THE G4: UNDIMINISHED EXPECTATIONS ROOM TO RECOVER

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After years of crisis and upheaval, some commentators have resigned themselves to an era of “mediocre” growth. But four of the world’s biggest economies* (Japan, America, China and India) are now in the midst of recovery, reform, or both. What if all four fulfilled their economic potential at the same time? That is the optimistic scenario examined in the G4 white-paper series. If this scenario materialized, the consequences would be profound. The G4 would lift growth and trade in the rest of the world, reverse the slide in commodity prices and sustain the rally in equity markets. The implications would also extend beyond economics into the geopolitical realm. Asia, after all, is not used to four ambitious, self-confident powers all operating in the same neighborhood.

BNY Mellon will explore this G4 scenario, its rationale and ramifications, in a sequence of four white papers to be released this year:

1. The G4: Undiminished Expectations - Room to Recover
2. The G4: Undiminished Expectations - The Sources of Growth
3. The G4: Undiminished Expectations - Investment Opportunities
4. The G4: Undiminished Expectations - The Geopolitical Consequences

* In terms of GDP measured at purchasing-power parity
Introduction

1.1 Thirteen months

This paper was inspired by a sequence of surprises that began two years ago. In April 2013, the Bank of Japan, backed by new prime minister Shinzo Abe, surprised the markets with the boldness of its plan to defeat deflation. Seven months later, in November 2013, China's president, Xi Jinping, set out his stall as an economic reformer, putting an unusually personal stamp on a 60-point decision passed at the Communist Party's “third plenum”, a historically resonant meeting of top party officials. And six months after that, in May 2014, India elected Narendra Modi’s party with an unexpected majority of seats in the hope that he would restore the economy’s lost momentum. Over that same period, US unemployment fell surprisingly quickly, dropping below the 6.5 percent threshold the Federal Reserve had cited as a necessary condition for raising interest rates 1.

America, it seemed, could finally welcome a durable recovery, even as Japan under Abe, China under Xi and India under Modi could each boast a confident government committed, at least in word, to economic reform and revival. This combination of events raised the tantalizing prospect that all four of these giant economies might stop floundering and start flourishing at roughly the same time. Asia’s stars rarely fall into alignment in this way. That, at least, was the scenario that Alan Harden, CEO of Investment Management Asia Pacific, invited me to explore in this paper.

The implications of such a scenario would be far-reaching. Japan, America, China and India are the world’s four biggest economies by one measure (GDP at purchasing-power parity 2). Between them, they have a population of over three billion and a combined GDP worth almost 45 percent of the global total 3. They consume a similar proportion of global energy and contributed well over half of last year’s global economic growth 4.

If these four economies were to fire on all cylinders at the same time, it would lift growth and trade in the rest of the world, reverse the slide in commodity prices, and underpin a further rally in global share prices. To weigh the influence of these four giants on other economies and markets, we asked the Economist Intelligence Unit to simulate the consequences of a specific growth scenario. The simulation assumes that Japan averages growth of about 2 percent for the remainder of this decade, America averages growth of roughly 3 percent, China 7 percent and India 8 percent. We call this the G4 scenario 5.

2 IMF World Economic Outlook database.
3 Ibid.
4 Energy Information Administration; IMF World Economic Outlook database
5 We call it the G4 scenario because these four economies are the biggest in the world, measured at purchasing-power parity (see box below). Internally, we also started calling it JACI, which has a nice ring to it. However we know that many people are now a little tired of attempts to yoke together economies under catchy acronyms. Feel free to use JACI if you like it. If you don’t, don’t blame us.
**G4 scenario: Additional GDP, relative to 2014**

This optimistic scenario would add over $10 trillion to the four economies' combined GDP in 2020, holding prices and exchange rates constant (see chart above). According to the EIU’s global economic model, it would also add $8 trillion to the rest of the world’s GDP outside these four. This combined growth would be enough to restore $100 oil and lift global food prices by over 40 percent from their level in March 2015. It would help the Nikkei 225 surpass 24,000, the Sensex exceed 45,000 and the S&P 500 reach 3,000 by the end of the decade (see chart below and section 3).

**G4 scenario: Oil, food and share prices**

Figures refer to projected end-2020 prices for stockmarkets, and projected 2020 average prices for commodities

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*As measured by the FAO Food Price Index.*
The implications would extend beyond economics into the geopolitical realm, where these four countries have overlapping and, at times, conflicting interests and visions. Each of the four countries has enjoyed periods of profound commercial and cultural prominence in previous eras. But the region is not used to all four of its great powers growing in prosperity, confidence and assertiveness at the same time. Is the region big enough to accommodate their joint success?

How likely is that success? Since the string of pleasant surprises from April 2013 to May 2014, not everything, of course, has gone well. In America, productivity has stagnated and the encouraging drop in unemployment has not translated into equally impressive wage gains. The dollar has strengthened, eroding the overseas profits of S&P 500 companies. In Japan, the economy has suffered another brief recession and core consumer prices (excluding food, energy and the effects of the consumption-tax hike) have flattened once again. China’s property market has faltered with dire consequences for homebuilding, collateral values, local-government revenues and upstream industries, such as steel and cement. Even in India, where macroeconomic stability has returned faster than expected, economic reform has proceeded slower than hoped. India’s government has forsworn “big-bang” reforms in favor of what its chief economic adviser calls “creative incrementalism”.

Alongside these checkered economic events, the economic debate has turned decidedly gloomy. Leading economists are brooding over different varieties of stagnation in the rich economies and different kinds of “landings” in the emerging ones.

To cite a few examples: Robert Gordon of Northwestern University argues that America’s productivity will not grow fast enough to offset the combined drag of an aging population, weak investment, heavy debts and unimproved schooling. That will slow the growth of its productive capacity. But that capacity may anyway go to waste, according to Larry Summers of Harvard, who worries that weak demand will keep the rich world’s economies underemployed, condemning them to a period of “secular stagnation”. Read the two together and you would conclude that the world’s mature economies face a double disappointment, failing to live up to a potential that is itself sadly diminished.

The economic conversation is not much cheerier when it turns to emerging Asia. China’s economy is slowing as Beijing’s reformers impose a firmer grip on the heavy borrowing of local and provincial barons. India’s reformers, by contrast, are struggling to ease the regulatory grip on the country’s entrepreneurial ambitions.

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8 Bureau of Labor Statistics
9 Bloomberg
10 Japan’s Cabinet Office; Statistics Japan
11 China’s National Bureau of Statistics
In the background, economists like Dani Rodrik of Harvard and Arvind Subramanian of India’s Ministry of Finance worry that the East Asian model of catch-up growth, led by labor-intensive manufacturing, is now harder to sustain, threatening countries with premature deindustrialization. And even as Mr Summers worries about stagnation in the West, he foresees regression in the East. With his co-author, Lant Pritchett of Harvard, Summers has argued that Asia’s miracle growth rates will not persist. The region will instead suffer from “mean-reversion”, lapsing into a mundane rate of expansion, more typical of the average post-war economy in an average year.

Some of the best minds in economics, in other words, are devoting their intelligence and imagination to all the things that could go awry or amiss. Their preoccupation with pessimism would seem to leave a gap in the intellectual marketplace to ponder what might go right. This series of papers is intended to fill that gap. As a thought experiment, it will make the following cheerful assumptions. It will presume that technology makes respectable progress, motivated by stronger demand and embodied in fresh capital expenditure; that Japan’s money printing eventually lifts spending, lending, prices and pay; and that China and India’s economies continue to catch up with their richer forerunners, rather than slowing down towards some international mean rate of progress. It will assume, in other words, that Asia’s two big emerging economies regress upwards towards average levels of income, rather than regressing downward towards average rates of growth.¹³

This paper shares one important assumption with the secular stagnationists, however. It agrees that these four economies all now suffer from insufficient demand. If spending were stronger, they would each have room to grow faster without exceeding their inflation targets. Unlike the secular stagnationists, however, we assume that spending will indeed strengthen, allowing these economies to close the gap between what they can produce and what they do produce.

