J.P.Morgan

Economic Research
June 21, 2016

Special Report

Profit stall threatens global expansion

"Crises, depressions, hard times, dull times, brisk times, periods of speculative advance, 'eras of prosperity,' are primarily phenomena of business; they are, in their origin and primary incidence, phenomena of price disturbance, either of decline or advance. . . . They affect industry because industry is managed on a business footing, in terms of price and for the sake of profits."

~ Thornstein Veblen, *The Theory of Business Enterprise* (1904)

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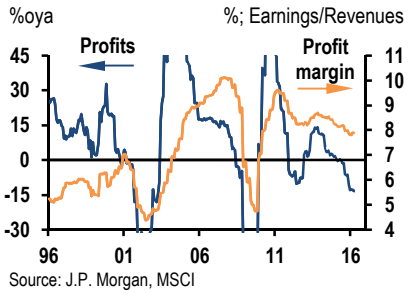
Despite a long history dating back to the second half of the 19th century, the study of business cycles is far from settled. Within the monetary school of thought (focused on the influence of credit and prices), the field has devoted most of the last 50 years to examining primarily the influence of central banks on the cycle. However, work dating back to Thornstein Veblen (1904) and popularized by Wesley Mitchell (1913) places the expected profit rate and its inherent fluctuations as a key driver of business cycles. In this regard, it is impossible to ignore the fact that corporate profitability—as defined by the profit margin—has peaked one to four years before every post-WWII US recession. With the US margin now decisively off its expansion highs, it is not hard to imagine being at least in the latter stages of the current expansion. For the rest of the world, the story is more mixed but largely echoes the concerning trends in the US.

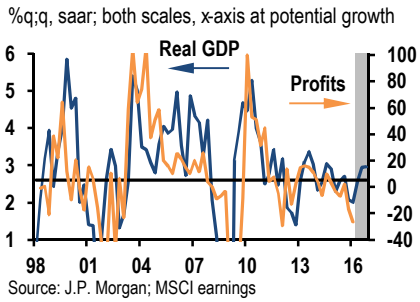
In this report we examine the evolution of global corporate profits during this expansion and assess its role in the outlook. To this end, we utilize a common set of data. Specifically, we use MSCI data on listed companies within each country's stock exchange. All values are on a per share basis and in local currency terms. Regional and global aggregates are nominal GDP-weighted averages. (See Appendix 1 for more details.)

Figure 1: Global profits and profitability



Source: J.P. Morgan, MSCI

Figure 2: Global GDP and corporate profits



Source: J.P. Morgan; MSCI earnings

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The report is organized in a way that decomposes the factors underlying corporate profit growth. It begins with a discussion of the trends in profit (earnings) growth and then discusses the dynamics of revenues and profit margins, the two components that comprise profits. A discussion of corporate profitability (margins) is then provided, with an analysis of productivity, pricing, and wage trends. A summary of this analysis is provided in Table 1. The main conclusions are:

- **A global profits stall.** Since 2010, profit growth has stagnated, a major shift from the past two expansions when profits grew at a double-digit average annualized pace.
- **Profit weakness is broadly based.** Neither the DM nor EM have seen profits grow on average over the past five years. This compares to a boom in the 2000s. DM profits stagnated even after the Euro area recovery took hold in 2013. EM weakness extends beyond Brazil's deep contraction and commodity-producing countries.
- **DM revenues have stagnated.** A slowing in revenue growth, closely related to the downshift in nominal GDP gains, has been an important source of the global profit stall. However, regional performance has varied. Much of the falloff in DM revenue growth represents sharp declines recorded over 2011-12 as the Euro area and Japan contracted. A clear message is the damage recessions inflict on revenues. In contrast to the DM, EM revenues have moderated in this expansion but to a still-solid 6% annualized pace of growth.
- **An end to a secular rise in margins.** Although revenue trends hew closely to the growth cycle, profit margin dynamics are more complex. They move up and down with nominal growth but also display patterns driven by secular forces. From the 1990s through 2007 a general upward trend in global profitability can be observed in which margins steadily expanded, with only temporary disruptions when growth weakened. Margins are now moving in reverse. Corporate profitability has never recovered its pre-recession levels during this expansion, and by the end of 2015, global margins stood at just 7.8%, 2.2-pts point lower than their earlier cyclical peak at the end of 2007.
- **Margin squeeze is concentrated in the EM.** Although margins are off their highs everywhere, DM economies have done a better job controlling margins in recent years. EM margins currently stand at 9.6%, a full 4%-pts off their 2007 peak and twice the decline seen in the DM.
- **The margin squeeze owes to two fundamental shifts:** a collapse in global productivity growth and an adverse shift in the relative pricing power between producers and labor. This has been partly offset by a decrease in the debt service burden as interest rates have been lowered significantly.
- **Slower productivity growth seen in DM and EM.** However, the slide in EM has been far more pronounced during this expansion. DM corporates have also done a good job aligning labor cost gains to the pace of inflation. In the EM, pricing power has moved sharply lower since 2013 and firms have not been able to adjust labor costs accordingly.

The final section of this report examines the linkages between profitability, business capital spending, employment, and overall growth. The results highlight both the contemporaneous and dynamic (lead-lag) relationships between corporate and macroeconomic performance. This raises an important tension for the outlook.

Our economists forecast a pickup in both real activity (Figure

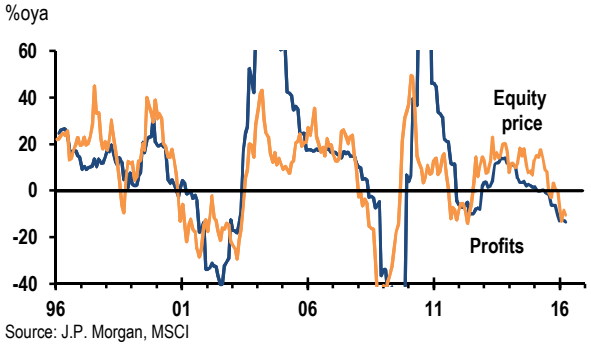
Table 1: A decomposition of corporate profit growth and margins
% change, annualized (except margin, change in %-pts and level in %)

	Profits	Revenues	Margins	Margin, Change [2]	Productivity	Relative Prices[3]	Other[4]	Margin, level
	(1)=(2)+(3)[1]	*(2)*	*(3)*	*(4)=(5)+(6)+(7)*	*(5)*	*(6)*	*(7)*	(eop)
Global								
1997 to 2000	10.7	4.7	6.0	0.4	1.6	-1.1	-0.1	7.0
2003 to 2007	32.6	13.7	15.6	1.0	1.5	-0.7	0.1	10.0
2011 to 2015	-0.4	2.8	-3.5	-0.2	0.5	-0.8	0.1	7.8
Developed								
1997 to 2000	12.4	5.4	6.6	0.2	1.5	-1.4	0.1	6.0
2003 to 2007	32.9	13.1	17.5	1.0	1.4	-0.6	0.2	8.8
2011 to 2015	-1.8	0.6	-2.4	-0.1	0.5	-0.7	0.1	6.8
Emerging								
1997 to 2000	2.7	-2.2	4.7	1.7	2.1	1.3	-1.7	10.9
2003 to 2007	29.5	18.9	8.8	1.1	2.7	-1.1	-0.5	13.6
2011 to 2015	-0.3	5.5	-5.8	-1.0	0.7	-1.6	0.0	9.6

Source: J.P. Morgan, MSCI; [1] Revenues and margins do not exactly sum to profits owing to approximation error. [2] Margins are based on a subset so as to be comparable with countries for which productivity and wage data are available (notably, excludes China and India). [3] "Relative prices" are the ratio of output price per unit to the wage rate. [4] "Other" is a residual partly reflecting approximation error but also including interest payments among other costs.

2) and inflation that should lift the pace of nominal GDP growth by over 2%-pts over the coming year. Underlying this swing are policy supports (China, Japan, and Euro area) and a fading of drags on earnings from falling commodity prices. An improvement in productivity growth is also expected. By itself, such a swing in nominal activity should translate into a return of corporate revenue growth to more than 10% and provide a significant boost to investment spending.

