



PGIM

EMERGING MARKETS AT THE CROSSROADS

Summer 2017

FOREWORD

Emerging markets will be the primary driver of global growth over the next decade, but a radical shift in the forces shaping emerging markets will require investors to take a quite different investment approach from what may have worked in the past. For our new white paper, we draw on the insights of more than 30 PGIM investment professionals across all our managers—as well as leading academics and policymakers from around the world—to debate the most striking developments across emerging markets, the likely winners and losers, and the most attractive investment themes arising from the rapid evolution of emerging markets. Here at PGIM we believe long-term investors who harness the new engines of growth identified in this report should be able to reap significant rewards from the new emerging market order.



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About PGIM

PGIM, the global investment management businesses of Prudential Financial, Inc. (PFI),* is the ninth largest global investment manager with over \$1 trillion in assets under management (as of December 31, 2016).¹ Our distinct multi-manager model delivers a broad suite of actively-managed solutions in the areas of public and private fixed income, equities and real estate to serve clients' needs.

*Prudential Financial, Inc. of the United States is not affiliated with Prudential plc, which is headquartered in the United Kingdom.

INTRODUCTION

Consider the following.² In 2016, Adidas announced plans to move shoe production—once considered the last frontier of automation—to robot-staffed facilities in Atlanta and Bavaria, requiring just 160 technicians compared with the more than 1,000 assembly-line workers in a typical Asian factory. At the same time, emerging markets (EMs) filed more patents annually than developed markets for the first time in history and built 9 out of every 10 skyscrapers completed globally. Greece is now defined as an EM by all the major equity indices. And the United States withdrew from the Trans-Pacific Partnership within 100 hours of the current administration assuming the presidency.

For EMs, the simple certainties of the post-1980 era of market reform, trade liberalization and export-led growth are clearly over. As aging populations in developed markets reduce aggregate demand potential, and anti-globalization sentiment increases, gone is the rising developed market tide to lift all EM boats. Increasingly, EMs are masters of their own fate, with their internal ability to tackle domestic opportunities and risks determining their divergent growth paths.

Despite these disparate growth paths, EMs will collectively be the primary driver of global growth over the next decade. EMs already represent nearly 60 percent of global gross domestic product (GDP) on a purchasing power parity basis. They are significantly more resilient: from 2007 to 2011 nearly 50 percent of developed markets underwent a systemic banking crisis compared with well below 10 percent of EMs.³ What's more, EMs are forecast to contribute over 90 percent of global population growth and global middle-class spending growth between 2017 and 2030.⁴

But in a world in flux, what opportunities and risks should investors* focus on?

From a portfolio perspective, we believe a one-size-fits-all classification of EMs no longer works and may in fact be misleading. We lay out a more granular investment framework that disaggregates EMs by asset class, time horizon, and components of growth. We also discuss why institutional investors may want to update their EM risk assumptions with a more forward-looking approach based on local perspectives on evolving macroeconomic

and political conditions. We discuss our sovereign ratings framework from a fixed income perspective, highlighting the potential investment opportunities resulting from the gradual re-rating of EMs. Finally, we suggest that investors may want to reduce their reliance on EM indices and index investing. While these resources are clearly an important component of performance benchmarking, we believe investors should move to a more bottom-up, thematic investing approach focused on identifying the most attractive sectors and securities in a highly active, benchmark-agnostic manner—rather than being straightjacketed by the rigid country weights underpinning EM indices.

Through this thematic lens, we have identified three ideas EM investors may want to focus on: leapfrogging into the digital era, domestic and cross-border opportunities across EMs from the rising domestic middle class, and structural transitions in domestic EM debt markets, infrastructure, and real estate as EMs modernize their economies. Within these broader themes, we identify multiple investment ideas across a range of public and private vehicles. Collectively they offer a spectrum of attractive avenues for investing in EMs.

For EM investors, there is plenty of opportunity in this transition from broad, market-based beta—driven by global growth, international trade conditions, and commodity price changes—to idiosyncratic alpha. We believe those who act first will reap the greatest rewards, for as EMs continue to close the economic gap to developed markets, the unique investment opportunities they afford will become increasingly scarce.

*All references to investors throughout the report will be defined as institutional and professional investors.

PART 1

MASTERS OF THEIR FATE: A 21ST CENTURY MODEL OF EMERGING MARKET GROWTH

In September 1981, when an International Finance Corporation economist pitched a “Third World” Equity Fund to a group of leading investors at Salomon Brothers, the idea was seen as dead on arrival. The “third world” conjured images of “flimsy polyester, cheap toys, rampant corruption, Soviet-style tractors, and flooded rice paddies.”⁵ As a result, the phrase “emerging markets” was coined to capture the potential, progress, uplift, and dynamism demonstrated by a new wave of developing countries around the world.⁶

From 1980 to 2007, this long-term economic promise of EMs— with some notable ups and downs—was largely fulfilled. The world economy was characterized by increasing foreign direct investment (FDI) and global trade, greater labor mobility, and economic

growth. Political cooperation and technological advances connected people and economies and spurred a period of rapid globalization, producing GDP growth in EMs that significantly outpaced the growth in developed markets (Exhibit 1).

Exhibit 1. Real GDP growth in emerging markets has outpaced developed markets

[Chart View](#) [Table View](#)

Country Group Name	Developed Markets	Emerging Markets	Country Group Name	Developed Markets	Emerging Markets	Country Group Name	Developed Markets	Emerging Markets
1980	1.33	3.45	1993	1.44	2.98	2006	3.05	8.06
1981	1.89	1.89	1994	3.38	3.07	2007	2.75	8.58
1982	0.19	1.54	1995	2.83	4.04	2008	0.14	5.77
1983	3.16	1.89	1996	3.00	5.06	2009	-3.41	2.88
1984	4.88	4.29	1997	3.53	4.84	2010	3.11	7.46
1985	3.88	3.69	1998	2.69	2.27	2011	1.70	6.27
1986	3.26	4.36	1999	3.63	3.64	2012	1.21	5.31
1987	3.73	4.11	2000	4.07	5.80	2013	1.23	4.96
1988	4.85	4.55	2001	1.57	3.71	2014	1.88	4.57
1989	4.04	3.51	2002	1.75	4.52	2015	2.08	4.02
1990	3.16	3.91	2003	2.07	6.97	2016	1.57	4.17
1991	1.57	4.39	2004	3.24	7.94			
1992	2.25	2.35	2005	2.74	7.17			

Source: International Monetary Fund (IMF), as of 12/31/2016.

Developed markets include countries categorized as “Advanced Economies” by the IMF. Emerging markets include countries categorized as “Emerging and Developing Economies” by the IMF.

End of an era: The slowdown in globalization

The global financial crisis marked a turning point in the world economy. Four main factors have stalled the export-led, externally oriented growth model that propelled many emerging markets since the 1980s.

- 1. A slowdown in aggregate demand growth in developed markets, fueled by an aging population, a shrinking workforce, and sluggish productivity gains.** The International Monetary Fund (IMF) believes developed markets' potential growth rate will be well under 2 percent annually for a sustained period (Exhibit 2). In addition, China's aging population and deleveraging both present additional headwinds for many EMs, particularly for those that have come to depend on China for trade and FDI.
- 2. A populist backlash in developed markets against globalization and free trade.** While many complex factors underpin this backlash, in the United Kingdom and the United States the growing income and job polarization over the past few decades may be key. It is particularly striking that while population-weighted income inequality between countries around the world has steadily declined since the 1980s, inequality within individual developed markets, particularly in the United States, has actually increased over the same period (Exhibit 3). There has been limited social welfare intervention to diminish the impact. Indeed, mortality and morbidity among significant groups of lower-income Americans without a college degree has steadily increased since the turn of the century, triggered by progressively worsening job opportunities.⁷

Exhibit 2. Declining GDP growth potential in aging developed markets

[Chart View](#) [Table View](#)

	2001-07	2008-14	2015-20
Total Factor Productivity Growth	1.0%	0.5%	0.8%
Potential Employment Growth	0.7%	0.3%	0.2%
Capital Growth	0.8%	0.5%	0.6%
Total	2.5%	1.3%	1.6%

Source: World Economic Outlook, International Monetary Fund, April 2015.

Note: Developed markets include countries categorized as "Advanced Economies" by the International Monetary Fund.

Exhibit 3. Global inequality has declined while inequality in the United States has risen⁸

[Chart View](#) [Table View](#)

	Global Population Weighted Real GDP Per Capita Gini	United States Household Gross Income Gini
1988	0.63	0.43
1993	0.62	0.45
1998	0.61	0.46
2003	0.61	0.46
2008	0.59	0.47
2013	0.53	0.48

Source: Branko Milanovic, *Global Inequality: A New Approach for the Age of Globalization*, Cambridge, Massachusetts: The Belknap Press of Harvard University, 2016; All the Ginis database (version October 2016).

Exhibit 4. The rising populism in European legislative elections: Percentage of popular vote received⁹

[Chart View](#) [Table View](#)

The share of the votes in legislative elections obtained by various European populist parties

Percentage of Popular Vote Received		
	2012-2015	Around 2000
Danish People's Party	21.1	7.4
Freedom Party of Austria	20.5	10.0
Jobbik (Hungary)	20.3	2.2
True Finns	17.7	1.0
National Front (France)	13.6	11.1
UK Independence Party	13.0	1.5
Swedish Democrats	12.9	1.4
Golden Dawn (Greece)	6.3	0.0
Alternative fur Deutschland	4.7	0.0

Source: Updated based on Milanovic, "Global inequality: A new approach for the age of globalization," 2016.

