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Disrupting Demographic Destiny: A New Paradigm for Investing In the Emerging Markets

- Favorable demographics have been a cornerstone of emerging markets investing, helping to advance the proposition of demographic destiny.
- Traditional models of economic development say that emerging countries should invest in the manufacturing and export sectors.
- Technological advances and changes in the global economy present a challenge as automation continues to reduce the need for labor.
- High population growth could become a source of instability and civil conflict if employment opportunities contract.
- Developing countries with faster consumption growth seem better suited to absorb excess labor.
- Investment in education and health care will be critical for building the workforce of the future.
- Investors in emerging and frontier markets should move away from demographics-based strategies and put greater emphasis on consumption and social investment.

The factors that drove emerging market (EM) economic performance and investment returns are set for major transition due to the spread of automation and artificial intelligence. Decades-old models of economic development focused on industrialization, exports, cheap labor and demographics will not continue to produce the successes of the past. Bourgeoning EM economies may face technological disruption should they fail to build a workforce for the future.

Continued on page 2

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A new age of industrial transformation—or revolution—is unfolding rapidly and automation is a key characteristic. For 50 years, manufacturers have increasingly integrated robotics for tasks that were repetitive, intensive or dangerous. Now, the cost of automation is decreasing at a rapid rate due to increased processing and sensor capabilities. Advances in cognitive technologies, more frequently referred to as artificial intelligence (AI), are opening a new front in industrial automation. The ramifications will be felt across the globe, but the greatest impact may be in the emerging markets.

Identifying drivers of economic growth remains contentious, with limited agreement on a few core elements, namely labor, capital and technological know-how. Such debates get even more intense when focused on the means by which developing countries might speed the journey to economic maturity.

One predominant argument is that population growth plays the central role in EM economic development. Higher population growth means there are more workers to fill jobs and competition lowers labor costs, helping to increase output. More workers translate into more consumers, providing an outlet for more supply. Countries with higher population growth and a higher percentage of working-age people should enjoy faster growth, which is essentially the long-held “demographics is destiny” theory.

Now that theory is under challenge by the industrial and technological transitions ahead. Instead of being an asset or engine of growth, in the future high population growth may become an engine of social unrest, according to a large body of academic research. Introduction of workers at an ever-faster pace as many lower-skilled jobs disappear could sow the seeds of civil conflict. The relationship between labor, demographics and growth will be upended.

This is not to imply that countries with higher population growth and a younger workforce are destined for ruin. Local factors and policies become more important in determining those likely to excel. Countries that have the resources to prepare their workforces for the future—or are already using those resources for such purposes—will likely be better positioned to grow in the global knowledge-based economy. Countries with high consumption, meaning they are less sensitive to manufacturing and export, will be able to shift workers to meet domestic needs. The other solution lies in the policy realm where countries will also be better positioned if they allocate resources to ensure the future workforce is both educated and healthy.

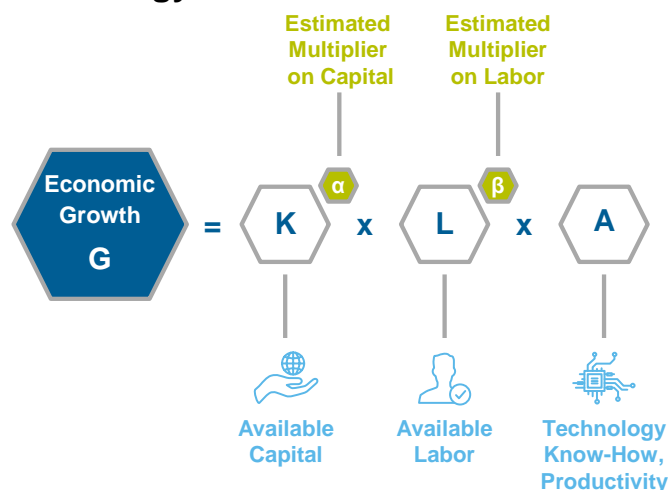
Since technological and industrial changes will disrupt demographic destiny, investors should shift emerging and frontier market allocations toward those best leveraging resources for success. The pursuit of economic development based on low-cost labor, exports and industrialization is out of place in the knowledge-and-networked economy.

