domestic economic will be weaker. Whether this results in earnings growing faster or slower than the domestic economy will to an extent depend on whether those foreign markets are growing faster or more slowly than the domestic economy.

In Figure 5, the green bars display exports as percentage of GDP and blue bars foreign revenue exposure of listed firms. The latter shows the exact extent that investors are exposed to foreign revenue when they invest in each MSCI country index. These measures therefore indicate how domestically-oriented both the economy and stock market are.

Figure 5: Exports and foreign revenue exposure



Source: Schroders, MSCI, HSBC, National Sources. Exports as of December 2016, foreign revenue exposure as of July 2014.

There is clearly a large dispersion in export numbers. In countries such as China and Brazil, exports are only a small percentage of GDP, suggesting these economies are more domestically oriented. On the other hand, in some of the Asian countries, exports can approach 70% of GDP (some of this is likely to be re-exports), suggesting that they are less domestically oriented.

There are large differences between the economy and stock market measures. For example, Thailand's exports are 69% of GDP, but the foreign revenue exposure in the Thai stock market is only 13%. This highlights how the structure of the economy can be very different from the structure of the stock market, a topic we will look at in more detail in the next section. This mismatch can blur the relationship between GDP growth and EPS growth. In summary, we would expect EPS growth to track GDP growth better in countries where the listed firms have limited foreign revenue exposure (countries on the left hand side of Figure 5). However, Figure 2 shows this not to have been the case universally. For example, while the Indonesian and Thai stock markets have low foreign revenue exposure and a below-average GDP/EPS gap, China has a very large gap despite being highly domestically oriented. There must be additional factors which need to be taken into account.

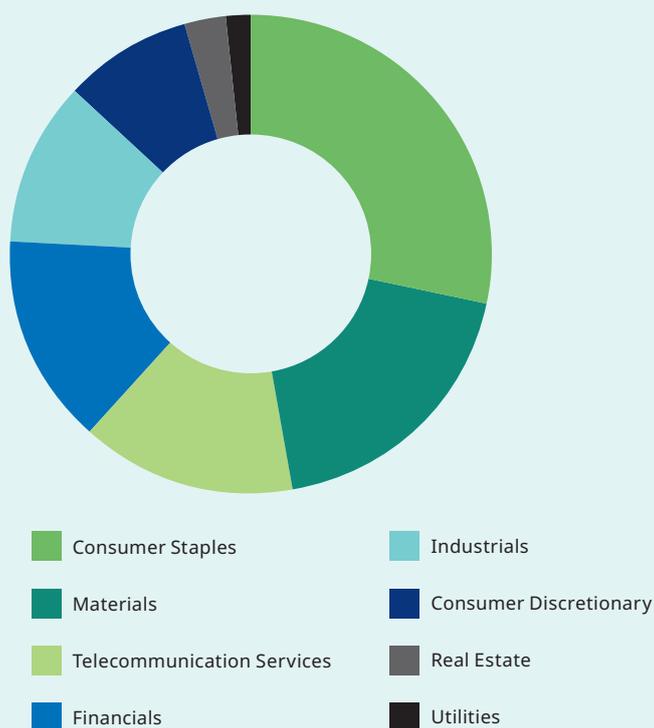
Difference in sectoral structure of economy and stock market

We have shown that stock markets often derive significant proportions of their revenues from overseas, a good reason why EPS growth could deviate from GDP growth. A further reason is that the sectoral composition of stock markets often varies considerably from that of the domestic economy. Analysis of this aspect is challenging because national accounts do not always classify companies in the same way that an index provider would. For example, IT firms form a standalone sector in GICS (the classification standard used by MSCI), whereas in the national accounts they are spread across different industries. That being said, we have highlighted three notable cases in the box to illustrate the fact that these differences exist and that they can be material.

Mexico

Figure 6 shows the sector composition of the MSCI Mexico Index. Mexico's stock market seems to be well balanced, as it covers all major sectors. However, crucially, it does not include a single company in the car manufacturing industry. As more and more foreign manufacturers set up car manufacturing plants in Mexico, the industry is becoming a larger and larger part of the economy. In fact, Mexico is the 7th largest car manufacturer and the 4th largest car exporter in the world. Since there are no car manufacturers listed in the stock market, the index will not capture the growth of this industry, potentially leading stock market earnings growth to diverge from GDP growth. At the very least, it introduces a mismatch.

