

# GDP Growth: Cutting Through the Noise

by James Masturzo, CFA, and Michele Mazzoleni, Ph.D.

Sports fans know that a team's performance depends on more than luck. From game to game every team experiences ups and downs, accompanied by intense speculation about trades and strong opinions about the coaches' resourcefulness or the players' agility under pressure. Luck does, of course, count; injuries can sideline star players for weeks. But fundamentals make the difference over the course of a season. No matter what journalists, retired players, and fans might suggest—and no matter how vehemently they might express themselves—there are no short cuts: A championship team needs a combination of talented players, expert coaches, and competent general management.

Economies, like sports teams, also experience ups and downs. Fortunately, most fluctuations in real GDP growth are nothing more than short-lived deviations from a stable long-run path. Nonetheless, it is during these episodes that the talking heads and economic pundits leap into action with convincing stories to justify high and low projections. If you tune in your favorite network, you will find the economic equivalent of sports talk shows, flooding the airwaves with an endless stream of breaking news.

A recent notable “down” of the U.S. economy took place in the first quarter of 2014. By the beginning of summer, the growth rate was revised down to -2.9%, more than 6% below the previous quarter. To justify this swing, the phrase “polar vortex” entered the financial lexicon. An abnormal pattern of exceedingly cold temperatures, the story went, discouraged consumers from going to the mall to spend their hard-earned cash. Was the “polar vortex” narrative a valid interpretation of what was happening? Probably only in part; however, in the spring of 2014, there were just as many commentators talking about the temporary weather phenomenon as there were prognosticators arguing that the first quarter augured oncoming headwinds.

The polar vortex was quickly forgotten when, in the second and third quarters, the U.S. economy enjoyed growth rates that even some emerging economies would envy. According to the latest revisions, the economy made up the ground lost in the first quarter and grew at annualized rates around 4% in the second and third quarters, numbers that the media hailed as “the strongest six-month performance in more than a decade” (Cohen, 2014). While this quote is technically correct, its rhetoric hides the disappointing fact that in the first *nine* months of 2014 the U.S. economy grew at an annualized rate of 2%—an anemic rate if compared to estimates of the current output gap.<sup>1</sup> It seems that every season has its story, which in turn is quickly forgotten as a new one emerges to capture the breaking news banner. Which stories should we focus on? What are investors to do?

In our opinion, the largest and most persistent active investment opportunity is long-horizon mean reversion in asset returns. The short term will be ridden with noise,<sup>2</sup> false projections, fanciful stories, and bogus interpretations, most of which don't mean anything. We at Research Affiliates suggest that long-term investors turn their attention to long-term growth fundamentals.

## Cutting Through the Noise

Building on the growth-accounting literature,<sup>3</sup> we can break out four main drivers of growth in real GDP:

$$\text{Real GDP Growth} = \text{Productivity} + a \times \text{Physical Capital} + (1 - a) \times (\text{Workers} + \text{Human Capital})$$

All the variables other than alpha ( $a$ ) are growth rates. Alpha is the share of national income that goes to the owners of capital, while the complement ( $1 - a$ ) is the share that goes to labor. This equation tells us that national production results from the combination of industrious, educated workers and physical capital, such as machines and equipment. Productivity captures the contribution of technological progress

and improvements in efficiency of the production process, while human capital represents the contribution to national production coming from advances in education.

Estimating how these components will contribute to future GDP growth is not an intuitive exercise because their impact is time varying. In **Figure 1**, we decompose the average real GDP growth rate in the United States over the last six decades. Between the 1960s and the 1980s, advances in education and increases in the labor force, driven by strong demographics, contributed more than half of the total growth. After the 1980s, when most of the baby boomers had already joined the workforce, the demographic dividend started to fade. Fortunately, extraordinary advances in technology in the 1990s offset the early demographic headwinds, contributing 40% of total output growth. These advances were impelled by the progressive incorporation of the Internet into work and, as Fernald (2014) recently argued, this technological expansion will not be easily replicated in future decades.