¹³ See also Brad DeLong http://equitablegrowth.org/2014/10/23/lunchtime-must-read-gavyn-davies-chinas-slowdown-secular-cyclical/
1.2 An optimistic scenario for the G4

The chart below presents in detail the growth scenario we will explore in this paper. It is intended to be optimistic without being utopian; contrarian, in some cases, without being crazy.

The G4 scenario

Simply put, our scenario assumes that China sustains 7 percent growth, give or take, for the rest of this decade, avoiding both the nasty hard landing expected by alarmists and the “long, soft fall” envisaged by productivity pessimists 14. Growth at that pace would be enough to meet Hu Jintao’s target, announced at the end of his term as leader of China’s Communist Party in 2012, of doubling China’s GDP from 2010 to 2020. It should also be enough to meet his target of doubling income per person over the same period, given a 5 percent increase in population.

India achieves roughly 8 percent growth in our scenario, justifying the revived hopes and expectations of the past 18 months. The high rate partly reflects the faster growth revealed by India’s new method of GDP accounting, which draws on a wider range of data and identifies a bigger growth contribution from manufacturing, broadly defined, and retail and wholesale trade 15. Eight percent growth is in keeping with the long-run forecasts in the Reserve Bank of India’s latest Survey of Professional Forecasters (which also refers to the new figures). It is also the kind of long-term growth rate anticipated by forecasters in the years before the taper tantrum of 2013.

15 http://mospi.nic.in/Mospi_New/upload/new_series_Nil.htm
Our scenario also assumes that Japan’s growth enjoys a revival to about 2 percent despite the decline of its working-age population. Of the four projections, this one lies furthest from consensus. If it materializes, Japan’s economy would follow a path similar to that envisaged by Japan’s Cabinet Office in its “revitalization case” outlined in July 2014 16 (see chart below). In our scenario, Japan’s GDP enjoys a cyclical upswing in the wake of last year’s recession, loses some momentum after the planned hike in the consumption tax in 2017, then settles at something like a 2-percent growth trend.

### Japan’s projected growth

Finally, under our scenario, America remains a 3-percent economy for the rest of this decade, defying the “headwinds” posed by an aging workforce, the plateau in women’s job-market participation, and the miserable productivity growth of the post-crisis years.

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Why the G4?

The United States, China and Japan are the world’s three biggest economies, when their GDP is converted into dollars at market exchange rates. India is not yet the fourth. In the 2014 calendar year, it was the ninth biggest economy in the world, a little bigger than Russia after the ruble’s plunge, but still smaller than Brazil, Italy, the UK, France and Germany.

Why, then, do we include it in the G4? Partly the choice reflects India’s obvious potential. With a population of over 1.25 billion, it’s easy to imagine India overtaking Brazil and Britain to become the fourth biggest economy outside the eurozone by the end of this decade. Nor is it difficult to imagine it overtaking Germany shortly thereafter (see chart below). To achieve that feat it would only have to muster a GDP per person equivalent to 6-7 percent of Germany’s.

India’s inclusion in our quartet also reflects the recent revival of its economic fortunes. India may be only the world’s ninth biggest economy, but it is likely to make the third biggest contribution to global growth this year, when it is expected to outpace China’s growth of about 7 percent. Simply put, no bigger economy is growing faster than India; and no faster-growing economy is bigger.

It is also worth noting that India is already the world’s third biggest economy when its GDP is converted into dollars at “purchasing-power parity” (PPP) rather than market exchange rates. The intuition behind PPP is simple, even if the implications are often controversial. If a basket of items is priced at 1500 rupees in India and the same items are priced at $100 in the United States, then the PPP exchange rate between the two countries is said to be Rs15 to the dollar. This is true whatever the market exchange rate might be.

In 2011, researchers led by the World Bank collected prices for a basket of similar items in India, the United States and 175 other economies. They discovered that 15.09 rupees spent in India could buy about as much as a dollar spent in the United States. This was a striking finding. It meant India’s PPP rate was much ‘stronger’ than its market exchange rate, which was 46 rupees to the dollar in 2011 and is over 62 today.

The race for third

Source: OECD baseline projections, May 2014

17 According to our calculations based on figures from India’s Central Statistics Office http://mospi.nic.in/Mospi_New/upload/Presss_note_for_Q3_AE_2014-15.pdf
18 This calculation is based on the 2015 growth forecasts in the IMF’s World Economic Outlook, April 2015. Each country’s weight reflects the IMF’s estimate of its 2014 GDP at market exchange rates.
20 According to Bloomberg, April 14th 2014
What does this mean for India’s GDP? In the 2013-14 fiscal year, India’s Central Statistics Office reported the country’s GDP at Rs 113 trillion*. Converted into dollars at market exchange rates, it was less than $2 trillion. But this amount of rupees stretches much further in India than $2 trillion stretches in the United States. In fact, it stretches more than three times further. By the IMF’s calculations, the amount spent and produced in India that year was equivalent to $6.78 trillion spent in America. That $6.78 trillion represents an alternative, purchasing-power parity measure of India’s GDP. By that yardstick, India is comfortably the third biggest economy in the world (see chart).

Do purchasing-power parities provide a valid measure of the size of economies? Not for all purposes. If you want to know how much a country could spend on foreign goods and assets - how much of a splash it could make in the international marketplace - then PPPs are not the best guide. Nor are they the best gauge for multinational companies looking to open up a new market and remit the earnings back home. No one gets paid in purchasing-power parity dollars.

But for a variety of purposes, purchasing-power parities provide a better portrait of an economy 21. Since they aim to compare the size of economies when similar items are priced similarly, they are a better measure of the volume of items a country produces 22.

As a result, many of the things that matter correlate more closely with GDP at purchasing-power parity than GDP at market exchange rates. By 2009, for example, India was already the world’s fourth biggest consumer of primary energy, according to figures from the US Energy Information Administration. Its carbon emissions ranked third in the world 23, and it was also the third biggest consumer of steel, using 2.5 times as much as Germany, a supposedly bigger economy 24.

Market exchange rates can also mislead. They are determined primarily by cross-border transactions for assets, goods and services. But internationally traded goods and services constitute only part of a country’s GDP. And many assets bought and sold across borders are not part of GDP at all 25. These transactions give exchange rates a manic life of their own that often bears little relationship to the underlying economy.

GDP at purchasing-power parity (PPP) 2014*

<table>
<thead>
<tr>
<th>Country</th>
<th>Billion, PPP current</th>
</tr>
</thead>
<tbody>
<tr>
<td>China</td>
<td></td>
</tr>
<tr>
<td>United States</td>
<td></td>
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<tr>
<td>India</td>
<td></td>
</tr>
<tr>
<td>Japan</td>
<td></td>
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</tbody>
</table>

* India’s figure is for the fiscal year ending March 2014.

Source: IMF World Economic Outlook, April 2015 and International Comparison Program, 2011.

21 The ICP 2011 program offers the following rationale for comparing the size of economies at purchasing-power parity: “Exchange-rate converted GDPs can be misleading on the relative sizes of economies... Price levels are normally higher in high-income economies than they are in low-income economies... If no account is taken of the larger price level differences for non-traded products when converting the GDPs to a common currency, the size of high-income economies with high price levels will be overstated and the size of low-income economies with low price levels will be understated... PPPs are designed specifically to make international comparisons of GDP. They are not designed to compare monetary flows or trade flows. International comparisons of flows, such as development aid, foreign direct investment, migrants’ remittances or exports and imports of goods and services, should be made with exchange rates rather than with PPPs.”

22 Unfortunately, it is not always easy to know whether an item is truly similar across countries. Fresh fish might be a staple food in a small island economy, for example, but an exotic delicacy in a mountainous, landlocked one.


