THE G4:

UNDIMINISHED EXPECTATIONS
THE SOURCES OF GROWTH

SEPTEMBER 2015

PREPARED FOR PROFESSIONAL CLIENTS ONLY

Executive Summary

Japan, America, China and India are home to over three billion people and produce almost 45 percent of global GDP[1]. But despite their joint significance, these four economies are rarely analyzed as a group. It can seem as if nothing unites them but size and complexity.

At BNY Mellon Asia-Pacific, we are taking some initial steps to consider these four countries in parallel. We call them the G4, as befits the world's four biggest economies, valued at purchasing-power parity [2].

It is a particularly interesting time to be thinking about this quartet. Deflation is receding in Japan; inflation has eased in India; unemployment is declining in America; and despite China's stockmarket turmoil, its property market shows signs of stabilizing. After a period of economic disrepair and political drift, these countries are now in the midst of recovery, reform, or both. In this series of papers, we explore what might happen if all four of these giant economies fulfilled their economic potential at roughly the same time.

This optimistic G4 scenario envisages growth over the rest of this decade averaging 2 percent in Japan, 3 percent in America, 7 percent in China and 8 percent in India. It is an ambitious scenario, but not an impossible one. In the first paper in the series, we concluded that each of these economies has "room to recover". If demand revives, they can grow quickly for a spell before running into capacity constraints.

Eventually, however, this slack will disappear and they will reach the limits of their productive capacity. In this second paper, therefore, we look at how this productive capacity will evolve over the rest of this decade, paying close attention to workforce trends, capital accumulation, and productivity gains - the ultimate sources of growth.

1 Their contribution to the growth of GDP is even bigger: more than 60 percent in 2015, according to the IMF's forecasts.
2 Purchasing-power parity attempts to value similar goods and services at the same dollar prices wherever they are sold.

Author

Simon Cox

Managing Director and Investment Strategist

BNY Mellon Investment Management Asia Pacific

Labor

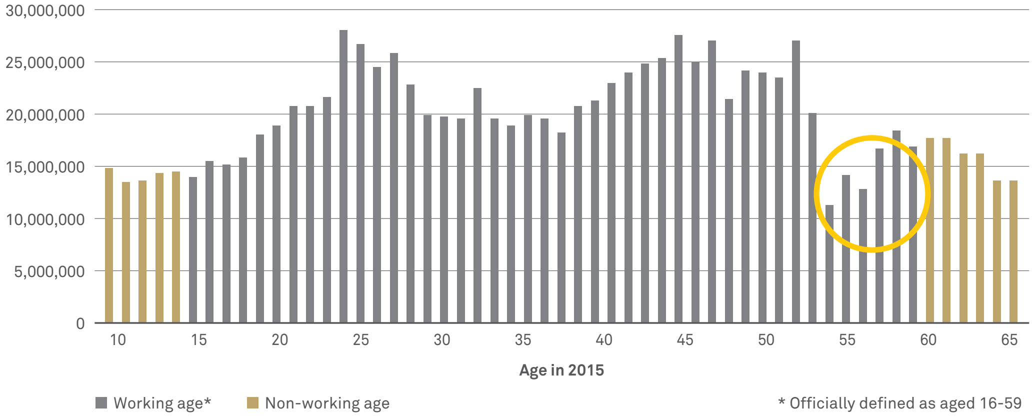
The growth of the G4 workforce will depend partly on **demographics**. But demography is not destiny.

In Japan the working-age population has shrunk in the past five years, but the number of people working has actually risen [3], thanks to increases in employment and participation rates.

China's working-age population has now begun to fall [4]. But the decline will be fairly gentle for the next few years. Indeed, the population aged 16-59 may start growing again for a couple of years at the end of the decade, because the cohort retiring in those years is unusually small.

China's population by age

(Based on 2010 census)



Source: China 2010 census. This chart assumes that each age cohort in 2015 is the same size as the cohort that was five years younger in 2010

The size of the G4 workforce will also depend on the labor-force participation rate (the proportion of people working or seeking work). In the US, this rate is at its lowest since 1977 [5], according to the Bureau of Labor Statistics. Some of the decline reflects potentially reversible cyclical effects. If this cyclical damage fades and unemployment drops as low as it did in the last cycle, US employment may grow by as much as 1 percent a year over the rest of this decade [6].