Why Are Demographics Relevant to Economic Growth?

Economists, going at least as far back as the 1700s, have tried to understand what makes output grow. In 1928, economists Charles Cobb and Paul Douglas produced a formulation that still serves as the bedrock for explanations of economic growth. Modifications and advancements followed in subsequent decades, but the core insights remain relevant and underlie research to this day

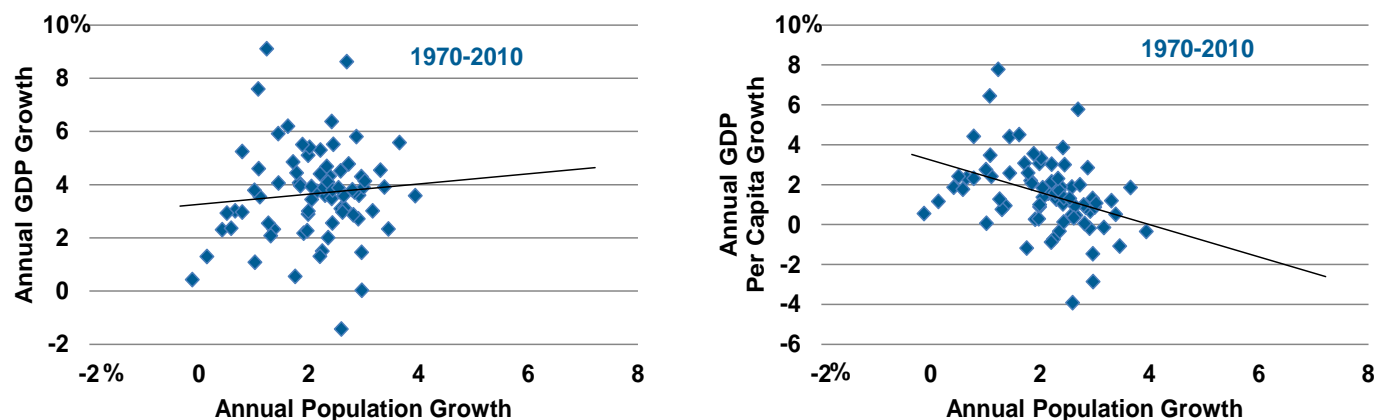
The Cobb-Douglas production function (see Exhibit 1) holds that economic growth is the product of capital (K), labor (L) and technological know-how (A). In this case, capital does not refer to cash or investments, but the industrial capital stock or resources that an economy leverages for production. Labor refers to the hours available for work. The theory also specifies the relationships between these three core factors. Capital and labor are each subject to a constraint, typically estimated, that determines the proportional impact additional units have on the economic output. In other words, a single-unit increase in either capital or labor could have a greater or smaller impact on output.

Exhibit 1: How Capital, Labor and Technology Drive Economic Growth



Source: Morgan Stanley Wealth Management

Exhibit 2: Population Growth Drives Output, Not the Standard of Living



Source: World Bank, Morgan Stanley Wealth Management

This simple formulation of economic growth allows for some powerful insights. Economies require capital and labor to grow, and the initial endowment of those factors helps determine future growth. All things equal, countries rich in both will grow faster. Since the capital and labor factors are weighted, an increase in one factor might have a larger impact than another. Finally, the intangible factor of technological know-how or productivity has multiplicative effects on the tangible capital and labor factors.

Implications for developed and developing markets begin to take shape when one considers the abundance and scarcity factors. Developed nations are relatively rich in capital compared with those countries still maturing. By contrast, capital-scarce developing countries often have abundant pools of labor available at relatively low cost.

Development frameworks stress the importance of industrialization, manufacturing and exports as the means of accelerating growth in developing countries and driving their economies toward convergence with more mature economies. The notion is simple: manufacturing for export to more capital-rich economies leverages the abundance of labor and rapid population growth. Properly implemented, these economies should theoretically grow at rapid rates based on demographic projections, seemingly offering a means for developing countries to leapfrog into the future.