Figure 3: Global corporate profits and price



Source: J.P. Morgan, MSCI

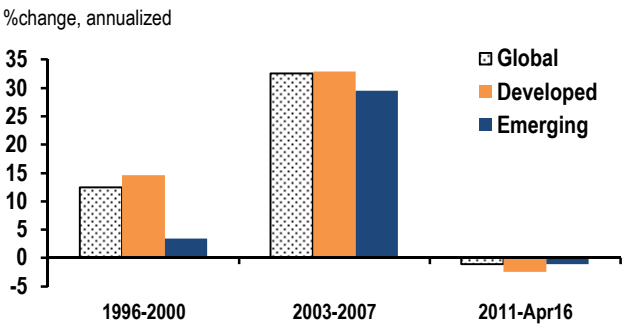
However, profits—alongside equity prices (Figure 3)—have declined over the past four quarters, and global investment spending has moved in lock step with the disappointing pace of profit growth this cycle. There is a significant risk that a substantial drag on corporate spending remains in the pipeline. Indeed, the key risk to the outlook is that the stall in profits is a catalyst for a pullback in hiring, which has held up well in recent quarters.

A low profit growth expansion

One of the notable characteristics of the current global expansion is the relative weakness of profit growth. Profits are highly sensitive to business cycle swings as many of the costs companies face—labor, interest expense, depreciation—are hard to adjust quickly. With revenues closely aligned to growth, profits tend to contract sharply in recessions and grow solidly through an expansion. These swings tend to be most pronounced around business cycle turning points.

The 2008-2010 experience closely followed the normal cyclical script. Global corporate profits, as measured by MSCI earnings per share, fell more than 50% peak to trough during the Great Recession but then surged in the first year of the expansion, more than retracing its decline. However, since 2010, profits have stagnated, marking a major shift from the past two expansions where profits grew at an average annualized pace of 12% and 32%, respectively, in the last five years of the cycle (Figure 4).

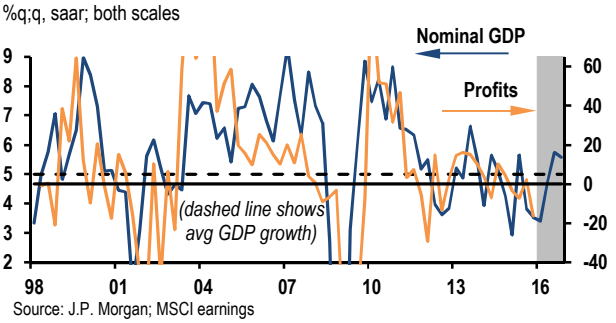
Figure 4: Mid/late cycle corporate profits over recent expansions



Source: J.P. Morgan

The stall in global profit growth aligns with slower nominal GDP growth. The global business cycle typically is characterized by sustained periods of above-trend real growth interrupted by brief bouts of weakness. However, the global economy has eked out only trend-like growth in real activity over the course of the current expansion. At the same time, depressed rates of inflation have damped growth in nominal activity. In whole, global nominal GDP has been expanding at a 5% annualized rate since 2010, nearly 2.5%-points below the pace posted in the prior expansion (Figure 5).

Figure 5: Global nominal GDP and corporate profits



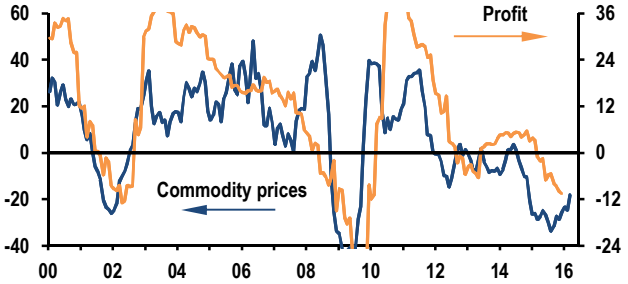
Source: J.P. Morgan; MSCI earnings

Part of the stagnation in global profit growth over the course of the current expansion reflects a set of regional and sectoral events that should be viewed as temporary:

- **Europe's sovereign credit crisis.** The European sovereign crisis and recession led to a collapse in regional earnings. The recession lasted two years from mid 2011 through early 2013, with a 1.6% peak-to-trough decline in real GDP. Corporate profits of listed companies in the region slumped nearly 50% over this period. While there has been a sharp rebound, Euro area profits are still down 7% since 2010. The Euro area recession was a global affair for profits, with profit growth slowing outside of Europe, including a large 10% decline in Japan profits.

- **Commodity price collapse.** The collapse in commodity prices that began in mid 2014 has weighed heavily on profits of commodity producers. Profits in this block of countries have dropped nearly 13% since oil prices started their sharp descent in July 2014 (Figure 6). Profits have been particularly hard hit in commodity focused countries such as Norway, Canada, Australia, Russia, Brazil, Indonesia, and Malaysia (Table 2). Similarly, profits of UK-listed companies have been hit hard—falling 68% since mid 2014—owing in part to the large number of listed commodity companies.

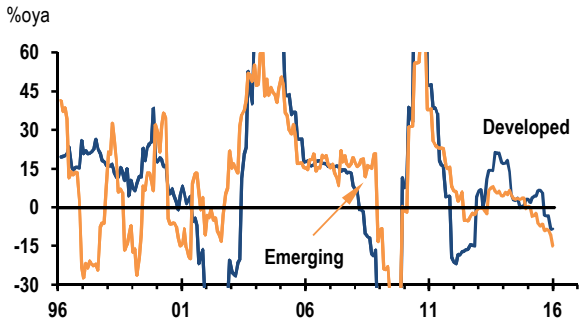
Figure 6: Commodity prices and profits of commodity countries
%oya; both scales



Source: J.P. Morgan; JPMCCI and MSCI

- **Brazil's depression.** Brazil is experiencing its worst economic collapse in over a century. Real GDP has shrunk over 7% so far. Profits of listed companies are down roughly 80% since mid 2012.

Figure 7: Corporate profits by region
%oya



Source: J.P. Morgan, MSCI

Even after accounting for these shocks, profit weakness looks persistent and broadly based. Indeed, the correlation in the profits of listed developed market (DM) and emerging market (EM) companies is impressive (Figure 7).

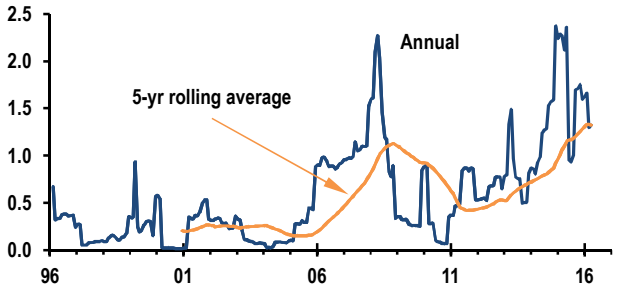
Neither the DM nor EM has seen any profit growth on average since 2011. This compares to a boom in profits during the 2000s' expansion that was shared equally across the two regions. DM profits have remained stagnant even after the Euro area recovery took hold and have fallen sharply in recent quarters, while EM weakness extends far beyond Brazil and other commodity-producing countries. And the most recent outright contraction in profits over the past year is also shared equally across the DM and EM (Table 2).

Table 2: Corporate profits of listed companies
% change annualized; MSCI EPS (local currency), 12m trailing

	1996-2000	2003-2007	2011-2015	2015	April 2016
Global	12.5	32.6	-0.3	-10.8	-13.9
Developed	14.6	32.9	-1.8	-9.9	-13.6
US	10.0	12.8	5.1	-4.0	-5.2
EMU	28.7	62.5	-8.0	-1.3	-7.3
Japan	5.5	41.6	8.3	3.3	0.1
Emerging	3.4	29.5	-0.3	-11.5	-14.2
EMA	-4.7	24.9	1.4	-11.5	-11.7
China	-29.8	18.9	1.7	-13.4	-14.2
India	15.7	24.2	-0.2	-19.0	-1.8
Korea	-1.1	10.7	-2.5	12.0	11.2
Latam	23.6	34.7	-12.3	-38.0	-21.0
Brazil	44.9	32.2	-27.3	-61.0	-39.8
Mexico	24.0	31.4	3.0	8.6	13.6
EMEA EM	46.5	40.9	2.6	16.5	-21.2
Russia	344.0	20.3	6.4	1.2	4.7
Turkey	139.1	35.3	7.3	6.1	8.7
Poland	-5.9	113.4	-8.8	16.1	-59.5

Source: J.P. Morgan, MSCI

Figure 8: Corporate earnings growth, global concentration
Inverse GDP-weighted standard deviation of %yoy earnings growth



Source: J.P. Morgan

Perhaps the most telling sign of the global nature of the profit growth slump is the fact that the concentration of earnings growth around the world (as measured by the weighted average of the inverse standard deviation across countries) has reached its highest level in at least two decades, surpassing even the large concentrated hit to earnings during the global financial crisis (Figure 8). The difference between then and now is that the financial crisis was a brief—albeit intense—shock, while the slowdown in earnings growth over the recovery has been ongoing for much of the expansion.