25 GDP only counts newly created non-financial assets; it therefore excludes financial assets and non-financial assets that were produced in an earlier period.
Thanks to the rupee’s gyrations against the greenback, India’s dollar GDP surged by over 30 percent in the 2007/8 fiscal year and shrank by over 1 percent in 2012/13. That was not an accurate reflection of the evolution of its economy in either year.

Fortunately, the gap between market exchange rates and PPPs tends to narrow over the long run. When a country’s market exchange rate is significantly weaker than its purchasing-power parity rate, the country’s prices or currency will typically rise over the long term, relative to those of the United States. As a result the country’s GDP measured in dollars grows faster than its real growth rate would suggest. This form of price convergence accompanies and amplifies the economic convergence implied by catch-up growth.

That matters for India. The disparity between its market exchange rate and its PPP rate is one of the biggest in the world. The country thus seems remarkably cheap to foreign visitors (see chart). That leaves India’s economy with tremendous scope for price convergence as well as economic convergence. As it becomes richer, it will probably become pricier. Its dollar GDP at market exchange rates will more closely resemble its dollar GDP at PPP, making the choice between the two slightly less consequential.

For all these reasons, I believe that India deserves consideration alongside the other three economies we discuss. But for anyone who still doubts India’s standing as a member of the G4, we have one final justification for including it: the G7 does not include the world’s seven biggest economies either.

**Price convergence: Richer countries tend to be pricier**

Source: BNY Mellon calculations, based on IMF World Economic Outlook, October 2014

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26 IMF World Economic Outlook database
27 According to Raghuram Rajan, the Governor of the RBI, India can expect its prices to rise 2 percentage points faster than those in rich countries like America. [http://www.rbi.org.in/scripts/bs_viewcontent.aspx?id=2972](http://www.rbi.org.in/scripts/bs_viewcontent.aspx?id=2972)
28 It is possible to compare India’s price level with that of other countries around the world by dividing their GDP in current dollars, as reported in the IMF’s World Economic Outlook, by their GDP at purchasing-power parity, reported in the same database. By this measure, India’s price level is one of the lowest in the world.
2.1 Room to surprise

Our scenario is more optimistic on balance than many widely cited long-term forecasts. If it were to materialize, India’s economy would be almost 60 percent bigger in 2020 than it was in 2014 (at constant prices and exchange rates), China’s would be almost 50 percent bigger, America would add about a fifth to its GDP over this period and Japan’s GDP would expand by a cumulative 13 percent or so. The first chart below compares the average growth rates in our scenario with those forecast by the International Monetary Fund (IMF) in April 2015. Its forecasts for China, India and the US are only modestly lower than ours. Its forecasts for Japan, however, are significantly gloomier.

If our scenario holds, therefore, the IMF forecasts will turn out to have been overly pessimistic. How likely is that? Even the best forecasts are subject to great uncertainty and frequent revision, of course. In recent years, the world’s big economies have mostly surprised on the downside, forcing institutions like the Fund to cut their projections repeatedly (see chart below).
The IMF’s recent soothsaying has, therefore, erred on the side of overoptimism. How plausible is it that their present forecasts have erred in the other direction, offering too gloomy a view of the G4’s future?

Upward revisions are not unheard of. The IMF is not congenitally optimistic. For much of the 1990s, America’s “new economy” exceeded the Fund’s expectations. The same is true of the growth of China and India from 2003 to 2007. In total, the IMF offers a dozen growth forecasts for each year, beginning five years ahead, updated twice a year, and ending in the fall of the year itself. From this large pool of prognostication, it is not hard to find examples of over pessimism.

A systematic review of these forecasts reveals the following: America’s growth exceeded the fund’s most pessimistic forecast in 16 of the past 24 years. Japan and India exceeded it 15 times. China, for its part, defied the Fund’s worst imaginings in no fewer than 22 of the past 24 years.

Nor were the IMF’s most optimistic forecasts always sufficiently hopeful. America’s growth surpassed the Fund’s highest forecast in a quarter of the past 24 years; Japan exceeded it once; India did so in 12 years out of 24; China in 13. In other words, it is not that rare for these four economies to surpass the Fund’s best hopes and it is quite common for them to outperform the Fund’s worst fears (see charts).

29 In this exercise, we ignore the last of the IMF’s predictions for each year, which is issued only a few months before the end of the year it is forecasting. That leaves 11 forecasts for each year.
US growth forecasts

![US GDP Growth Diagram](image)

- Actual growth
- Lowest IMF growth forecast
- Highest IMF growth forecast
- G4 scenario

Source: BNY Mellon calculations, based on IMF World Economic Outlook archive

Japan growth forecasts

![Japan GDP Growth Diagram](image)

- Actual growth
- Lowest IMF growth forecast
- Highest IMF growth forecast
- G4 scenario

Source: BNY Mellon, IMF
India growth forecasts

Source: BNY Mellon calculations, based on IMF World Economic Outlook archive

China growth forecasts

Source: BNY Mellon calculations, based on IMF World Economic Outlook archive
What about the future? The IMF first began forecasting 2015 GDP five years ago. So its vision of the future has a past of its own, so to speak. In most cases, our scenario nestles somewhere within the range of forecasts the IMF has offered over the past few years. It is reasonably close to what the IMF once thought, if not always close to what it now expects.

For our US scenario to come true, its economy has to do better than the IMF now foresees, but no better than the IMF expected as recently as 2013. For China, our scenario is broadly in keeping with the IMF’s guesstimates from late 2014, and it is significantly less ambitious than the IMF forecasts before the volatile summer of 2013. India’s recent overhaul of its GDP statistics makes it difficult to compare current forecasts with past forecasts. But our scenario, based on the new GDP statistics, is similar to the view the fund held in 2011.

The IMF has never expected Japan to grow as quickly over the next five years as our scenario implies. But because of disappointing growth in 2014, Japan will be starting further back than the IMF once thought. In my view, Japan’s recent underperformance may have left it with more room to outperform in the next couple of years. If it does follow the trajectory we have outlined, its GDP in 2018 will be only 1 percent bigger than the IMF expected when it issued its forecast in the fall of 2013.

The IMF and other forecasters have lowered their sights in recent years. But as the past record has shown, the IMF’s gloomiest forecasts are rarely the best guide to how these economies will actually perform. That is one reason why we think it is worth looking at the world with undiminished expectations.

**United States**

![Chart showing GDP forecasts for the United States from 2010 to 2020.](Image)

Date forecast was issued (S=Spring F=Fall)

Source: BNY Mellon, IMF
China

GDP, yuan billions, 2014 prices

India

GDP, Rs billion, FY2013/14 prices

Japan

GDP, Yen billion, 2014 prices

Date forecast was issued (S=Spring F=Fall)
Source: BNY Mellon, IMF
A look back at looks forward

Economists, like everyone else, often reflect on the past and contemplate the future. Sometimes they combine the two activities, reflecting on past contemplations of the future. It is usually a humbling experience.

In a 1995 article, Charles Jones carried out the following thought experiment (or something similar to it). Imagine someone back in 1929 trying to predict America’s income per person two or three decades hence. What number would they have come up with? Over the previous five decades, from 1880 to 1929, America’s GDP per person had grown by about 1.6 percent a year on average, despite ups and downs along the way (see chart below). A forecaster in 1929 might have simply assumed this trend rate of growth would continue.

By 1938, such a prediction would have looked ridiculous. By that point, the US economy had suffered the horrors of the Great Depression and the disappointment of an aborted recovery. No one would have thought the pre-1929 growth path was a useful guide to the future. The Depression had left too many scars.

Indeed the disappointments of the period prompted one prominent economist, Alvin Hansen, to coin the term “secular stagnation” in 1938. He lamented “sick recoveries which die in their infancy and depressions which feed on themselves”. Hansen argued that America lacked sufficient “outlets” for investment, due to slowing population growth, the end of its westward territorial expansion, and the “failure of any really important innovations of a magnitude sufficient to absorb large capital outlays”. In the absence of any attractive investment outlets, the country’s high saving merely depressed demand, leaving the economy stranded far below its pre-Depression trajectory.