Exhibit 5. Number of trade measures implemented worldwide

[Chart View](#) [Table View](#)

	Liberalizing	Discriminatory	Net
2009	40	250	-210
2010	100	290	-190
2011	90	260	-170
2012	50	180	-130
2013	135	380	-245
2014	140	400	-260
2015	205	540	-335
2016	159	453	-294

Source: Updated based on Arvind Rajan, Key Fault Lines in the Global Earthquake Zone, PGIM Fixed Income, September 2016; Conference Board; Global Trade Alert as of year-end 2016.

3. As a result, clear winners and losers of globalization have emerged. The winners: the middle class in EMs as well as those at the top of national and global income distributions.¹⁰ The losers: the middle class in rich countries. It should be no surprise that populism and opposition to free trade have become common themes among middle-class voters in developed markets. Populist undercurrents propelled Donald Trump's election win in the United States as well as the British vote to exit the European Union—and the associated protectionist sentiments threaten to unravel the global trade regime (Exhibit 4). The effects of this blossoming protectionist sentiment are already tangible. Since 2012, the number of protectionist trade measures has been on the rise (Exhibit 5).
4. **The twin forces of rising EM wage levels and increasing automation, which are shifting manufacturing from EMs back to developed markets.** As firms account for the benefits of automation, improved speed to market, lower transportation costs, and the sociopolitical advantages of a homemade product, several are beginning to reshore production to their home countries (Exhibit 6). Rising EM wages only add to the economic calculus: for example, since 2001 hourly manufacturing wages in China have risen by an average of 12 percent a year.¹¹ And while the share of reshored jobs remains small, there is growing evidence that this trend will continue given the unrealized automation potential of the global economy, especially in the retail and manufacturing sectors.¹²
5. **The end of the commodity supercycle.** Commodity export-dependent EMs must now find new engines of long-term growth and diversification. Much of the decline in commodity prices can be attributed to the slowdown in China

as policy makers deleverage and rebalance the economy away from capital investments and exports and toward domestic consumption. The resulting decline in Chinese demand for iron ore, copper, and coal—at its peak, China represented more than 70 percent of global nickel and more than 60 percent of global iron ore imports—has contributed to the sharp contraction in prices (Exhibit 7).¹³ In addition, shale production in the United States, combined with lower global demand growth, has led to an oversupply of oil, causing Brent crude to decline from \$126 at its peak in 2012 to \$28 at its trough in 2016. While some factors—including President Trump's proposed infrastructure spending plan and China's regional infrastructure investment plans under the One Belt One Road initiative—might help to boost commodity prices, it is unlikely that prices will rebound to their 2011 peak levels anytime soon.

The new engines of emerging market growth

If emerging markets can no longer ride on the coattails of developed-market economic growth, global trade liberalization, or Chinese supply chains, where will growth come from? We believe success for EMs in this new post-financial crisis era will require restoring or maintaining macroeconomic balances and macroprudential discipline, deepening local infrastructure and institutions, and tapping into new domestic and regional engines of growth.

In addition to keeping the foundational pillars of success in sight, investors will also want to capture the opportunities related to five

Exhibit 6. Automated industries in the developed markets



TEXTILES

- Company: Parkdale Mills
- Location: United States
- Automated Process: Cotton yarn spinning



APPARELS

- Company: Adidas
- Location: Germany
- Automated Process: Sports-shoe production



PERSONAL CARE

- Company: Philips
- Location: Netherlands
- Automated Process: Electric shaver production

Source: Stephanie Clifford, "U.S. Textile Plants Return, With Floors Largely Empty of People", New York Times, September 19, 2013; "Adidas's high-tech factory brings production back to Germany: Making trainers with robots and 3D printers", The Economist, January 14, 2017; John Markoff, "Skilled Work, Without the Worker", New York Times, August 18, 2012.

Exhibit 7. Chinese raw material imports and select IMF commodity price indexes, 1998-2015

Chart View Table View

	China Raw Materials Imports	All Commodity Index	Metals Price Index	Fuel (Energy) Index		China Raw Materials Imports	All Commodity Index	Metals Price Index	Fuel (Energy) Index
1998	13	48	56	27	2007	196	135	183	132
1999	16	48	54	32	2008	298	172	169	185
2000	32	63	63	54	2009	239	121	137	117
2001	32	58	56	48	2010	363	152	202	147
2002	34	58	54	47	2011	502	193	230	194
2003	51	65	61	55	2012	520	186	191	195
2004	88	80	82	72	2013	539	183	183	192
2005	116	100	100	100	2014	526	172	164	177
2006	147	121	156	119	2015	366	111	126	98

Source: IMF, World Bank's World Integrated Trade Solution Database, and UN Comtrade, as of 12/31/2015.

relatively new EM growth engines, which we detail in this section. Increasingly, the opportunities for EM investors will be rooted in their ability to capture the alpha from these new growth drivers rather than in chasing the beta of the increasingly disparate and diverging economies that make up EMs.

Foundational prerequisites

Solid foundations underpin long-term economic success: countries must effectively manage inflation, create currency stability, manage fiscal deficits, improve tax collection efficiency, maintain a sustainable external position, and ensure banking and financial stability and resilience. Ideally these solid foundations are combined with robust, broad-based physical infrastructure. Lower-income emerging markets need many basic services—starting with water and sewage, followed by electricity, telecommunications and transportation networks—as they modernize. In contrast, higher-income emerging markets need to keep pace with urbanization, including building airports, roads, and high-speed rails linking major cities together, as well as replacing existing aging infrastructure.

In addition, a robust institutional infrastructure—one that ensures political stability, protects property rights, produces market-based competition, creates appropriate economic incentives, and anchors monetary and fiscal stability—has become a differentiating factor and has played a vital role in facilitating or hampering sustainable economic growth (Exhibit 8).

Harnessing new engines of emerging market growth

As emerging markets adapt to the changing geopolitical and economic environment, we have identified five new potential drivers of EM growth: the potential for cross-EM trade, the demographic dividend from younger populations, the rise of the domestic middle class, the opportunities from digital disruption, and the potential from deeper local capital markets.

Trade expansion within emerging markets

From 1980 to 2015, EM exports to developed markets grew more than tenfold, from \$0.4 trillion to \$3.8 trillion.¹⁴ However, as protectionist policies increase in developed markets, EMs will increasingly need to look at other EMs for new and expanded trade links. Indeed, trade among EMs is already on the rise, up from 25 percent of global EM exports in 1995 to 40 percent in 2015 (Exhibit 9). Going forward, EMs will have opportunities to tap into China's growing consumer market and link into India's supply chains. Perhaps most notably, EMs will have the opportunity to promote trade links via China's New Silk Road—the result of the “One Belt One Road” infrastructure initiative that will culminate in new highways, railways, energy grids, and port facilities to connect 65 countries in Asia, Africa, and Europe.

The demographic dividend

The youthful populations and expanding labor force in Africa and South Asia should help generate strong economic growth and

Exhibit 8. Global competitiveness data

World Economic Forum's Global Competitiveness Country Scores for Select Indicators, 2016-2017				
	Property Rights	Judicial Independence	Burden of Government Regulation	Strength of Investor Protections
Top Quartile	United Arab Emirates South Africa Malaysia Saudi Arabia	South Africa United Arab Emirates Uruguay Qatar	United Arab Emirates Malaysia China India	Malaysia India Korea South Africa
Bottom Quartile	Venezuela Argentina Russia Pakistan	Venezuela Argentina Bangladesh Turkey	Brazil Mexico Nigeria South Africa	Venezuela Philippines China Vietnam

Source: World Economic Forum. *The Global Competitiveness Report 2016-2017*, September 2016.

Note: Top quartile countries shown with the highest ranking country first; bottom quartile countries shown with the lowest ranking country first.

higher savings thanks to a lower dependency ratio.¹⁵ By 2030, EMs will add an estimated 1.7 million workers a month to their labor force, significantly more than what China added every month during its rapid expansion from 1978 to 2011.¹⁶ But a bulge in the working-age population must be accompanied by policies and institutions that help promote jobs and reduce income inequality. If youthful populations enter the workforce without meaningful employment opportunities, and if only those at the top benefit from the demographic dividend, countries are likely to face social and political unrest instead of strong economic growth.

However, going forward not all EMs will reap this demographic dividend. Aging populations are commonly believed to be a developed-markets phenomenon, but in reality two-thirds of the world's seniors live in EMs—a proportion that is expected to rise to almost 80 percent by 2050. China alone is currently home to 131 million people over the age of 65, with the UN projecting that by 2045, the number of Chinese aged 65 or older will exceed 355 million—more than the entire current US population. Even the share of elderly people in countries such as Argentina, China, Russia, South Korea, and Thailand is approaching that of developed markets. And where average age is rising, EMs will no longer reap the benefits of the demographic dividend. China's aging population, for example, could trim 3.25 percentage points off its annual growth rate from 2012 to 2030.¹⁷ Similarly, South Korea's potential growth rate could fall by 1 percentage point in the 2020s due to aging.¹⁸

Exhibit 9. Emerging market exports to other emerging markets (% of total exports)

[Chart View](#) [Table View](#)

1995	2005	2015
25%	28%	40%

Source: IMF Direction of Trade Statistics, as of 12/31/2015.

Emerging Markets are classified as "Emerging and Developing Economies" under the IMF Direction of Trade Statistics.

The rising middle class

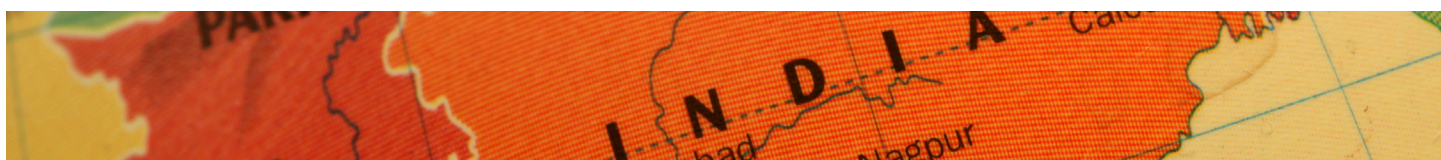
The rapidly growing middle class in EMs spans many countries, not just the BRICs, and is increasingly urban, aspirational, connected, and wealthy (Exhibit 10). The EM middle class includes more than 1.5 billion people spending upward of \$15 trillion annually. Research by McKinsey and the Brookings Institute suggests that this figure will rise to more than \$30 trillion by 2030—about three times the current consumption levels in the United States—and radically reshape the global consumer map.