Figure 6: MSCI Mexico sectors

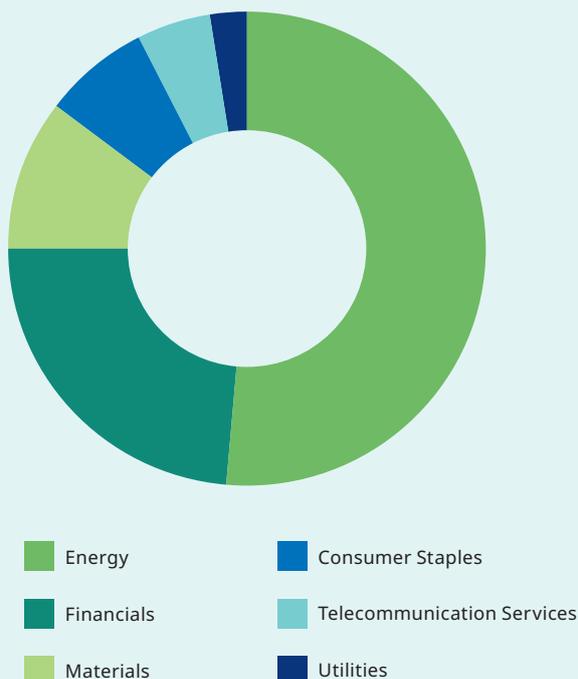


Source: MSCI As of June 2017.

Russia

The energy sector is more than 50% of MSCI Russia (Figure 7). While the sector plays an important role in Russia's economy, the index still overstates its importance to an investor. This is especially true for some of the domestically oriented sectors. For example, wholesale and retail trade is 16% of Russia's economy on a value added basis, yet consumer stocks are just 7% of MSCI Russia. In general, the consumer sector becomes more important in developing countries over time. However, investors in Russian equities would not capture much of this growth due to the unbalanced composition of the index.

Figure 7: MSCI Russia sectors



Source: MSCI As of June 2017.

South Korea

The IT sector is 45% of MSCI Korea, with Samsung Electronics alone constituting 32% of the index. Looking at the structure of South Korea's economy, the largest sector is manufacturing at 30% of GDP. No doubt a large part of the sector is electronics, but the stock market index is still overly skewed towards an IT sector that accounts for 45% of the total.

The examples in the box above are prominent cases where the sectoral structure of the stock market differs from that of the economy. The problem is compounded in some of the smaller EM country indices which just include a handful of stocks. For example, MSCI Czech Republic has only four and MSCI Hungary three constituents, making any comparison of stock market and economy meaningless in these countries.

Whether due to differences in domestic exposure or sector composition, stock markets and their host economies can vary considerably. However, these differences are

not necessarily negative. The profits of firms listed in the stock market can grow faster or slower than the whole economy. What is important to appreciate is that there are good reasons why it would be unreasonable to expect stock market earnings to grow in line with GDP. Unless the stock market is highly domestically oriented with an almost identical sector exposure to the host economy – a rare occurrence – then there should be little reason to expect stock market earnings to move in line with GDP growth. The bigger the mismatches, the greater the likely variation.

Dilution and IPOs

We have found so far that strong GDP growth in EM countries has not led to equally rapid EPS growth of listed firms. For some countries, this difference can be partly explained by the fact that the sectoral structure of the stock market is very different to that of the economy. And in countries with large foreign revenue exposure, profits can be driven more by global rather than domestic cycle. Still, these factors explain only that EPS growth is likely to be different to GDP growth, not that it should be much less over time. It cannot completely explain the structurally negative EPS/GDP gap in EM.

In this section we look at the final stage of how a unit of GDP transforms to a unit of EPS. The index-level EPS is calculated by dividing aggregate earnings by the total number of shares outstanding. It is therefore not just earnings that matter, but also the number of shares. Should the number of shares increase faster than earnings, or the growth of earnings come through IPOs, EPS will fail to keep up with aggregate earnings growth. This is exactly what we see in EM.

A seminal paper by Bernstein and Arnott (2003)⁴ postulated that, over time, EPS must grow more slowly than the economy. This is because the growth of existing firms contributes only part of GDP growth. It is the creation of new firms through entrepreneurial capitalism that is behind the majority of the growth. Those earlier stage companies experience much faster rates of growth than more established stock market-listed companies. The authors show that, in the 20th century, the difference, or dilution, as they call it, was around 2% in developed market countries.

