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GLOBAL**
ADVISORS

TRILOGY'S WORLD REPORT

March 2018

MIND THE GAP(S): WHERE ARE WE IN EM VERSUS DM BUSINESS CYCLES?

With the U.S. economy having reached full employment by many measures, while other major Developed Market (DM) economies are also at or approaching full employment, investors have become concerned that overheating in DM economies will lead to inflation, greater than expected monetary tightening, inverted yield curves, and recessionary conditions that will trigger a severe bear market in DM equities. And if DM equities catch a cold, the fear is that Emerging Market (EM) equities will catch pneumonia.

There is little doubt that we have entered a period of higher equity market volatility than was the norm in the last several years, not least because of recent fears of a possible trade war. That said, setting aside worst-case political scenarios, we think fears of global overheating are overdone or at least premature by several years. Our support for this view comes from an examination of data on “output gaps” which represent the difference between actual and potential (estimated) GDP. When actual GDP exceeds potential by a wide margin, inflation tends to accelerate, and central banks are forced to slam on the breaks. Equity weakness ensues. When actual GDP is below or at potential, central banks can afford to be more patient and “growth friendly.” Our key reasons for maintaining a constructive view on global equities rest on the following observations:

- Although DM economies have closed their output gaps, EM economies as a group have not done so and still have room to run.
- This suggests that the global economy still has ample slack resources and even room to “run hot” for a few years.
- Historically, equity returns have generally been positive when the global economy has not faced significant resource constraints as measured by output gaps.
- But equity volatility does tend to rise once actual GDP approaches or exceeds potential GDP, which also coincides with a focus by monetary policymakers to curb growth.

Let's review the evidence.

ABOVE TREND GROWTH FOR THE U.S., EUROPE, AND JAPAN, BUT NOT CHINA

First, consider that economic data for the U.S., Europe, and Japan has been generally quite positive since mid-2016. According to data collected by Now-Casting Economics, in each of those key DM areas, growth rates have recently been consistently above historical trend rates since mid-2016 (Chart 1). In contrast, even though growth in China has picked up since early 2016, it remains well below its historically high average growth of 10% seen for the previous decade and – briefly – following the Global Financial Crisis.

Above-trend growth rates mean that economic slack is diminishing. In terms of output gaps, it means that countries with negative output gaps – where actual GDP is below potential – are seeing a narrowing of the output gap and reduced deflationary pressures. And countries with positive output gaps – where actual GDP exceeds potential – will see increasingly positive gaps and rising inflationary pressures.

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Consider the United States, which by many measures appears to have reached full employment and full resource utilization (Chart 2). Based on the output gap, one could say that the economic crisis is now officially over since real GDP has reached the same level as it would have if there had been no crisis. That said, the fact that it ran with negative output gaps from 2008 to this year helps explain why inflation surprises were frequently negative and why interest rates remained depressed for such an extended period. Essentially, during that long period, the negative output gap meant that aggregate supply exceeded aggregate demand which limited the pricing power of both labor and corporations.

In contrast, analysis by the International Monetary Fund (IMF) indicates that Japan and the Euro Area have lagged the United States in closing their output gaps (Chart 3).¹ Accordingly, from the perspective of the DM economies overall, the output gap is just coming into balance this year for the first time in a decade (Chart 4). While that suggests that inflation risks are likely to be more balanced in those economies than in previous years, it does not suggest that central banks as a group need to be slamming on the brakes to deal with overheating economies.

WHY CENTRAL BANKS SHOULD CONTINUE CAUTIOUS, GRADUAL APPROACHES TOWARD POLICY NORMALIZATION

Indeed, there are compelling reasons for central banks to continue with cautious and gradual paths toward interest rate normalization. First and foremost, inflation rates remain well below the targets of around 2% set by the major DM central banks. For example, year-on-year core inflation rates for the U.S., the Euro Area, and Japan stand respectively at 1.5%, 1.0%, and 0.3% (Chart 4). This suggests that it might take several years of “running hot” – letting actual GDP exceed potential – for core inflation to hit targets. This is especially true in the Euro Area and Japan, where inflation remains well below central banks’ targets.

Second, the benefits of running economies hot may well exceed the risks. Workers who have dropped out of the labor market in the aftermath of the Global Financial Crisis may just now be coming back to work, implying that there is still more scope for non-inflationary growth than reflected in conventional unemployment rates. In addition, tight labor markets promote wage gains for blue-collar workers who have been disadvantaged by technology and globalization, while also creating incentives for firms to invest in capital equipment to boost productivity.

Third, even if inflation rates do exceed 2% targets for some time, that could well be “a feature not a bug.” Since such an inflationary overshoot would temporarily depress real interest rates, it would permit central banks to eventually reset interest rates to higher nominal levels without too severe an impact on growth. That way, when the next recession arrives, central banks would have greater scope to cut rates before they approach the lower bound near zero. As monetary economist David Beckworth has argued, true inflation targeting means that roughly half of the time inflation should exceed the target of 2%.² He has illustrated nicely with a simple picture showing what textbook targeting would mean for actual inflation outcomes compared to what central banks have done in practice (Chart 5). As his illustration makes abundantly clear, central banks have acted as if the 2% target is a ceiling not a target, and have continually undershot their 2% targets. Correcting this bias clearly requires them to let economies run hot for several years, which supports the case for cautious, gradual approaches toward policy normalization.

¹ Refer to International Monetary Fund, World Economic Outlook, October 2017, which projects the aggregate output gap for DM nations to be 0.1% for 2018, up modestly from an estimated -0.2% in 2017.

² See David Beckworth, [“The Latest Central Bank Fad: Asymmetric Inflation Targeting,”](#) Macro Musings Blog, January 26, 2016.

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Indeed, a look at interest rate futures suggests that cautious paths toward normalization still represent the base case for the U.S., the Euro Area, and Japan. In the U.S., futures markets suggest the most likely outcome for Fed policy continues to be for 3 rate hikes by the end of this year – with 40% probability – although there is now a roughly 25% chance seen for 4 or more hikes. In contrast, futures markets for the Euro Area see almost zero odds for the ECB's policy rate to become positive this year, although the markets see about a 15% chance the rate could move up from -0.4% to -0.3%. Likewise, in Japan futures markets see less than 5% chance that the Bank of Japan's policy rate will move into positive territory this year from its current level of -0.1%.

INCLUDING EM, THE GLOBAL OUTPUT GAP REFLECTS GREATER SLACK THAN FOR DM ALONE

Although EM data is generally less reliable than DM data, we believe that there is considerably more economic slack remaining in EM nations than in DM. This is primarily because EM nations experienced a multi-year slowdown in economic growth after their robust recovery from the Global Financial Crisis which peaked in 2011. Consider cyclical analysis recently produced by Goldman Sachs that shows the deviation from long-term trends of indicators like GDP, Industrial Production, Investment, and Imports (Chart 6). These indicators show that DM is looking late cycle (above trend) while EM ex-China is looking decidedly early cycle (still below trend).

That would suggest that there are still negative output gaps in many EM economies, suggesting ample room to run before serious resource constraints are encountered. This view also finds support in inflation data for EM, which shows year-on-year CPI inflation to be running at close to the lowest level seen since 2000 – and at an annual pace of 3.1% which is even lower than in the immediate aftermath of the Global Financial Crisis (Chart 7). This disinflationary trend has created the scope for many EM central banks to ease policy over the past few years. It also suggests that they will be in no hurry to tighten policy significantly even as the Fed continues with interest rate normalization.

Since EM nations as a group now account for almost 60% of world real GDP, if there is still a substantial output gap in the EM nations then the global economy is probably at much lower risk of overheating anytime soon than is commonly perceived. Referring once again to the EM versus DM cyclical comparison from Goldman Sachs (Chart 6), note how different the current cyclical picture looks from the 2007-2008 period when both DM and EM economies were all apparently overheating at the same time. Now, even though there is much talk of a synchronized global expansion, the EM ex-China recovery still appears to be early cycle because its starting point was in 2016 – and followed a five-year slowdown from 2011 through 2015.