In Japan, unemployment is low. But many people who say they want to work are not counted as unemployed because they are not actively seeking employment. In the first quarter of 2015, over 4 million people who were not in the labor force said they nonetheless wanted to work [7]. That is equivalent to 6.5 percent of Japan's working population. Many of these "missing workers" are women.

Capital accumulation

In Japan, America and India, investment in new capital has been lackluster in recent years. The chief deterrent to such spending, according to a recent study by the IMF, is economic weakness [8], just as economic weakness is also one consequence of flagging investment. It is, then, possible to imagine a virtuous cycle in which improved confidence and a strengthening recovery spur investment, which in turn helps to bolster the economy.

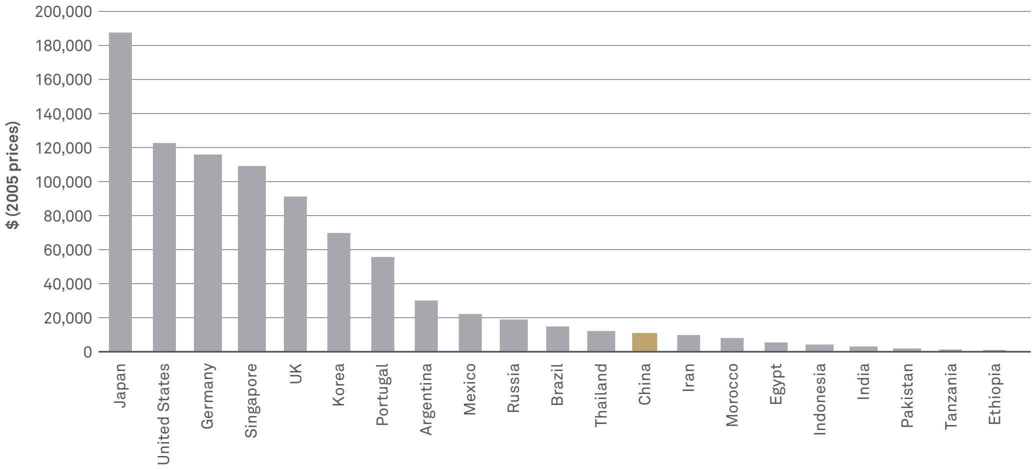
When that virtuous cycle begins, the G4 economies will not lack for worthwhile projects. In the United States, private fixed assets now average about 22 years in age, the oldest they've been since the 1950s. In Japan, meanwhile, the capital equipment used by manufacturers is estimated to be even longer in the tooth: 3-4 years older than in the US [9].

What about China? Because China often invests wastefully, many people conclude that it also invests excessively. But just because China has overcapacity in some industries, does not mean it has overcapacity in everything. Despite urban China's impressive surface infrastructure, many city-dwellers are still at risk of flooding, thanks to inadequate drainage systems [10]. And despite enormous outlays on subways, the length of track has not kept up with the number of passengers.

Adding everything together, China's accumulated stock of capital is not yet large, relative to the size of its population and workforce (see chart).

3 http://www.stat.go.jp/data/roudou/longtime/zuhyou/lt01-a10.xls
4 Although, contrary to conventional wisdom, its workforce (its "economically active population") is still increasing, according to the latest figures from the National Bureau of Statistics http://www.stats.gov.cn/tjsj/ndsj/2014/zk/html/Z0401E.HTM
5 Bureau of Labor Statistics
6 BNY Mellon calculations, based on participation scenarios by the Council of Economic Advisers and population forecasts by the Bureau of Labor Statistics
7 Japan Labor Force Survey

Capital stock per person 2013



Source: BNY Mellon calculations, based on M. Berlemann and J.-E. Wesselhöft, "Estimating Aggregate Capital Stocks Using the Perpetual Inventory Method" (2014)