In order to understand this better, we can go through a simple example. Let us suppose that a stock market is composed of three stocks, each with earnings of \$10 and five shares outstanding. The EPS of the market is then \$2 (\$30/15). The first and obvious way dilution happens is when firms issue more shares. If the first company issues two more shares, then the aggregate EPS falls to \$1.76 (\$30/17), as the same amount of earnings is divided between a greater number of shares.

What many investors do not realise is that, at the index level, IPOs have also a dilutive effect for existing shareholders. We can again use our hypothetical stock market to explain this. Assume that there is a fourth company with \$10 of earnings listing its shares through an IPO. Aggregate earnings increase from \$30 to \$40, a 33% increase. The impact on index EPS of this addition will depend on how many shares in the new company are issued in relation to the \$10 of earnings. For example, index EPS would either rise, remain the same or fall if four, five or six shares were listed, respectively. However, regardless of which of these occurs, it will always be the case that when growth is fully or partly funded by the issuance of new equity, index EPS will grow slower than aggregate index earnings. Besides dilution, a reverse situation is possible where a stock is delisted or shares are bought back. That would lead to negative dilution, i.e. the number of shares declining and earnings staying flat.

Bernstein and Arnott (2003) use a simple yet effective proxy to measure dilution. They divide the total market capitalization of an index by the historic price of the same index. This method has an advantage of removing valuation effects. Generally, market capitalization and the price index should be highly correlated. However IPOs and share issuance increase market capitalization, but have no effect on the price index. If the ratio rises over time, then it means that share of existing investors is being diluted. In practical terms this means that some of the growth in aggregate stock market earnings is being generated by the issuance of new shares, the benefit of which does not accrue to existing shareholders.

With this simple methodology we can now look at the dilution figures for selected EM and DM countries. The table in Figure 8 shows the annualized change in the market capitalization/price index ratio over a 10 year period. Wherever possible, we have used an "all-share" type of index that covers the broadest set of stocks. We do this to minimize the effect of changes in market capitalization deriving from stocks being included or excluded from the index as opposed to the new issuance and IPO activity we are interested in (see Figure 12 in the Appendix for coverage of indices). We are not using MSCI indices in this case because MSCI inclusion criteria leaves out a section of stock market. For China we have included both stocks listed on the Shanghai Stock Exchange and the Shenzhen Stock Exchange.

Figure 8: Annualised change in market capitalization/price index ratio

	Index	10 years
Brazil	Ibovespa	4.3%
China (Shanghai)	Shanghai Composite Index	10.8%
China (Shenzhen)	Shenzhen Composite Index	13.0%
India	Nifty 500	4.5%
Indonesia	Jakarta Stock Exchange Composite Index	4.5%
Korea	KOSPI	2.7%
Mexico	Mexico IPC	0.7%
Philippines	Philippines Stock Exchange All Share Index	-0.2%
Qatar	Qatar SE Index	4.9%
Russia	Micex Index	2.6%
South Africa	JSE All Share	-1.1%
Taiwan	TAIEX	1.8%
Thailand	Bangkok S.E.T.	2.6%
Turkey	Bist National All Share	1.8%
Canada	TSX Composite	2.4%
France	CAC ALL SHARES	1.3%
Germany	CDAX	-2.4%
Japan	TOPIX	1.3%
UK	FTSE All-Share	1.3%
US	Russell 3000	-0.9%
Average EM		3.8%
Average EM ex China		2.4%
Average DM		0.5%

Source: Schroders, Thomson Reuters Datastream, Bloomberg. Adjusted for changes in market capitalization arising due to changes in methodology. Chile, Malaysia and Poland are excluded due to lack of broad based stock index. Data to 30 June 2017.

On average, dilution has been noticeably larger in EM than in DM, 3.8% vs. 0.5%. Even if we exclude China, the dilution is still much larger in EM. The average annual dilution rate in EM ex-China has been around 2.4%, approximately two percentage points greater than in DM. This is a key contributor to the larger GDP/EPS gap in EM compared with DM. Looking at individual countries, China, Indonesia and India have had the largest dilution out of the 13 EM countries. At the same time, those three countries have also had the fastest GDP growth (see Figure 2). At the other end of the spectrum is South Africa, which has had very meagre GDP growth and negative dilution.

