



**FORWARD.
PROGRESS.**

Illuminating Wealth,
Accelerating Investments

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The Global Innovation Barbell

The many amazing technological breakthroughs of the past 20-30 years that most people are aware of have been in most cases attributed to well-known, U.S.-based corporations. This view, while largely justified, does do an injustice to the many non-U.S. corporations, research institutions and others from around the globe that have contributed greatly to the advancement of mankind's knowledge and capabilities. Yet, perhaps the largest oversight within this exciting period has been the disproportionate benefit that emerging/underdeveloped countries enjoy as a result of these various accomplishments as compared to those countries whose citizens are primarily responsible for developing the impactful technologies. Much of the growth in the emerging markets over the past few decades has been attributed to the economic reforms of China and globalization as a whole. The U.S. has been a favored place for investing by many who state that "since it is the has the most innovative economy, why invest anywhere else?!". Perhaps a more objective analysis, and well-balanced approach, is warranted by factors that are now becoming more clearly established and understood.

It is marginal change, not nominal growth, that matters in the short/intermediate term

As the following chart illustrates, China's annual GDP growth rate (left-hand scale) has decelerated from almost 12% to just over 7% over the past few years. The U.S. economy, on the other hand, has bounced between 1.5-3.0% (right-hand scale), but with a discernible upward trend beginning before 2012. If you compare the lowest annual rate of growth for China over this period (7%) and compare it to the fastest annual growth rate for the U.S. (3.0%) you get a ratio of over "2" indicating that China has totally dominated in the "who's growing faster?" contest:

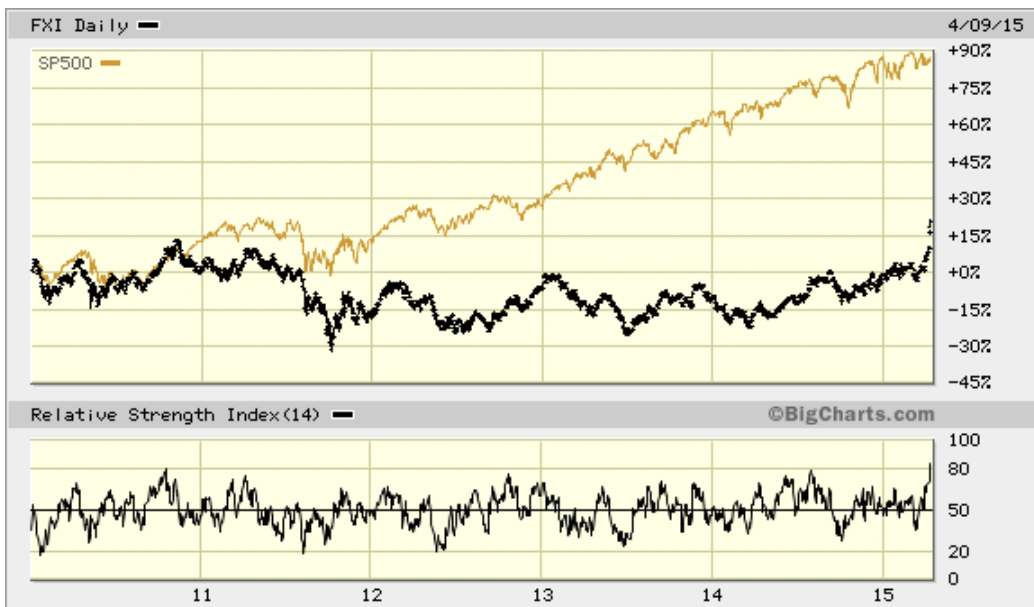
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Chart Comparing the Annual GDP Growth Rates of China (left hand scale) vs. the U.S. (right hand scale) since 2010



Despite this much faster GDP growth rate, China's stock market has dramatically underperformed the S&P 500 because the **marginal change** for China's GDP growth rate has been negative (decelerating), while the marginal change for the U.S.'s GDP growth rate has generally been positive (accelerating) on average since 2011:

Chart Comparing the China Large Cap Equity ETF (ticker: FXI) vs. the S&P 500 Index since 12/31/09



Note that in the above chart that the China ETF has recently had a very strong acceleration in price performance (up over 30% within the last several months). This has been in response to a variety of recently adopted pro-growth measures by the Chinese government that are hoped to be effective in stabilizing the country's GDP growth rate.

If “positive” marginal change is so important to a country’s stock market performance, which countries have the greatest potential for accelerating their workforce productivity?

Comparative Statistics of 10 Most Populous Countries/Regions

Country/ Region	GDP Per Capita* (2013)	GDP* (billions; 2013)	% of World's GDP*	Population (millions; 2014)	% of World's Population	Median Age
Top in Productivity and/or Innovation Creators						
Europe Union	\$ 34,500	\$ 15,850	18.2%	511	7.1%	42.0
Japan	\$ 37,100	\$ 4,729	5.4%	127	1.8%	46.1
United States	\$ 52,800	\$ 16,720	19.2%	319	4.4%	37.6
Subtotal		\$ 37,299	42.7%	957	13.3%	
Low in Productivity and/or Innovation Benefactors						
Bangladesh	\$ 2,100	\$ 325	0.4%	166	2.3%	24.3
Brazil	\$ 12,100	\$ 2,416	2.8%	203	2.8%	30.7
China	\$ 9,800	\$ 13,390	15.3%	1,356	18.9%	36.7
India	\$ 4,000	\$ 4,990	5.7%	1,236	17.2%	27.0
Indonesia	\$ 5,200	\$ 1,285	1.5%	254	3.5%	29.2
Nigeria	\$ 2,800	\$ 479	0.5%	177	2.5%	18.2
Pakistan	\$ 3,100	\$ 574	0.7%	196	2.7%	22.6
Subtotal		\$ 23,458	26.9%	3,588	50.0%	
World Overall	\$ 13,100	\$ 87,250	100.0%	7,174	100.0%	29.7