Today’s economic debate has a similar feel. Larry Summers has revived Hansen’s concept of secular stagnation to describe the lackluster recoveries of recent decades. Other economists have busily cut their estimates of America’s growth potential, concluding, with the wisdom of hindsight, that its pre-2008 trajectory was obviously unsustainable and therefore irrecoverable.

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**United States**

**GDP per person**

<table>
<thead>
<tr>
<th>Year</th>
<th>GDP per capita</th>
</tr>
</thead>
<tbody>
<tr>
<td>1880</td>
<td>8.0</td>
</tr>
<tr>
<td>1890</td>
<td>8.2</td>
</tr>
<tr>
<td>1900</td>
<td>8.4</td>
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<tr>
<td>1910</td>
<td>8.6</td>
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<tr>
<td>1920</td>
<td>8.8</td>
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<tr>
<td>1930</td>
<td>9.0</td>
</tr>
<tr>
<td>1940</td>
<td>9.2</td>
</tr>
<tr>
<td>1950</td>
<td>9.4</td>
</tr>
</tbody>
</table>

Source: The Maddison database

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31 The growth figure is a compound annual average based on estimates of constant-price GDP prepared by Angus Maddison and his successors at the Maddison Project.
But historical judgments are never fixed or definitive. The wisdom of hindsight evolves as hindsight lengthens. Looking back from the vantage point of 1938, our optimistic 1929 forecaster would have looked ridiculous. But if we wind the tape further forward, he looks prophetic. By 1950 America’s GDP per head had indeed returned to its pre-1929 trend, almost as if the Great Depression had never happened (see chart).

Demand eventually recovered. And as it did so, some of the damage of the Depression was undone. Capital that had been allowed to decay was replaced. Workers who had been left on the scrapheap were rehabilitated.

And despite Hansen’s technoskepticism, America discovered a backlog of “really important innovations”, which sustained rapid productivity growth for decades afterwards.

What can we learn from this example? The parallels with today are not perfect. Other countries, suffering subsequent crises, have not matched America’s post-Depression resilience. Nonetheless this historical example does hold one important lesson: economic prognostication tends to be pro-cyclical, and the latest forecasts are not always the best.
2.2 Room to recover

In our scenario, the G4 economies would each escape the stagnation that some commentators now foresee for them. But our scenario shares one assumption with the secular stagnation view. It assumes that the G4 economies are all falling short of their full potential.

That is true in a broad sense and in a more technical, macroeconomic sense.

In a broad sense, it is clear that the economies of Japan, America, China and India are not all that they could be. All four now labor under self-imposed handicaps that needlessly impede their growth. The list of desirable reforms is long and often wearingly familiar. To cite a few examples: India should make it easier for industry to buy land fairly; China should make it easier for villagers to sell it. The American tax code is too elaborate; the Indian tax net is too threadbare. In India investment is unnecessarily encumbered; in China it is needlessly extravagant. In India's formal sector, labor is artificially expensive. In China's state-owned sectors, credit is artificially cheap. In India and Japan, those in regular, formal employment enjoy perks and privileges denied to other workers. In China much the same is true of registered urban residents, who enjoy better access to public services than their migrant neighbors. Companies in China and Japan often neglect return on equity, distributing too little to shareholders in dividends; companies in America, arguably, inflate it, distributing too much to shareholders through buybacks.32

These economies are also falling short of their potential in a more precise, macroeconomic sense. Their actual GDP is lower than their potential GDP, defined as the maximum amount they could produce without undue inflationary pressure (see pages 22-23).

The United States, for example, produced $17.4 trillion-worth of goods and services in 2014. But it could have produced almost half a trillion ($478 billion) more than that, according to estimates of potential GDP by the Congressional Budget Office (CBO). Indeed, according to the CBO's estimates, the US has operated below capacity in no fewer than 60 of the last 80 quarters (see chart).

32 The argument is best articulated by Andrew Smithers in "The Road to Recovery" (2013), http://www.ft.com/intl/cms/s/2/9deb271b-2c3b-11e3-8b20-00144feab7de.html#axzz3W4xXIT2
This is a colossal waste. Over the past seven years alone, the gap between America’s actual GDP and its potential adds up to a cumulative $5.3 trillion. That means the US economy has squandered over $5 trillion-worth of goods and services by the simple expedient of not producing them. Five trillion dollars is an extraordinary sum: equivalent to shutting down the entire US economy for three-and-a-half months.
The workers who could have produced that output were left unemployed or underemployed. The plant, machinery and officespace they could have operated and occupied stood idle or vacant. The mass mothballing of manpower this entailed has been well described by Mary Mann, a researcher, in The New York Times:

“Millions were paid to stand around, forced into inactivity by potential customers’ reluctance to spend, reminding ourselves that we were lucky just to be employed. Retail salespeople, tour guides and hotel clerks, waitresses and cooks and dishwashers and bartenders - we were everywhere, and we had a lot of time on our hands.”

Most of these workers and much of this capital may still exist, of course. But the time - the hours they could have spent fully occupied and utilised - has been lost to the economy forever.

Some of the lost time can be counted. In 2014 America’s workers between them put in almost 194 billion hours of work. That sounds like a lot. But if the country’s people had been fully employed, they could have worked an additional 5.6 billion hours. That shortfall is equivalent to 638,000 years.

**US aggregate annual hours worked**

![Graph showing US aggregate annual hours worked with potential (full employment) and actual hours. Source: Congressional Budget Office, Bureau of Labor Statistics, BNY Mellon Investment Management.](http://www.nytimes.com/2015/04/19/opinion/sunday/the-other-side-of-boredom.html?_r=0)
High hopes in low inflation

“Potential” GDP can be defined in a number of different ways. Economists at America’s Congressional Budget Office describe it as follows:

“[Potential output] is a measure of sustainable output, in which the intensity of resource use is neither adding to nor subtracting from inflationary pressure. If actual output exceeds its potential level, then constraints on capacity begin to bind, restraining further growth and contributing to inflationary pressure. If output falls below potential, then resources are lying idle and inflation tends to fall.”

This is similar to the definition we use in this paper: potential GDP is the maximum amount an economy can produce without unwelcome inflationary pressure.

Potential GDP is a measure of an economy’s productive capacity. It depends on fundamental factors, such as the size of its workforce, the sophistication of its factories and equipment, the weight of its regulations and the ingenuity of its entrepreneurs. It is a measure of the “supply-side” strength of an economy: its ability to produce stuff.

There is no guarantee, however, that an economy actually will produce all that it can.

That depends on the “demand-side” of the economy — on the willingness of households, firms, the government and foreigners to buy all that an economy could potentially supply. Unfortunately demand is not always strong enough to make full use of an economy’s productive powers. That can leave an economy with a substantial “output gap”, a gap between its potential GDP and its actual performance. It is our contention that this problem now afflicts Japan, America, China and even India to varying degrees. They would all now benefit from stronger demand.

The best evidence for this proposition is the weakness of inflation. “Upstream” producer prices are falling year-on-year in China, India and the United States (see chart). Ironically, the only G4 economy with rising producer prices is Japan. This lack of price pressure is also evident downstream, in consumer goods. In the US, the Fed has consistently undershot its 2 percent consumer-price inflation target since the financial crisis. Significant overshoots are a distant memory.

---

34 By my count, there are at least five definitions. 1) The amount an economy can produce without increasing the rate of inflation (whatever that rate may be). By this definition, even an economy in deflation could be operating at its potential GDP level as long as that deflation is not getting worse. 2) The amount an economy can produce without increasing the rate of inflation above some acceptable limit, such as a 2 percent inflation target. 3) The amount an economy can produce in the long run, once prices have had time to adjust to any economic shocks. 4) The amount an economy can produce in its long-run “steady state”, once the capital stock has stabilized relative to the size of the economy. 5) The amount an economy could produce in an economists’ utopia where all distortions were removed from markets.