Harnessing the growing domestic spending power of the rising middle class will be critical for many EMs as they look to balance their economies between export-led growth and internal growth drivers. Increasingly urban and wealthy populations will not only consume more but also shift from consumption dominated by staples and essentials such as food, clothing, and shelter toward consumer discretionary, financial services, healthcare, recreation, leisure, and personal care.

Exhibit 10. Decade when a country is mostly middle class rather than mostly poor¹⁹

		Overall emerging market share of global middle class consumption
1960s	Jamaica, Singapore	16%
1970s	Malta, Taiwan, Cote d'Ivoire, Seychelles, South Korea	16%
1980s	Costa Rica, Uruguay	18%
1990s	Chile, Peru, Bosnia and Herzegovina, Albania, El Salvador	23%
2000s	Russia, Malaysia, Belarus, Iran, Tunisia, Kazakhstan, Venezuela, Ukraine, Dominican Republic, Brazil, Syria, Armenia, Thailand, Colombia	32%
2010s	Panama, Ecuador, Egypt, Turkmenistan, Georgia, Sri Lanka, Botswana, Moldova, Paraguay, Gabon, Jordan, China	46%
2020s	Indonesia, South Africa, India, Azerbaijan, Cambodia, Vietnam, Fiji, Bangladesh, Philippines, Tajikistan, Uzbekistan, Guatemala, Morocco, Sudan	62%

Source: Büge, M., & Brandi, C. (2014). A Cartography of the New Middle Classes in Developing and Emerging Countries (Discussion Paper 35/2014). Bonn: German Development Institute / Deutsches Institut für Entwicklungspolitik (DIE); Kaufmann, Daniel, Kharas, Homi and Penciakova, Veronika (2012, July 18). Development, Aid and Governance Indicators (DAGI). Retrieved from <https://www.brookings.edu/interactives/development-aid-and-governance-indicators-dagi>.



The deepening of India's capital markets

India's new administration has made significant progress in putting the country on a strong economic growth path. But there is still a long way to go to achieve its full potential. One of the best avenues is further boosting the already healthy growth of India's capital markets, an area where several developed and emerging countries are more advanced. The fixed income market presents a unique developmental opportunity as government bond issuance and trading dominates while corporate and securitized markets remain nascent. With an infrastructure funding need of approximately 67 trillion rupees over the next 5-10 years, deeper bond markets are essential to facilitate India's economic development.²⁰

The Modi administration has already taken steps on the fiscal and regulatory side to promote financial deepening. For example, the new portfolio investment regime and Masala bonds are a move in the right direction.²¹ As India looks to further deepen its capital markets, investors should watch for the government's progress in a few areas:

- 1. Streamlined and optimized financial intermediation that takes a holistic view of the economy-wide financial intermediation process.** In India, as in many other countries, each type of institution and security has its own specific set of regulations, often administered by separate regulatory bodies such as the Securities and Exchange Board of India (SEBI) and the Reserve Bank of India (RBI). A simplified and harmonized set of regulations surrounding financial intermediation would reduce transaction costs and further encourage financial market activity by providing a more seamless experience to investors and issuers.
- 2. The further deepening of the pension, life insurance, and asset management industries.** This can help to better mobilize domestic savings, creating larger demand for local assets.
- 3. Improved country-wide financial literacy.** This might be done by further enhancing the National Centre of Education and Central Board of Secondary Education's (CBSE) financial education training program, SEBI's "Resource Person" program, and by leveraging India's high mobile penetration to "leapfrog" resource constraints and improve financial inclusion and literacy.

Taking advantage of digital disruption

Disruptive digital technologies and automation are eroding EMs' comparative advantage in labor-intensive manufacturing: the imperative to build supply chains based on the location of relatively immobile and cost-effective labor is waning, with production moving closer to final markets. But for EMs able to adapt to disruptive innovations, the digital age may bring new opportunities.

For example, less advanced EMs with limited bricks-and-mortar footprints in the financial services and healthcare sectors may be able to “leapfrog” the missing physical infrastructure by embracing financial technology (fintech) and mobile solutions. And EMs that put in place the right incentives and intellectual property protections may also be able to speed up the process of technology transfer from developed markets: new technologies can now be transferred instantaneously via code rather than the time- and resource-intensive process of relying on FDI and local “learning by doing.” Successful EMs will also likely draw on their diasporas—especially where there are still close ties to the home country—to accelerate this process of technological learning.

Taking advantage of digital disruption will require investing in physical capacity—such as high-speed broadband, data centers,

and cell towers—as well as regulatory reform to encourage digital entrepreneurship and education programs that create digitally savvy and technologically educated workforces for jobs that can be done remotely. Beyond upgrading manufacturing, EMs should be preparing for the shift toward services and seeking ways to boost their trade in services, much like India and the Philippines have done.

Harnessing the growth of local capital markets

The development of local capital markets will drive investment and economic activity in EMs—a particularly important evolution for effectively capturing and efficiently allocating domestic savings. The IMF has noted that such capital-market development “is widely believed to confer important stability benefits, helping countries limit swings in asset prices, find alternative sources of funding, and attenuate the need for reserve accumulation.”²²

Deepening local bond markets can also help reduce balance-sheet mismatches by allowing firms, households, and governments to raise funds in domestic currencies and at longer maturities (see sidebar, “The deepening of India’s capital markets”). There is a significant variation across EMs in bond market maturation, ranging from South Africa with a weighted average maturity of 24 years to Brazil with a weighted average maturity of less than 7 years (Exhibit 11).

Exhibit 11. Wide variation in EM bond market depth

[Chart View](#) [Table View](#)

Dollar weighted average tenor of local currency sovereign bonds (years)

Country	Years
South Africa	23.9
Peru	18.3
Mexico	15.0
Indonesia	15.0
India	14.4
Colombia	12.9
Thailand	12.0
Russia	10.0
Malaysia	9.7
Hungary	9.7
Poland	8.4
China	7.6
Romania	7.6
Turkey	7.3
Brazil	6.9
Average years to maturity	10.9

Source: J.P. Morgan.
As of March 2017.
Excludes countries with fewer than 5 bonds.

PART 2

UNBUNDLING EMERGING MARKETS: PORTFOLIO-WIDE IMPLICATIONS

While no longer driven by a single unifying force, EMs continue to offer long-term investors an array of attractive investment opportunities across fixed income, equities, and real assets, especially relative to structurally slow-growing developed markets. Capturing these opportunities will require CIOs to take an active investment approach, with a focus on developing a granular investment framework that unbundles EMs by asset class, time horizon, and growth driver; updating EM risk assumptions with a more forward-looking approach that captures investment opportunities from the gradual re-rating of EMs; and rethinking their reliance on EM indices and index investing, in particular taking a more bottom-up, thematic approach to EM equity security selection that is highly active and benchmark-agnostic.

Position the portfolio for emerging market divergence

From a portfolio perspective, a one-size-fits-all classification of EMs is misleading. Thirty-five years since the term was coined, emerging markets—and the proliferation of related acronyms such as BRICS, MINT, TICK, and the N-11—are defined more by their differences than their similarities.

However, investors must not only take the divergent trajectories of EMs into account but also recognize that different asset classes are impacted in unique ways and to different extents by the broad array of emerging market “performance indicators” assembled by economists, finance ministries, and multilateral institutions. Exhibit 12 shows how macroeconomic and political factors are prioritized quite differently in making investment decisions across different asset classes: public emerging market equities, local currency emerging market sovereign debt, hard currency emerging market corporate debt and opportunistic emerging market real estate.

As Exhibit 12 illustrates, investors must have a nuanced understanding of how different growth factors affect investment opportunities based on asset class and time horizon. Indonesia offers a clear example: the country is an attractive sovereign fixed income play given its strong institutional support for sovereign bondholders, low public debt, and manageable fiscal deficit. At the

same time, Indonesia is unattractive for real estate investors and corporate bondholders due to weak property rights protections and inconsistent legal frameworks. Furthermore, for real estate in Indonesia and elsewhere, market scale and deal sizes should be large enough to justify the research and due diligence required by institutional investors, and liquidity must be high enough that investors can exit if they wish (see Appendix A for a matrix highlighting the importance of various factors for different asset class investments).

Important variations also exist within a single asset class. For example, contract enforcement is particularly important to corporate debt, as corporate-debt contracts can be contested and enforced by the local legal system. But sovereign-debt investors need not pay as much heed, as local contract enforcement is irrelevant for sovereign debt issued under foreign law and may be weaker for local-law sovereign bonds where creditors cannot easily enforce their claims through the courts, which may have limited power to force compliance.

Of course, the importance of factors will also vary across investment time horizons. For example, factors that promote innovation and entrepreneurship such as intellectual property protection and ease of doing business are somewhat important for public equity investments in the medium term as they affect companies’ ability to generate profits. But these factors play a vital role in the long-term health of the economy—and therefore in companies’ ability to generate long-term, sustainable returns.

