

Deutsche Bank
Research
Global
Strategy
Asset Allocation
The Arithmetic of EM and Global
Growth: The \$35 Trillion Myth

|| The recent slowing in China and EM more broadly has raised concerns about the level and sustainability of global growth;

|| But EM growth has been slowing for the last 5 years, while DM growth picked up and global growth over the last few years has been perfectly steady at near trend rates, measured using conventional PPP exchange rate weights;

|| Conventional PPP exchange rate based measures massively overstate the size of EM in the global economy: by \$35 trillion or 2 US GDPs;

|| Global growth has been rising over the last few years when measured using market exchange rate based weights;

|| The arithmetic of global growth: DM (60%) is still bigger than EM (40%) and 1pp of additional DM growth offsets 1.5pp of slower EM growth;

|| We expect a continued normalization of EM growth lower though we are almost there; DM growth to pick up; and global growth (i) at conventional PPP weights to be near trend rates while (ii) at market rate weights to accelerate above trend rates in 2016

The recent slowing in China has raised concerns about global growth. It is widely believed that if China, and the emerging markets (EM) more broadly, which represent the faster growing part of the global economy, are slowing, it means a slowing in, if not the end of, global growth. The decline in

commodity prices is often seen as evidence of this slowing in global growth and a driver of slow multinational corporate earnings growth.

But growth in EM has been slowing for the last 5 years while global growth has been perfectly steady, measured using conventional PPP exchange rate weights

EM real GDP growth, as measured by the IMF at purchasing power parity (PPP) exchange rates, fell from a peak of 7.4% in 2010 down to 4.6% in 2014. Developed markets (DM) growth on the other hand rose after the European financial crisis ended and was up from 1.2% in 2012 to 1.8% in 2014. The pickup in DM growth simply offset the slowing in EM growth and global growth was perfectly steady during 2012-2014 at slightly below its long run trend rate of 3.5%, its average over the last 40 years.

Conventional PPP exchange rate based measures massively overstate the size of EM in the global economy: by \$35 trillion or 2 US GDPs

|| PPP vs market exchange rates for EM. The IMF's headline measure of global growth uses PPP exchange rates to aggregate country GDPs into a global composite. The approach seeks to avoid changes in measured

global real GDP simply because of changes in the value of the dollar which has historically exhibited big (40-50%) long cycles (6-7 years). In our view, the approach makes sense for DM where PPP corresponds to the average

Weights using PPP exchange rates

Global growth (PPP) steady last 3 years

World Real GDP Growth (%)

-1

0

1

2

3

4

5

6

Avg: 3.5%

Steady

global

growth

-1

0

1

2

3

4

5

6

Weights using PPP exchange rates

Source: Deutsche Bank

Global growth with market weights rising

0.0

1.0

2.0

3.0

4.0

5.0

World Real GDP Growth (%)

Avg: 2.9%

Rising

global

growth

0.0

1.0

2.0

3.0

4.0

5.0

Weights using market exchange rates

Source: IMF, Deutsche Bank

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Date

11 September 2015

Binky Chadha

Chief Strategist

Rajat Dua

Strategist

EM growth falling, DM growth rising

-3

-1

1

3

5

7

9

Real GDP growth (yoy,%)

(IMF data and forecast)

EM

DM

-3

-1

1

3

5

7

9

Parag Thatte

Strategist

Jan-80

Jan-84

Jan-88

Jan-92

Jan-96

Jan-00

Jan-04

Jan-08

Jan-12

Jan-16

Jan-75

Jan-79
Jan-83
Jan-87
Jan-91
Jan-95
Jan-99
Jan-03
Jan-07
Jan-11
Jan-15
Jan-75
Jan-79
Jan-83
Jan-87
Jan-91
Jan-95
Jan-99
Jan-03
Jan-07
Jan-11
Jan-15

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real value of exchange rates over long periods, i.e., deviations are long lived but cyclical and mean reverting. But EM FX by contrast is massively structurally (always) cheap on a PPP basis, given their earlier stage of economic development. EM real exchange rates will likely converge to PPP only with the convergence of per capita incomes, i.e., in the very very long run. So the cheapness of EM FX on a PPP basis is not cyclical but structural (How Much Will Fast Growing EM Currencies Appreciate, Sep 2005).

|| The \$35 trillion myth. Using PPP exchange rates raises the size and weight of EM in the global economy massively. To get some idea of how much, consider some of the bigger emerging markets exchange rates versus their PPP levels. For China, a market CNY of 6.4 versus the dollar compares with a PPP rate of 3.6. So measuring Chinese GDP at PPP exchange rates raises it 1.8 times. For India, a market INR of 66.5 compares with a PPP rate of 18, which is 3.7 times higher. For EM as a whole, nominal GDP of \$30 trillion at current market exchange rates compares with \$65 trillion at PPP rates, i.e., a more than doubling. This is \$35 trillion of EM and global GDP which does not and has never existed. To put it in perspective another way, the size of the overstatement is about two US GDPs.