35 http://www.cbo.gov/sites/default/files/03-16-gdp.pdf
The last time core inflation was over 3 percent was in mid-1992, during the first Bush presidency.

Low inflation is, of course, a sign that growth is weak. But we already knew that: growth can be measured directly. Low inflation is also telling us something more interesting and promising: it is telling us that growth is weak relative to its potential. That is significant because potential GDP is not otherwise directly measurable.

If growth was weak and inflation high, we would be forced to conclude that these economies could not do any better. The fact that inflation is low suggests they can. Slow growth tells us the economy isn’t good. Low inflation tells us that it has scope to improve.

**Demand-led investment; investment-led technology.**

The distinction between demand and supply, actual GDP and potential GDP, is useful but it is not absolute. Demand and supply interact.

After a spell of weak investment, an economy’s stock of capital - its infrastructure, buildings and machines - will have aged, decayed and shrunk relative to the size of its workforce. America’s stock of private fixed assets per person, for example, was lower in 2013 (the latest figure available) than it was in 2008, according to the Bureau of Economic Analysis. That shrinkage hurts an economy’s productive capacity in the short run. But it also means that returns on fresh investment should be high. A period of stagnation can then leave room for strong investment spending.

A failure to expand and renew the capital stock also retards technological progress, much of which is embodied in new machinery, equipment and software. Weak employment can do the same. When labor is in surplus, firms have less incentive to develop labor-saving technologies. And when workers lack the bargaining power to demand secure employment, firms have less incentive to invest in their skills.

For all these reasons, if an economy falls short of its potential for long enough, its deficient demand will begin to look like a supply-side failing: a lack of appetite will begin to look like a lack of vitality. Conversely, strong demand, if sustained for long enough, can lead to improvements in an economy’s supply-side capabilities. It can motivate innovation, education and capital accumulation. As an economy’s growth lives up to its potential, it may discover that its potential lives up to its growth.

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36 Core inflation, as measured by the year-on-year change in the price index for personal consumption expenditures, excluding food and energy.

37 “Aggregate Supply in the United States: Recent Developments and Implications for the Conduct of Monetary Policy”, by Dave Reifschneider, William Wascher, and David Wilcox

38 I have expressed similar thoughts in previous articles on Japan. See, for example: http://foreignpolicy.com/2014/12/10/japans-swing-voters-abenomics-election/
Potential GDP in the US

The CBO’s estimates of American underproduction are, if anything, conservative. It has repeatedly cut its figure for potential GDP, thereby reducing the gap between what was and what could have been.

If our G4 scenario came true, America would close its output gap as early as next year, according to the CBO’s latest projection of US potential GDP. But our scenario assumes that the sustainable limit on America’s production turns out be higher than the CBO now thinks. It assumes that this limit is more in line with the CBO’s 2010 projections, which are higher than its latest forecasts but considerably below its pre-crisis forecasts (see chart).

US potential GDP 2007–2020

CBO projections from the last ten years
Potential GDP in Japan

Japan’s economy is also falling short of its potential GDP, according to estimates by the country’s Cabinet Office (see chart).

Japan’s wasted potential

![Graph showing Japan's wasted potential](image)

Source: BNY Mellon calculations, based on data from Japan’s Cabinet Office and Statistics Japan via Thomson Reuters Datastream

But these estimates, like their US counterparts, are also too conservative, in our view. One way to show this is to look at what happens to inflation when Japan’s economy nears its “potential” as the Cabinet Office measures it. When the output gap is zero, according to the Cabinet Office’s estimate, consumer-price inflation is typically minus 0.15 percent (see chart below) 39. The economy would have to be performing much stronger than this to lift inflation to Japan’s official target of 2 percent.

Japan’s Output Gap and Inflation (1998–2014)

Inflation = 0.15* (Output gap) - 0.15

![Graph showing Japan's output gap and inflation](image)

Source: BNY Mellon calculations, based on data from Japan’s Cabinet Office and Statistics Japan via Thomson Reuters Datastream

39 The Bank of Japan, which has shown a similar chart in the past, argues that the relationship between the output gap and inflation has shifted up recently due to higher inflation expectations. But even if the sample is restricted to the most recent nine quarters, from 2012Q4 to 2014Q4, the Cabinet Office’s estimate of potential GDP seems too conservative. Assuming a static linear relationship between the output gap (as measured by the Cabinet Office) and core inflation, Japan’s GDP would have to exceed “potential” by over 6 percent to generate 2 percent inflation.
Potential GDP in China

There are no official estimates of China’s potential GDP. But the long absence of inflationary pressure in the Middle Kingdom also suggests it is growing slower than necessary. In the year to the first quarter China’s nominal GDP grew by just 5.8 percent, slower than its real GDP, which expanded by 7 percent. This implies that the GDP deflator, a broad measure of prices in the economy, fell by 1.1 percent in the year to the first quarter.⁴⁰

How fast could China grow before price pressures got out of hand? It is impossible to say with any precision. But the following two charts are suggestive, I think. They show a reasonably tight correlation between inflation in each quarter and growth three quarters before. This correlation implies that China would have to grow by 7.5-8.5 percent, before inflation on either measure reached even 2 percent, let alone the official ceiling of around 3 percent. If anything, that makes our optimistic scenario, in which China averages 7-percent growth for the rest of the decade, seem conservative.

China’s growth and inflation 1: GDP deflator

![](chart1.png)

Source: BNY Mellon; Thomson Reuters Datastream

China’s growth and inflation 2: consumer prices

![](chart2.png)

Source: BNY Mellon; Thomson Reuters Datastream

⁴⁰ 100*(1.058/1.07)-1=-1.1

⁴¹ The correlation coefficient between the year-on-year change in GDP and the GDP deflator three quarters hence is 0.69 for the period shown. A simple regression suggests growth would need to be 7.5 percent to generate 2 percent inflation. This assumes a rather crude “Phillips Curve” relationship between activity and price movements. But other researchers have found that old-fashioned Phillips Curves work quite well in China. See, for example, “Inflation in China: Old versus New Phillips Curves” by Sandeep Mazumder, Europe-Asia Studies, 66(3), 689-709, (2014).
Potential GDP in India

In India the story is more complex. (It often is.) Until recently, India was cursed by a combination of high inflation and disappointing growth. The roots of this stagflation go back several years. In the run-up to the 2009 election, which coincided with the global financial crisis, India’s previous government overstimulated the economy, waiving farm loans, awarding big pay increases to civil servants, cutting taxes and raising food-price floors for farmers. Then in the wake of several corruption scandals early in its second term, it fell into a state of “policy paralysis”, failing to approve projects, award clearances or allocate resources, such as coal, to the power plants that needed them.\(^{42}\)

The combination of fiscal and monetary generosity followed by bureaucratic bottlenecks allowed inflation to take root. And high inflation raised people’s expectations of price rises in the future. Some traders hoarded commodities. According to some economists, the government’s own food corporation itself hoarded buffer stocks of grains that it was reluctant to sell for less than the regulated price it had paid for them.\(^{43}\)

Households looked for a hedge against rising prices. For many, the preferred choice was the traditional one: gold, which Indians imported in great quantities. These imports worsened India’s trade deficit, weakened the currency, and exacerbated inflationary pressure. Breaking India’s inflationary psychology required tight money and a prolonged slowdown that hurt the more modern, non-agricultural sectors of the economy disproportionately.\(^{44}\)

Despite the sharp slowdown in India’s industrial production, its inflation persisted longer than most policymakers expected. But in the past five quarters, consumer-price inflation has also fallen faster than they anticipated, from over 10 percent in November 2013 to 5.2 percent in March.\(^{45}\) Falling inflation is evidence that India is operating below potential, even if it took a long time for that output gap to break the momentum of prices. Recent work by economists at the IMF, which attempts to infer the potential GDP of a variety of countries from the relationship between output, employment and inflation, suggests that India’s GDP fell below potential in 2013.\(^{46}\)

The fact that these economies are falling short of their potential is, of course, a pity. But it has a happier corollary. Because these economies are now underperforming, they have ample room for improvement.