It is essential to recognize that these factors are related to one another. First of all, capital accumulation is connected to productivity and demography: Discerning investors would not invest in a country that has reached its productivity peak and has a shrinking pool of workers. In addition, cross-country evidence suggests that productivity growth is tightly bound up with the demographic structure of an economy. As shown by

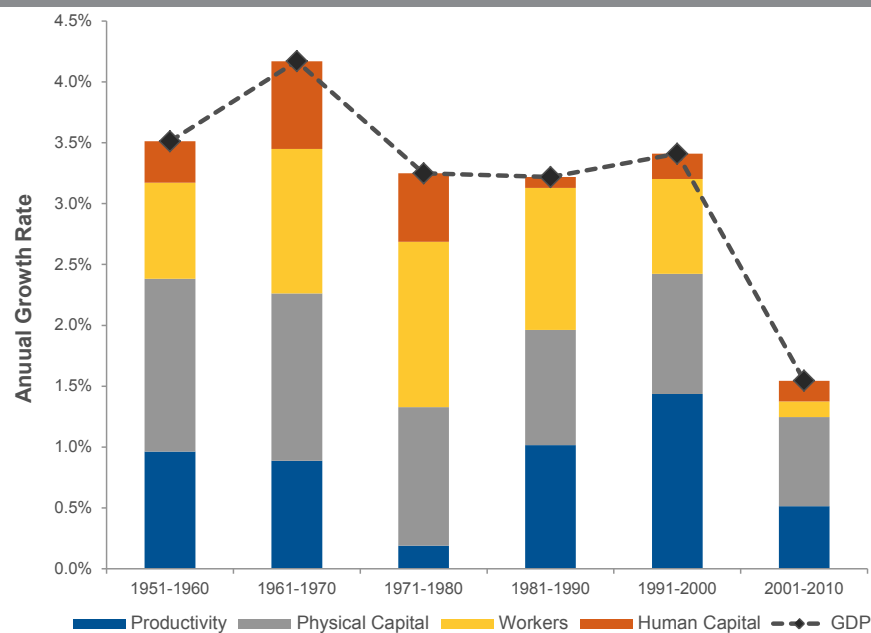
Arnott and Chaves (2012), experienced workers enjoy the highest productivity levels, but younger employees experience the highest rates of productivity *growth*. For GDP growth as well as asset returns, what matters is the growth rate.

You might look at the last column in Figure 1 and wonder about the rest of the world. Unfortunately, as shown in **Figure 2**, the situation does not look better in other developed economies. With the exception of the relatively dynamic United Kingdom, Europe is afflicted by the fatigue of mature economies with large debts, high taxes, and tight labor regulations. Japan also faces challenges that are very much related to its population dynamics: The pool of workers is shrinking, and productivity growth is likely suffering.

Figure 2 also shows that the BRICS countries enjoyed higher growth rates during the previous decade. Indeed, these countries displayed large productivity gains and a fast-growing labor force, reflecting a relatively young population building a new urban middle class. However, not all the BRICS countries have equally edifying stories to tell.

The star is China, whose spectacular growth was driven by productivity gains and high investments in physical capital. Indeed, the Chinese government gradually embraced many of the principles of a market economy, which led the more efficient private sector to overtake the government and become the largest actor in the

Figure 1. Drivers of Real GDP Growth in the United States, 1951–2010



Source: Research Affiliates using data from Penn World Table version 8.0 in Feenstra, Inklaar, and Timmer (2013).

economy. Brazil also appeared to be a success story, as the former President Lula Da Silva had pursued a moderate agenda and could leverage a commodity exports boom led by Chinese demand. In contrast, Russia, India, and South Africa achieved less than their potential. In particular, Russia enjoyed dramatic productivity improvements, a product of years of centralized planning, but failed to diversify away from the energy sector and establish the rule of law. The consequences of these choices are particularly visible nowadays.