Source: CIA World Factbook; *GDP figures are calculated on a Purchasing Power Parity basis

Of the above listed, most populous countries/regions, the top three most productive (as measured by GDP per Capita) produce 50% more GDP, with less than one-third the population, than the other seven countries combined. Obviously, even moderate increases in productivity of these highly populated, less productive countries would have a dramatic impact on global productivity as a whole. This improvement does not require that the lesser developed countries rise to meet the economic standards of the U.S., Europe or Japan. Bangladesh could double its productivity and rise to a level comparable to India’s level of efficiency, and India could double and still be below that of China’s productivity.

These economies have been underdeveloped/underperforming for many decades, if not centuries, why would things change now?

There are many examples of how modern innovations are today reaching economies in way that they have not previously because technology is becoming not only more powerful, but more inexpensive and mobile. Some examples:

-The adoption of cellular phone technology has allowed poorer countries to “skip” the infrastructure build of traditional wireline/phone systems.

-Hand-in-hand with the wider access to cellular/satellite technology, access to the internet is becoming commonplace in many remote regions of the world. This improves access to farming/technical information, education and other life-improving insights.

-With access to communications, farmers and craftsmen are becoming better informed about global commodity/product pricing and are becoming more effective at negotiating fairer prices for their goods.

-A wide variety of non-bank payment systems have been developed to allow consumers and business people to transact safer, quicker transactions where a traditional banking system is unavailable or too inconvenient.

-The combined forces of internet access, crowd-sourcing and micro-lending has allowed people living in poorer countries greater access to business formation capital.

-With greater access to information about the developed world, attitudes about the role and potential for women to participate in the economy in more meaningful ways are changing. This area of potential economic improvement has a compounding effect as almost half of a country's population may begin to be more involved with work outside of traditional roles, be better equipped to do so because of increased access to education and other productivity-enhancing tools. Further, it has been shown that as more women enter the workforce in lesser developed countries, birth rates and poverty levels fall, and health conditions improve, with greater ability to afford more adequate nutrition and healthcare.

-As the means of communication becomes available to more people, countries with a history of oppressive governments have a better chance of opposition forces organizing and of not being as influenced by the propaganda of entrenched, totalitarian regimes.

Are all the benefits from technological advancement just commerce-related?

No, there are many ways that recent breakthroughs will help developing countries become healthier and more prosperous in ways other than monetary, such as:

-Smart phone technologies are being developed to provide people living in remote areas access to:

- a) Video conferences with distant medical personnel
- b) Low cost, diagnostic testing of fluid samples
- c) Image-based diagnosis of physical symptoms
- d) On-line health management and nutrition education

-Data collection is becoming cheaper, more accurate and timelier for activities such as:

- a) Tracking and managing pandemic outbreaks
- b) Responding to natural disasters
- c) Monitoring/management of weather/pest infestations effects on crops

-There are many potential life science breakthroughs that would certainly be of benefit to developed countries, but their positive benefits would be far more profound for lesser developed countries such as:

- a) More drought/pest resistant crop science
- b) More effective/lower cost vaccines
- c) Earlier detection of disease where travel times to needed medical care are more considerable

Are there positive potential effects for developed country workforce productivity as well?

Yes, there are many known hindrances to productivity improvement in developed countries that could be removed/lessened via adoption of technological advancements such as:

-Businesses in countries with high cost/highly structured labor markets could increase the productivity of their current workforce through greater adoption of automation/robotics to make their workforces more competitive on the global stage (i.e. Europe).

-Countries with older populations can potentially extend the potential careers of workers who want to work, but need automation/technology to assist them with physical stamina, vision impairment and/or reduced cognitive skills (i.e. Japan). This is not just a “longer work life issue”. Older employees in many cases are more highly skilled and productive than younger employees. The extension of their participation in the workforce provides the potential for skills that are not widely available as well as provide the opportunity for those older employees to provide mentorship to younger, less experienced employees.

-Countries with significant numbers of immigrants who are in many cases not proficient in speaking the native language can benefit from ever-improving language translation technologies (i.e. U.S.)

Strategy Implications

We agree with those who are enthusiastic about America’s ability to innovate and lead with regards to advancing mankind’s knowledge and abilities, and we feel a substantial portion of most investor’s risk capital should focus on trying to profit from the individual companies that are the most formidable in their creativity and capability of turning that foresight into commercially viable businesses. Having said that, it is important to remember that America’s contributions do not remain within our borders and that in many cases the countries that will most benefit “at the margin” (one of the most important drivers of investment performance) are those that are presently the most underdeveloped/least productive. The equity markets of lesser-developed countries have been poor performers over the past few years as China has shifted its economic policies and glided towards a slower, but still fast and more sustainable, economic growth rate. As non U.S. equity markets stabilize (which they appear to be doing presently), the effects of their adoption of new technologies within the realms of business, healthcare, communications and social change should become more visible. As a result, we feel a barbell approach towards investing, in which an allocation to companies who are innovators is matched with an allocation to those countries who will most benefit, is one that is promising and increasingly relevant as the ravages of the global economic turmoil of the past several years finally subsides from many shores around the world.

“Look to the Future, be Optimistic...but Hedge.”

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