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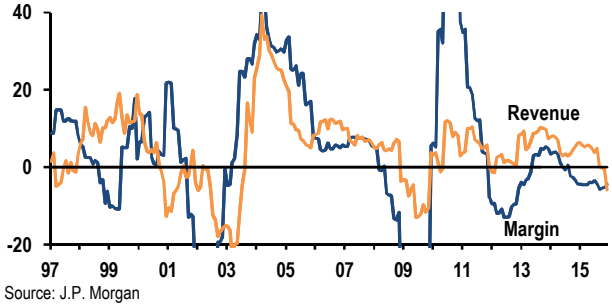
DM revenue growth has stalled

To better assess the state of the profit cycle, it is important to understand the sources of weakness. The profit cycle can be decomposed along two dimensions: revenues and profitability. Company earnings come from the ability to generate sales and to do so at low cost. In this regard, profit growth is the sum of growth in revenues and growth in the earnings share of revenues (i.e., the margin). Not surprisingly, both revenues and margins have strong pro-cyclical tendencies. Both rise when growth is strong and are hurt badly by recessions (Figure 9). However, the two drivers of earnings can take on dynamics of their own over the course of the cycle.

Figure 9: Global profit growth, decomposed
%oya; Margin is the earnings share of revenue

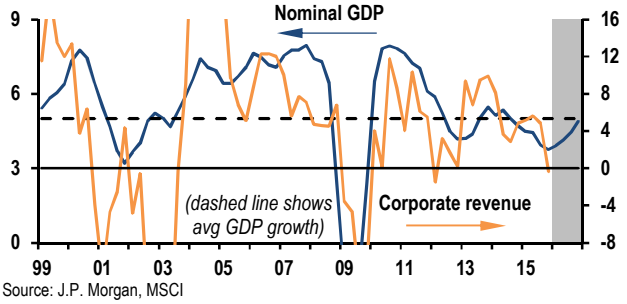


Source: J.P. Morgan

Nominal GDP performance largely explains the swings in revenue growth. When nominal GDP growth has slowed below 3%, revenues have contracted. When growth averages more than 6% (as it did from 2003-07 and for a brief period at the start of this expansion), revenues increased at a near double-digit pace (Figure 10). Revenues actually expanded at a relatively firm 5.2% annualized pace from 2011 through 2014—in line with solid nominal GDP growth on average—before sliding sharply in 2015. An important driver of these swings is commodity prices, which sustained revenue growth in 2011-13 despite slower real growth but has been a drag more recently despite more stable real global growth. These commodity price induced divergences are evident in the higher amplitude moves in nominal GDP growth.

The sharp divergence in revenue performance by region during this expansion highlights the role of swings in nominal GDP and commodity prices. Growth in DM revenues stalled over 2011-15, falling far short of the 14% annualized gains during the 2003-07 expansion. Much of the falloff in DM revenue growth represents sharp declines recorded over 2011-12 as the Euro area and Japan contracted. A clear message from this comparison is the damage to revenue growth that comes with recession.

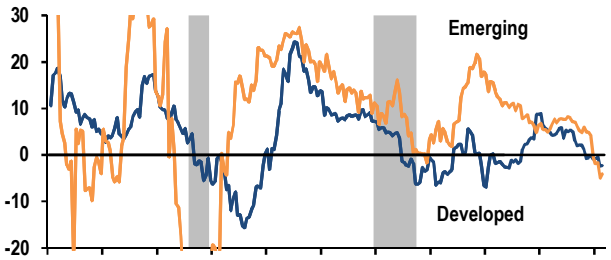
Figure 10: Global nominal GDP and corporate revenues
%oya; both scales



Source: J.P. Morgan, MSCI

Revenue growth in the EM has also slowed from the boomy 18% annualized gains in 2003-07. However, the 10% annual gain over 2011-15 is still a strong outcome. As DM revenues contracted over 2011-13, rising commodity prices produced strong EM revenue gains despite the moderation in growth. These dynamics turned negative over 2014-15. Indeed, EM revenues have contracted over the past year (Figure 11).

Figure 11: Corporate revenues
%2year change, ann rate



Source: J.P. Morgan

EM has faced a sustained margin squeeze

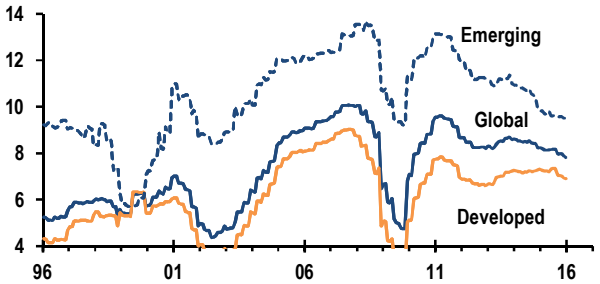
Although revenue trends hue closely to the growth cycle, profit margin dynamics are more complex. To be sure, they have moved up and down with nominal growth and have generated particularly large swings in recessions and in the early stages of expansions. However, they also display patterns driven by other forces—some of which may be more secular in nature. From the 1990s through 2007 profitability generally trended upward as margins expanded steadily, with only temporary disruptions when growth flagged.

The secular uptrend in profit margins since the 1990s appears to have reversed following the Great Recession. Some of this was expected (See "Profit Margins to Fall," Global Issues, April 21, 2008). Even still, corporate profitability never recovered to its pre-recession peaks and has been deteriorating over the course of the expansion. By the end of 2015, global margins stood at just 7.9%, a percentage point lower than

their 2011 cyclical peak (Figure 12). Indeed, our decomposition shows the stall in global corporate profit growth in the current expansion owes disproportionately to a slide in profitability (Table 1).

Figure 12: Profit margin

%; earnings share of revenue

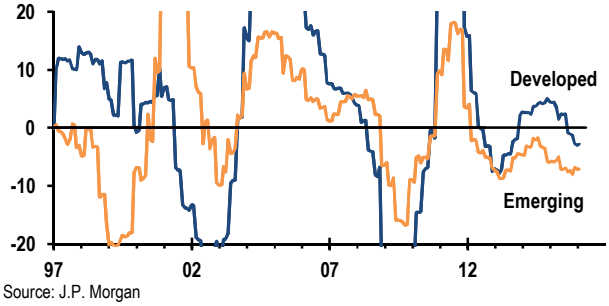


Source: J.P. Morgan

While EM revenue growth has generally outperformed that of the DM, the reverse is true for corporate profitability (Figure 13). DM margins have been relatively stable in the current expansion (albeit amid some cyclical swing around the Euro area and Japan recessions in 2011-12). By contrast, EM profitability has deteriorated steadily since 2011.

Figure 13: Corporate margins

%change over 2 years, annualized



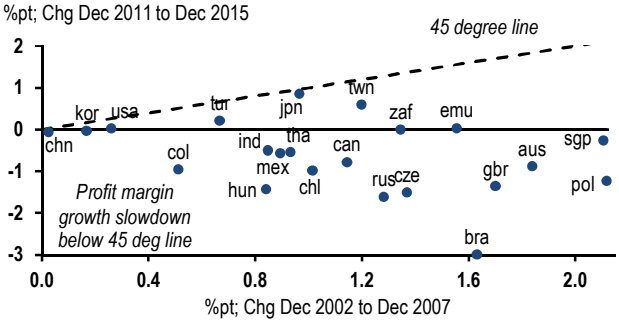
Source: J.P. Morgan

To be sure, the level of EM margins are higher than in the DM, owing in part of the fact that the listed EM corporate sector is less representative and reflects larger corporates, many of which have significant public sector support. Even still, we have noted for some time that the sharp deterioration in corporate profitability has been an ongoing source of downside risk to the EM outlook since 2013 ("Job gains to lag global growth lift," Global Issues, July 24, 2013).

The divergence in EM/DM margin dynamics is broadly based across countries. Since 2011, margins have been stable in the US and have moved higher in the Euro area and Japan. Meanwhile, nearly all EM economies have experienced a drop in margins—a striking shift from their performance from 2002 through 2007 (Figure 14).