The World Bank has recently produced an output gap analysis for the world economy that includes both DM and EM nations (Chart 8). Their analysis also demonstrates that DM nations are further ahead in the economic recovery process, with a modestly positive output gap projected for 2018 of 0.3% while the EM nations have lagged DM and are projected to have a modestly negative output gap this year of -0.3%. That leaves the world economy with a rough balance between supply and demand, which suggests further room to run – particularly if policymakers in the major DM nations opt to “run hot” to bring core inflation rates closer to target levels of 2%.

The World Bank's analysis also validates Goldman's observation that the business cycles of EM ex-China still look decidedly early cycle. They do so by breaking down EM nations into commodity exporters and commodity importers, with China's giant economy being classified as a commodity importer (Chart 9).³ This shows that the commodity exporters as a group still have significantly negative output gaps following severe multi-year recessions. In contrast, the commodity importers are estimated to have actual GDP roughly in balance with potential GDP for 2018, as has been the case for those nations since 2011. Of course, these estimates are subject to significant measurement error as shown by reasonably wide confidence bands around the output gap estimates for both DM and EM nations (Charts 10 and 11).

³ “EM commodity exporters” include Argentina, Bolivia, Brazil, Chile, Colombia, Indonesia, Kazakhstan, Malaysia, Peru, Russia, and South Africa. “EM commodity importers” include China, Hungary, India, Mexico, Poland, Romania, Serbia, Thailand, Turkey, and Vietnam.

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WHAT ABOUT CHINA?

Measurement error is an issue for all nations, but Chinese GDP data has been notoriously smooth. Because of China's large weight in EM aggregate GDP and the MSCI EM Index, its business cycle data deserve scrutiny. A look at official data shows that China's GDP growth rate has fallen – smoothly – almost in half compared to the heady days of the mid-2000s when 12% GDP growth was normal (Chart 12). Bloomberg estimates that China's potential GDP growth rate has fallen from more than 9% at the end of the last decade to about 6.7% currently, or roughly in line with the current government target for GDP growth of 6.5% this year. The slowdown in potential GDP growth reflects modestly negative labor force growth along with slower growth in the capital stock and total factor productivity (Chart 13).⁴

Using official GDP data, China appears to have a modestly negative output gap. We base this on a standard technique for calculating its real GDP as a deviation from trend growth (Chart 14). But China's Premier Li Keqiang spoke for many several years ago when he expressed little faith in official GDP data and said that he preferred to assess the economy using data on items like changes in bank lending, rail freight, and electricity consumption. Bloomberg now publishes a China Li Keqiang Index which is a weighted average of those items. Not surprisingly, it depicts a far more cyclical picture of the Chinese economy than official GDP data, showing a major slowdown in 2015 and a significant recovery in 2016 and 2017 (Chart 15).

Despite a slowing of growth in the second half of 2017 in response to credit curbs, the Li Keqiang Index depicts a surge of growth early this year that suggests the output gap may once again be positive. That said, Bloomberg has a more broadly based monthly indicator of China's economic activity, which shows less reacceleration of growth in early 2018 than the Li Keqiang Index. According to Bloomberg's China Monthly GDP Estimate, growth has moderated from a very robust year-on-year pace of 7.7% in mid-2017 to a current rate of 6.8%, or roughly in line with the government's target (Chart 16).

China's credit impulse remains negative, which suggests that a further slowing of growth in coming quarters could create slack in the economy that could eventually prompt the government to ease credit policy once again (Chart 17). But they are probably in no hurry to ease since CPI inflation has recently approached the Bank of China's 3% target rate (Chart 18). Moreover, reducing risk in the financial system through prudent credit controls remains a priority for the nation's leadership – at least for the time being.

WHY OUTPUT GAPS SHOULD MATTER TO INVESTORS

We think the analysis of output gaps can be useful to investors for two reasons. First, history suggests that output gaps have a negative relationship to future equity returns. When output gaps are negative, and economies have ample room to run, equity markets have tended to do well over the next few years. Conversely, when output gaps are positive, and central banks are aggressively curbing growth, equity markets have tended to deliver disappointing returns. Second, the evidence suggests that output gaps have a positive relationship to future equity market volatility. Markets tend to be calmer when economies have ample room to run, as reflected in negative output gaps. But they also tend to be more volatile when economies face limits to growth, as reflected in positive output gaps.

⁴ It is worth noting that this type of growth accounting approach toward estimating potential GDP is likely to have a difficult time capturing the impact of China's "Supply Side Structural Reforms" (SSSR), which have involved reducing capacity in industries like coal and steel that have had ample excess capacity. Such capacity reductions would tend to lower the level of potential GDP beyond what estimates based on historical capital stock changes might otherwise imply.

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We can see negative relationships between output gaps and 3-year forward equity returns in both DM and EM markets (Charts 19 and 20, Tables 1 and 2). When output gaps are close to zero, as is now the case, a simple regression analysis says to expect further positive equity market returns over the next three years. This very simple analysis would point to DM returns in U.S. dollar terms of about 5% over the next three years, and EM returns of close to 9%.⁵ That's the good news.

Somewhat more concerning is the fact that equity market volatility tends to rise when output gaps approach zero or turn positive. Using the relationship between the DM output gap and the VIX Index of volatility on the S&P 500 Index, we can see that when the DM output gap is around zero, equity market volatility as measured by the VIX Index is likely to be a bit higher than its long-run average of 19.4% (Chart 21). Accordingly, on return versus risk basis, it seems likely that we are moving into a less comfortable environment for equity investors if equity returns are less positive at a time when volatility is moving back to normal or even somewhat above-average levels.

That said, modern financial history suggests that the biggest global equity market drawdowns have occurred in the three years following clear evidence of economic overheating, as indicated by IMF output gaps that have exceeded 1% for the DM economies (Chart 22). Based on the data we have presented, we do not believe that degree of economic overheating is likely this year or even next year. But we think we have entered a transition phase between a world of persistently negative output gaps and one where economies may run hot for a few years and eventually overheat.

Against that backdrop, our conclusion is simple: mind the gap(s).

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⁵ Our analysis also shows that the difference in EM vs DM output gaps has a strong negative correlation (-0.82) with the 3-year forward difference in annual returns between EM and DM. On that basis, the World Bank's current estimate of the EM-DM output gap differential (-0.3% - 0.3% = -0.6%) is consistent with 3-year outperformance of EM vs DM of about 7.5% per annum over the 2018-2020 period (Chart 23).

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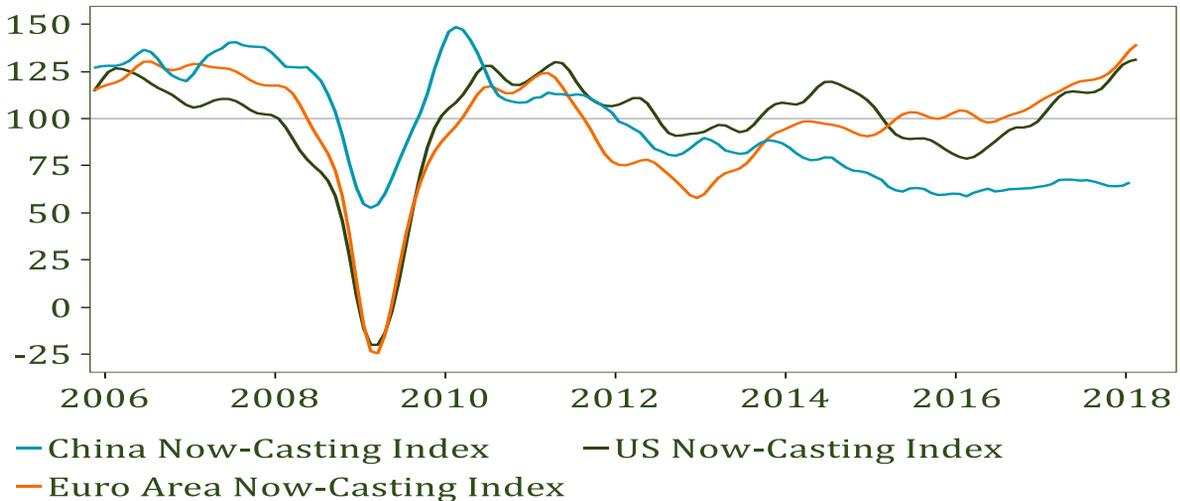
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CHART 1