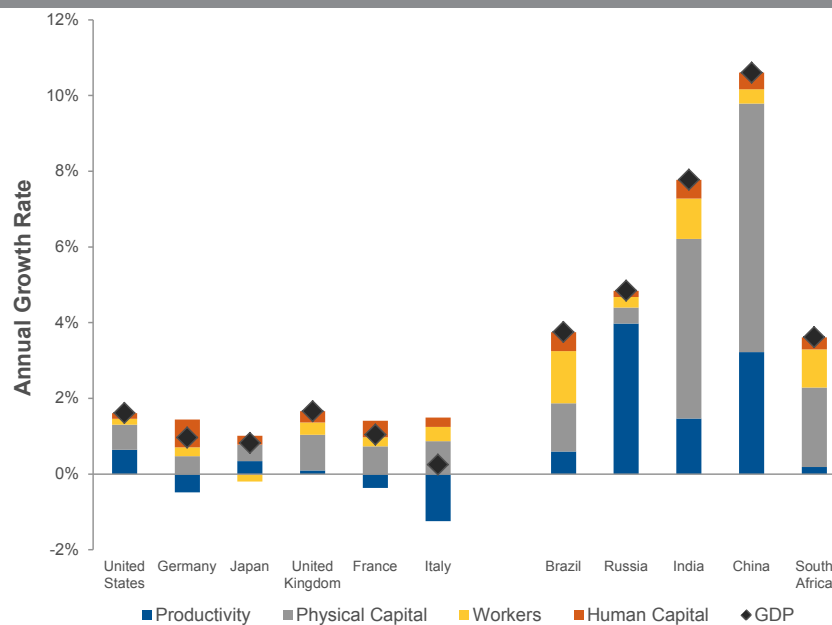
### Looking Ahead

Let's not kid ourselves, unless we come up with the next big discovery, the United States will not replicate the productivity growth achieved in the 1990s. Even comprehensive immigration reform aimed at attracting younger workers would not change the outlook significantly. This is not meant to imply the United States is headed toward economic collapse. The country is still at the forefront of world technological innovation. In addition, the United States has a sophisticated financial industry, which efficiently channels capital to productive uses, and it is experiencing a natural gas revolution. This revolution will support U.S. companies' competitiveness and improve the current account. Nevertheless, Americans as well as citizens of other developed countries should come to terms with the prospect of slower economic growth in the future. What do we mean by slower growth? We would not

be surprised if real U.S. output growth barely reaches 1.5% in the coming decades. Human capital growth will approach zero, and labor force growth will continue to decelerate as more and more baby boomers retire. These demographic headwinds will affect capital accumulation as well as productivity growth. Productivity could contribute to GDP growth by just a third of the 1% that we experienced in the past, while the contribution from capital accumulation could permanently fall below 1%.

The rest of the developed world looks even more worrying. Japan is mainly trying to solve deep structural problems with monetary policy, whose ability to generate permanently higher inflation through bond purchases is not certain. The Eurozone appears, now more than ever, to be far from an optimal monetary union; instead, it is an agglomeration of diverse economies with little popular willingness to make necessary sacrifices. The euro is still overvalued on a trade-weighted basis for most of its peripheral member states, whose economies badly need to regain their competitiveness. Unless Germany changes its views on monetary policy, less competitive countries such as Italy will have no expedient other than internal devaluations to regain a commercial advantage. That is, they need to go through recessions, which will lead to lower wages and prices. It is no wonder that some German experts express little concern over the dismal economic performance of the Eurozone: This is their new normal!

Figure 2. Drivers of Real GDP Growth Between 2002 and 2011



Source: Research Affiliates using data from Penn World Table version 8.0 in Feenstra, Inklaar, and Timmer (2013).

Fortunately, we can still hold out some hope in this world of slowing growth. Perhaps counterintuitively, poor countries have better prospects for strong growth than rich countries. As the convergence hypothesis postulates, each country's destiny is to reach a balanced path of growth, one that is determined by global technology and country-specific factors (Barro, 1991). In other words, once we discount institutional, political, and demographic differences, all emerging markets should come to resemble the United States in the long run. One striking example of the convergence hypothesis at work is the Chinese economy: Since it began its transformation more than 30 years ago, China has enjoyed enviable growth rates. We provide further evidence supporting the convergence hypothesis in **Figure 3**: The relative GDP per capita of an emerging market economy in 1992 explains about 31% of its real GDP growth in the subsequent 20 years.