Figure 14: Change in corporate profit margin

%pt; Chg Dec 2011 to Dec 2015



Source: J.P. Morgan, MSCI; margins defined as eanrings as % of revenue

Table 2: Corporate profit margins of listed companies

%; 12m earnings share of revenue as of December

	2000	2007	2011	2014	2015
Global	7.0	10.0	8.7	8.2	7.8
Developed	6.0	8.8	7.0	7.3	6.8
US	7.7	8.9	9.4	9.6	9.5
EMU	6.4	8.7	4.2	4.3	4.3
Japan	1.3	4.7	1.6	4.9	5.1
Emerging	10.9	13.6	12.1	9.9	9.6
EM Asia	11.1	12.9	11.1	10.7	10.6
China	16.7	12.6	11.7	11.1	11.4
India	10.0	16.3	11.2	10.4	9.2
Korea	2.8	7.7	5.9	4.5	5.7
Latam	8.6	13.9	12.7	7.4	5.3
Brazil	9.7	15.2	14.4	5.8	2.4
Mexico	8.7	12.9	8.8	6.5	6.5
Chile	7.2	8.9	9.7	6.0	5.8
EMEA EM	14.5	15.0	14.5	9.8	10.3
Russia	21.0	18.3	18.2	11.1	11.7
Poland	3.8	11.0	10.9	4.7	5.9
Czech Rep	7.7	19.4	20.2	15.9	14.1
S. Africa	12.0	11.0	10.8	10.2	10.8

Source: J.P. Morgan, MSCI

Identifying profit margin drivers

Forecasting the profit cycle boils down to forecasting revenues and margins. Revenues tend to track nominal GDP and so rely simply on our macroeconomic outlook. Assuming global real GDP accelerates from 2.1% ar in 1Q16 to a 3% pace over the coming year and inflation picks back up to the pace posted prior to the collapse in commodity prices, global nominal GDP growth would pick up by more than a full percentage point over the course of this year. This would be a material rise from the 4% pace around the turn of the year, the weakest gain in nominal GDP of the expansion. Such a

swing in nominal activity should translate into a material acceleration in corporate revenues (Figure 10).

The drivers of the profit margin are more complicated. The profit margin is defined as the earnings share of revenue. Earnings (E) can be defined as revenues (PY, where P is the price and Y is real output) less costs, which include labor costs (WH, where W is the wage rate and H is hours worked), other direct and indirect costs of production ($Other$), interest costs (I), and taxes (T). Specifically, the margin (m) is:

$$m = E/PY = 1 - WH/PY - Other/PY - I/PY - T/PY.$$

Note that WH/PY can be rewritten as the ratio of the per-unit relative cost (W/P, wage rate relative to output price) to productivity (Y/H). The change in corporate profitability (Δm) can then be approximated as:

$$\Delta m \approx \rho + (\pi - \omega) - \Delta\theta - \Delta i - \Delta\tau,$$

where ρ is labor productivity growth, π is output price inflation, ω is wage inflation, and $\Delta\theta$, Δi, and $\Delta\tau$ are the change in the other cost, debt service burden, and tax burden each scaled by labor costs, respectively.

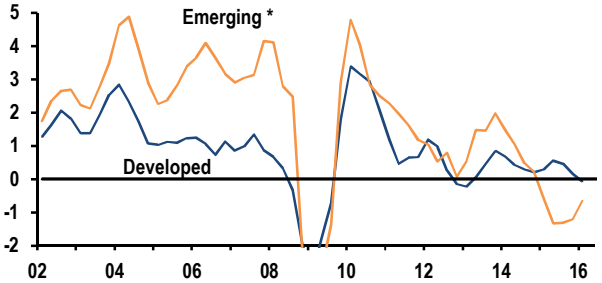
With the above formulation in hand, three points will become clear in the analysis below:

- The slide in global profitability owes to two fundamental shifts: 1) a remarkable collapse in global productivity growth ($\boldsymbol{\rho}$) and 2) an adverse shift in the relative pricing power between producers and labor ($\boldsymbol{\pi - \omega}$), amplified by the abrupt and disruptive end to the commodity supercycle. This has been partly offset by 3) a decrease in the debt service burden ($\boldsymbol{\Delta i}$) as interest rates have been lowered significantly around the world**.**
- Slower productivity growth has been a drag for both the DM and EM. However, the slide in EM has been far more pronounced during this expansion.
- While DM corporates have been effective in aligning gains in labor costs to the pace of inflation in recent years, this is likely to change as labor markets tighten further—particularly in the US and UK. In the EM, pricing power moved lower since 2013 and firms have not been able to adjust labor costs accordingly.

Productivity malaise limiting profitability

Amid the numerous challenges facing the global economy, perhaps the single largest challenge is the remarkable collapse in global productivity growth. Global productivity growth has slumped from a 1.7% annualized pace in the 2003-07 expansion (excluding China and India due to data limitations) to a paltry 0.3% pace since 2010, contracting outright in 2015. (See "One challenge to rule them all: Productivity," March 21, 2016). The decline is broad based, although the 3%-pts plunge in the EM is particularly worrisome compared to the 1%-pt drop in the DM (Figure 15).

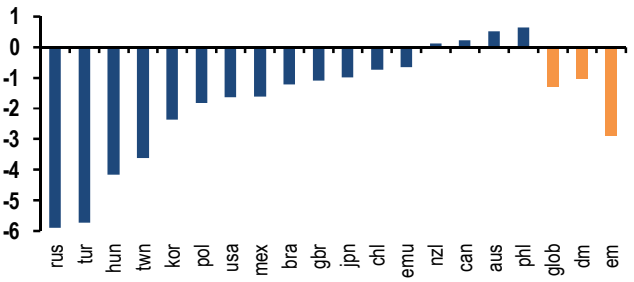
Figure 15: Productvity growth
%oya; estimated as real GDP growth less employment growth



Source: J.P. Morgan; Excludes China and India

Of the 10 largest declines in productivity growth from the prior to the current expansion, eight are in the EM. The largest are Russia, Turkey, Hungary, Taiwan, Korea, and Poland (Figure 16). Within the DM, the US has seen the largest decline, with the growth in real GDP relative to employment dropping 1.6%-pt annualized. The UK and Japan have seen 1%-pt declines, while the Euro area slide is 0.7%-point.

Figure 16: Change in productvity growth by country
%pt, ar; Chg in avg pace 2003-07 to 2011-15



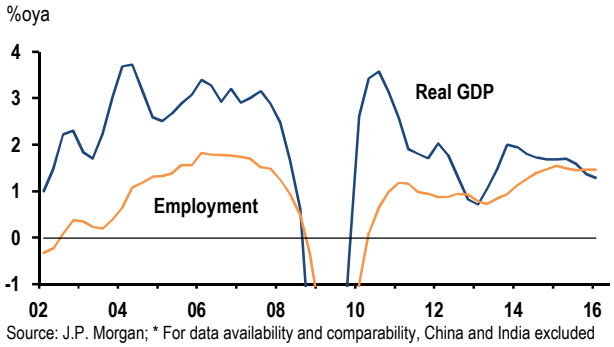
Source: J.P. Morgan

The sharp slowing in global productivity is seen most easily in the contrast between accelerating global employment—driven primarily by the DM—and what has been merely trend-like GDP growth (Figure 17). Put differently, businesses have required accelerating labor inputs for continued modest output gains.

As we have stressed in our outlook for some time, the slide in labor productivity growth has led a slowdown in what we have called "delivered" potential growth—the supply side of the economy inclusive of both cyclical and structural forces. (See "Global productivity slowdown lowers sights on poten-

tial GDP," Nov 25, 2015). The result has been an unusually quick tightening in labor markets despite what we believe to be trend-like growth—perhaps suggesting that potential growth is slower than believed.

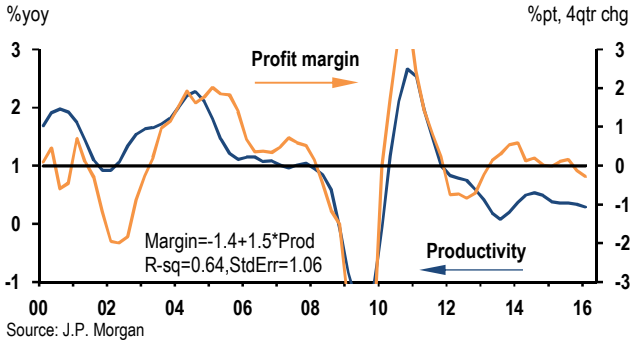
Figure 17: Global* real GDP and employment



Source: J.P. Morgan; * For data availability and comparability, China and India excluded

Regardless, absent a recovery in productivity growth, the risk is that long-run potential growth begins to converge to this much more downbeat measure of "delivered" potential. While weaker productivity growth, if not reversed, will eventually damp potential growth and reduce growth in corporate revenues, it will also compress profit margins.