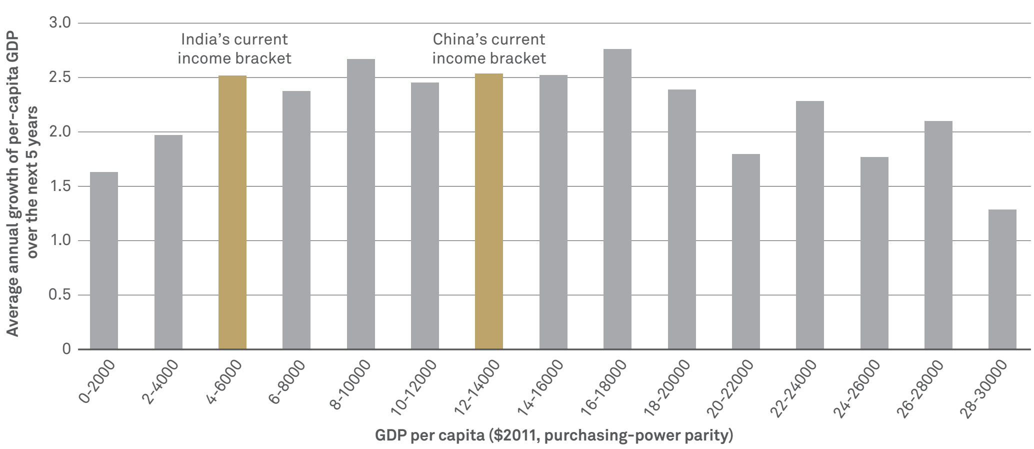
Technology

Optimists argue that the world is in the midst of a third industrial revolution, driven by the rapid growth and diffusion of networked computer power throughout the economy. These "technotopians" imagine a future of driverless cars, refurbishable bodies and artificial minds. Sadly, these exciting breakthroughs have yet to translate into any discernible uptick in the rich world's miserable rate of productivity growth. But such a lag between technological and economic revolution is not unprecedented. To boost worker productivity, improved technologies have to be "embodied" in new equipment, and widely deployed by firms. That requires investment. The IT revolution may, therefore, revive when capital formation finally booms. To fulfil the G4 scenario, US labor productivity will have to grow by about 2 percent a year, a "somewhat optimistic", but "plausible" aspiration, according to one Fed study[11]. Japanese productivity will have to grow equally fast, but from a significantly lower base.

Even if technological progress remains as slow as some techno-skeptics fear, China and India still have great scope to enjoy "catch-up growth". They can improve their productivity by assimilating techniques that are not new to the world, but are new to them.

Many people, however, argue that developing economies tend to fall into a "middle-income trap", interrupting their progress from poverty to prosperity. The idea of such a trap is intuitive and popular. But we find it hard to confirm in the data. The chart below shows how countries have grown in the five years after reaching a given level of per capita income. The data span more than 200 countries and 50 years. If the middle-income trap exists, we would expect growth rates to dip in the middle range of income brackets. But no such dip is discernible. If anything the opposite is true.

How fast do countries grow after reaching a given level of GDP per person? 1960 - 2009



Source: BNY Mellon calculations, based on World Bank World Development Indicators

8 http://www.imf.org/external/pubs/ft/weo/2015/01/pdf/c4.pdf
9 http://www.imf.org/external/pubs/ft/wp/2014/wp14141.pdf
10 http://usa.chinadaily.com.cn/china/2013-07/20/content_16805895.htm
11 http://www.federalreserve.gov/pubs/feds/2013/201336/201336pap.pdf

Conclusion

The growth envisaged in our G4 scenario is somewhat front-loaded, driven by a cyclical upswing as demand revives in the next year or two. Later in the decade, supply-side limits will impose themselves. At that point, growth will depend heavily on the pace of productivity improvements.

Unfortunately, productivity growth is particularly hard to predict. "Productivity forecasts have had no success historically," Robert Hall of Stanford has pointed out, with merciless honesty. That poor track record is humbling for long-term forecasters. But this lack of predictive success offers one consolation. Many of those who foresee an era of economic stagnation have already decided that productivity growth will disappoint as the world economy revives. Such a conclusion seems to us premature. Forecasts of productivity failure are as fallible as any other. If we cannot know the future, we cannot know that it will be bleak. Good investors will remain open to other, brighter possibilities.

Issued as at 21 Aug 2015 GA22 21 Feb 2016 (6M)

BNY MELLON