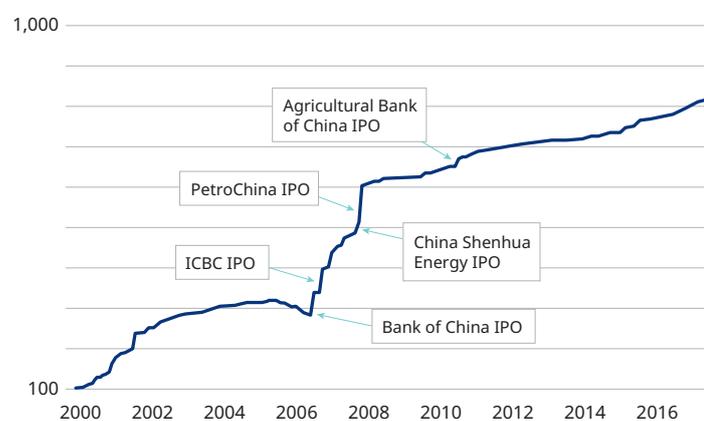
4. Bernstein, W. J., & Arnott, R. D. (2003). *Earnings Growth: The Two Percent Dilution*.

The numbers in DM vary somewhat, with the largest dilution in Canada. Interestingly, dilution has been negative in the US. This reflects two major developments: first, the number of IPOs there has fallen significantly, and, second, share buybacks (anti-dilution) have been increasingly popular. Share buybacks of course also exist in EM, but we are more interested in the net dilution numbers, which show that IPOs and share issuances vastly outnumber buybacks and delistings.

We can summarize that, whether looking at the global or country level, all other things being equal, faster GDP growth appears to be consistent with higher dilution. As explained, a portion of corporate earnings growth happens prior to IPO, which means that, over long term, EPS growth should be expected to lag GDP growth. We want to emphasize that, while IPOs and share issuance are dilutive initially, they can benefit investors. This is because funds received in share issuance can be used to help firms grow post IPO.

The dilution numbers are especially large for China, 10.8% and 13% a year for the Shanghai Composite and the Shenzhen Composite indices, respectively, over the past 10 years. To explain this, we looked at the data in detail. Figure 9 shows the market capitalization/price index ratio for the Shanghai Composite from January 2000 to July 2017. Aside from a short period between 2005 and 2006, the ratio has been rising, indicating that the value of IPOs and secondary issuance has been larger than the value of delistings and share buybacks. In itself this is not surprising for a country with fast economic growth and developing capital markets. However, the pace of the market capitalization increase when compared to the price index is truly remarkable. Since January 2000 it has risen from 1.6 trillion yuan to 31.8 trillion yuan (19.9 times). At the same time, the price index has risen only from 1,366 to 3,253 (2.4 times).

Figure 9: Shanghai Composite Index market capitalization/price index ratio (log scale)



Source: Schroders, Thomson Reuters Datastream. Data up to 30 June 2017.

Conclusions and implications for investors

The data in this paper illustrates that the link between economic growth and earnings growth is not straightforward. Even if investors can correctly predict which economies will grow faster, that does not mean that listed companies will experience faster earnings growth. Differing regional and sectoral exposures can result in growth in aggregate stock market earnings diverging considerably from GDP growth. In addition, dilution is an almost constant drag on EPS growth relative to aggregate earnings growth. These issues are present in all markets, but are especially prominent in EM.

This is not to say that a country's economic growth is irrelevant to the EPS growth of its stock market, nor that it is impossible for investors to capture that economic growth. What it does mean is that investors need to work harder to identify and access the sources of that growth, as a simple strategy of investing in the stock market is likely to come up short. In order to navigate this challenging environment and to reap the full benefits of strong GDP growth in EMs, investors need a skilful manager who can conduct and understand the fundamentals of companies and markets.

We can reach a similar conclusion by looking at actual profit figures, although over a slightly shorter time horizon due to the lack of longer term data. Since January 2004, the total earnings of firms in the Shanghai Composite have risen from 42 billion yuan to 2.05 trillion yuan (31 times). Over the same period, the EPS of Shanghai Composite have risen from 67 yuan to 222 yuan (3.3 times). Again, the newly listed stocks add to total earnings but not to EPS.

It is notable that there have been some large spikes in the market capitalization/price index ratio, especially between 2006 and 2008. We can match these spikes with actual IPOs. The table in Figure 10 records some of the largest IPOs on the Shanghai Stock Exchange.