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\(^{44}\) “Sectoral effects of disinflation: Evidence from India”, by S. Raja Sethu Duraia & M. Ramachandrana in Macroeconomics and Finance in Emerging Market Economies, Volume 6, Issue 1, 2013

\(^{45}\) Thomson Reuters Datastream

2.3 Strong demand in short supply

We have observed that all four economies have fallen short of the growth path they seemed to be following a few years ago. All four are also experiencing low or declining inflation. This lack of price pressure suggests to us that some of their growth shortfall is due to insufficient demand, rather than supply-side shortcomings, like inadequate productivity or capacity.

Supply-side failings, like poor infrastructure or skills, are hard to fix but easy to understand. Inadequate demand, on the other hand, poses something of a conceptual puzzle. Of all the reasons to be poor, underspending is surely the strangest.

Deficient demand is, at root, a co-ordination problem: workers lack jobs because firms lack customers, and firms lack customers because workers lack jobs. The problem might disappear if the economy could make three-way bargains between the jobless, prospective employers and potential customers: “If you hire me, I will buy things from him, who will buy things from you.”

If these four economies do indeed suffer from inadequate demand, then structural reform is not yet the binding constraint on their growth. They will all need to unshackle their economies in due course. But until then, all four could benefit immediately from stronger spending.

How likely are they to get that stronger spending? Economists used to argue that weak demand was a purely cyclical phenomenon that would typically resolve itself over shorter periods than the five-year horizon of this study. Most economists were confident that central banks, with the freedom to issue their own currency, could always revive demand if necessary. Indeed, the profession’s main worry was that central banks might overdo it, resulting in overheating economies and inflation.

After more than six years of zero interest rates in the US and two decades of intermittent deflation in Japan, economists are no longer so confident. Central banks cannot lower nominal interest rates much below zero. And in an era of slow productivity growth and low inflation, zero might not be low enough. Even at rock-bottom interest rates, economies might exhibit a strong urge to save and a weak appetite for investment. Stagnant demand might then become a secular phenomenon, as Larry Summers has argued, and not a cyclical one.

Will these limits on central-bank power prevent Japan, America, China and India fulfilling the scenario we have set out for them?

These limits are unlikely to stop China or India. Summers revived the idea of secular stagnation to shed light on mature economies like America, Japan and Europe, not emerging ones like the two Asian giants. China and India still have substantial room to cut policy rates and reserve requirements if necessary. Zero nominal rates would also, presumably, be more stimulative in China and India because their underlying growth rates are higher than in the G7. 47

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47 http://foreignpolicy.com/2015/03/27/is-paul-krugman-seeing-double-or-just-hungover-china-economy-growth/
If monetary policy falls short, China can also choreograph greater spending through its large network of state-owned banks and enterprises. Failing that, both India and China can also vary public investment and social spending as cyclical conditions demand. As a rule, developing economies should not lack for investment outlets, almost by definition. And it is certainly hard to think of a catch-up economy that has ever stagnated due to a sustained shortage of demand.

In the United States, the Federal Reserve's policy rate is still stuck at zero. But although interest rates have not risen, monetary policy is still tighter than it was when the Fed was expanding the size of its balance sheet through quantitative easing or assuring the markets that it would be patient in raising rates. Since US monetary policy is no longer as easy as it could possibly be, it is hard to argue that America's recovery is constrained by the Fed's inability to ease policy further. Demand may not be growing as quickly as we might like. But we can no longer blame underspending on the technical limits of monetary policy.

In Japan, the central bank under Governor Haruhiko Kuroda has twice surprised the markets with its determination to reflate the economy: in April 2013, when it launched its bold program of asset purchases, and again in October 2014, when it expanded it.

Thanks to the Bank of Japan's efforts, nominal GDP has grown by a cumulative 3.7 percent from the fourth quarter of 2012, when Abe returned to power, to the same quarter of 2014. That is Japan's fastest two-year nominal growth since 1997, according to Cabinet Office statistics. The Bank of Japan has also succeeded in weakening the yen, which is hard to explain if you believe it is stuck in a liquidity trap. The cheaper currency has bolstered the profits of exporters and is beginning to lift their sales too, according to recent trade figures from the Ministry of Finance.

The central bank's monetary easing has, it is true, struggled to offset the impact of the consumption-tax hike in April 2014. But it now has two years to work unimpeded by another such hike.

Despite the Bank of Japan's failure to raise consumer-price inflation to its target of 2 percent by its original two-year deadline, it should eventually succeed if it is sufficiently determined. In the final analysis, it is hard to argue that central banks cannot raise prices in a currency they can print. To raise prices is to reduce the value of a currency. If central banks cannot reduce the value of their currency by issuing more of it, they could, theoretically, issue enough of it to buy everything under the sun.48

The G4 scenario is not a forecast. We cannot say with any certainty that the G4 will grow as fast as we have outlined. We are saying that they could. And if they did, we would be curious to know what the consequences would be. To find out, we asked the Economist Intelligence Unit to simulate the effects of the G4 scenario using their global economic model. In the penultimate section of this paper, they report on their results.

48 http://www.princeton.edu/~pkrugman/bernanke_paralysis.pdf
3. EIU simulation: the ‘high-growth’ scenario

What if four of the world’s largest economies grew faster than we anticipate over the rest of this decade? 49

In this scenario, we consider the impact on the global economy if China, India, Japan and the US all experience higher than expected economic growth. This high-growth scenario assumes that past economic weakness has left these four economies with some "slack" or spare capacity; it also assumes that supply-side reforms increase their growth potential over the medium term. That would enable an expansion in output without inflationary overheating. (Their strong economic growth may, however, push up prices in other markets, including commodity markets.) The EIU has analysed the impact of this scenario on five different areas: economic growth in the rest of the world; economic growth of the other major economies in the scenario; food prices and energy prices; interest rates; and stock markets. The specific growth assumptions were provided by BNY Mellon. The Economist Intelligence Unit makes no comment on the likelihood of these high growth scenarios occurring.

### Economic growth (% real change)

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First, we consider the impact if the positive growth shock were experienced in all four economies simultaneously. We refer to this as the joint scenario. Then, we consider four sub-scenarios, in which the shock occurs in only one of the countries at a time. (We will refer to these sub-scenarios as the US-only scenario, the China-only scenario, and so on.) To gauge the impact, we compare these optimistic scenarios with a baseline, which is the EIU’s own growth forecast, issued in March 2015 and set out in the table above.

49 Section 3 of the white paper was written by the Economist Intelligence Unit.
3.1 Impact on growth in the rest of the world

‘Rest of World’ economic growth (% real change)

<table>
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<th>Year</th>
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<td>2014</td>
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<tr>
<td>2020</td>
<td>2.5</td>
<td>3.0</td>
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</table>

Source: The Economist Intelligence Unit.

The impact of the high-growth scenario on the Rest of the World (RoW) will be compared against the EIU’s baseline forecast for countries outside of China, India, Japan and the US. That baseline forecast is set out in the table above. It foresees an acceleration in economic growth from 1.8% in 2015 to 2.6% in 2017. Growth will remain at that level until 2020, when it drops slightly to 2.5%. This reflects a steady improvement in the global economic outlook. The US economic recovery is showing signs of deepening. China, meanwhile, remains the global star: growth may be slowing, but from a very high base, and China will continue to be a major source of new economic activity. Meanwhile, the outlook for the euro zone economy is improving, and given its large share of the RoW’s economy, it plays a big part in the baseline forecast above.