The strategy worked, in part, for much of the past four decades. GDP growth modestly tracked population growth in developing economies (see Exhibit 2, left). The predicted relationship between population and economic growth may not have been perfect, but the general trend followed production function predictions. A one percent increase in population growth rate translated to 0.19% per year in additional economic growth for 40 years.

Unfortunately, economic growth did not necessarily translate to improvements in the quality of life (see Exhibit 2, right). Growth in the labor force helped to power the overall economy, but did little to improve individual wealth measured by GDP per capita. This meant that many of the countries pursuing the traditional industrialization-and-manufacturing strategy, such as China, struggled to build vibrant consumer economies, instead finding themselves captive to exporting low-cost manufactured goods to capital-rich countries.

Labor is a critical factor in the economic growth model, but only one of three variables. Leveraging labor to help countries overcome a shortfall in capital, technology or productivity was a reasonable strategy for the interconnected trading economy of the 20th century, but looks increasingly like a losing approach with the global automation of the 21st century.

How Is Technology Changing the Demographics-Growth Relationship?

Technological innovation and industry co-evolved over centuries, going back to advances like the abacus, the weaving loom and the steam engine. These tools helped boost efficiency and were central to periods of rapid economic transformation and growth. The World Economic Forum argues that a new industrial revolution is at hand, built on the digital technology that powered the Third Industrial Revolution. A range of new innovations in areas like materials science and nanotechnology, combined with global connectivity, should foster innovation at an unprecedented speed and scale.

One component of this transformation is advances in automation, which is especially relevant to the linkage between demographics and economic growth. Improved automation technology should lead to a reduced need for workers engaged in redundant tasks. It is difficult to forecast the trajectory of this shift, but the cost of robots relative to labor over time is instructive. According to ARK Invest, an asset management firm focused on exponential technologies, the unit cost of a robot declined 76% to \$31,312 in 2014 from \$131,433 in 1995, shifting the calculus for investment in automation technology drastically. In 1995, the unit cost of a robot was the equivalent of hiring 2.9 workers with an average US wage of \$45,123. By 2014, the unit cost was equivalent to hiring 0.5 people at \$59,219 annually.

Automation is not the only factor that will impact global production and supply chains. New fabrication technologies allow for localized production. For example, instead of making a sneaker in another country and paying overseas shipping costs, new technologies will facilitate low-cost, on-demand and customized production in a decentralized fashion. While still early, the

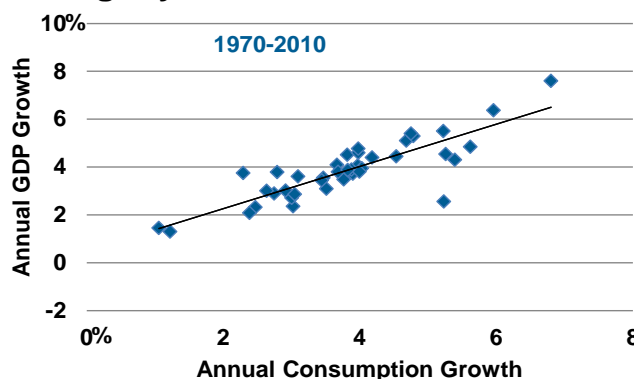
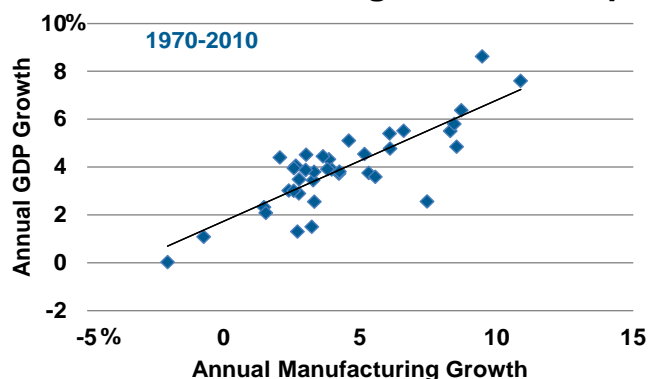
combination of fabrication methods like 3-D printing with materials science and improvements in robotics most likely will move production physically closer to the final consumers.