Figure 10: IPOs on the Shanghai Stock Exchange

Company	Date	Sector	Market cap % index at IPO	Excess return since IPO
Bank of China	Jul-06	Banks	17.5%	-56.4%
ICBC	Oct-06	Banks	17.3%	51.9%
China Shenhua Energy	Sep-07	Energy	7.3%	-31.0%
PetroChina	Nov-07	Coal	30.7%	-66.7%
Agricultural Bank of China	Jul-10	Banks	5.6%	29.7%

Source: Thomson Reuters Datastream, Bloomberg. Excess return over the Shanghai Composite Index. Data up to 30 June 2017. For illustrative purposes only and not to be considered a recommendation to buy or sell.

There are several noteworthy points about these IPOs. First, all were state owned enterprises (SOEs). Second, at the time of the IPO, they all constituted a disproportionately large share of the Shanghai Composite index. For example, PetroChina was more than 30% of the index at the time of its IPO in November 2007. Third, three out of five have underperformed the index significantly since the IPO, while others have outperformed handsomely. As we said, firms can continue to do well after an IPO, but the large IPOs in China were dilutive and have not always benefited investors since.

The case of large SOEs may be unique to China, but is also important for other fast growing markets. A passive strategy is forced to allocate to large IPOs just because of their size. While this might be an optimal strategy in developed markets, it may work less well in EM where corporate governance is weaker and the number one goal is not always to maximize shareholder wealth. It is possible that this could change in future if the pressure to raise standards of corporate governance is successful. However, this is as yet unproven and even if it does occur, its effects are likely to be felt unevenly, both within and between markets.

Appendix

Figure 11: 20-year annualized real GDP and real EPS growth

Country	Real GDP	Real EPS	Gap
Brazil	2.3%	0.2%	-2.1%
Chile	3.8%	1.5%	-2.3%
China	9.1%	-0.1%	-9.2%
India	6.9%	2.3%	-4.6%
Indonesia	4.1%	1.0%	-3.1%
Korea	4.0%	6.5%	2.5%
Malaysia	4.5%	0.4%	-4.1%
Mexico	2.6%	5.7%	3.1%
Philippines	4.8%	-1.0%	-5.8%
Poland	3.7%	-3.0%	-6.7%
Russia	3.3%	-5.8%	-9.1%
South Africa	2.7%	2.6%	-0.1%
Taiwan	3.9%	3.1%	-0.8%
Thailand	3.4%	0.4%	-3.0%
Turkey	4.5%	1.0%	-3.5%
Canada	2.4%	3.8%	1.4%
France	1.6%	4.5%	2.9%
Germany	1.4%	4.8%	3.4%
Japan	0.7%	6.1%	5.4%
UK	2.0%	-0.1%	-2.1%
US	2.2%	3.0%	0.8%
Average EM	4.2%	1.0%	-3.1%
Average DM	1.7%	3.7%	2.0%

Source: Schroders, IBES, Oxford Economics. Data 10 years up to 31. March 2017.

Figure 12: Market indices used to calculate dilution

Country	Index	Coverage of local market
Brazil	Ibovespa	75% of Bovespa Market Cap
China (Shanghai)	Shanghai Composite Index	All shares listed on the Shanghai Stock Exchange
China (Shenzhen)	Shenzhen Composite Index	All shares listed on Shenzhen Stock Exchange
India	Nifty 500	95.2% of the capitalization of the stocks listed on NSE
Indonesia	Jakarta Stock Exchange Composite Index	All share
Korea	KOSPI	All common stocks traded on the Korea Exchange
Mexico	Mexico IPC	All the shares listed on the exchange
Philippines	Philippines Stock Exchange All Share Index	All share
Qatar	Qatar SE Index	97% of listed stocks
Russia	Micex Index	80% of the market capitalization of the stock market
South Africa	JSE All Share	All share
Taiwan	TAIEX	All listed common shares
Thailand	Bangkok S.E.T.	All common stocks
Turkey	Bist National All Share	All share
Canada	TSX Composite	70% of the total market capitalization of TSX
France	CAC ALL SHARES	All share
Germany	CDAX	All domestic shares
Japan	TOPIX	All domestic stocks of the TSE 1st Section
UK	FTSE All-Share	At least 98% of the full capital value of eligible companies
US	Russell 3000	98% of US stocks

Source: Schroders

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