In BNY Mellon’s joint scenario China, India, Japan and the US grow on average 0.8 percentage points faster, annually, than in our baseline view. The upside surprise in these four big economies has a noticeable spill-over effect on the rest of the world, boosting its annual growth by an average of 0.5 percentage points in 2015-20. The impact is modest initially, but gathers pace each year, as trade links deepen and producers in the RoW benefit from productivity gains in the four central economies. Indeed, under the joint scenario, growth in the RoW accelerates each year, reaching 3.4% in 2020, almost a full percentage point higher than the baseline forecast for that year.

Which of the four economies makes the biggest contribution? To help answer this question, we unpack the joint scenario into its four constituent parts, looking at the impact on the rest of the world of faster growth in the US, China, Japan and India separately rather than jointly.

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50 Compared to the EIU baseline, the scenario has compound annual GDP growth rates (CAGR) over the period 2015-20 that are 0.7 percentage points (pp) higher for the US, 1.1 pp higher for India, 0.5 higher for Japan and 0.8 higher for China. The average of these differences in CAGRs is 0.8 pp. Henceforth, all 2015-20 period averages, or differences in those averages, refer to calculations based on CAGRs. This scenario was provided by BNY Mellon, and the EIU does not make a judgement on its likelihood.
Both the China-only scenario and its US equivalent have a similar overall effect, lifting the rest of the world’s growth by 0.2 percentage points above baseline, on average. But this similarity masks differences of timing and geographical impact. With the US growing at a faster pace than forecast, Europe and Latin America would benefit the most, while Asia would benefit more from the China-only scenario. The impact of the US-only scenario is also more consistent each year, while the impact of the China-only scenario builds over time.

What about India and Japan? Growth in the RoW increases only slightly in the Japan-only and India-only scenarios. They both add about 0.05 pp on average to the rest of the world’s annual growth. Japan’s economy still has a bigger impact than India’s, all else equal. But this is cancelled out by the fact that India’s growth shock is bigger in the scenario under consideration 51.

3.2 Impact on each other

GDP growth in individual country scenarios (% real change)

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Source: The Economist Intelligence Unit.

51 If Japan’s growth were one full percentage point higher than the baseline, it would add about 0.1pp to the rest of the world’s annual growth on average. The equivalent figure for India is about half that.
Faster growth in one of the four major economies will also lift growth in the other three (although India’s impact on the rest is less perceptible). This reflects the economic interdependence of the four major economies. For example, almost 40% of Japanese exports in 2013 went to the US and China. America is also China’s biggest (single-country) trade partner by far. China’s exports to the US amounted to US$396bn in 2014, according to Chinese customs data, and imports from the US equalled US$159bn.

The strong interdependence of these four economies is borne out in the modelling.

The US-only scenario has a significant impact on the other three major economies. It would raise India’s growth from a baseline of about 6.8% in 2017-2020 to 7.2%. The US-only scenario would also increase China’s average growth rate in 2015-20 from a baseline of 6.2% to 6.4%. This reflects America’s prominence as an export market for both Asian countries. The boost from faster US growth would not be enough by itself, however, to outweigh China’s structural slowdown over this period, which is driven mainly by a reduction in its immense levels of investment.

For slower-growing Japan, the assumed increase in US growth would be a notable fillip. The baseline forecast is that Japanese growth will average 1.6% annually in 2015-20. But a stronger US economy would push this up to 1.8%. The US has been a major trading partner for Japan for many decades, and although it has now been eclipsed by China, it still received about 19% of Japan’s exports in 2013.

As China’s economy approaches the size of America’s (and even overtakes it, if purchasing-power-parity exchange rates are used) it is also beginning to match America’s economic impact on other parts of the globe. Its expanding domestic market has become one of the most important export destinations for many countries. Indeed, China is now the most important market for US exports outside of North America, receiving almost 8% of US exports in 2013, compared with only 2% at the turn of the century.

Likewise, over the past decade, China has become one of India’s most important markets in Asia, alongside the economies of Hong Kong and Singapore. If the recent trend in trade agreements is anything to go by (China has wrapped up free trade negotiations with both Australia and South Korea recently and also belongs to the Regional Comprehensive Economic Partnership, a proposed FTA between 16 countries in the Asia-Pacific region) China’s impact on the complexion of global trade will only grow.

Thanks to this growing influence, the China-only scenario would add an average 0.1–0.2 percentage points in 2015-20 to the annual growth rates of the US, India and Japan.
3.3 Impact on food and energy prices

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Source: The Economist Intelligence Unit. \(a\) Brent, spot price. \(b\) FAO Global Food Price index.

Faster GDP growth in four of the major economies in the world will undoubtedly heighten demand pressures for a number of key commodities, including oil and food. We would anticipate relatively rapid supply responses: US shale producers can swiftly reactivate production at a number of oil wells, for example, and farmers in the major agricultural powers would increase planting. Nonetheless, the overall impact would be to push up commodity prices.

**Oil**

Our baseline assumption for oil is that market fundamentals alone do not justify the 50% decline in prices witnessed between June 2014 and January 2015. These low prices will boost demand, depress production and discourage investment. In our baseline, we therefore expect a correction in the second half of this year, with gradually increasing prices thereafter (see table above).

If growth in these four major economies (which account for almost half of global GDP) is faster than the baseline envisages, it will accelerate the recovery in prices. A co-ordinated positive growth shock in the four major economies would cause prices to firm from US$62/b in 2015 to US$109/b in 2020.
Despite the buoyant global growth envisaged in the joint scenario, international oil prices would still remain slightly below their peaks of 2011-13. Prices will be contained by the significant excess capacity that now exists in the market, together with the ability of US shale producers to readily increase output if prices warrant. Prices will also be dampened by a strong US dollar and ongoing efforts to increase energy efficiency in developed economies.

Two deeper trends will also be at work. Energy intensity—the ratio of energy use to GDP—typically declines with increasing income. China’s economy is also undergoing a structural transformation towards less oil-hungry growth. Both of these trends imply that global oil demand (and crude prices) will grow much slower than the overall global economy.

What if the faster growth is confined to one of the four economies only? The US is still the world’s largest oil consumer by far, not least because Americans show a strong attachment to cars as a mode of transport. Faster economic growth in America would therefore lift US households’ demand for fuel. Furthermore, as shown above, faster growth in America would have sizeable knock-on effects on the RoW’s economic performance, lifting their demand for oil also. A US-only scenario would therefore be enough by itself to raise Brent oil prices above US$100/barrel by 2020. Faster growth in China—whose oil consumption in 2014 was slightly more than half that of the US and more than double that of India—would also push oil prices significantly higher, but the impact of a India-only or a Japan-only scenario would be more subdued.

Food

The EIU baseline scenario for food prices broadly tracks that of the oil price. The global Food Price Index (FPI) is expected to fall in 2015, amid bumper harvests in the US and EU and comfortable stock levels, before recovering gradually in 2016-20 on the back of robust demand, especially from fast-growing emerging markets in Asia.

A positive growth shock across the US, China, India and Japan would push up prices faster. Despite some supply responses, the FPI would, by the end of the decade, exceed its peak of 2011. Rising incomes—especially in China, India and other developing economies—would lead to greater and more protein-rich food consumption. In particular, a faster transition towards meat and dairy-based diets would put strong upward pressure on prices, as meat and dairy require significantly more inputs. While the joint scenario shows a gradual increase in food prices over 2016-20, we cannot rule out upward spikes. Lower stocks and tighter markets mean that global food prices will be vulnerable to a negative supply shock. For example, weather-related disruptions in any major producing country could trigger a surge in prices.

India and China loom larger in the food market than the other two major economies. This chiefly reflects the sheer size of their populations. Food consumption in these two giants is also more sensitive to rising income levels than it is in richer countries. Of the two, China’s impact on food prices is even larger than India’s, largely due to cultural differences, which ensure that meat and dairy consumption is much more widespread than in India.
3.4 Impact on interest rates

### Interest Rates

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Source: The Economist Intelligence Unit.   a. 90-day interbank market rate.    b. Central Bank Repo Rate (EOP, % per annum).    c. Call Rate: Uncollateralized 3 Month rate.    d. 3 month commercial paper rate. Average.