Global growth has been rising when measured using market rate based weights

Using rolling market exchange rate based weights global GDP growth has historically been lower than the IMF's headline measure based on PPP rates, averaging 2.9% versus 3.5% at PPP weights. Global growth bottomed with the European financial crisis in 2012 at 2.4% then rose to 2.7% by 2014, still somewhat below trend or average rates.

The arithmetic of EM and global growth:

|| DM still bigger than EM. At PPP rates, EM accounts for 57% and DM 43% of global GDP. This differential is the source of current perceptions that EM is more important for the global economy than DM. At market exchange rate weights on the other hand, EM accounts for a smaller 40% and DM for 60%. Some other arithmetic facts of note: the US and Eurozone together (24%+16%) equal the size of all of EM (40%) in the global economy, while the US is 1.5 times the size of China (24%:16%);

|| 1pp of DM growth equals 1.5pp of EM growth. The weights at market exchange rates (60:40) imply that 1pp of additional DM growth offsets a 1.5pp slowing in EM. The arithmetic of the US vs China (24:16) is similar in that 1pp of additional US growth offsets 1.5pp of slowing in China.

Where is global growth going? What about commodities? Earnings?

|| Continued normalization of EM growth but almost there, while DM growth picks up. We have long argued that the large multi-year outperformance of EM during 2001-2010 represented the confluence of a variety of circumstantial factors. That each of the factors had gone into reverse, but had not run its course (When Will EM Stop Derating, Sep 2013). EM growth in 2015 is expected to have reverted further back into its historical

range though still above the mid-point of the range and we expect it to be nearing the bottom. EM growth should be supported by a pickup in DM growth which DB economists and the consensus see continuing to pick up in 2016 (China's impact on the global economy and the Fed, Sep 3 2015).

|| Expect global growth to hold steady at near trend rates, measured at conventional PPP weights and accelerate above trend at market weights in 2016. The EM growth advantage will continue to erode further and fall to the middle of the historical pre-boom range. With the EM-DM growth differential back to modest levels, we expect the EM share of global GDP to rise only modestly further whether measured in PPP weights or market weights.

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|| The commodity price declines underway since 2011 have been primarily a reflection of the rising dollar and a correction of overvaluation not slower global growth (Trading The Commodity Underperformance Cycle, Apr 2013). We expect the dollar to remain the primary driver of the complex and while we expect the dollar pause to continue near-term the dollar up cycle has further to run medium term. Oil is a little above fair value currently while gold and especially industrial metals remain expensive and should remain under pressure even if the dollar remains flat.

|| Strong trend-like underlying earnings growth is consistent with trend like global GDP growth; low headline growth reflects impact of past dollar and oil price moves. Attention has continued to focus on the weak headline earnings growth in the US. However, adjusted for the impacts of oil price declines and the higher dollar, underlying earnings growth in Q3 remained robust across all of DM: US (10.6%); Europe (7.4%) and Japan (29.4%). Unless the declines in oil prices and appreciation in the dollar continue at the extreme pace of the last year, the drags will subside as a matter of arithmetic and earnings growth will converge to the 8-10% underlying rate prevailing for the last 2 years.

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Figure 1: EM growth has been slowing for 5 years, normalizing back to its historical range

1
2
3
4
5
6
7
8
9
2011 forecast
2012 forecast
2013 forecast
2014 forecast
Consensus forecast
2015 forecast

EM: Real GDP growth rate (%)
(IMF data and forecasts)
2015

1
2
3
4
5
6
7
8
9

Source: IMF, Haver, Bloomberg Finance LP, Deutsche Bank

Figure 2: Even as EM growth continued slowing, DM growth has been rising since the European financial crisis ended in 2012

-3
-1
1
3
5
7
9
EM
DM

Real GDP growth (yoy,%)
(IMF data and forecast)
2015

-3
-1
1
3
5

7

9

Weights using PPP exchange rates
Source: IMF, Haver, Deutsche Bank

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Jan-75

Jan-78

Jan-81

Jan-84

Jan-87

Jan-90

Jan-93

Jan-96

Jan-99

Jan-02

Jan-05

Jan-08

Jan-11

Jan-14

Jan-17

1976

1979

1982

1985

1988

1991

1994

1997

2000

2003

2006

2009

2012

2015

2018

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Figure 3: Global GDP growth measured at conventional PPP weights has been steady at near trend rates for the last 3 years. EM slowing was perfectly offset

by the DM pickup

-1

0

1

2

3

4

5

6

World Real GDP growth rate (IMF data and forecast)