Advances in cognitive technologies such as artificial intelligence and machine learning are also changing the industrial landscape. Manufacturing becomes more efficient as robots integrate machine learning to collaborate, and logistics operations like delivery benefit from algorithms that identify the most efficient routes.

These technological transformations will be as disruptive to countries as they are for industry. Economies that invest in automation and fabrication techniques should be able to produce more with fewer workers. In fact, there is evidence that population and economic growth are already decoupling in developed markets. The Sheffield Political Economy Research Institute noted that UK economic growth followed population growth cycles from the 1960s until about 2000. Since then, economic growth has been stagnant despite accelerating population growth.

Labor helps drive growth through two channels: more workers and more consumers. Within emerging markets, much of the benefit has come from increased manufacturing rather than consumption. Exhibit 3 shows the strong linear relationships between manufacturing, consumption and economic growth between 1970 and 2010. Higher levels of consumption and manufacturing growth are both associated with increased GDP growth during these 40 years. In a multivariate analysis, a 1% increase in manufacturing correlated with a 0.64% increase in economic growth, while a 1% increase in consumption was associated with 0.13% higher growth. Manufacturing proved an important driver of growth and likely helped propel consumption higher during this period.

Exhibit 3: Manufacturing and Consumption Are Tightly Correlated With GDP Growth



Source: World Bank, Morgan Stanley Wealth Management

If labor proves less important in production going forward, developing markets lose a critical element of growth. Leveraging low-cost labor through exporting and manufacturing is likely in secular decline. Developing economies that already have high consumer spending may redirect excess capacity into production for the domestic market, but those without robust consumption are likely to struggle as more workers find fewer employment opportunities.

Under these conditions, rapid population growth could be the wellhead for social and civil unrest. Research in the causes of civil wars frequently identifies countries with large populations and low incomes as especially vulnerable. Countries that invest in their populations with an eye toward building the workforce of the future may well outperform peers with better demographics. Two critical factors for building a knowledge-based workforce are education and health care.

Investing in education systems produces higher-skilled individuals that can work alongside the machines as opposed to being supplanted by them. ManpowerGroup's 2016/17 survey found that 40% of firms globally are having trouble filling positions. This problem cuts across developing and developed countries as the US has an estimated shortfall of 3 million science and technology workers. Sustained social investment in health care and education sectors may help distinguish future leaders from laggards.

Does Economic Growth Translate Into Equity Returns?

Translating economic models and expectations into financial returns is not always straightforward. What's more, it is important to ask whether emerging market returns have generally cued off underlying economics. An examination of emerging markets indexes shows that equity performance has generally correlated with economic growth since 2000. Statistical analysis shows that a 1% increase in GDP growth amounted to 2.4% higher compounded annual equity returns.

Investors have generally benefited from emerging markets' exposure to the fastest-growing economies. Emphasis on demographic factors has generally worked well during this period. Population growth over the long run has correlated with GDP growth, and that was an effective means of cross-country asset allocation. If the thesis proposed here is true, and technological innovation crowds out labor in many developing countries, reliance on demographics could be misleading. Emphasizing domestic economic conditions and social investment may serve as a better heuristic.

Which Countries Are Building for the Future?