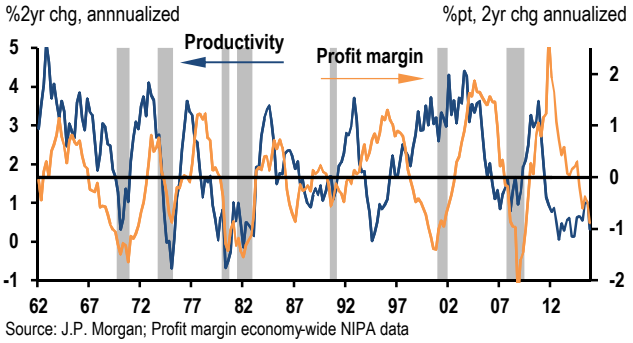
Figure 18: Productivity and profit margin, Developed markets



Source: J.P. Morgan

The definitional link between growth in productivity and profitability described in the previous section can be clearly seen empirically as well (Figure 18). For the DM as a whole, productivity growth looks to have averaged just 0.3% annualized from 2011 to 2015. Not surprisingly, this is much weaker than the boomy rebound at the start of the expansion. However, more concerning is that productivity growth is down over 1%-pt from the 1.4% annualized average pace in the 2000s expansion. In light of this productivity growth slowdown, the weakness in corporate profitability is understandable. Moreover, the productivity soft patch indicates that further deterioration in DM profitability may be in the offing.

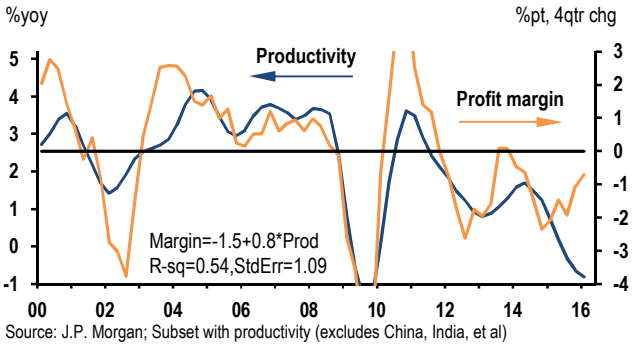
Figure 19: US productivity and profit margin



Source: J.P. Morgan; Profit margin economy-wide NIPA data

The deterioration in DM profitability has now become a central threat to the near-term outlook. Indeed, for the US, the turn down in the profit cycle weighs heavily in our estimate of rising recession risks (see "US recession risk tracker rises on profits, sentiment, claims," May 27, 2016) The deeper historical experience of the US better highlights the linkage between productivity and corporate profitability (Figure 19). The latest downshift in US productivity suggests the disappointing profit outturns of late likely will not stabilize absent a pickup in productivity growth to an above-1% annualized pace, all else equal. While some acceleration is embedded in our forecast, recent experience suggests the risks are skewed to the downside.

Figure 20: Productivity and profit margin, Emerging markets*



Source: J.P. Morgan; Subset with productivity (excludes China, India, et al)

As noted above, the deceleration in global productivity has been most extreme in the EM—having fallen from the rapid 3-4% annualized pace in the 2000s expansion to a 1.2% outright contraction (excluding China and India due to data limitations). This may be surprising given how much more EM employment growth has slowed in recent years compared to the DM. However, it simply underscores that EM GDP growth has downshifted even more. The productivity slowdown in the EM has translated directly into a steep decline in the EM corporate profit margin from a 13.5% peak in 2007 to 9.5% as of 4Q15—an outcome that has subtracted roughly 30% (or 4% annually) from overall profit growth (Figure 20).

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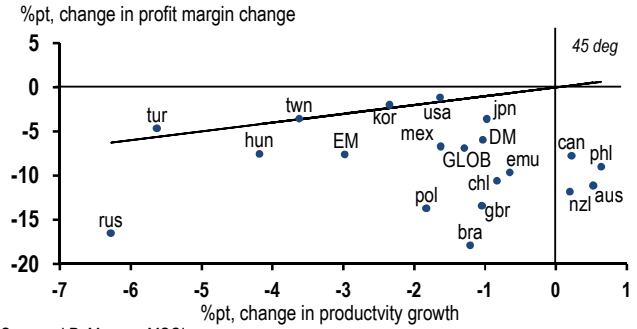
The continued deceleration in EM productivity suggests that the recent slowing in the decline in the EM profit margin may be short-lived, all else equal.

By country, the dynamics of productivity and profitability are noisier, but the general picture of slowing productivity growth and a shift toward falling profitability remains the same. The slowdown in profitability—as gauged by the change in the change of the profit margin—is more significant than the productivity growth slowdown would explain on its own. The slowing in productivity growth aligns well with the decline in the change in the profit margin for the US, Korea, Taiwan, Hungary, and Turkey. However, for all other countries, the deterioration in profitability has been much more significant (Figure 21). The result underscores the degree to which productivity is not the only factor weighing on global profitability, even if it is a significant contributor.

Figure 21: Productivity and profitability slowdown, 2003-7 to 2011-15



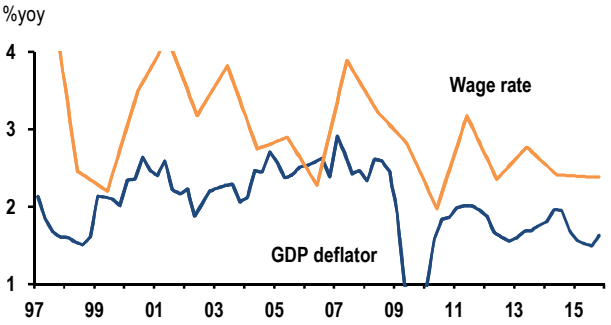
Source: J.P. Morgan, MSCI

Relative pricing power declining

Alongside the slowing in productivity growth, the other fundamental force weighing on corporate profits is a shift in the pricing power of producers relative to labor. This is the per-unit price differential of the margin, P/W from the above formulation (i.e., in terms of the change in the margin, it is the gap between output price inflation and wage inflation ($\pi - \omega$)).

To examine corporate relative pricing power, we use the GDP deflator for output prices and the Conference Board's International Labor Costs data for wages. Consumer prices could be used but are influenced by commodity prices that do not necessarily reflect output prices for cross-regional comparisons. Only those countries with reported data on productivity, GDP deflators, and manufacturing wages are included in the analysis. This includes the US, EMU, Japan, the UK, Canada, Australia, New Zealand, Brazil, Mexico, Korea, Taiwan, Philippines, Hungary, Poland, and Turkey.

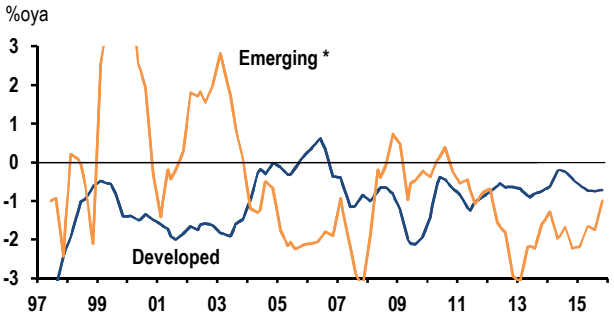
Figure 22: Wage rate in manufactuing and output prices, Global*



Source: J.P. Morgan, Conference Board; * Subset of countries with comparable data

For this subset of the world as a whole, wage inflation in global manufacturing has run at a roughly 2.5% annualized since 2011, about 0.5%-pt slower than the pace set during the 2003-07 expansion. Price inflation, as gauged by the GDP price deflator, has also drifted lower since 2011 and has averaged just 1.8% annualized this expansion compared to a 2.5% annual gain in 2003-07 (Figure 22). The gradual widening wedge between wage growth and output price inflation has been a steady drag on corporate profitability during this expansion.

Figure 23: Output price-wage differential



Source: J.P. Morgan, Conference Board (manufacturing wages); * Excludes China et al

Beneath the global surface, EM and DM trends look different (Figure 23). DM corporates have seen wage and output price inflation align during this expansion, leaving it as a roughly neutral driver of profitability. At the same time, the wedge between wages and output prices in EM widened materially after 2012 and has been an important factor explaining the region's deterioration in profitability.

Wage dynamics have been broadly stable across both regions (Figure 24). The global financial crisis hit labor markets hard, but wage inflation has been relatively resilient, with wage growth in the EM rebounding more strongly. Indeed, if the strong slowdown in Korean wage growth were excluded, EM wage inflation would be stronger (for our subset).