2015

Average = 3.5%

Steady

global

growth

-1

0

1

2

3

4

5

6

Weights using PPP exchange rates

Source: IMF, Haver, Deutsche Bank

Figure 4: The conventional method of aggregating global GDP employs PPP exchange rates which tend to be systematically higher than market rates for EM but in-line for DM

0.5

1.0

1.5

2.0

2.5

3.0

3.5

PPP to market exchange rate ratio

EM

DM

0.5

1.0

1.5

2.0

2.5

3.0

3.5

Source: IMF, Haver, Deutsche Bank

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Jan-80

Jan-82

Jan-84

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Jan-90

Jan-92

Jan-94

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Jan-06

Jan-08

Jan-10

Jan-12

Jan-14

Jan-16

Jan-75

Jan-78

Jan-81

Jan-84

Jan-87

Jan-90

Jan-93

Jan-96

Jan-99

Jan-02

Jan-05

Jan-08

Jan-11

Jan-14

Jan-17

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Figure 5: For DM the PPP methodology smoothens out cyclical variations in exchange rates but has minimal impact on the trend in the level of DM GDP

10
15
20
25
30
35
40
45
50
5
DM GDP (\$tn)
Using PPP Exchange Weights
Using Mkt Exch Rate Weights

10
15
20
25
30
35
40
45
50
5

Source: IMF, Haver, Deutsche Bank

Figure 6: For EM, the PPP methodology massively overstates the size of GDP relative to market exchange rates, more than doubling the current size

10
15
20
25
30
35
40
45
50
55
60
65
70
0
5
EM GDP (\$tn)
Using PPP Exchange Weights
Using Mkt Exch Rate Weights
\$30tn
\$65tn
\$35 tn

10
15
20
25
30
35
40
45
50
55
60
65
70
0
5

Source: IMF, Haver, Deutsche Bank

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Jan-14
Jan-16
Jan-18
Jan-20
Jan-80
Jan-82
Jan-84
Jan-86
Jan-88
Jan-90
Jan-92
Jan-94
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Jan-98
Jan-00
Jan-02

Jan-04
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Jan-12
Jan-14
Jan-16
Jan-18

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Figure 7: At PPP weights EM is already almost 1.5x larger than DM

35
40
45
50
55
60
65

Share of EM vs DM in World GDP (PPP weights)

EM
DM
35
40
45
50
55
60
65

Source: IMF, Haver, Deutsche Bank

Figure 8: At market exchange rate weights EM has seen its share in global GDP rise but is still much smaller than DM

10
20
30
40
50
60
70
80
90

Share of EM vs DM in World GDP (mkt exch rate wts)

EM
DM
10
20
30
40
50
60
70
80
90

Source: IMF, Haver, Deutsche Bank

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Jan-12
Jan-14
Jan-16
Jan-80
Jan-82
Jan-84
Jan-86
Jan-88
Jan-90
Jan-92
Jan-94
Jan-96
Jan-98
Jan-00
Jan-02
Jan-04
Jan-06
Jan-08
Jan-10
Jan-12
Jan-14
Jan-16

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Figure 9: At market exchange rate weights global GDP growth has been rising over the last 3 years

0.0
0.5
1.0
1.5
2.0
2.5
3.0
3.5
4.0
4.5
5.0

World Real GDP growth rate (IMF data and forecast)

2015

Average = 2.9%

0.0
0.5
1.0
1.5
2.0
2.5
3.0
3.5
4.0
4.5
5.0

Weights using market exchange rates

Source: IMF, Haver, Deutsche Bank

Figure 10: At market weights DM is still much larger than EM with just the US and Eurozone together equal to all of EM

Shares in Global GDP

Nominal GDP (\$tn)

Market

PPP

Region

DM

US

Eurozone

Japan

EM

Asia ex-Japan

China

India

Latam

Brazil

EMEA

Russia

weights

43%
16%
12%
4%
57%
31%
17%
7%
6%
3%
7%
3%

Source: IMF, Haver, Deutsche Bank

exch rate

weights

60%

24%

16%

6%

40%

23%

15%

3%

5%

3%

4%

2%

PPP

based

48.1

18.1

18.0

4.8

64.5

35.4

19.0

8.0

6.3

3.3

7.3

3.5

Market

exch rate

weights

44.9

18.1

11.7

4.2

29.6

17.4

11.2

2.3
3.6
1.9
3.1
1.2
PPP
based
NA
0.7
104.0
NA
3.6
17.9
NA
1.8
NA
19.7
Exchange rate
Market
exch
rate
NA
0.9
121.7
NA
6.4
66.1
NA
3.6
NA
65.2
Market to
PPP exch
rate ratio
NA
1.2
1.2
NA
1.8
3.7
NA
2.1
NA
3.3
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Figure 11: We expect the EM growth advantage of DM will erode further and fall to the middle of its historical range