Exhibit 12. Investment drivers by select EM asset classes

Chart View Table View

	Factor	Public Equities	Local Currency Sovereign Debt	Hard Currency Corporate Debt	Opportunistic Real Estate
Political Risk	Rule of Law	Medium	Medium	High	High
	Risk of Conflict		Medium	Medium	Medium
	Corruption	High	Medium	High	Medium
	Degree of Market Intervention	High	Medium	Medium	Medium
	Election Cycle	Medium	Medium		Medium
	Strength / Bifurcation of Support Base	High	Medium		Medium
Policy Consistency / Ability	Fiscal Policy	High	High	Medium	Medium
	Pace of Market Liberalization	High	High	Medium	Medium
	Central Bank Credibility / Inflation Risk	High	High		Medium
Infrastructure	FX Policy	High	High	Medium	Medium
	Quality of Infrastructure	High			Medium
Institutional Quality	Property Rights			Medium	High
	Contract Enforcement	High	Medium	High	High
	Independent Judiciary			Medium	Medium
	Strength of Investor Protection	High	Medium	High	Medium
Environment for Innovation and Entrepreneurship	Level of Tertiary Education	Medium			
	IP Protections	High			Medium
	Internet and Mobile Connectivity	High			Medium
	New Businesses Density	Medium			
	Ease of Doing Business	High	Medium	Medium	Medium
Structural Imbalances	Capital Controls / Distortionary Policies	High	Medium	High	Medium
	Financial Sector Health		Medium	Medium	Medium
	Economic Diversity	High	Medium	Medium	
	Ability to Adjust to Shock	Medium	Medium	Medium	Medium
	External Solvency		High	Medium	High
External Liquidity		High	Medium	High	Medium
Sustainable Growth		High	High	Medium	Medium
Fiscal Stability		Medium	High	Medium	Medium
Financial Stability		Medium	High	Medium	Medium
Demographics / Middle Class Growth		High	High	High	Medium
Market Scale / Liquidity		Medium	High	Medium	Medium

Source: Based on informal interviews with portfolio managers and investment researchers across PGIM. Views are as of 5/31/2017.

Take advantage of the gradual re-rating of emerging markets

In today's low-yield environment in developed markets, investors will continue to search for yield in EMs. However, misconceptions about EM risk—particularly in times of crisis—are slowing this rebalancing. Investors tend to discount EMs because they have shorter financial, economic, institutional, and governance histories compared with developed markets. Investors also tend to assume that past risks are still relevant today—but they are often wrong.

Longer, more robust data sets show that the measures taken by some EMs to address crises have bolstered their macroeconomic positions—and in some cases, they appear more resilient than several debt-ridden developed markets. For example, many EMs that struggled during the Latin American debt crisis of the early 1980s, the Tequila Crisis of 1994, and the 1997 Asian financial crisis went on to improve the composition of their balance sheets, implement stronger policy frameworks, and generate sustainable economic growth. Because of past reforms, countries such as the Philippines, Indonesia, and India weathered the recent global financial crisis and recovered quickly.²³

Additionally, contagion risk has diminished considerably across EMs, indicating a growing diversification benefit for EM investors. EM fixed income provides a good illustration of this evolution. After the Mexican Peso Crisis in 1994, Mexican external debt returned –34 percent in 1995, while the J.P. Morgan Emerging Market Bond Index Plus (EMBI+) index returned –27 percent.

Similarly, when Russia defaulted on its US dollar–linked local government bonds in 1998, the Russia sub-index of the EMBI+ returned –78 percent and the J.P. Morgan EMBI+ index returned –29 percent. More recently, however, shocks appear to be less universally felt, and the risks in one emerging market have not translated into risks for other emerging markets. For example, following the oil shock of 2014 and the broad commodity sell-off in 2015, commodity-exporting countries such as Venezuela and Brazil felt significant losses, yet the J.P. Morgan EMBI+ index returned 7.43 percent and 1.18 percent in 2014 and 2015, respectively.²⁴

These trends create potential alpha-generation opportunities for investors in areas such as emerging market hard currency sovereign debt—an asset class that has benefited in the past 15 years from a significant quality upgrade, partially in response to the crises of the late 1990s (Exhibit 13). After that experience, many countries decided to adopt floating currencies, build up war chests of foreign exchange reserves, shore up macroeconomic management practices, and control current account and fiscal deficits. These changes have led to increased diversification in the asset class as more sovereigns have issued hard currency debt. The resilience of this sector was proven during recent sell-offs such as the 2008 global financial crisis, the 2011–15 commodity meltdown, the 2011 European sovereign crisis, and the 2013 taper tantrum. In mid-2017, more than 50 percent of the emerging market hard currency denominated bond market was rated investment grade, yet traded at a spread of 310 basis points—more than 160 basis points wide of the comparable investment grade-rated US corporate bond market (as represented by the J.P. Morgan JULI BBB index).²⁵

Exhibit 13. The percent of the EM Global Diversified Index rated investment grade has been steadily increasing

[Chart View](#) [Table View](#)

End Date	% of Index Rated Investment Grade	End Date	% of Index Rated Investment Grade
1998	17%	2008	57%
1999	26%	2009	53%
2000	36%	2010	56%
2001	38%	2011	59%
2002	39%	2012	62%
2003	45%	2013	66%
2004	40%	2014	65%
2005	39%	2015	56%
2006	36%	2016	52%
2007	39%	2017	49%

Source: Bloomberg, as of 4/28/2017.

By creating more comprehensive and up-to-date risk rating frameworks that account for both long-term economic fundamentals and near-term institutional and political volatility, investors can develop more nuanced and actionable views on EM opportunities and risks. One example is PGIM Fixed Income's sovereign rating framework, which comprises two major pillars. First, sovereigns are ranked based on their fundamental macroeconomic strengths and vulnerabilities, with the choice of variables informed by lessons from past crises in both EMs and developed markets. Second, a qualitative assessment is overlaid that focuses on the evolving institutional and political setting that guides policy formulation. The inclusion of a current perspective, informed by the team's hands-on experience, results in the ratings diverging significantly from those assigned by the rating agencies.²⁶ These out-of-consensus views, often driven by emerging political risks, have proven to be meaningful contributors to alpha generation over the years.*

Rethink your use of emerging market benchmarks

While indices will continue to play an important role for policy benchmarks and performance measurement, investors must recognize that both passive and index-hugging emerging market strategies are likely to miss out on some of the best investment opportunities in EMs given the underlying structure of the indices.

Though some investors might face constraints that restrict them to tracking benchmarks, we believe investors should carefully evaluate the significant downside to indexed and closet-indexed EM investment strategies.

Within equities, the most commonly used indices, such as the aggregate global MSCI ACWI Investable Market Index (IMI) and the MSCI EM index, are weighted by countries' free-float market capitalization. The MSCI EM index excludes Chinese mainland stocks due to concerns about market accessibility, and it includes countries such as South Korea and Taiwan, which are growing at rates similar to developed markets. Passive or benchmark-hugging equity investment strategies closely tracking these indices can also be problematic because EM equity indices are heavily skewed toward large financial services, energy and mining, and large, state-owned companies such as China National Offshore Oil Corporation, Gazprom, and Petrobras. These indices fail to fully capture many of the growth opportunities, which are best represented by public mid-cap, public small-cap, or private companies with niche or specialized capabilities meant to serve the domestic economy. This distortion is perhaps best evidenced by the MSCI EM index weighting of financials, which as of the end of 2015 represented 28 percent of the index yet only accounted for 6 percent of GDP in the BRICS.²⁷ Given limited capital market depth in many EMs, many investable ideas are best accessed through benchmark-agnostic active equity strategies, private equity,

Exhibit 14. Benchmark country weights vary from GDP weights

Chart View Table View

Fixed income		
	JPM GBI-EM Broad Weight	GDP weight
China	29%	50%
India	14%	10%
Mexico	10%	5%
Brazil	10%	8%
Poland	6%	2%
Indonesia	5%	4%
All others	26%	20%

Equity		
	MSCI EM weight	GDP weight
China	26%	43%
South Korea	14%	5%
Taiwan	12%	2%
India	8%	8%
Brazil	7%	7%
South Africa	7%	1%
All others	24%	32%

Source: MSCI, World Bank, J.P. Morgan "Local Markets Guide", World Bank. As of 12/31/2015.

*Past performance is not a reliable indicator of future results.

direct real estate and private debt, or even in companies listed abroad and might thus not be captured in the benchmarks.

The most commonly used global fixed income indices, for their part, are calculated based on outstanding debt—not issuance—reflecting historical, as opposed to prospective, trends in bond markets. Since capital markets are less mature in EMs compared to the developed markets, the indices under-represent the full range of economic activity. For example, EMs represent only 6 percent of the J.P. Morgan Government Bond Index (JPM GBI), compared with 17 percent of GDP of the countries in the index in 2016. Issuers from EMs whose debt capital markets are rapidly evolving and deepening are often neglected due to their low debt market capitalization. Even within exclusively EM benchmarks, there is a mismatch between country weights and GDP. For example, the J.P. Morgan's Government Bond Index (GBI) EM-Broad, one of the most commonly used local currency denominated debt benchmarks, significantly underweights China and overweights Mexico (Exhibit 14).

For fixed income investors, passive strategies might also push investors into lower-quality assets. Since fixed income benchmarks are based on outstanding debt, they will by definition have higher weights for countries with more debt outstanding. While this is the most transparent representation of the market, it ignores countries' debt sustainability factors. Simply put, higher debt outstanding does not imply higher GDP—the source through which governments can fund their debt obligations. Investors who track the benchmark might therefore be at risk of investing in countries with high debt-to-GDP ratios and higher default risk, rather than countries with strong balance sheets. Brazil offers a clear example. In 2016, Brazil's debt-to-GDP reached 70 percent and is projected to increase to nearly 80 percent by 2018, potentially indicating growing debt sustainability concerns.²⁸ Yet Brazil currently represents over 13 percent of the J.P. Morgan GBI-EM Broad index.