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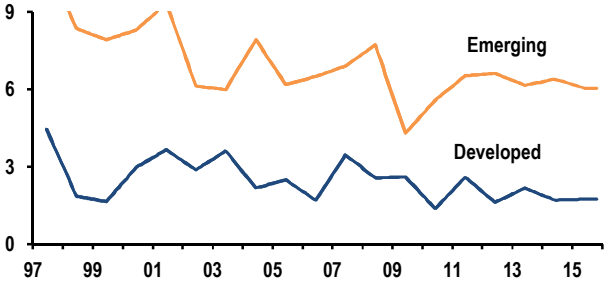
Figure 24: Wage rate in manufacturing

%yoy; both scales

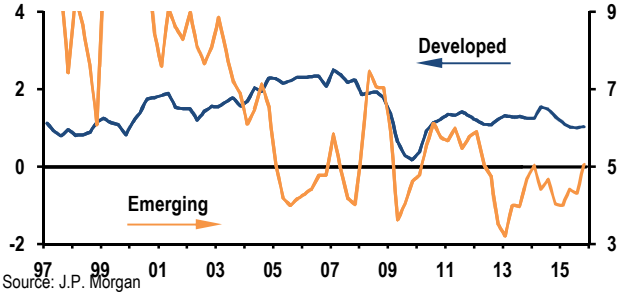


Source: J.P. Morgan, Conference Board

It is a little surprising that DM wages did not decelerate more significantly given the sharp rise in unemployment rates. The US and UK did indeed experience a sharp downshift, but manufacturing wage growth has held up better in the Euro area and Japan.

Figure 25: Pricing power, GDP deflator

%oya

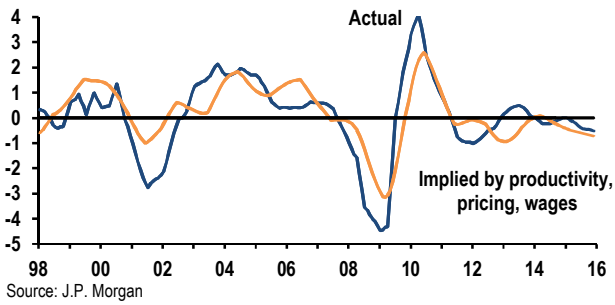


Source: J.P. Morgan

GDP inflation paths have differed more significantly across regions (Figure 25). DM GDP inflation has held relatively steady, albeit at a depressed 1% pace, since 2010. By contrast, for the EM subset, GDP inflation has fallen from a 5.6% annualized pace in 2010 and 2011 to 4.4% since 2011.

Figure 26: Change in profit margin, global

%pt, change over 4 quarters

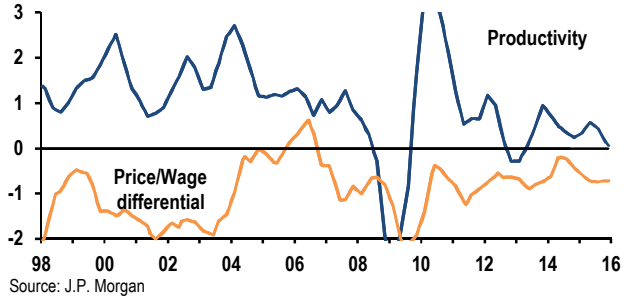


Source: J.P. Morgan

The analysis above suggests that the slide in margins owes to a combination of slowing productivity growth and a decline in relative pricing power. That movements in these two align remarkably well with changes in global corporate profit margins (Figure 26) provides considerable confidence that the decomposition of profitability into productivity, pricing, and wages is accurate even if it ignores the other moving parts from interest costs and taxes.

Figure 27: Contribution to change in profit margin, Developed

%pt contrib to change over 4 quarters



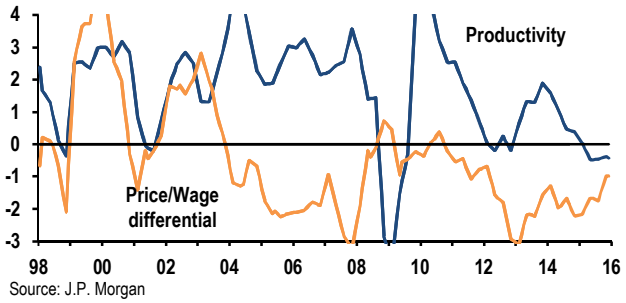
Source: J.P. Morgan

However, the driving forces vary by region. Within the DM, relative pricing generally is a persistent drag on profitability, offset by productivity growth. The slide in the pace of change in DM corporate profit margins this expansion owes entirely to the slide in productivity growth (Figure 27).

In contrast to the DM, the EM has seen a marked slowing in both productivity growth and relative price inflation (Figure 28). In the last expansion, very strong productivity growth and a modest drag from relative pricing power (on net from 2002-07) boosted EM corporate profitability. The initial stage of the current expansion saw a strong bounce in productivity growth complemented by an equally impressive jump in relative pricing as the largely commodity price driven bounce in pricing power more than offset the strong bounce in wage growth. However, this has deteriorated on both fronts since 2011.

Figure 28: Contribution to change in profit margin, Emerging

%pt contrib to change over 4 quarters



Source: J.P. Morgan

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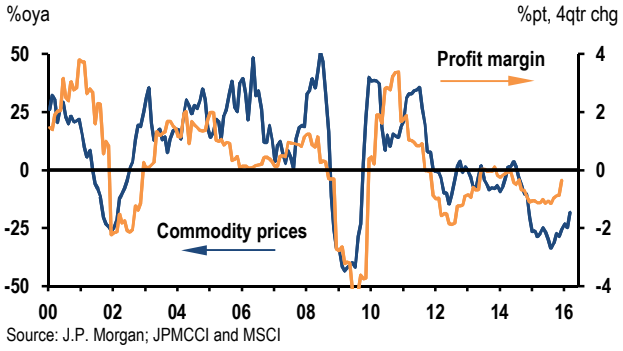
The linkage between commodity prices and EM corporate profitability cannot be overstated. Changes in commodity prices and changes in the EM profit margin move very closely together (Figure 29). Given the fact that the EM is a net commodity exporter, this should not be surprising and is consistent with the message sent by the alignment with moves in the EM GDP deflator. It also underscores that, with commodity prices stabilizing, EM profit margins will benefit considerably from this significant headwind subsiding.

Figure 29: Commodity prices and EM profit margin

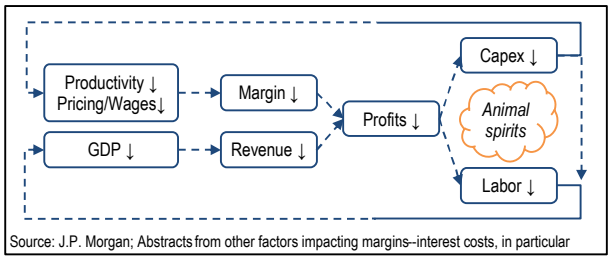


Source: J.P. Morgan; JPMCCI and MSCI

Profit cycle: demand vs. supply shocks

The profit cycle is intimately related to the business cycle (Figure 30). For *aggregate demand shocks* that depress nominal GDP growth, the resulting drop in revenue growth amplifies the initial downturn, damping spending on both capex and labor. Alternatively, declining productivity growth or a rise in the bargaining power of labor relative output pricing power can act as an exogenous headwind to profitability. The immediate impact of these *relative income shocks* to profitability may be ambiguous as it reflects a rotation in income from firms to households. But the fall in profits should, all else equal, generate a weakening in business demand that can feed back onto weaker GDP growth.

Figure 30: The down-cycle of profits and business



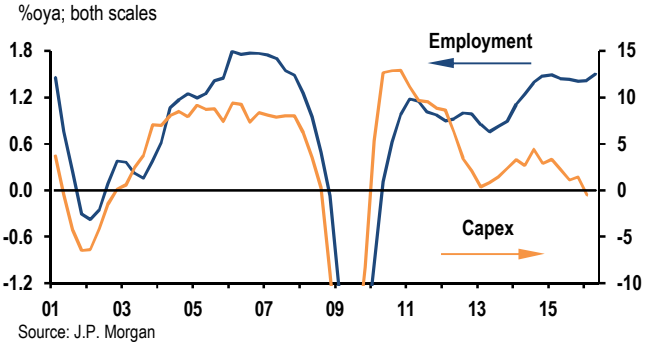
Source: J.P. Morgan; Abstracts from other factors impacting margins--interest costs, in particular

It is not always easy to identify the source of macroeconomic shocks as they all tend to reduce GDP growth as well as corporate profitability. In the face of negative aggregate demand shocks, counter cyclical demand management policies can be implemented. By helping to restore the economy to full employment rapidly, the damage is mitigated. But for relative income shocks, the challenge is more difficult and has short- and long-run ramifications. Moreover, providing aggressive policy supports in the face of income shocks promotes imbalances in the economy in the form of financial excesses and inflation.