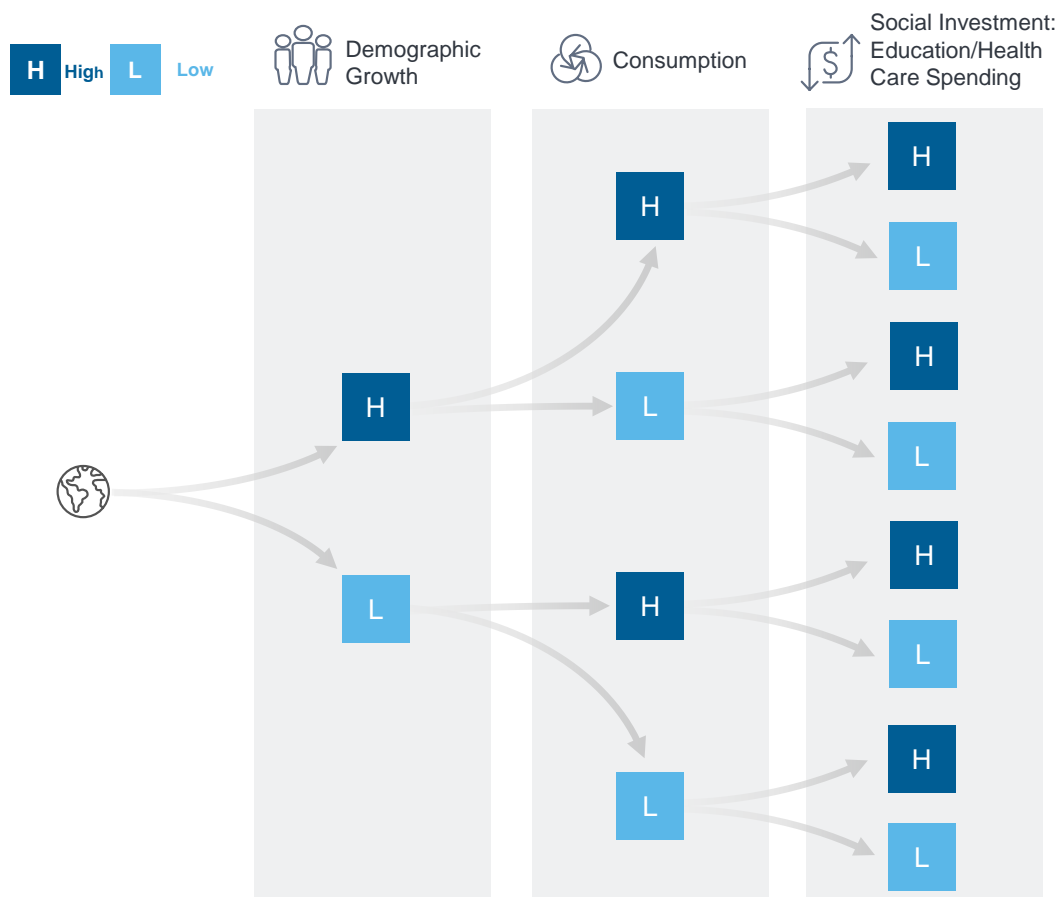
Here we look to develop a more robust framework for thinking about emerging market investing that explicitly encompasses future changes to the global economy. Labor growth is still an important variable, but largely helps identify countries with growing risk of unrest as opposed to economic opportunity. Two additional variables play a more central role in selecting the countries best prepared for the future. The first is consumption and the second is social spending on education and health care.

If there is less demand for low-skilled labor and reduced economic value to export, the impact of labor growth could become conditional on consumption. Countries with high population growth and an undeveloped domestic economy like Mali or parts of South Asia likely face significant challenges. Those countries are most likely to experience social and civil conflict. By contrast, countries with high population growth and higher levels of consumption can channel labor to services or domestic goods with greater success. Kenya has had reasonable success improving living standards, thereby promoting social stability.

Stock of available resources is important when the final variable, social investment, is incorporated into the analysis. Consistent with the work of economists Jess Benhabib and Mark Spiegel, countries that develop human capital such as skills and education grow faster than others. This occurs because the population is more productive, and these economies also attract more physical capital. The relative importance of human capital development likely grows exponentially in the coming years. Countries that invest to keep their people healthy and educated should experience more rapid economic growth, a strategy that Israel has successfully employed in becoming a center for innovation and entrepreneurship.

We combine the three variables, demographic growth, consumption growth and social investment, as a means of identifying countries poised for outperformance relative to those that may have a more difficult time. Exhibit 4 (see page 6) shows how these three factors combine. Each variable serves as a filter, and each country is identified as having a high or low designation. The categorization was assessed based on a country-value being above or below the sample mean. With three filters and two designations, there are eight possible combinations as the exhibit shows. This provides the foundation for the investment framework.

Exhibit 4: Forward-Looking Investment Filters to Help Identify Promising Countries



Source: Morgan Stanley Wealth Management

What Is the Investment Framework?