Now-Casting Indexes for the US, Euro Area, and China (100=Trend Growth)

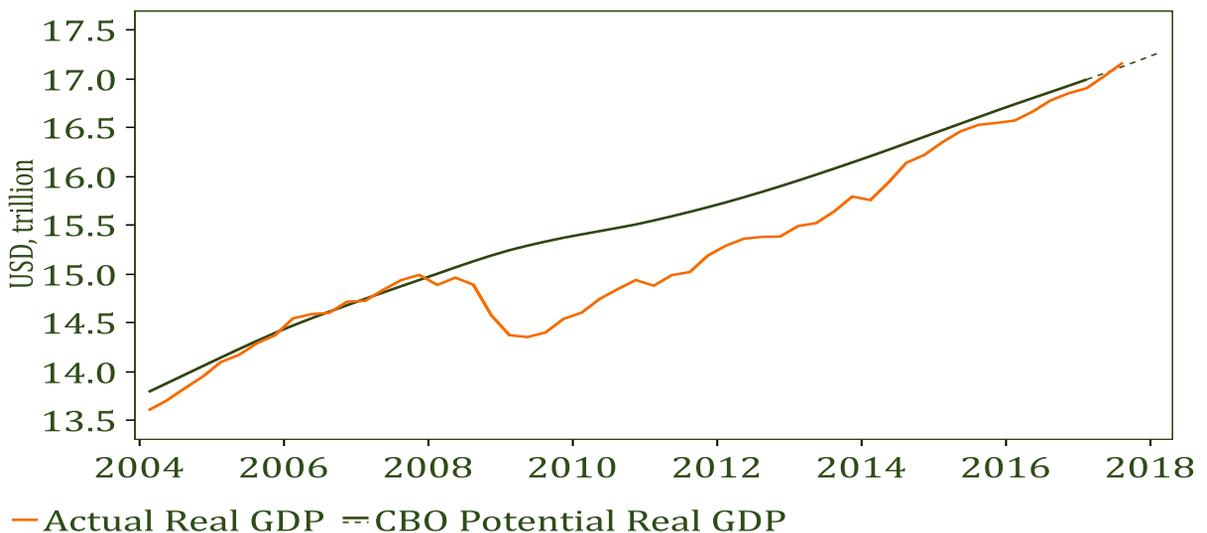


Source: Now-Casting Economics, Ltd., Bloomberg, and Macrobond

According to Now-Casting Economics, the U.S. and the Euro Area have been experiencing above-trend growth for more than a year, while China's growth has remained below its historical trend rate.

CHART 2

The U.S. Crisis is Over: Real GDP is Now As High As It Would Have Been With No Crisis



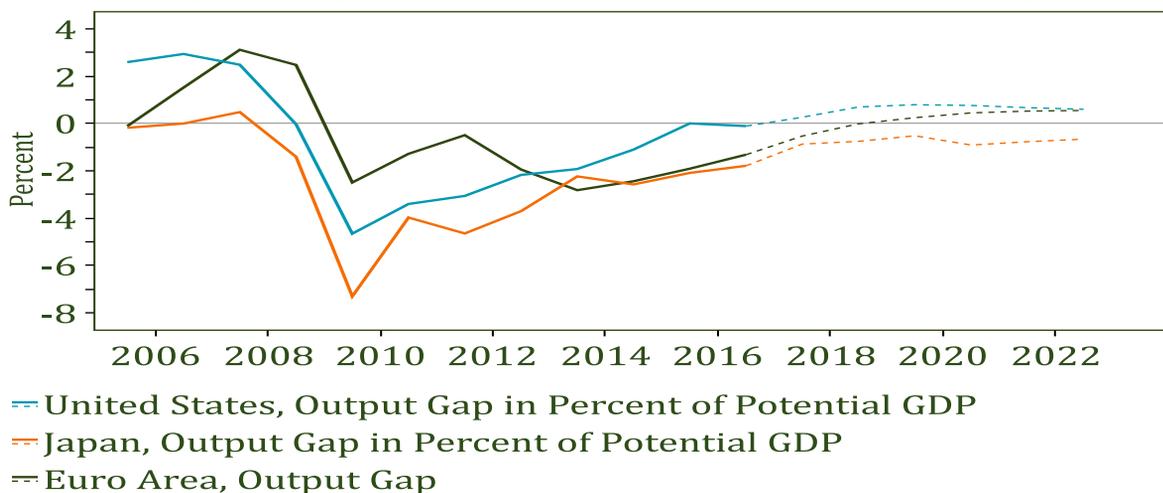
Source: Macrobond

According to the Congressional Budget Office's estimate of potential GDP, the U.S. economy has finally reached a state of full resource utilization after many years of a negative output gap.

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CHART 3

Mind the Gaps: Output Gaps for the U.S, Euro Area, and Japan

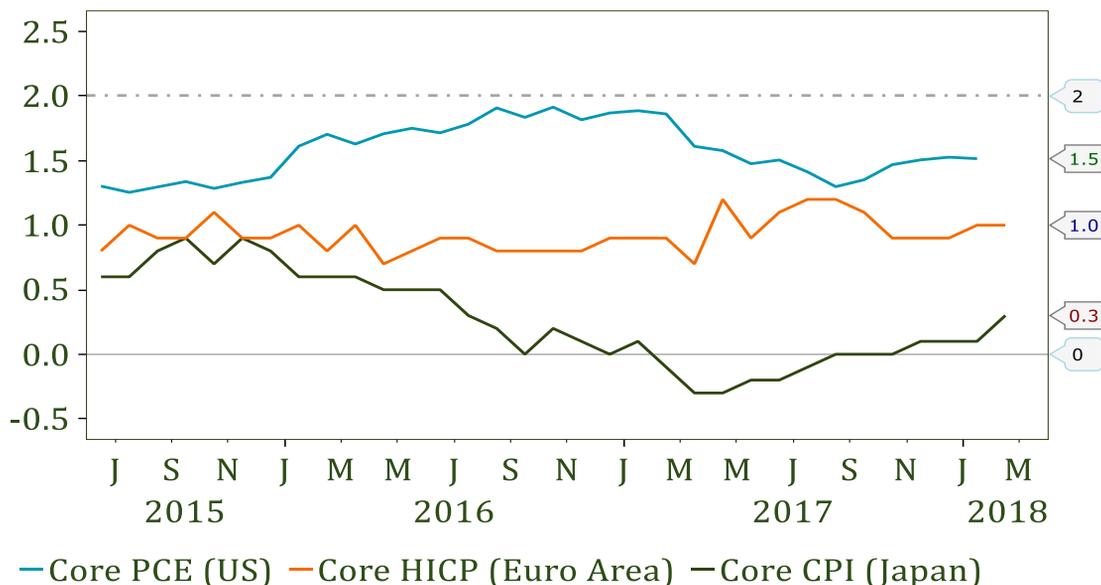


Source: IMF and Macrobond

Based on the IMF's estimates, the U.S. has led the Euro Area and Japan in closing the gap between actual and potential GDP, suggesting greater potential for accelerating inflation.