Further, the EM local currency bond indices are often unrealistic for investors to track. Many of the countries included in the indices—such as Brazil, India, Indonesia, and South Korea—have non-deliverable currencies, as they do not have open capital accounts. Save for the largest, most sophisticated investors, as well as onshore investors, many investors will find it difficult to purchase local currency bonds or will need to purchase derivatives that entail additional costs and risks.

In addition to the lost opportunities arising from the underlying structure of the indices, passive EM fixed income strategies will also fail to capture many of the best opportunities to generate alpha through active sector rotation (across countries, credit, local interest rates, and foreign exchange). Since 2003, the annual difference in US dollar total returns between hard and local currency

denominated EM government bonds has ranged from –11.97 percent to 16.10 percent, with hard currency bonds outperforming in 9 out of the 15 years and local currency bonds outperforming in the other 6 years.²⁹ Benchmark strategies won't allow investors to capitalize on these divergences.

EM countries run the gamut of credit ratings, from AAA to CCC, and as such they are constantly priced and repriced through market cycles. With more than 60 EM countries to choose from, investors who take a nuanced approach to country and issue selection can potentially capture numerous idiosyncratic relative value opportunities across hard currency and local currency denominated bonds through these cycles—an approach that would not be easily accessible to passive investors.

Build emerging market equity portfolios from the bottom up—not top down based on country allocations

The historical EM equity investing approach of rotating exposures to country markets based on top-down macro views—and of index-hugging investments in a few dozen large, state-owned companies and financial institutions—will no longer be adequate in the new EM order. As EMs gravitate from the old economy to the new economy—and as each EM embarks on its own unique journey—investors will need to focus on the cross-cutting themes, sectors, and companies that drive investment returns. Indeed, our analysis reveals that, more recently, country selection drives only around 30 percent of investment returns, with sector- and stock-selection generating 70 percent of returns.³⁰

Of course, sophisticated investors should always be aware of country risks and on the lookout for times when the “macro overwhelms the micro.” But our thesis is that investors who identify long-term, secular opportunities among EM firms on a country-agnostic basis will be rewarded over time. This hypothesis is supported by Exhibit 15, which shows how the quintile of companies with the highest relative earnings growth over the past 15 years has the highest relative return in EMs—indicating that companies with a sustainable growth advantage will be rewarded by capital markets over time, independent of top-down country rotations.

A recent survey of institutional investors by Greenwich Associates confirms this hypothesis, with investors forecasting a shift from top-down, country-driven investing approaches to highly active, benchmark-agnostic, bottom-up investing (Exhibit 16).

Part 3 of this report explores the key themes that will underpin this new approach to EM investing across equities, corporate and other debt, real estate, and private assets over the next decade.

Exhibit 15. Median relative earnings growth and relative return quintiles rolling 5-year periods (2001-2016)

[Chart View](#) [Table View](#)

MSCI Emerging Markets Index		
	Relative 5 Year Historical Earnings Growth	Relative 5 Year Rolling Returns
Quintile 1	39%	7.53%
Quintile 2	13%	6.05%
Quintile 3	0%	2.97%
Quintile 4	-11%	-2.10%
Quintile 5	-30%	-8.97%

Source: FactSet and MSCI, Jennison Associates analysis. Data from 12/31/96 to 12/31/16. Chart was created using the MSCI Emerging Markets Index.

Exhibit 16. Investor views on relative importance of top-down or bottom-up EM equity investing

[Chart View](#) [Table View](#)

	TODAY		10 Years from Today	
	U.S.	Europe	U.S.	Europe
Top-Down	49%	50%	32%	23%
Bottom-Up	70%	50%	77%	64%

Source: Greenwich Associates 2017 Emerging Markets Thought Leadership Study, Q2 2017.
 Note: Based on 107 responses in the U.S. and 14 in Europe.

PART 3

INVESTABLE OPPORTUNITIES

Our analysis identified several long-term investment opportunities rooted in the new EM landscape we have described. These opportunities fit within three main themes: leapfrogging into the digital era, the rising urban middle class, and structural transitions in infrastructure and real estate as EMs modernize their economies. Within these broader themes, we have identified eight specific investment opportunities that can be pursued through a range of public and private vehicles. Collectively, they offer a spectrum of attractive avenues for investing in EMs. Note an important caveat: asset prices and relative valuations will always be the most critical factors for individual asset selection within these themes.

Exhibit 17. Investors should examine EM investment opportunities across three primary themes



LEAPFROGGING INTO THE DIGITAL ERA

Total smartphone subscriptions are expected to reach 6.3 billion by 2021, with roughly 90% of all new subscriptions coming from EMs.



THE RISING URBAN MIDDLE CLASS

EM middle class consumption is expected to reach \$33.5 trillion by 2030, with trade between EMs representing over 40% of their total exports.



MODERNIZING ECONOMIES

As EMs transition, new opportunities will arise from broader local debt markets, more formalized domestic real estate markets and stronger infrastructure.

Source: Ericsson, June 2016; Brookings Institute, July 2012; PGIM Real Estate, February 2017.

Leapfrogging into the digital era

The digital revolution underway has allowed companies in tech-savvy EMs such as Brazil, China, and India to leapfrog the construction of bricks-and-mortar institutions. Indeed, the pervasiveness of the digital and mobile economies in many EMs significantly exceed those of developed markets. India, for example, is now among the top three markets globally for app downloads from the Google Play store, while Chinese Internet companies such as Alibaba, Baidu, and Tencent are beginning to rival the more-established, developed-market Internet companies as measured by market capitalization.³¹ The investment opportunities unleashed by the rapid adoption of fintech, e-commerce, and the associated distributional logistics are among the most attractive investment themes in EM equity and real estate investing today.

Fintech

The rapid adoption of fintech in EMs allows consumers to gain access to modern payments and banking services while bypassing the inadequate bricks-and-mortar footprint of financial institutions. What is perhaps the most surprising feature of fintech and e-commerce investment opportunities in EMs relative to developed markets is the pervasiveness of Internet service providers and the rapid consumer adoption of their services. The multiple product lines of Tencent in China are a good example: WeChat offers instant multimedia messaging, Tenpay is the second-largest online payment system offering seamless connectivity to instant messaging services, Tencent Games is the largest online gaming community in China, and QQ provides an online news platform and browser.

The success of EM fintech will be most evident in countries that enable innovation and foster entrepreneurship—especially through network connectivity, education, and regulations that foster digital innovation. Importantly, fintech companies require relatively low upfront capital costs to launch, meaning that they can thrive even in low-income economies.

For example, a potentially promising opportunity for investors is the mobile banking industry in sub-Saharan Africa. There, growing mobile penetration combined with vastly underbanked populations has led to the emergence of fintech companies that are capturing young and growing populations' unmet demand for financial services, including insurance products, credit ratings, and peer-to-peer lending. For example, around two-thirds of the adult population in Kenya make or receive payments using their mobile phones.³² This trend could yield promising opportunities for early-stage investors. Investment opportunities should also emerge for mobile-payment companies that can successfully tap into Africa's \$36 billion remittance market.³³

Investors seeking to participate in fintech must look primarily to public equity, private equity, or venture capital markets. In most circumstances, investors will be unable to access corporate debt investments in fintech, as EM corporate debt is dominated by larger issuers focused on the commodity, energy, infrastructure, banking, and industrial sectors.

E-commerce and distributional logistics

In countries with relatively underdeveloped bricks-and-mortar retail and young, digitally connected consumers, much of the growth will occur online in the form of e-commerce. In India alone, retail e-commerce sales are expected to grow from

Exhibit 18. Investment opportunities in the digital economy



FINTECH

In low-income economies, only 1 out of 100 people 15 years or older has a credit card, yet 1 out of 10 has a mobile money account, highlighting strong demand for fintech.



E-COMMERCE AND LOGISTICS

By 2019, retail e-commerce sales in the BRICs are projected to be more than double total sales in North America and Western Europe combined.

Source: World Bank, as of 04/15/2015; eMarketer, December 2015.

\$16 billion in 2016 to more than \$47 billion by 2020.³⁴ Many large US and EU e-commerce players have struggled in EMs for a variety of cultural, regulatory, and infrastructure-related reasons. Their slow progress has opened the door for local e-commerce platforms such as Argentina-based MercadoLibre and China's Alibaba and JD.com to capture nascent high-growth markets.

Investors looking to capitalize on the growing demand in EM e-commerce should focus on local or regional companies that have already developed their online and distribution infrastructure. Online marketplaces that provide consumer-to-consumer, business-to-consumer, and business-to-business platforms should all thrive. In countries such as Argentina, Brazil, China, and India, most of these plays are public companies and can be accessed through public equity markets.

The rapid growth of EM e-commerce will also enable a significant opportunity to invest in real estate logistics, including warehouses, truck terminals, and other logistics facilities to store and transport goods. In a world no longer purely dominated by large bricks-and-mortar retailers, the presence of efficient logistics networks enables goods to be transported on-demand from manufacturer to store (or directly to the consumer) without taking up valuable shelf or warehouse space for extended periods of time. In 2017, Alibaba called for the establishment of an Electronic World Trade Platform, with their first investment in a regional distribution hub in Malaysia. In Saudi Arabia, King Abdullah Port, which began operating in 2014, aims to be a global logistics hub.

The rising urban middle class

Spending by the emerging market middle classes—led by the BRICS, Indonesia, and Mexico—is forecast to grow from around 40 percent of global middle class spending in 2010 to 55 percent by 2020 and nearly 70 percent by 2030.³⁵ The expanding and evolving needs of the rising EM middle class will generate investment opportunities linked to expanding cross-border trade opportunities between EMs, growing manufacturing and service sectors needed to meet the demands of a new urban consumer class, and an expanding retail real estate sector.