Across the three factors considered here, some are more malleable than others. Exhibit 4 shows the filters. Demographics, or population growth, is difficult for policymakers to change as long-term trends usually remain persistent. Next, consumption is hard to change, but not as difficult as demographic factors given appropriate economic incentives. Social investment is the easiest lever for policymakers to pull. While increased allocations to education and health care take time to vest, this is the factor over which policymakers have the most direct control.

Consumption plays a critical role in this framework. Countries with low levels of consumption growth in recent years likely experience two challenges. First, they will struggle to deploy people as labor is displaced by technology. In countries with rapidly growing populations, this can easily manifest in political

instability as is the case in places like El Salvador and Sudan. Both are plagued with governance challenges, criminal or insurgent threats to legitimacy as well as high levels of violence. Second, lower levels of consumption mean there are fewer domestic resources to redeploy into social investment and building the knowledge-economy workforce.

There are four buckets of countries with low levels of consumption, and we believe serious structural challenges face these economies in the future. As a result, we provide no allocation to these emerging and frontier markets. In a long-short strategy, countries with high population growth and low consumption would be potential shorting opportunities. Similarly, countries with low population growth, low consumption and low levels of social investment likely get left behind in the global economy just as Russia appears to be in secular decline.

The most interesting group among those with low consumption are the countries with low population growth and high social investment. Policymakers here have the right priorities and, given time, could benefit from an increasingly capable and competitive workforce. The challenge for this group, however, is maintaining the investments in the face of resource constraints. Some countries that fall into this category have a history of socialist or populist politics such as Argentina and Brazil. As a result, there are high levels of social expenditures, but also significant fiscal overhangs from pensions and social security.

Since it is not clear that elevated education and health care spending is sustainable, they are also excluded from the allocation. Should fiscal situations prove sustainable, some of these countries would be worth reconsidering down the road.

This leaves four remaining buckets, all with high consumption growth (see Exhibit 5, page 8). Some countries are excluded because of missing data on social spending. These are countries with the capability of redirecting labor as well as sustaining social investment should they choose to pursue such a policy.

High Social Investment

Two buckets stand out given the preference for high consumption and high levels of social investment. There is a small group of countries that have high population growth, high consumption and high social spending. These states should be well-prepared to benefit from a consumer sector and a workforce primed for the knowledge economy. This is one of the groupings that we would overweight.

The second group has high consumption and social spending with low population growth. Since population growth plays a much less important role in the forward-looking paradigm developed here, these countries may be the most underappreciated set. The slower population growth has generally been viewed as a drag, but might now be a tailwind since there should be less social friction associated with higher unemployment as the global economy transitions. Nonetheless, they still benefit from a growing consumer sector and well-trained labor. These countries are also overweight in our framework.

Low Social Investment

Equal-weighting goes to countries with low population growth, high consumption and low social investment. While the low social investment is a drag, this is easier to change than consumption or demographics. Should policymakers change priorities, these countries have the resources to enact and sustain more concerted measures to build the needed workforce. Low population growth also means that these countries have a longer runway to make such changes since social unrest is less likely than would be in a country with high population growth.