CHART 4

Core Inflation Rates Remain Well Below Target in the U.S., Euro Area, and Japan



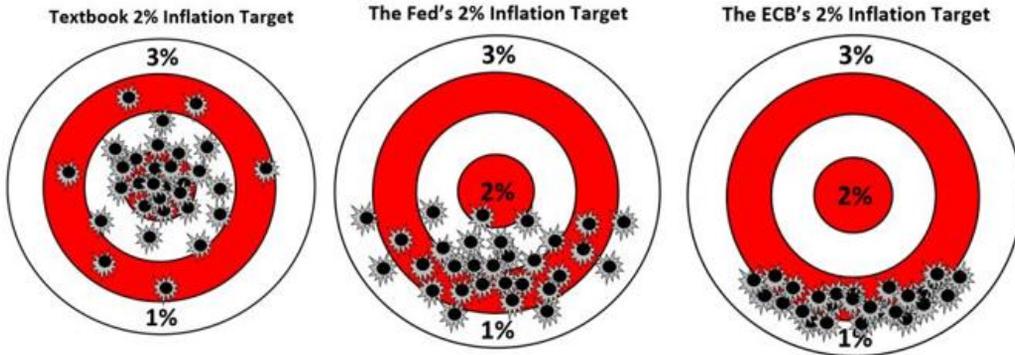
Source: Bloomberg and Macrobond

Core inflation rates in the U.S., the Euro Area, and Japan remain well below 2% inflation targets, providing justification for gradual monetary policy shifts.

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CHART 5

Target Practice



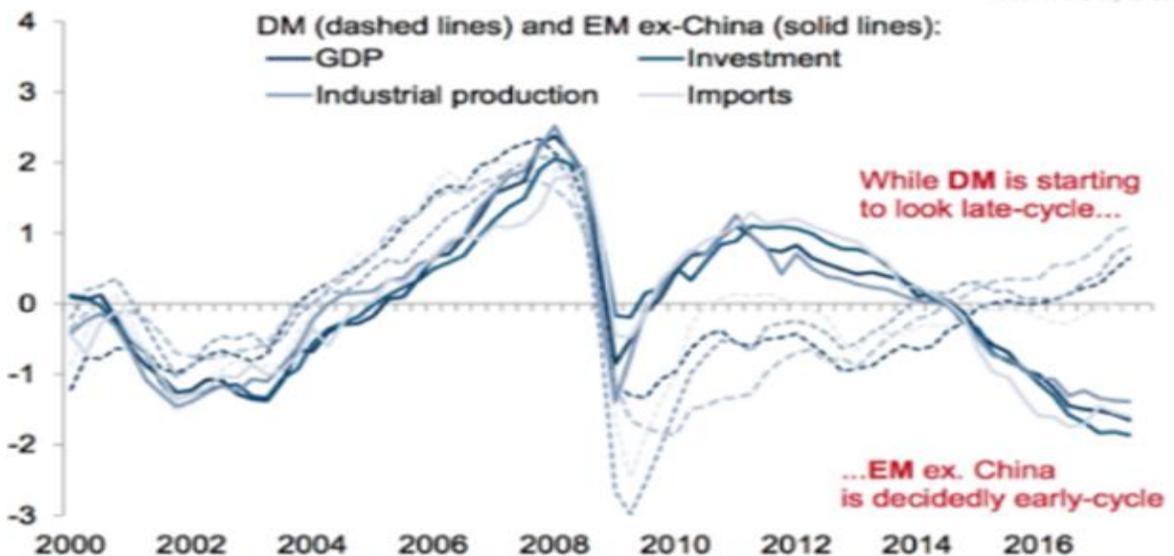
Source: David Beckworth, "The Latest Central Bank Fad: Asymmetric Inflation Targeting,"
Macro Musings Blog, January 26, 2016

Central banks in recent years have not allowed inflation to hit or exceed 2% targets. Correcting this bias would require "running economies hot."

CHART 6

EM Ex-China Remains Early Cycle

Deviation of EM and DM Indicators from 2000-17 trend, standard deviations



Source: Haver Analytics, Goldman Sachs Investment Research

Reflecting the multi-year growth slowdown in EM, cyclical indicators for many EM nations remain decidedly early cycle. This suggests that the global economy is not overheating.

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CHART 7

Emerging Economies Consumer Price Index: 2000-2017 Annual YoY %

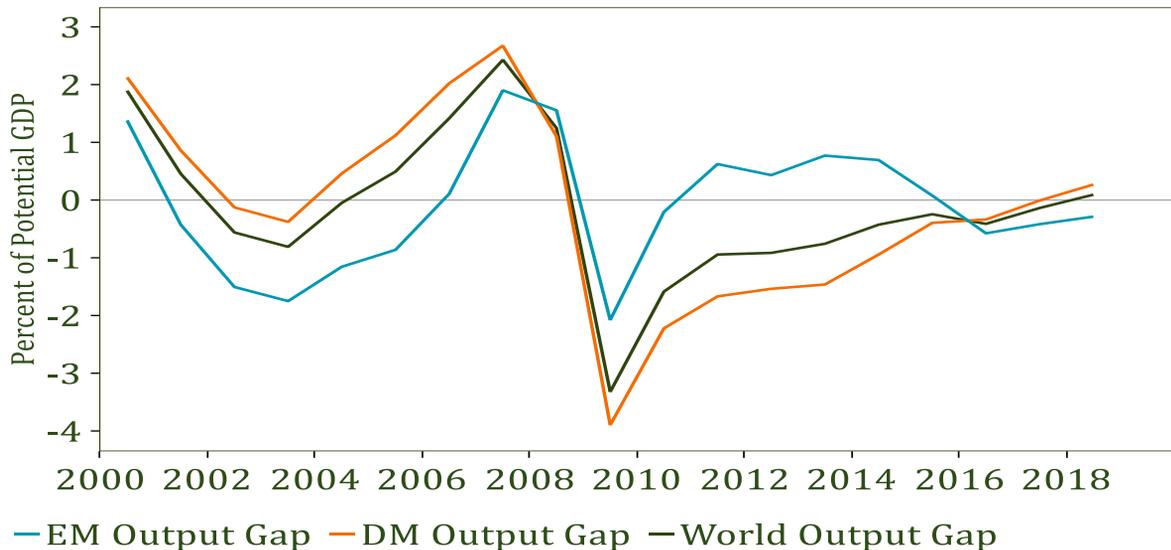


Source: Bloomberg and Macrobond

EM CPI inflation continues to run at close to its lowest level since 2000, suggesting that output gaps are negative and that those economies have room to run.

CHART 8

No Global Overheating: World, DM, and EM Output Gaps

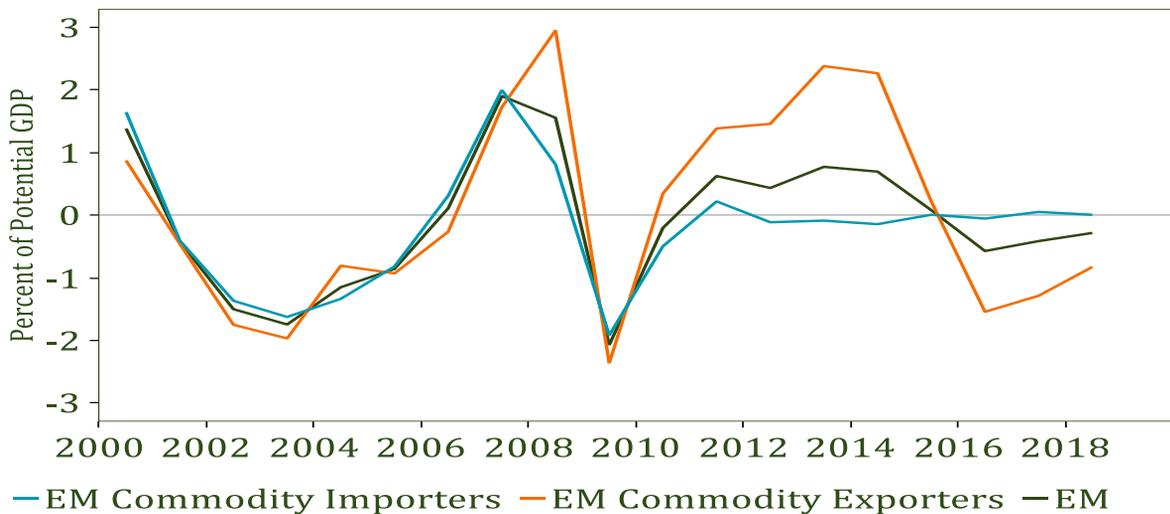


Source: World Bank and Macrobond

According to the World Bank, actual and potential world GDP are expected to be in line in 2018, reflecting DM and EM output gaps which are modestly positive and negative respectively.