The current episode likely reflects both demand and income shocks. There are clearly elements of demand shortfalls in the European sovereign credit crisis, the collapse in commodity prices, and the sharp reversal in EM capital flows. This is not to suggest that there are not fundamental sources to these problems but rather that the unwinding of these forces has been amplified by a demand-side "coordination failure" whereby weak demand begets further weakness in demand. Demand-side policy support is warranted in each of these cases. However, the sharp slide in productivity is a much more serious challenge that, while initially assumed to be transitory, is now taking on a more structural feel.

The willingness of businesses to view part of the profit growth slowdown in the current expansion as temporary can be seen by the unusual divergence in spending on capital and labor. In the initial stage of the expansion, both employment growth and capital spending growth rebounded quickly. However, whereas employment growth sustained its solid rebound pace and has even accelerated over the past two years, business equipment spending has decelerated to a more muted pace and is showing signs of outright contraction over the past year (Figure 31).

Figure 31: Employment and equipment spending, Global

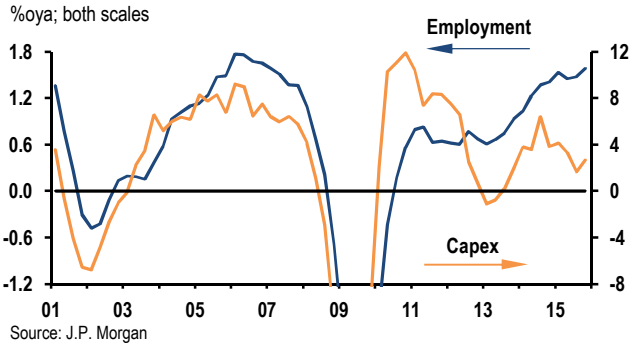


Source: J.P. Morgan

The unique divergence between employment and capex can be seen in both the DM and EM. However, the gap is particularly striking in the DM, where employment growth has been accelerating strongly even as capital spending has been much

more muted (Figure 32). By contrast, business spending in the EM on both labor and capital has decelerated—even if the downshift in capex growth has been more significant (Figure 33).

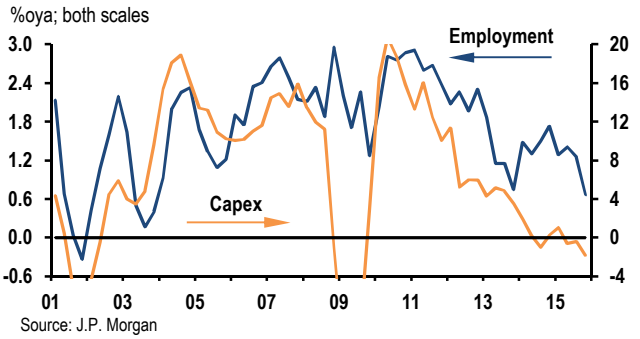
Figure 32: Employment and equipment spending, Developed



Source: J.P. Morgan

Given the uniqueness of the current cycle, it is not surprising that the relationship to the profit cycle has also behaved unusually. Both business equipment spending and employment have tracked profits closely around the turning points over the two recent business cycle downturns. The sharp slide in profits was accompanied by equally sharp downturns in both capex and hiring. Similarly, as the recoveries began to take shape and profits bounced strongly, business spending recovered across both capital and labor (Figures 34 and 35).

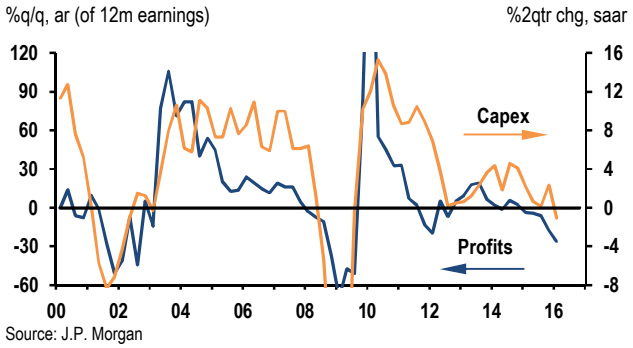
Figure 33: Employment and equipment spending, Emerging



Source: J.P. Morgan

However, as the expansion matured and the slowing productivity growth showed little sign of recovery, businesses reacted to the resulting implied shortfall in potential growth by reducing capital spending. This contrasts with the prior expansion. Growth in capital spending and hiring both ran above profit growth in the 2000s. But while the current expansion has seen unusually weak profit growth, the surprise is that capital spending has failed to outperform like it did in the last expansion. Rather, growth in global capital spending has moved almost in lockstep with profit growth. The positive wedge that existed in the 2000s' expansion has faded.

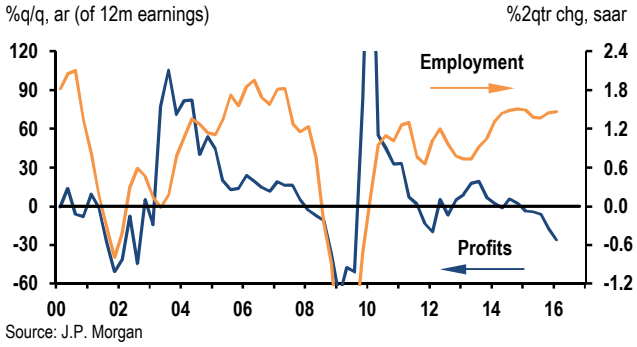
Figure 34: Profits and equipment spending, Global



Source: J.P. Morgan

By contrast, the outperformance in employment growth may appear in conflict with the weakness in profit growth, but this trend is similar to the relative performance seen in the 2000s' expansion (Figure 35). Profit growth has been unusually weak and is perhaps somewhat at odds with what has been a fairly robust global labor market. But the magnitudes are not so different from the 2000s expansion.

Figure 35: Profits and employment, Global



Source: J.P. Morgan

The forecast looks for a modest improvement in productivity growth and pricing power (aided in part by rising commodity prices) to stabilize profitability, while a pickup in goods spending lifts revenues. The resulting improvement in profit growth should provide incentive for businesses to increase capital spending and sustain the solid pace of hiring. However, the risk is that this latest downturn in the profit cycle is a harbinger of the next recession.

The profit cycle and recession

Businesses have been hoping for a recovery in demand growth that boosts pricing power. In the process, businesses have maintained the pace of hiring while cutting costs by curtailing capital spending. However, the weakness in

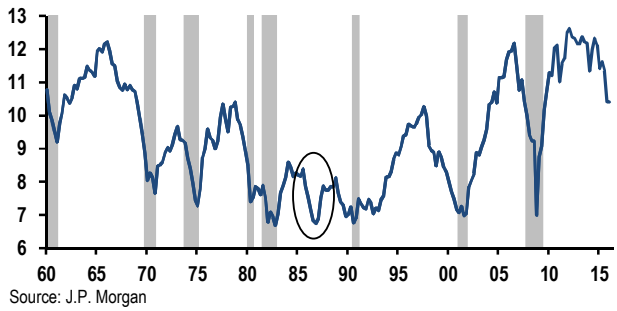
productivity growth has meant firms have had to rely even more heavily on labor while lackluster demand growth has damped pricing power. The key question is whether the latest downshift in profit growth marks the beginning of a recession dynamic or simply reflects a temporary soft patch amplified by the commodity price plunge that has hit related earnings.

One metric for gauging the stage of the business cycle is the level of the profit margin. In this regard, the timing does not look encouraging. The US experience is instructive in this regard. The rolling over of the profit margin has led every US post-World War II recession by one to three years (Figure 36). Indeed, it is partly for this reason that our medium-term recession-probability models show the odds of a recession with the next three years running near 90% (See "US: It ain't a pretty picture for profits," February 11, 2016).

There are three important mitigating factors to the latest slide in the US profit margin. First, as noted above, margins are still elevated, so earnings are still heavily geared for any potential rise in revenues. Second, the "false-positive" in the US profit cycle from the mid 1980s (when margins fell sharply but then recovered) owed in part to an energy-led decline in the face of a sharp drop in oil prices. This dynamic has some similarities to the current episode, although the USD also declined sharply during that period—a powerful support to growth and profits that is unlikely to be repeated in the current environment. Third, the rolling over in the profit margin in the past has been observationally equivalent with (indeed partly driven by) a Fed that was pushing policy into restrictive territory. While Fed normalization is coming, the path back to neutral should be long and gradual.