EM-EM cross-border trade

As the share of intra-EM trade rises to well over 40 percent of total EM exports, investors have a growing opportunity to select companies that are primarily trading with other EMs and therefore less reliant on (and more resilient to) slowing growth in developed markets. The first wave of intra-EM trade was fueled by the rise of China and its vast requirements for manufacturing supply chains as well as the demand for food or other resources by the increasingly wealthy Chinese middle class. As incomes rise across EMs and demand growth slows in the developed markets, the next wave of EM opportunities will arise from companies tapping into other EM consumer markets.

In particular, as per capita income in EMs rises and consumption patterns change, consumer durables should experience robust

Exhibit 19. Investment opportunities from the rising, urban middle class



EM-EM CROSS BORDER TRADE

Intra-EM trade now accounts for over one quarter of global trade, and appears poised for continued expansion.



A NEW DOMESTIC CONSUMER CLASS

By 2030 combined middle class spending in China, India and Indonesia is projected to be nearly 3.5 times higher than in the U.S., Japan and Germany.



RETAIL REAL ESTATE

China accounts for nearly 60% of the 33.5 million square meters of shopping center space currently under construction globally.

Source: Kharas, Homi, "The Unprecedented Expansion of the Global Middle Class: An Update", Brookings; February 2017; UNCTAD, 2015; CBRE, February 2017.

demand growth. Take motorbikes in Southeast Asia, widely used by low-income households as the primary mode of transportation. As these households become wealthier, they tend to shift from motorcycles to automobiles. This trend is blossoming in Thailand, which, as of 2015, had a GDP per capita that was more than double that of its neighbors in the region (Cambodia, Laos, Myanmar, and Vietnam). As demand for motorcycles has declined in Thailand, it has been picking up in markets such as Cambodia, Laos, and Myanmar, and Thai motorbike companies are responding by building factories in and exporting bikes to the country's neighbors.³⁶

Similarly, as China shifts away from a fixed asset investment-driven economy to more of a consumption-driven economy, and as the population ages and wages rise, China's import composition should shift dramatically from a basket primarily limited to commodities to one that includes more consumer goods and services. EM companies that can tap into China's rising consumer class stand to benefit from this transition.

In addition, EMs are poised to receive many more tourists from other EMs over the next decade. From 2000 to 2010, China was the fastest-growing outbound tourism market in the world. In 2016 the number of outbound Chinese travelers reached 135 million, representing more tourists than the total combined population of France and the United Kingdom.³⁷ Looking forward, Chinese outbound travel expenditure is projected to increase even further, with Southeast Asia becoming the top destination for outward travel expenditures.³⁸ Online travel companies are enabling this growth. For example, the fast-growing India-based MakeMyTrip.com (9.6 million unique visitors per month in fiscal year 2016) and Shanghai-based Ctrip.com now dominate the Indian and Chinese travel sectors, respectively.³⁹ This trend in outbound travel should create investment opportunities in hotels, airlines, and travel-enabling technology. Domestic companies that cater to the local consumer offer some of the best ways to take advantage of the expanding travel sector in emerging markets.

New domestic consumer class

Targeted investments focused on the evolving needs of the new domestic consumer classes in EMs should thrive, notably in healthcare, pharmaceuticals, consumer durables, and leisure and recreation. In particular, companies that can borrow successful models from their counterparts in developed markets and adapt them to local preferences will offer significant value. Case in point: in Brazil, drugstores such as Raia Drogasil are beginning to consolidate, incorporate higher value-add products (such as personal care and beauty items) into their offerings, and launch private-label brands in moves that echo what many US drugstores have done.

Further, as the EM middle class grows, the private healthcare industry should benefit, with substantial room for greater spending

in countries with poor healthcare infrastructure and low access to public healthcare. Indeed, a growing need to modernize existing infrastructure—through greenfield projects such as medical offices, hospitals, and specialized care facilities—may also create potential direct real estate investment opportunities.

Beyond infrastructure, rapid growth in healthcare spending will present opportunities for private groups that operate full-service hospitals and specialized medical care centers. The relatively rudimentary nature of healthcare systems in many emerging markets will mean that all parts of the healthcare value chain can expect to benefit. For example, there should be growing demand for medical equipment, supply providers, and healthcare IT. While investments in many of the larger healthcare groups can be made through public equity markets, investors will need to use private equity to gain access to smaller providers. Given the often challenging regulatory and operational environments in many EM healthcare sectors, investors must evaluate whether to pursue a specialized healthcare fund with a strong regional focus or opt for a more diversified generalist fund.

Similarly, a huge untapped demand exists for pharmaceuticals, as drugs remain largely unavailable in many emerging markets. IMS Health predicts that global medicine consumption will rise by 24 percent from 2015 to 2020, with Brazil, China, India, and Indonesia representing nearly half of that growth.⁴⁰ Increased spending on drugs in EMs should also enable investors to capture value through domestic pharmaceutical companies.

Notably, the pharmaceutical sector is often tightly controlled in many EMs, making it difficult for international companies to enter or compete. For example, Russia provides significant access and price advantages to locally manufactured products and implements a price freeze for imported medicines on the essential list.⁴¹ Given this elevated regulatory risk, investors seeking to capitalize on the growing demand for pharmaceuticals may want to focus on local companies serving increasingly wealthy domestic populations.

Last, as emerging market consumers amass more disposable income, spending on leisure and recreation should rise. Since 2000, annual spending on sports increased significantly in Russia (53 percent), China (20 percent), India (17 percent), and Brazil (7 percent).⁴² Movie ticket sales in China grew at a compound annual growth rate (CAGR) of 40 percent from 2009 to 2014.⁴³ In addition, demand is increasing for theme parks: according to *The Economist*, theme park attendance in Asia has grown faster than anywhere in the world, and the size of this market could surpass that of North and South America combined by 2020.⁴⁴ Of course, this trend will necessitate evaluating investments in sporting infrastructure such as stadiums and arenas, media companies that own the distribution rights for sporting events, public companies or local investment funds with exposure to sports teams, and recreational infrastructure such as movie theaters and theme parks.

Retail real estate

Urban middle-class consumers in EMs—roughly 1.5 billion and growing—have considerable money to spend on retail purchases.⁴⁵ To cater to this burgeoning corps of shoppers, in parallel to the growth in e-commerce, cities will require more shopping malls and retail outlets of all types, creating commercial real estate opportunities throughout the emerging world. While malls and similar retail real estate opportunities will continue to flourish in top-tier cities, the rapid pace of urbanization and wealth creation in second-tier cities (for example, in China) should generate investment opportunities as well.⁴⁶

In addition, as incomes rise and demand for higher-quality vegetables, fruits, dairy, and meat increases, food retailers will require new or improved cold-storage facilities. In some of the larger markets such as China and India, this niche real estate sector is underdeveloped; for example China's cold storage space equals roughly 13 percent of the US total despite having over four times the population.⁴⁷

Vehicles and development companies focused on direct-investment opportunities in retail outlets and cold-storage warehouse space can be geographically diversified, offering exposure to different cities while capitalizing on the overall retail boom in EMs. To date, limited supply has hampered investors' efforts, especially in emerging Asia. Both the assets and the overall market are still fairly small compared with developed markets. However, the EM retail real estate landscape is changing as economies begin to formalize and new real estate markets are institutionalized. These trends are

creating opportunities for institutional investors to acquire assets in markets that were previously inaccessible. Over the past decade, South Korea has advanced on this front, with sale and leaseback transaction volume expanding rapidly.⁴⁸ In markets where supply and liquidity are low, though, investors will need to ensure they have a long-term time horizon and flexibility around exit timing.

Modernizing economies

As emerging markets modernize their economies, long-term investors will find additional opportunities created by the structural transitions in local debt markets, real estate, and infrastructure.

Maturing local bond markets

As domestic capital markets deepen, local government, quasi-sovereign, corporate, and securitized debt in EMs could potentially represent a riskier but potentially even richer asset class than hard currency bonds. While local currencies are subject to periods of booms followed by significant underperformance, as evidenced during the commodity super cycle and ensuing sell-off, local currency debt assets are in many ways a more natural liability stream to service than external debt for local governments, companies and financial institutions. The development of local insurance and pension industries, and deeper domestic capital markets, goes hand in hand with the maturing of these asset classes.

We believe investors looking to participate in financing the enormous infrastructure and development needs of EM countries

Exhibit 20. Investment opportunities from the modernizing emerging markets



MATURING LOCAL BOND MARKETS

The broadening of domestic EM bond markets will create opportunities across quasi-sovereign, local government, corporate and securitized debt.



FORMALIZATION OF THE REAL ESTATE SECTOR

The amount of professionally managed real estate held as investments in EMs is set to grow by over 550% between now and 2036.



MODERNIZING INFRASTRUCTURE

EMs are forecast to experience population growth of over 1 billion people between now and 2030, highlighting the need for new and improved infrastructure.

Source: World Bank, as of 04/17/2017; PGIM Real Estate, February 2017.

Exhibit 21. International retailer presence (number of stores)

Chart View Table View

	Wal-Mart	Carrefour	Tesco	Total
Mexico	2,411	0	0	2,411
Thailand	0	0	1,815	1,815
Poland	0	886	440	1,326
Brazil	498	349	0	847
Argentina	107	603	0	710
China	439	254	0	693
South Africa	373	0	0	373
Malaysia	0	0	62	62
India	20	0	0	20

Source: Wal-Mart, Carrefour and Tesco company websites. Note: Figures are from YE 2016.

in the coming decades, should look for select opportunities in local bond markets. The key drivers of returns will be domestic currencies, duration, and credit. In general, EM currencies offer a modest, albeit highly volatile, risk premium to be harvested, and the 2011–15 commodity sell-off has left these currencies cheap on a real effective basis in many EM geographies, especially Africa, Central Europe, Latin America, and the Middle East. Given that local duration and credit risk premia vary by geography—and that corporate and securitized markets in EMs are still in their infancy—active asset and country selection will be key. In addition, it is worth noting that as countries adopt more orthodox monetary regimes and come down the risk spectrum toward investment grade, their currency and duration markets will become less correlated, improving the risk profile of domestic bonds.