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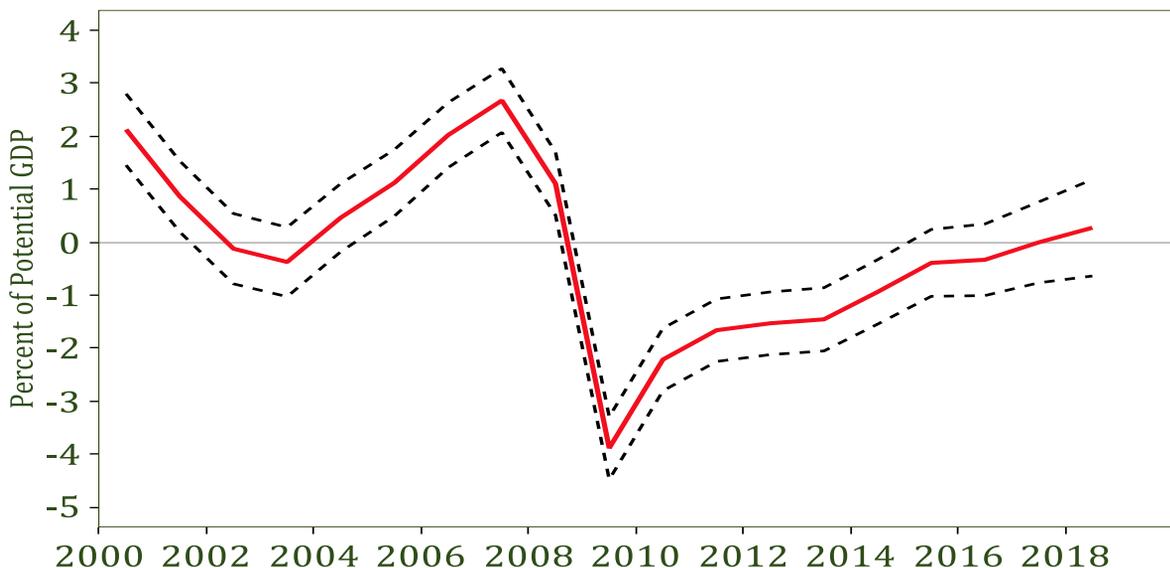
CHART 9
EM Output Gaps:
Commodity Exporters and Importers (%)



Source: World Bank and Macrobond

According to the World Bank, EM commodity exporters still have relatively large negative output gaps, while the overall output gap for commodity importers is zero.

CHART 10
Measurement Error?
DM Output Gap Plus 95% Confidence Band (%)



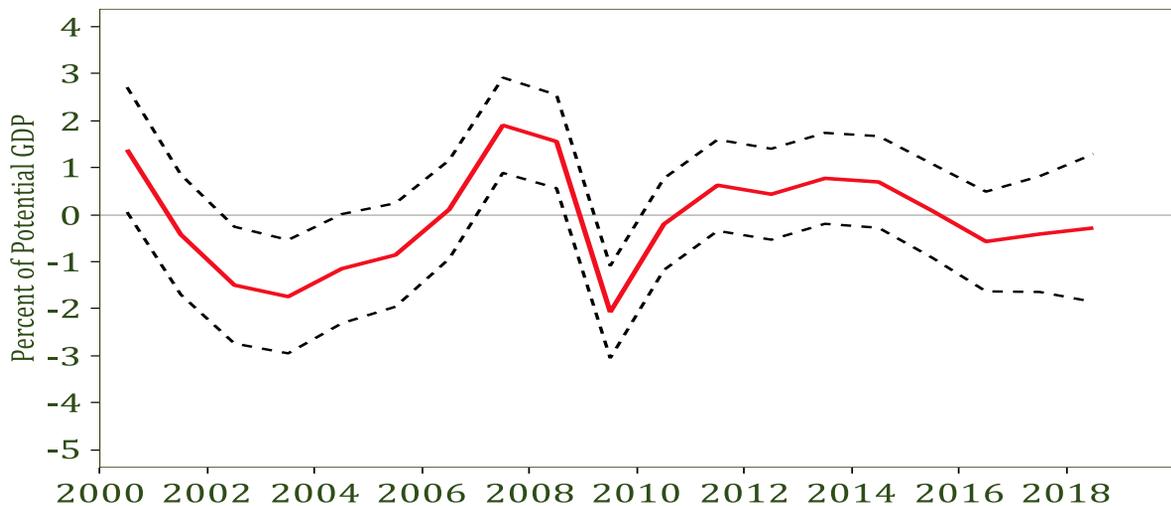
Source: World Bank and Macrobond

Although the World Bank believes that the DM output gap will be modestly positive in 2018, its 95% confidence bands suggest the possibility of significant measurement error in either direction.

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CHART 11

Measurement Error? EM Output Gap Plus 95% Confidence Band (%)



Source: World Bank and Macrobond

Although the World Bank believes that the EM output gap will be modestly negative in 2018, its 95% confidence bands suggest the possibility of significant measurement error in either direction.

CHART 12

China's Actual GDP Growth Slows Along with Potential



— China GDP Constant Price YoY — China Potential GDP Growth YoY

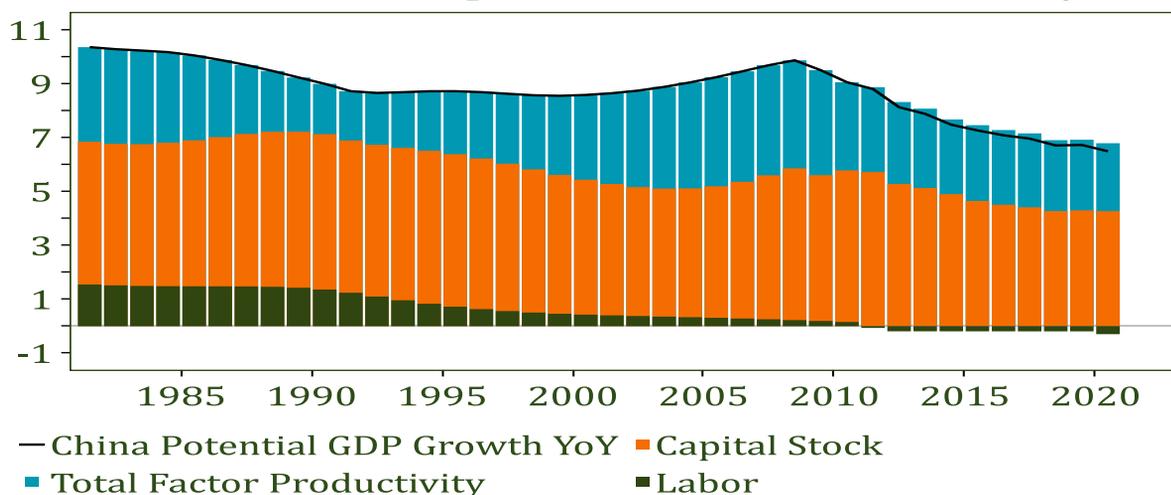
Source: Bloomberg and Macrobond

China's official GDP data show a smooth adjustment toward a slower growth path, with reported GDP growth slowing in line with estimated potential.