Figure 36: US corporate profit margin

%, proft share of GDP

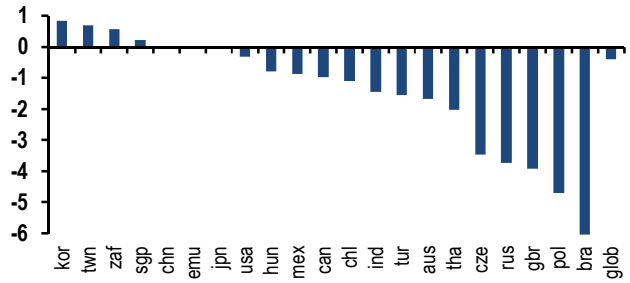


Source: J.P. Morgan

At the same time, several factors make the 1980s' experience less appropriate by comparison to now. First, the Plaza Accord led to a significant depreciation of the USD. Second, unit labor costs did not show much acceleration despite a significant fall in the unemployment rate, perhaps owing to a decline in the so-called NAIRU. Third, growth (and thus profits) outside the US was cushioned to some extent by significant policy support. All of these conditions are less likley in the current environment. Even with regard to policy support, while monetary conditions are very easy, the amount of potential added support is limited.

Figure 37: Change in corporate profit margin

%pt; Chg Dec 2013 to Mar 2016

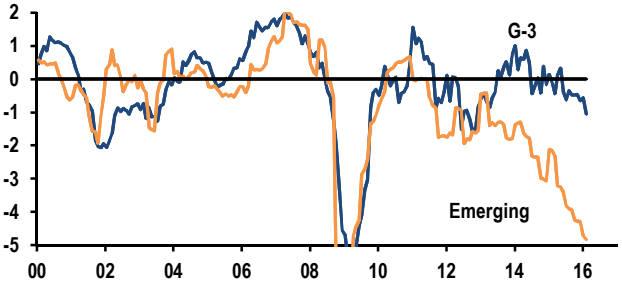


Source: J.P. Morgan, MSCI; margins defined as eanrings as % of revenue

If the US experince is any guide, recession risks are elevated broadly. Globally, profit margins peaked near the end of 2013, and declines have occurred across nearly all countries with the exception of Taiwan, Korea, and South Africa (Figure 37). Margins have been stable in the Euro area, Japan, and China. By comparison to the huge declines in some countries, the margin compression in the US appears relatively modest. Not surprisingly, Brazil—already in its worst recession since the the Great Depression—has seen the most signicicant margin compression. A similar message is seen for Russia. But for those ecomomies still in expansion, the fall in margin is the most concerning for Poland, the UK, the Czech Republic, Thailand, Australia, Turkey, and India, in order of largest margin declines.

Figure 38 - Business confidence

Std dev from mean



Source: J.P. Morgan

The latest decline in business sentiment is underscoring the worrying signs from profit margins. Although borrowing costs are low, business behavior is driven by their confidence

in the demand backdrop. As with the profit margin, business sentiment has declined markedly over the past six months, alongside the slide in profit growth and the weakening in the global outlook (Figure 38). Notably, the deterioration has come entirely from the US, Euro area, and Japan (G-3), while the already depressed levels of EM business sentiment appear to have stabilized of late. Without a recovery in business confidence, it is hard to imagine a turn up in capital spending, and it is increasingly likely that the next leg down will be from a pullback in G-3 hiring.

With monetary policy unlikely to be the limiting factor on the life of the expansion, it remains an open and central question as to whether the deterioration in profits will be the catalyst for the next recession. Assuming productivity growth improves along with our outlook, and commodity prices at least maintain their recent rebound, growth in corporate profits and profitability could firm. But, while commodity prices are indeed already rising, the needed rise in productivity growth continues to be elusive.

Should productivity growth strengthen, the corporate sector will be able to produce at a lower cost. The increase in margins will lift profits, which will in turn encourage greater capital spending—thereby further improving productivity growth. But until this happens, businesses will like remain cautious. And the concern is that labor markets in the DM begin to deteriorate. The most recent US payrolls report for May sends a sharp warning that this more adverse dynamic could be underway.

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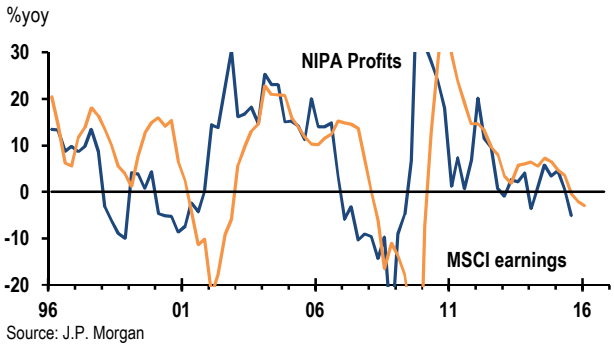
Appendix 1: Measuring profits

The raw data we use are the price per share index (P), the price-to-earnings ratio (P/E), earnings per share (EPS), and revenues per share (RPS). Corporate profits are defined as earnings from the ratio of the price index to the P/E ratio (E=P/(P/E)). Corporate profitability is defined as the ratio of earnings per share to revenue per share (EPS/RPS). Global and regional aggregates are GDP-weighted averages. For profits, aggregates are generated from growth rates.

National accounts data on corporate profits are limited. For the purposes of comparison and aggregating across countries and regions, we utilize the MSCI indexes and their supporting financial detail. Specifically, for each of the 30 countries tracked in the J.P. Morgan universe, we utilize data from each country's major equity market covering 1) the overall price index (P), 2) earnings per share (E), and 3) sales per share (S). All aggregates are computed as weighted averages, where the weights are nominal GDP in USD terms. The corporate profit measure used in this report is earnings. This generally aligns well with the profits data reported from the US BEA on a national income accounts basis (Figure 39). Profitability is given by the profit margin, defined as the ratio of earnings per share to sales per share.

Figure 39: US corporate profits

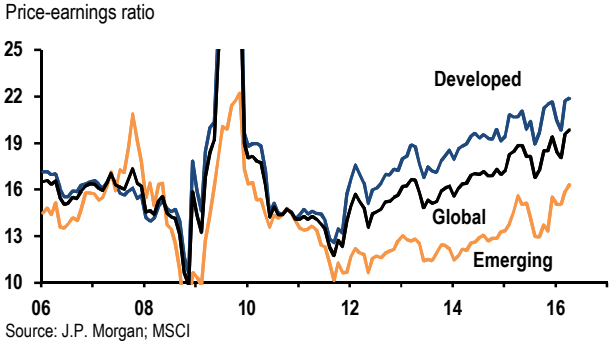


Source: J.P. Morgan

Appendix 2: Equity prices and multiples

Despite the over-13% contraction in global corporate profits in the year through April 2016, equity prices have help up relatively well. In general, global equity price have aligned remarkably well with moves in corporate profits (Figure 40). However, deviations do occur. Indeed, since 2012, the global corporate price-earnings ratio has trended higher. This should come as little surprise given the combination of low interest rates and a period of fading downside tail risks—while these risks are by no means absent and continue to ebb and flow, the fear of a disruptive breakup of the Euro area has subsided considerably since 2012.

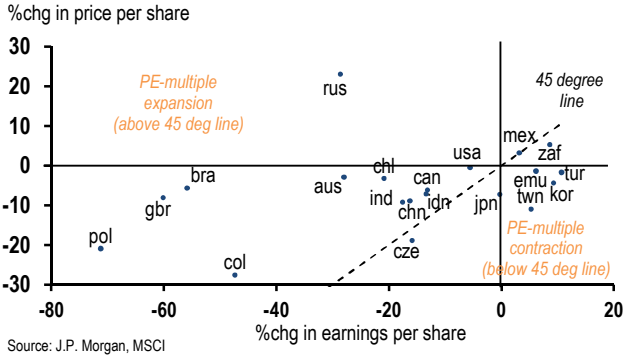
Figure 40: Multiples on corporate equities



Source: J.P. Morgan; MSCI

Price-earnings multiples have moved up uniformly across the developed and emerging markets as these tail risks have faded. However, the rise has been more significant for the DM. As of 1Q16, the DM aggregate price level stood at 21.9 times earnings, 35% higher than its 16.2 average in 2006-07. Presumably, multiples will move lower in the DM when rates begin to rise. By contrast, the 16.3 aggregate EM multiple as of 1Q16 is roughly in line with its 2006-07 average.

Figure 41: Corporate performance, Nov 2014 through Apr 2016



Source: J.P. Morgan, MSCI

Although the recent downturn in profits has been broadly based, the rise in multiples has been more varied. In general, the multiples expansion since the peak of global earnings in November 2014 has been the largest for those countries whose listed corporates have seen the largest hits to profits (Figure 41). This includes the UK, Brazil, Russia, Poland, Colombia, and Australia. Indeed, for Russia, where earnings per share have plunged roughly 30% since November 2014, equity prices are up 23% over the same timeframe. The belief is clearly that the earnings hit is temporary. Still, the distribution of outturns on multiples does provide a useful gauge for which markets require the most significant earnings recovery to justify current pricing.

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