The formalization of the real estate sector

As consumers gain access to mortgages and credit, demand for higher-quality housing and retail real estate increases. Further, as economies shift from largely informal, rural economies to more industrialized, urban economies, demand for industrial and office real estate grows. These transitions formalize the real estate sector, providing institutional investors with access to those markets for the first time. In some EMs such as Malaysia, Mexico, and Poland, the formalization process is well under way, with Malaysia and Mexico already developing active real estate investment trust (REIT) markets (see sidebar, “The Mexican REIT market”).

As investors look to capitalize on the evolving real estate markets, they may want to closely monitor leading signals of growing



The Mexican REIT market

REITs are becoming an increasingly popular vehicle for real estate ownership as they offer easy market access and attractive dividends to retail and institutional investors alike. Although not yet widely adopted across EMs—as of 2016, there were only 36 countries with REIT or REIT-like regimes, 18 of which were EMs—their presence represents a major turning point in the real estate sector’s formalization.⁴⁹

The first Mexican REIT, Fideicomiso de Inversión en Bienes Raíces (Fibras)—known as Fibras Uno—began trading on the Mexican Stock Exchange on March 18, 2011, after regulatory changes made the structure both possible and attractive from a tax perspective. Since then, another nine REITs have been listed, reaching a total market capitalization of \$13.3 billion as of November 2016. While returns have been mixed since the market launched, initial concerns over the Fibras Uno’s management structures are being addressed. Moreover, strong economic fundamentals surrounding middle-class growth and a robust manufacturing base have many investors confident that Mexico’s REIT market will continue to mature and expand.⁵⁰

Exhibit 22. Invested vs. investable real estate stock, 2016

Chart View Table View

	Investable Stock (\$B)	Invested Stock as a % of Investable Stock
	2016	2016
Russia	405	28%
Malaysia	98	23%
Poland	165	23%
Turkey	231	21%
Thailand	101	18%
China	2,741	17%
Brazil	566	15%
Mexico	384	14%
Argentina	215	10%
Korea	626	10%
Indonesia	174	7%
Philippines	59	5%
India	347	3%
Vietnam	30	0%

Source: PGIM Real Estate, "A Bird's Eye View of Real Estate Markets: 2017 Update."

formalization—including the availability of real estate stock, the evolution of ownership structures, and the presence of international retailers—in evaluating investment opportunities (Exhibit 21). In addition, as the laws, regulations, and market structures of real estate sectors mature, investors will have an easier time pursuing these opportunities and should therefore keep a close eye on the regulatory environment. For example, as tenancy laws provide owners with more certainty about rights and responsibilities, leasing and valuation practices standardize and become more transparent, and retail and office buildings shift from an owner-occupied model (many individual owners of smaller assets) to a leasing model (fewer owners of larger assets), institutional investors will be able to find larger deal sizes and generate rental income.

Another important indicator of the real estate market's formalization is the share of invested stock as a percentage of the total available investable stock.⁵¹ The ongoing institutionalization of real estate in EMs contributes to the growth in their invested stock: as countries move up the economic growth path, more and more investable stock will actually become invested (Exhibit 22).

Office and retail are typically among the first wave of real estate asset classes to become viable investments for institutional

investors, followed by for-sale residential and industrial assets. Others such as multifamily rental housing are relatively slow to institutionalize and unlikely to yield many investment opportunities in the short to medium term.

As Exhibit 22 indicates, the real estate sectors of many Asian countries are on the cusp of formalization, creating large opportunities in real estate equity and debt. Most notable is China, where improving asset quality and market transparency, along with a potential loosening of inbound FDI restrictions for real estate, are creating an opportunity for institutional investors to gain access to China's \$2.7 trillion real estate market.⁵² Vietnam is another market where formalization is primed to take hold. Recent deregulation of its real estate market has established equal treatment for local and foreign investors. In addition, the recent deregulation in Vietnam's retail sector has led to the entrance of major foreign retailers such as Japan's Aeon and South Korea's Lotte, creating a spike in institutional-grade real estate stock. Importantly, investors must remain vigilant around supply risk throughout the formalization process as supply-demand mismatches might lead to a fair amount of volatility in vacancy rates and rental growth in rapidly evolving real estate markets.

Modernizing infrastructure

The developing world suffers from a significant undersupply of infrastructure (Exhibit 23). Filling this gap may create valuable opportunities for patient, long-term private capital seeking to generate stable, inflation-protected and low correlation returns. Given the high level of state control and the patchwork of regulatory regimes, accessing EM infrastructure opportunities might not always be straightforward, though. Yet, with the asset class maturing and a diverse range of infrastructure debt and equity instruments now available, investors may increasingly be able to find investments that match their risk-reward tolerance and liquidity requirements. Looking forward, there may be potentially attractive investment opportunities in water and sanitation, digital infrastructure, and in Asian infrastructure linked to China's One Belt One Road (OBOR) initiative, and, in the longer-term, renewables (see sidebar, "The mainstreaming of renewable energy").

Perhaps the most pressing need in EMs is to boost the already-strained supply of water. Regions such as Central Asia, North Africa, the Middle East, and South Asia are already in states of near-permanent water stress. As populations grow, countries urbanize, energy demand increases, and higher incomes shift food consumption from predominantly plant-based diets to more water-intensive dairy and meat products, the demand for water will far outstrip current supply.⁵³ EMs will require large-scale investment

in water collection, storage, transportation, treatment, distribution, and use, notably including water and sanitation infrastructure such as desalination plants, wastewater treatment plants, and efficient irrigation systems. Developing Asia alone will require \$800 billion in new water and sanitation investment between now and 2030.⁵⁴

EMs will also see the largest growth in Internet users over the next decade, and new infrastructure will be required to support them. Since EMs often lack fixed-line infrastructure, consumers gain access to high-speed Internet through mobile broadband technologies, leading to a growing need for IT infrastructure, broadband, data centers, and cell towers.

Institutional investors evaluating EM infrastructure opportunities may also want to monitor the infrastructure opportunities generated by OBOR. China has indicated a desire to bring in private institutional capital to co-invest alongside Chinese banks and the Asian Infrastructure Bank. While the risks of investing in complex projects in challenging regulatory environments cannot be ignored, the sheer size of the financing proposals means that investors will want to keep an eye on the potential opportunities. Investors might also want to evaluate gaining exposure to OBOR through the companies contracted to develop the infrastructure and provide the equipment, without taking on the risk of direct debt or equity positions.

Exhibit 23. There is a significant infrastructure funding gap in emerging markets

[Chart View](#) [Table View](#)

	Capital Expansion Requirements (\$)	Maintenance Requirements (\$)	Total Infrastructure Requirements (\$)	Estimated Actual Investment (\$)
South Asia	159	144	304	68
Sub-Saharan Africa	29	27	56	28
East Asia & Pacific	116	96	212	356
Middle East & North Africa	15	32	47	52
Latin America & Caribbean	66	74	140	41
Europe & Central Asia	24	36	60	35

Source: Ruiz-Nunez, Fernanda and Wei, Zichao, "Infrastructure Investment Demands in Emerging Markets and Developing Economies", World Bank. September 2015.

While EM infrastructure has often been financed by domestic governments and international development banks, the vast financing gap means that long-term institutional investors will have a growing opportunity to use direct equity investments—structured as public-private partnerships (PPPs) or co-invested alongside local institutional investors—or infrastructure debt financing to capitalize on the increasing requirement for modern, broad-based infrastructure.

When, where, and how to invest

While the evaluation of specific investments depends on each investor's unique objectives, we believe that the eight investable ideas detailed above present attractive opportunities in EMs. Of course, timing varies; many of the ideas discussed are investable now, while others will be most opportune at specific times in a country's or sector's development trajectory (Exhibit 24). For example, the opportunities in fintech and the new domestic consumer class are accessible to investors right now, while the mainstreaming of EM renewables may take longer to become investable at scale.

These investment opportunities are also accessible across a broad range of public and private vehicles and asset classes, demonstrating the wide range of potential entry points available to investors (Exhibit 25).

Investors moving beyond hard currency-linked EM asset classes must also think carefully about currency risk. Though we believe long-term investors should be able to generate outsized returns in EMs despite currency volatility, significant currency movements can still overwhelm the long-term value in unhedged portfolios if not carefully monitored. For a start, it will be vital for investors to understand what is driving currency movements. Is the dollar strengthening relative to a basket of EM currencies because of healthy economic activity in the United States or because EM fundamentals are deteriorating? The former would imply more positive global growth and act as a tailwind for EMs, while the latter would indicate growing headwinds. Investors should therefore regularly assess macroeconomic conditions and take caution when investing in countries with significant current account and fiscal deficits or that frequently intervene in currency markets. In addition, investors must evaluate their own risk-return