One of the main assumptions underlying BNY Mellon’s optimistic scenario is a bigger-than-expected output gap in these four economies. This greater untapped potential means that economic activity can increase without spurring increases in price pressures. Thus all four central banks - the Bank of Japan (BOJ), the US Federal Reserve (Fed), the Reserve Bank of India (RBI) and the People’s Bank of China (PBC) - would have more scope to keep rates lower for longer than would otherwise be the case.

To varying degrees, these economies could also benefit from key structural reforms to enable greater-than-expected potential growth. For example, Japanese labour reforms could incentivise firms to compensate employees based on their performance, not simply the long hours they put in. Furthermore, Japan’s attempts to revamp the national pension system, which favours stay-at-home mothers over those who work, will raise female participation in the workforce. In India, meanwhile, reforms to land purchases and taxation would strengthen the economic potential of the economy.

The result is that the joint scenario would have a limited impact on short-term interest rates, relative to the EIU’s baseline. Two competing effects cancel each other out. Although policy rates would normally rise in the face of faster-than-expected growth, this “hawkish” effect would be offset by the “dovish” impact of a bigger output gap and faster growth in supply-side capacity.

52 For clarity, these interest rates were imposed on the model to capture the impact of a larger than expected output gap. Without this constraint, the model used in this analysis would consider this as a demand-side shock only. In this situation, interest rates would rise marginally above our baseline due to the inflationary impact of growth. For example, the Japan short rate would reach 1.95% by 2020, and the corresponding long rate would rise to 2.5%.
3.5 Impact on stock markets

Stock markets
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Source: The Economist Intelligence Unit. a: Shanghai A-Share share price index, EOP 21/02/92=100. b: Composite stock market (Sensex) index in local currency. 1978-79=100. c: Nikkei Stock Average: Tokyo Stock Exchange series of 225 issues, local currency terms. d: Standard & Poor’s Composite index of 500 stocks (S&P500, 1941-43=10).

Following a surge in 2013, when many stock markets recovered to their pre-crisis levels, equities also rose strongly in 2014. This rally in stock markets reflects the ongoing recovery since the global financial crisis, as well as the expansionary monetary policies of central banks, especially those in Japan and the US.

In the joint scenario, with stronger economic growth than expected, stock markets will also move higher than the EIU baseline implies. Several studies have found a strong positive link between economic growth and the stock market, although the causality and sequencing is hard to disentangle. (Higher share prices might reflect faster growth or help cause it. They might also anticipate faster economic growth or follow it.) This link between growth and equity performance was also found in our analysis, although the strength of the correlation varied. We did not conduct stock market forecasts for the Shanghai A-share price index, given the absence of a credible relationship between economic fundamentals in China and the performance of local shares.

In the EIU baseline forecast, the S&P 500 will continue to rise in 2015-20, but the pace of gains will be more modest than the rapid increases in the years following the financial crisis. We forecast 5-7% annual stock market gains in 2015-18, before a pause in 2019, as the US undergoes a modest business cycle recession (two consecutive quarters of contraction), with growth resuming in 2020. In the joint scenario, stronger economic growth would push the stock market index higher - the gains would reach double digits in 2016, before gradually slowing in the years to 2020.
For Japan, the EIU baseline stock market forecast is constrained by the country’s modest economic outlook and limited market opportunities relative to other OECD countries and emerging markets. We forecast that the Nikkei 225 index will average annual gains of 4.7% in 2015-20. In the joint scenario, meanwhile, the value of the stock market would rise slightly faster: annual gains would average almost 6% in 2015-20. These advances would peak in 2016 at 11.7%, before slowing thereafter.

Japan’s equities will be helped by recent changes in the Government Pension Investment Fund (GPiF), the world’s largest institutional investor with ¥130trn in national pension savings under management. In October 2014, GPiF announced a radical shake-up of its asset allocation in an effort to improve returns. It is aiming to cut its domestic-bond allocation from 60% to 35%, while increasing its allocation to equities from 24% to 50%, split equally between domestic and foreign equities. The changes announced by the GPiF are expected to prompt other Japanese pension funds to adopt more aggressive investment strategies, thus providing a new source of support for the Nikkei 225 index.

After strong, but volatile, performance in recent times, the Indian Sensex is forecast to rise steadily by 6.9% a year on average in 2015-20 in the EIU’s baseline forecast. Gains in the Sensex will be even stronger in the joint scenario, pushing up annual average returns to almost 9%.

The Global Model

We have made use of our pioneering Global Vector Autoregression (GVAR) model developed by econometricians over the past decade to consider the scenario from BNY Mellon. The GVAR model is solved by combining a number of vector error-correction models – one for each country – the implication being that macroeconomic variables tend (or “error-correct”) towards long-run equilibrium relationships, but move freely in the short-run. Such models are believed to have strong forecasting properties, particularly in the short-run, and to capture cross-quarter and cross-variable dynamics effectively.

The macroeconomic variables we include in the model are real output, the real exchange rate, consumer price inflation, equity price index and both short and long domestic interest rates. Each country’s forecasting model also includes a small number of “foreign” variables: weighted averages of the key variables for the “rest of the world”, where the rest of the world is proxied by the other countries in the model. Including the influence of foreign variables in this way allows us to transmit shocks originating in one country to its trading partners. For example, a negative shock to China’s growth forecast would have an impact on the economies of all of China’s trading partners, with the effect being proportional to each country’s exposure to China, measured in terms of bilateral trade flows.
4. Conclusion

The title of this paper alludes to Paul Krugman’s classic book “The Age of Diminished Expectations”. In the space of a couple of hundred pages, it offered a panoramic view of America’s economic flatlands, documenting its poor productivity growth, its ageing population, and its chronic trade and budget deficits. The US economy was not about to fall off a cliff, Krugman argued, but neither was it making much upward progress. “Avoiding crisis and doing well are not the same thing,” he wrote.

The same sentiment applies with equal force today. Some commentators and policymakers seem resigned to, even grateful for, a “new normal” of modest growth, which comes as a relief after the economic upheaval of the recent past. But avoiding crisis and doing well are not the same thing. Indeed, “normal” is altogether too comforting a word to describe the world’s economic underperformance. It suggests that this underperformance is the best that one can expect. Christine Lagarde of the International Monetary Fund is right to describe it instead as the “new mediocre”, a pejorative term which is, therefore, a better one 53.

This paper has tried to look at four of the world’s biggest economies with undiminished expectations. This is partly because signs of recovery and reform in these countries allow some room for cautious optimism. But it is also because optimism is itself a necessary ingredient of reform and recovery. No economist or policymaker knows with certainty how fast Japan, America, China and India could grow over the next decade without running into capacity constraints. But the best way to locate this upper limit is to run up against it. That requires policymakers to show some ambition.

Central bankers can make sure an economy never exceeds their estimations by tightening monetary policy whenever it threatens to surprise them. As a group, entrepreneurs and their financial backers are no less powerful. They plan their capital outlays, wages and prices based on their forecasts for economic growth. But this growth is in turn a consequence of their outlays and decisions. Indeed, it is hard for an economy to grow much faster than its bankers and entrepreneurs expect it to grow, and easy for them to expect it to grow at about the same pace as it has in the past 54.

Krugman first published “The Age of Diminished Expectations” in 1990 as a guide to economic policy in the decade ahead. As it turned out, the 1990s far surpassed the shrunked hopes of the book’s title. Productivity accelerated, unemployment plummeted, America’s budget deficit vanished (albeit briefly). Even inequality stopped getting much worse 55. America remembered what it was like to do well. Pessimism may be prudent but it is not always prescient.

54 In his book Major Recessions, Chris Dow elaborates on this mechanism. See especially p.368
http://www.oxfordscholarship.com/view/10.1093/0199241236.001.0001/acprof-9780199241231-chapter-10
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