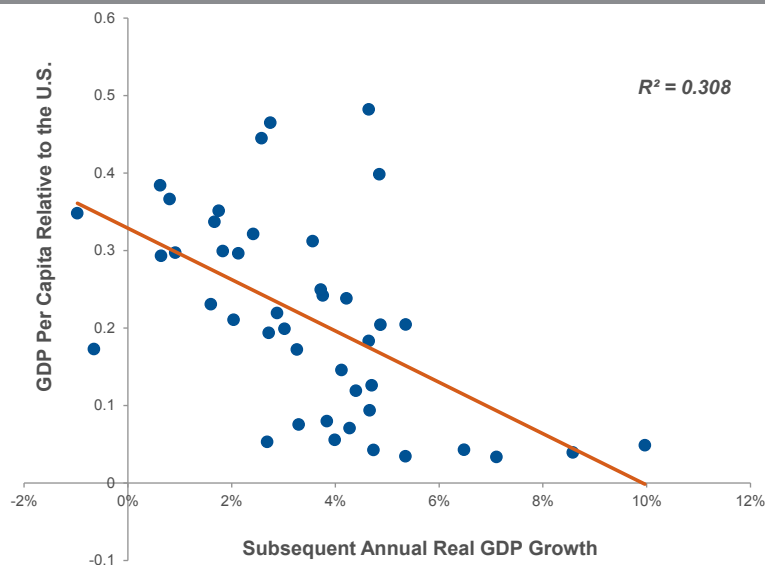
The convergence hypothesis of economies is a conditional prediction in the sense that not all countries are expected to behave in the same way. There are some success stories, such as Chile, and some disappointing performances in countries that delivered less than expected, typically because of poor political leadership. For every Ragu Rajan—the brilliant economist who recently took the helm of the Reserve Bank of India—there might be several less credible figures who advocate risky, heterodox policies. All the same, the powerful force of convergence is expected

to pull the *aggregate* growth rate of emerging market economies above and beyond what developed markets are likely to achieve.

### The Outlook for Investors

Equity and bond returns tend to be higher in fast-growing economies where companies can sell more goods and governments can more easily meet their financing needs. As shown by Laubach and Williams (2003), higher real GDP growth translates into higher real interest rates. In turn, over long horizons, higher real rates are associated with higher equity returns. Therefore, despite inevitable short-term fluctuations, it is the potential long-term growth that matters (or *should* matter) to investors with extended planning horizons. Unfortunately it is in the short run that stories are concocted and opinions are formed. Who knows what we might hear in the future: The winter was too cold and the summer too hot; this has been the best seven-and-half-month growth in the last 52 months.... As investors we need to cut through the noise and focus on the long-term trends. Even with a particularly positive quarter here and there, the long-term trend in economic growth in the developed world is underwhelming. The emerging countries of the world look far better on this metric. Therefore, when focusing on country growth, do not get distracted by short-term results and the stories that purport to justify them; instead, keep your head pointed downfield and focus on the long term. That's what we're doing.

Figure 3. GDP Per Capita vs. Real GDP Growth



Note: GDP per capita in 43 large emerging market countries is measured in PPP at the beginning of 1992. The subsequent average real GDP growth is measured from 1992 to 2011.

Source: Research Affiliates using data from Penn World Table version 8.0 in Feenstra, Inklaar, and Timmer (2013).

## Endnotes

1. The output gap is defined as the percentage deviation of actual real GDP from potential real GDP. Potential GDP is typically estimated as the level of production consistent with full employment and stable inflation (see for instance the Congressional Budget Office estimates for the United States).
2. Another source of noise comes from the fact that GDP values are revised in subsequent months after they are reported. Although the mean revision is close to zero on average, revisions can have magnitudes greater than 2% in some quarters. Research has shown that U.S. revisions cannot be forecasted with significant accuracy. See Faust, Rogers, and Wright (2005).
3. Solow (1957) and Jorgenson and Griliches (1967) are seminal works in the growth-accounting literature.

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