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CHART 13

China's Potential Growth Slows as Contributions Slow From Labor, Capital Stock, and Productivity

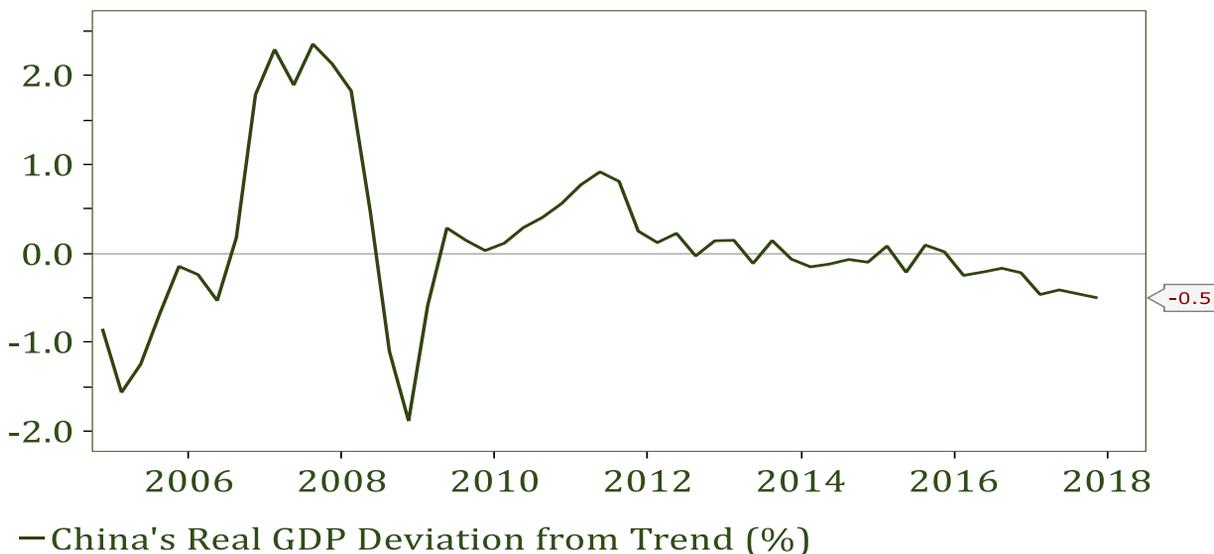


Source: Bloomberg and Macrobond

China's potential GDP growth has slowed due to declining labor force growth and declining contributions from growth of the capital stock and productivity.

CHART 14

China's Output Gap Looks Negative Based on the Deviation of Official GDP Data vs Trend (%)



Source: Macrobond

Note: Trend based on HP Filter of quarterly data ($\lambda = 1600$)

Using China's official GDP data, which is notoriously smooth, China's output gap looks modestly negative based on its deviation from its long-term declining trend.

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CHART 15

China's "Premier Li" Index Shows Greater Cyclicity



Source: Bloomberg and Macrobond

Premier Li Keqiang's favored indicators are bank loans, electricity output, and rail freight loadings. Those measures show a sharp slowdown in 2015 followed by recovery in 2016-17.

CHART 16

Bloomberg's China Li Keqiang Index versus Monthly GDP YoY Estimate



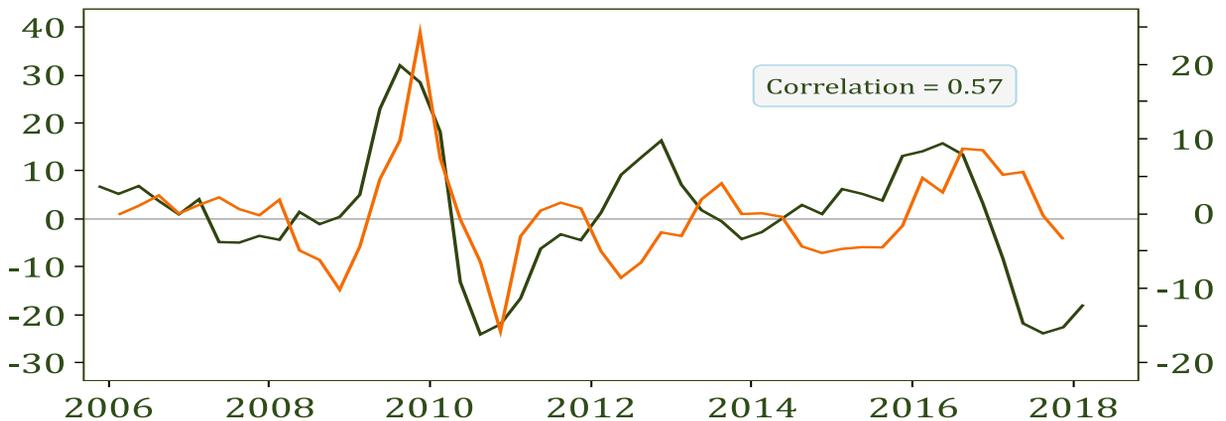
Source: Bloomberg and Macrobond

Bloomberg's broad-based China GDP tracking index shows less reacceleration of growth in early 2018 than the Li Keqiang Index, and a modest cooling of growth versus mid-2017.

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CHART 17

China's Bank Credit Impulse Is A Leading Indicator for the "Premier Li" Proxy for GDP Growth



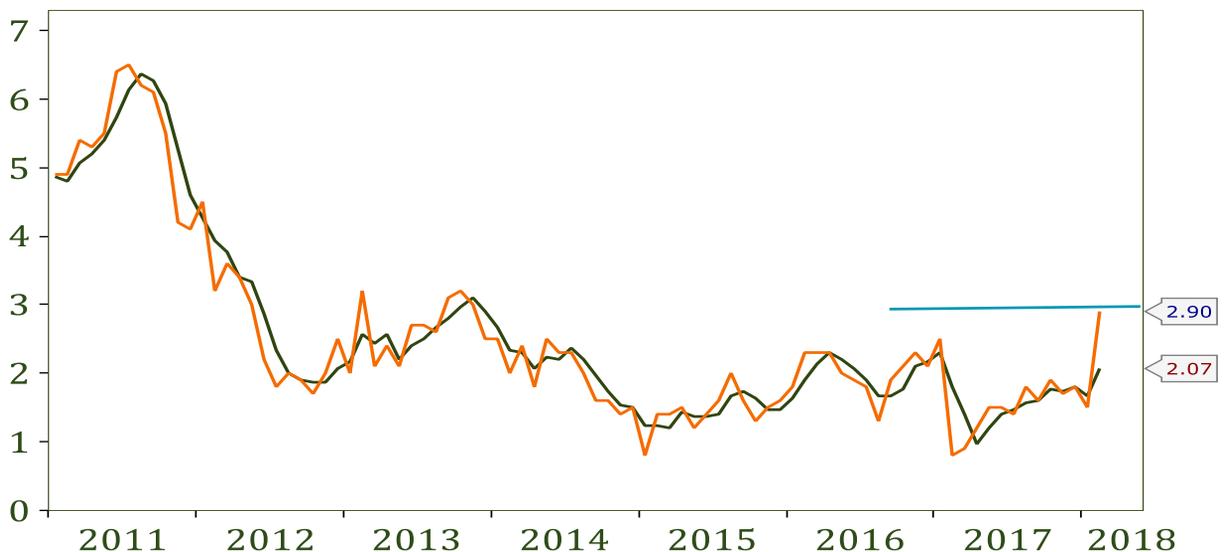
- China Li Ke Qiang Index, 4q change, rhs
- Bank Credit as % of GDP, 4q change of 4q change, 1q lag, lhs

Source: Bloomberg and Macrobond

China's credit impulse remains negative, although less so than in mid-2017. It continues to point to further slowing of growth in coming quarters that could prompt policy easing later this year.