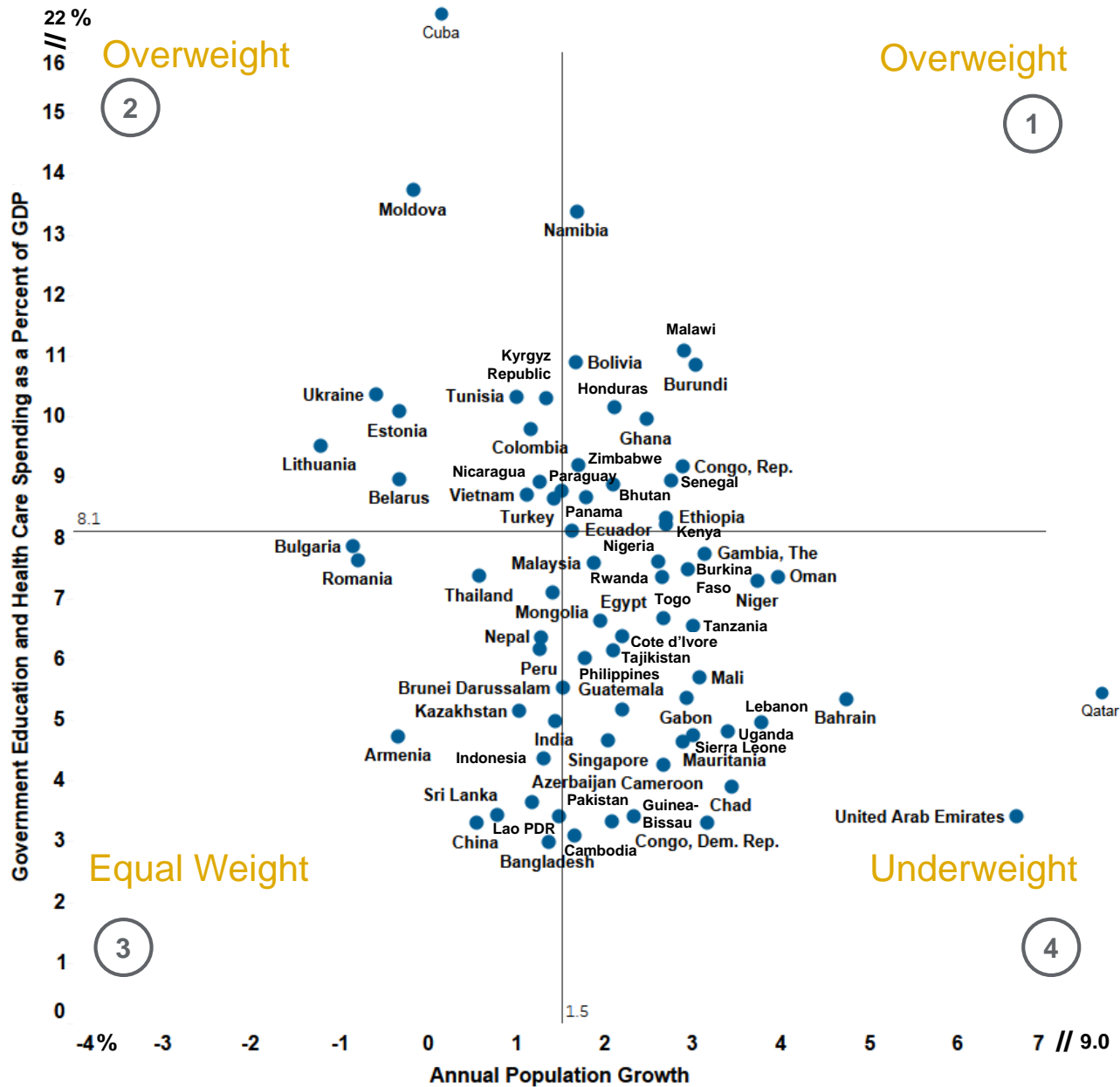
This leads to the final of the four buckets and the underweight, high growth, high consumption and low social investment. While higher demographic growth in an economy with growing consumption is an asset, the lack of social investment could slow the economy and be a source of unrest. If these countries do not begin investing in their populations, they are unlikely to maintain the current rate of consumption growth. Slower consumption growth paired with high population growth would provide fertile ground for instability, and in fact, some of these countries are already among the least stable in the four buckets. Nonetheless, a shift in policy to improve social investment could set the groundwork for strong economic growth in the future.

Conclusion

This investment framework is inherently forward-looking, shedding conventional wisdom and focusing on global change. Economies with the means and conviction to adapt will outperform those that simply believe industrialization or demographics will deliver results. We prefer consumption, social investment and political stability derived from manageable population growth in an increasingly automated world. We also believe that this is a multiyear if not decades-long transformation, meaning that leaders in the global knowledge economy will take time to emerge and countries will have the opportunity to adapt and change strategies over time. This is a strategic rather than a tactical approach to EM allocation. ■

For more information, please contact your Financial Advisor.

Exhibit 5: An Investment Framework for Emerging and Frontier Markets With High Consumption Growth



Source: World Bank, Morgan Stanley Wealth Management

Index Definitions

For index, indicator and survey definitions referenced in this report please visit the following:

<http://www.morganstanleyfa.com/public/projectfiles/id.pdf>

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