-1
0
1
2
3
4
5
6
7
EM minus DM: Real GDP growth rate (%)
(IMF data and forecasts)
2011 forecast
2012 forecast
2013 forecast
2014 forecast
Consensus forecast
2015 forecast
2015

-1
0
1
2
3
4
5
6
7
Source: IMF, Haver, Deutsche Bank

Figure 12: Global growth steady at trend like rates as measured at PPP weights, rising above trend as measured at market weights

-2
-1
0
1
2
3
4
5
6
World Real GDP Growth (%)
(IMF data and forecast)
2015
PPP weights
Market exchange rate weights
-2
-1
0

1
2
3
4
5
6

Source: IMF, Haver, Deutsche Bank
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Jan-83

Jan-86

Jan-89

Jan-92

Jan-95

Jan-98

Jan-01

Jan-04

Jan-07

Jan-10

Jan-13

Jan-16

1976

1979

1982

1985

1988

1991

1994

1997

2000

2003

2006

2009

2012

2015

2018

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Figure 13: Falling commodity prices primarily reflect a rising dollar...

Commodity prices and the dollar

65
70
75
80
85
90
95

US Trade Weighted Dollar (lhs)

S&P GS Commodity Index (rhs)

300
350
400
450
500
550
600
650
700
750
800

Source: Bloomberg Finance LP, Deutsche Bank

Figure 14: ...and a correction of overvaluation, not slower global growth

Brent Oil Price

WTI Oil Price

110
130
150
10
30
50
70
90

Estimated Sample Period: Nov 1999 to Feb 2013

R-Squared = 82%

Fitted (Real log Oil Price) = 19.6 -3.50*(Ln USDTWI) + 1.89*(World Output Gap)

(-130.2)

Fair value model oil price

(17.9)

110
130
150
10
30
50
70
90

Source: Bloomberg Finance LP, Haver, Deutsche Bank

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Oct-13

Oct-14

Oct-15

Jan-10

May-10

Sep-10

Jan-11

May-11

Sep-11

Jan-12

May-12

Sep-12

Jan-13

May-13

Sep-13

Jan-14

May-14

Sep-14

Jan-15

May-15

Sep-15

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Figure 15: Gold and industrial metals in particular still remain very expensive

Industrial metals price

Fitted model ind metals price index

100

150

200

250

300

350

400

450

500

550

Fitted (Log Real Ind Metals Price) = 16.9 -2.54*(Ln USDTWI) + 3.7*(World Output Gap)

(-172.2)

(63.6)

Estimated Sample Period: Jan 1993 to Feb 2013

R-Squared = 86%

100

150

200

250

300

350

400

450

500

550

Source: Bloomberg Finance LP, Haver, Deutsche Bank

Figure 16: Underlying earnings growth, i.e., adjusted for the impacts of oil price declines and the dollar up cycle are robust across the developed markets

Q2 2015 Earnings growth yoy excl crude and currency Impacts

companies reported

Proportion of companies beating estimates (%)

Initial headline growth expectation (%)

Size of beat (blended, pp)

Final headline growth (%)

Energy sector impact on headline (pp)

Currency impact on headline (pp)

Growth ex oil and FX impacts, %

Source: Factset, Deutsche Bank

US EMU Japan

487

73.1

-5.1

4.9

-0.3
-6.1
-4.8
10.6
132
60.6
10.7
0.6
11.3
168
68.5
14.5
18.8
33.3
-0.1 NM
4.0
3.9
7.4
29.4

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Appendix 1

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Sell: Based on a current 12-month view of total shareholder return, we recommend that investors sell the stock

Hold: We take a neutral view on the stock 12-months out and, based on this time horizon, do not recommend either a Buy or Sell.

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Buy: Expected total return (including dividends) of 10% or more over a 12-month period

Hold: Expected total return (including dividends) between -10% and 10% over a 12month period

Sell: Expected total return (including dividends) of -10% or worse over a 12-month period

200

400

600

800

1000

1200

1400

1600

0

Buy

Companies Covered

Hold

Sell

Cos. w/ Banking Relationship

Global Universe

46 %

39 %

48 %

30 %

6 %

21 %

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in
addition
to
the
risks
related
to
rates

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movements.

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