CHART 18

China's Inflation is Approaching the 3% Target



- China CPI YoY - 3-Month Moving Average

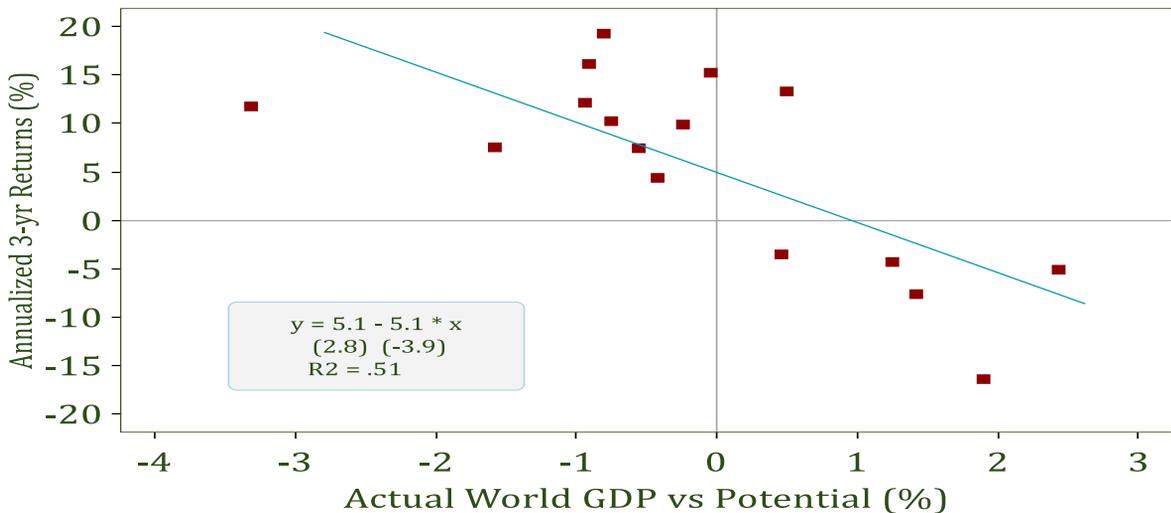
Source: Macrobond

China's CPI inflation has trended up in recent months, which suggests that the authorities will be in no hurry to back away from restrictive credit measures.

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CHART 19

MSCI World 3-Year Forward Total Returns (USD) vs World Output Gap: 2000-2015

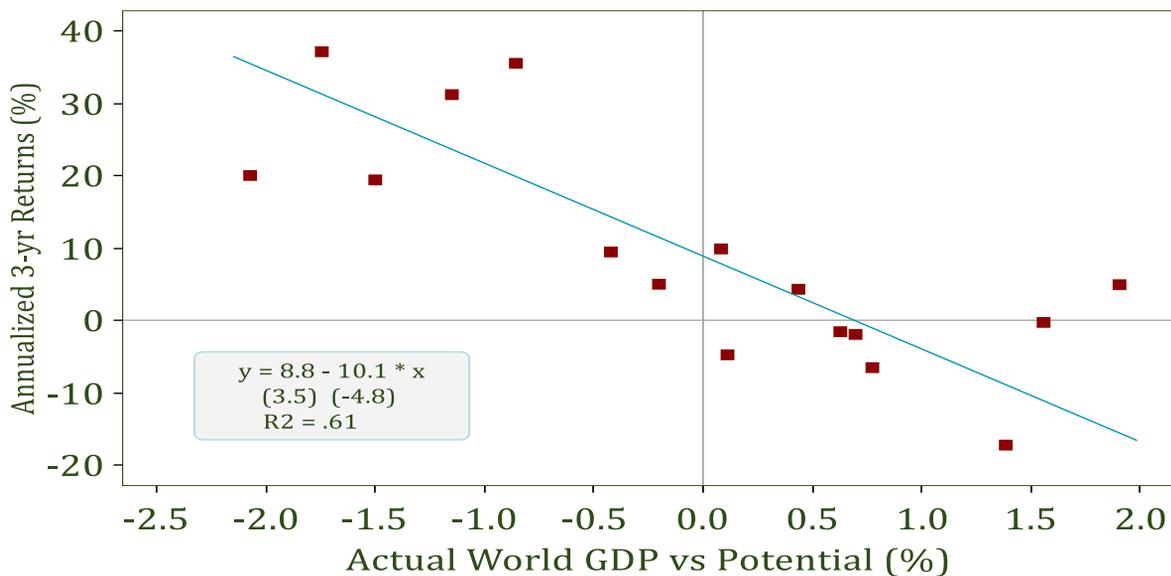


Source: World Bank, MSCI, and Macrobond

Historically, negative output gaps have been associated with positive 3-year forward MSCI World equity returns and vice versa. A gap of zero would be consistent with modestly positive 5% annualized returns.

CHART 20

MSCI EM 3-Year Forward Total Returns (USD) vs EM Output Gap: 2000-2015



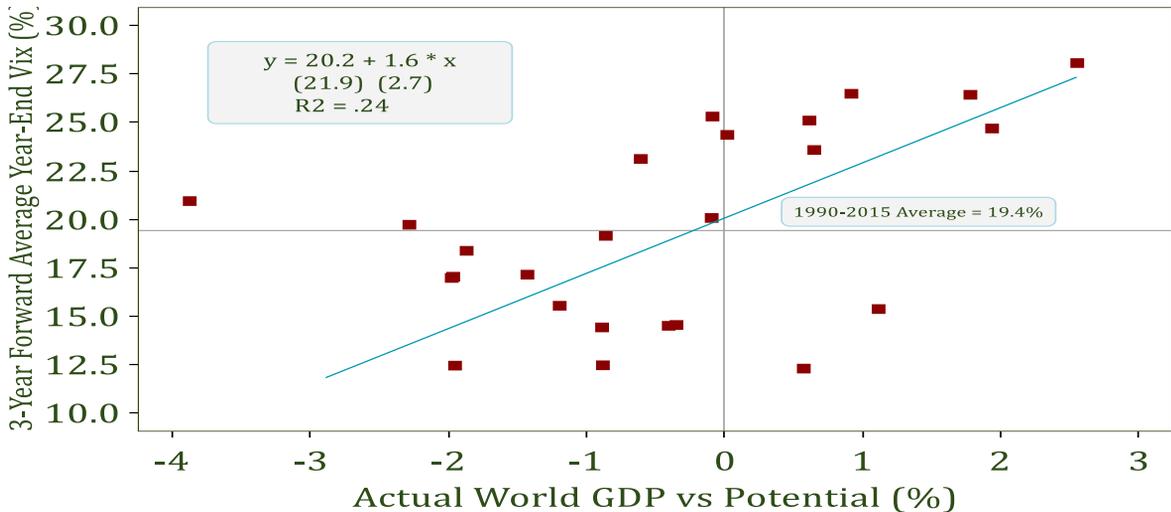
Source: World Bank, MSCI, and Macrobond

Historically, negative output gaps have been associated with positive 3-year forward MSCI EM equity returns and vice versa. A gap of zero would be consistent with nearly 9% annualized EM returns.

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CHART 21

VIX Index 3-Year Forward Average vs IMF World Output Gap: 1990-2015

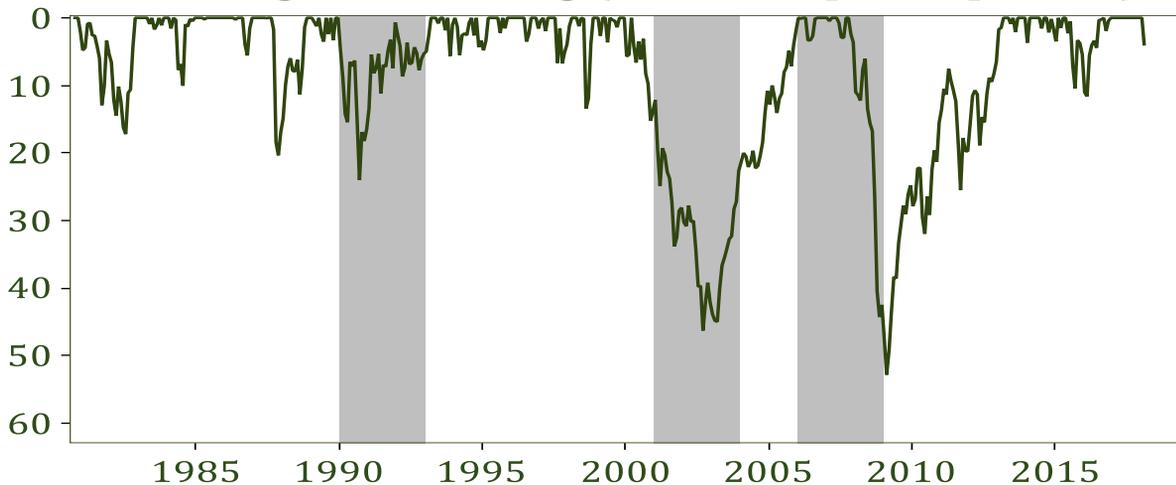


Source: IMF, Bloomberg, and Macrobond

Historically, forward equity market volatility has tended to be higher when World GDP has been at or above potential GDP, which is when central banks tend to curb growth.

CHART 22

Big Drawdowns of MSCI World Occur in 3 Years Following Overheating (= IMF Output Gap > 1%)



— MSCI World Total Return Index, Percent Off High

Source: Macrobond

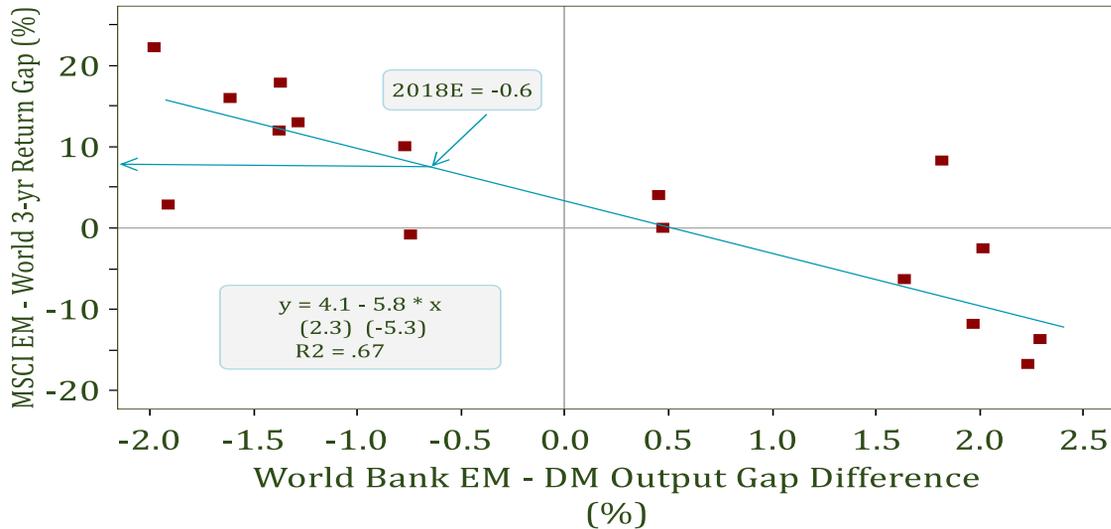
Note: Shaded areas indicate the three years following a year when the IMF output gap exceeded 1%.

Large global equity drawdowns have tended to occur in the three years following evidence of economic overheating as measured by the IMF's output gap for the developed nations.

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CHART 23

MSCI EM vs World 3-Year Forward Total Return Gap vs EM - DM Output Gap: 2000-2015



Source: World Bank, MSCI, and Macrobond

The difference between EM and DM output gaps is a decent predictor of 3-year forward return differences between EM and DM. The current gap is consistent with EM outperformance of about 7.5%.

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TABLE 1

World Bank Output Gaps vs Subsequent 3-Year Total Returns and Volatility for MSCI World and EM: Sorted by Size of Output Gap, 2000-2015

Year	World Bank Global Output Gap (%)	MSCI World 3-Year Forward Total Returns (USD)	MSCI World 3-Year Forward Volatility (%)	Year	World Bank EM Output Gap (%)	MSCI EM 3-Year Forward Total Returns (USD)	MSCI World 3-Year Forward Volatility (%)
2009	-3.3	11.8	20.4	2009	-2.1	20.0	25.2
2010	-1.6	7.5	17.1	2003	-1.7	37.1	16.5
2011	-0.9	12.1	13.7	2002	-1.5	19.4	18.1
2012	-0.9	16.1	10.2	2004	-1.1	31.2	17.5
2003	-0.8	19.3	9.7	2005	-0.9	35.5	18.1
2013	-0.8	10.2	10.5	2001	-0.4	9.5	24.7
2002	-0.6	7.4	15.1	2010	-0.2	5.0	21.8
2014	-0.4	4.4	11.0	2015	0.1	9.9	15.6
2015	-0.2	9.9	10.3	2006	0.1	-4.7	30.6
2004	0.0	15.2	7.8	2012	0.4	4.3	15.4
2001	0.5	-3.5	17.9	2011	0.6	-1.5	19.4
2005	0.5	13.3	7.9	2014	0.7	-1.9	16.4
2008	1.2	-4.3	24.7	2013	0.8	-6.5	14.5
2006	1.4	-7.6	18.1	2000	1.4	-17.2	25.2
2000	1.9	-16.4	17.2	2008	1.6	-0.2	33.9
2007	2.4	-5.1	22.3	2007	1.9	5.0	33.6
Average All Years	-0.1	5.7	14.6	Average All Years	0.0	9.1	21.6
Excess Supply Years	-1.3	12.1	13.8	Excess Supply Years	-1.5	28.7	19.1
Balanced Years	0.1	7.9	11.0	Balanced Years	0.0	4.8	21.6
Excess Demand Years	1.7	-8.3	20.6	Excess Demand Years	1.2	-3.7	23.8

Source: Trilogy Global Advisors, LP, International Monetary Fund, and MSCI

Notes: (1) 3-year annualized returns and volatility include the current and subsequent two calendar years; and (2) Excess Supply Years = Output Gap < -0.5%, Excess Demand Years = Output Gap > 0.5%, Otherwise "Balanced"

TRILOGY'S WORLD REPORT

TABLE 2

IMF Output Gaps vs Subsequent 3-Year Total Returns and Volatility for MSCI World: Sorted by Size of Output Gap, 1981-2015

Date	World Bank Global Output Gap	MSCI World 3-Year Forward Total Returns (USD)	MSCI World 3-Year Forward Average Volatility (%)
1982	-3.9	13.2	13.1
2009	-3.9	11.8	20.4
1983	-3.6	22.7	10.9
2010	-2.3	7.5	17.1
2012	-2.0	16.1	10.2
2013	-2.0	10.2	10.5
1993	-2.0	16.4	10.4
2011	-1.9	12.1	13.7
1984	-1.8	28.9	13.0
1981	-1.7	9.9	12.8
2014	-1.4	4.4	11.0
1986	-1.3	27.4	17.8
1994	-1.2	13.4	9.3
1985	-1.2	33.2	17.2
1987	-0.9	19.3	17.4
2015	-0.9	9.9	10.3
1992	-0.9	7.4	10.8
1995	-0.9	17.1	10.4
1996	-0.6	18.2	14.7
1991	-0.4	11.8	12.4
2003	-0.3	19.3	9.7
2002	-0.1	7.4	15.1
1998	-0.1	10.9	16.3
1997	0.0	22.0	15.5
1988	0.4	6.6	16.9
2004	0.6	15.2	7.8
1999	0.6	-3.1	15.7
2001	0.7	-3.5	17.9
2008	0.9	-4.3	24.7
1990	1.0	-1.8	16.7
2005	1.1	13.3	7.9
1989	1.1	5.2	17.8
2000	1.8	-16.4	17.2
2006	1.9	-7.6	18.1
2007	2.6	-5.1	22.3
Average All Years	-0.6	10.6	14.4
Excess Supply Years	-1.8	15.8	13.2
Balanced Years	-0.1	13.0	14.3
Excess Demand Years	1.2	-0.8	16.6

Source: Trilogy Global Advisors, LP, International Monetary Fund, and MSCI

Notes: (1) 3-year annualized returns and volatility include the current and subsequent two calendar years; and (2) Excess Supply Years = Output Gap < -0.5%, Excess Demand Years = Output Gap > 0.5%, Otherwise "Balanced"