The mainstreaming of renewable energy

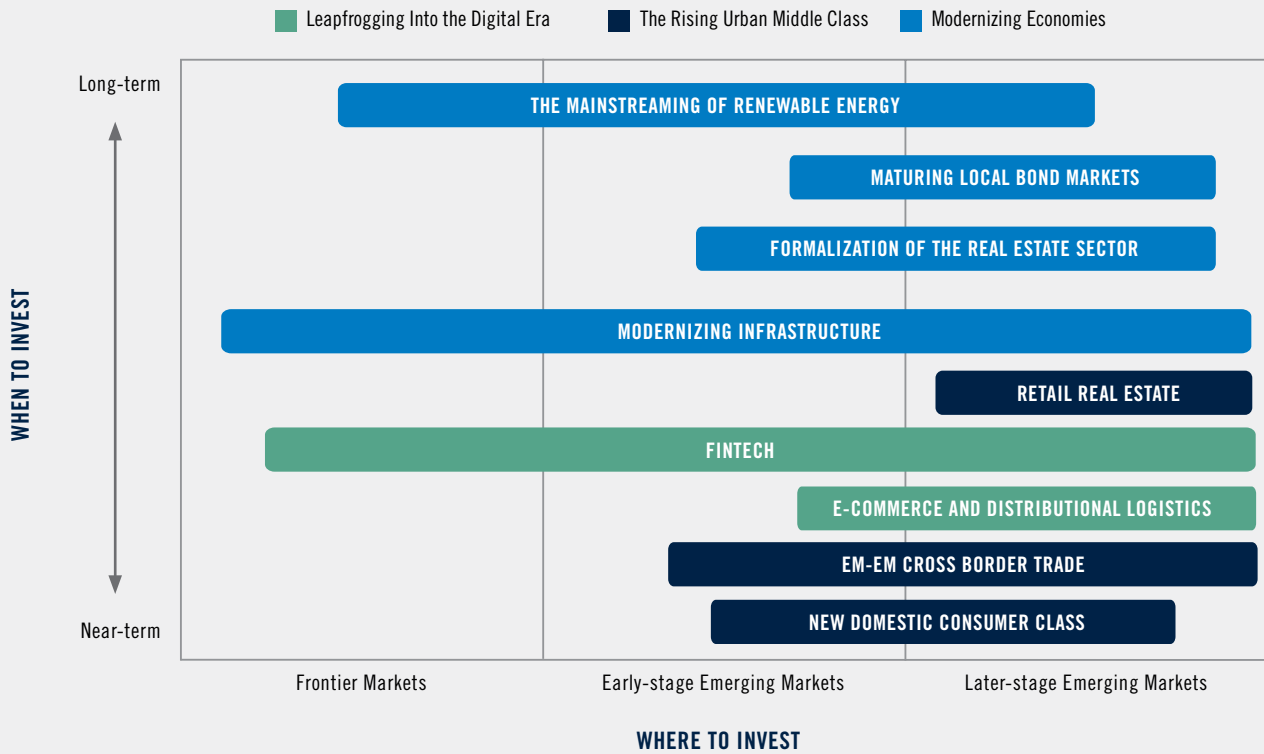
While fossil fuels will remain a critical component of global energy markets for the foreseeable future, renewables are starting to gain traction as viable complements as they become more cost competitive and as energy storage capabilities improve. Solar and wind, for example, have made significant efficiency gains in recent years, achieving economic competitiveness with coal and gas; in an increasing number of EM markets such as Chile and Mexico, solar and wind have become quite cost competitive. They also provide a potential source for greater energy self-sufficiency in EMs where domestic supplies of traditional fossil fuels are scarce. Meanwhile, average lithium-ion battery costs have halved over the past three years, helping to drive robust electric vehicle demand growth in both EMs and developed markets alike (in 2015, China became the largest market for electric car sales).⁵⁵ As a result of these improvements, investment in renewable energy reached a record \$286 billion in 2015, with \$156 billion of that in EMs.⁵⁶

Within EMs, one of the more promising renewable investment opportunities lies within solar power generation and transmission. EMs make up more than half of the top 10 countries for solar photovoltaics (PV) and concentrated solar power, including both mature EMs such as Brazil, Chile, China, India, Mexico, and South Africa, as well as less-developed EMs such as Egypt, Jordan, and Morocco. And while many investors still view solar as a niche investment opportunity with limited entry points, a variety of innovative vehicles are arising for solar. For example, Argentina and the United Arab Emirates recently raised capital for a range of renewable projects through "green bonds." In addition, EM-focused "yieldcos," or companies that own operating assets and use predictable cash flows to pay investors, are being offered as an alternative to conventional equity in utilities, giving investors broad geographic exposure to a range of EM assets. Finally, asset-backed securities are being issued for smaller-scale solar projects, bundling revenue streams of companies that install and lease rooftop solar PV assets—with successful issuances in markets such as China and Kenya.⁵⁷ These investment options offer a wide range of risk-reward profiles across both equity and debt instruments.

Investment opportunities may also exist in EMs in energy storage—particularly in the manufacturing of lithium-ion batteries. Energy storage and battery technologies, which are necessary to power electric vehicles as well as to store and transport intermittent energy sources such as solar and wind, are growing in importance. EMs with natural resources such as cobalt and lithium—necessary inputs for these batteries—will likely benefit. For example, Goldman Sachs estimates that the demand for lithium will increase 11-fold by 2025, benefiting producers in EMs such as Argentina, Chile, and China. Also, demand for cobalt should spike by roughly 30 percent through 2021, creating potential supply deficits over the next three to five years.⁵⁸

Given the lack of market scale, project and contract standardization, and policy uniformity, investing in EM renewables at scale—and with confidence around the regulatory environment—may still be some years out. However, long-term investors would be wise to monitor the renewable landscape carefully and look for strategic entry points—especially in countries that have prioritized renewables in their national energy policies and are therefore likely to have less regulatory flux.

Exhibit 24. Summary of investment ideas: Primary ways to access



Source: PGIM analysis.

Exhibit 25. Summary of investment ideas: How to invest

INVESTMENT IDEA	ASSET CLASS							
	Public Equity	Public Debt	Private Equity	Private Debt	RE Equity	RE Debt	REITs	PPPs
Leapfrogging Into the Digital Age	E-Commerce and Distributional Logistics	•	•	•	•	•	•	•
	Fintech	•		•	•			
The Rising Urban Middle Class	EM-EM Cross Border Trade	•	•	•	•			
	New Domestic Consumer Class	•	•	•	•	•	•	•
	Retail Real Estate					•	•	•
Modernizing Economies	Maturing Local Bond Market		•					
	The Formalization of the Real Estate Sector					•	•	•
	Modernizing Infrastructure	•	•		•		•	•
	The Mainstreaming of Renewable Energy	•	•	•	•			•

Source: PGIM analysis.

tolerance to decide whether it makes sense to hedge. While some liability-constrained investors such as pension funds might hedge to reduce return volatility and better match home currency liabilities, other investors with greater risk tolerance or institutional appetite for taking on currency risk might find hedging to be too expensive or might be willing to bear the volatility in return for earning EM currency premiums.

Investors must also think carefully about the optimal timing to access EM investment opportunities from a valuation perspective. While investors will of course need to carefully evaluate the right entry and exit points, we believe EMs represent a long-term secular growth opportunity that no investor can afford to ignore, particularly given the low growth and yield prospects in developed markets for the foreseeable future. In addition, given the growing divergence across EMs, the real question for institutional investors is not whether to access EMs as a single collective but which EM sectors, securities, and themes to participate in at any point in time. Of course, each investor will need to examine their long-term investment goals—and their specific risk-return criteria—to determine how best to incorporate EM exposure into their

portfolio, and how to monitor their aggregate exposure to EM sectors and themes across the portfolio.

Conclusion

EMs will be the primary engine of global growth over the next decade. We believe they represent an array of attractive, long-term, risk-adjusted return opportunities that will require benchmark-agnostic, locally informed, and highly active investment decisions. Increasingly, these opportunities will be captured by investors who look beyond the market beta of the broad EM universe and harvest idiosyncratic alpha from specific themes, sectors, and securities across all EM asset classes—public and private, equity and debt.

Navigating the risks and participating in the investment opportunities offered by this new EM order will be an increasingly important driver of portfolio returns in a world where developed markets are likely to offer diminished yields and subdued growth prospects over the long term.

Appendix A: Investment Drivers by Asset Class⁵⁹

Chart View Table View

Factor	PUBLIC EQUITY					FIXED INCOME					REAL ESTATE		
	Public Equities	Local Currency Sovereign Debt	Hard Currency Sovereign Debt	Local Currency Corporate Debt	Hard Currency Corporate Debt	Emerging Market FX	Core/Core Plus	Opportunistic	Value-Add				
Political Risk	Rule of Law	Medium	Medium	High	High	Medium	High	High	High	Medium	High	High	
	Risk of Conflict	Medium	Medium	Medium	Medium	Medium	High	High	High	Medium	High	High	
	Corruption	High	Medium	Medium	High	High	High	High	High	Medium	High	High	
	Degree of Market Intervention	High	Medium	Medium	Medium	Medium	Medium	Medium	Medium	Medium	Medium	Medium	
	Election Cycle	Medium	Medium	Medium	Medium	Medium	Medium	Medium	Medium	Medium	Medium	Medium	
	Strength / Bifurcation of Support Base	High	Medium	Medium	Medium	Medium	Medium	Medium	Medium	Medium	Medium	Medium	
Policy Consistency / Ability	Fiscal Policy	High	High	Medium	Medium	High	Medium	Medium	Medium	High	Medium	Medium	
	Pace of Market Liberalization	High	High	Medium	Medium	High	High	High	High	Medium	Medium	Medium	
	Central Bank Credibility / Inflation Risk	High	High	High	High	High	High	High	High	High	High	High	
	FX Policy	High	High	Medium	Medium	High	High	High	High	Medium	Medium	Medium	
	Quality of Infrastructure	High	Medium	Medium	Medium	Medium	High	High	High	Medium	Medium	Medium	
Institutional Quality	Property Rights	High	Medium	Medium	Medium	Medium	Medium	Medium	Medium	High	High	High	
	Contract Enforcement	High	Medium	Medium	High	High	High	High	High	High	High	High	
	Independent Judiciary	High	Medium	Medium	Medium	Medium	Medium	Medium	Medium	Medium	Medium	Medium	
	Strength of Investor Protection	High	Medium	Medium	High	High	High	High	High	High	High	High	
	Level of Tertiary Education	Medium	Medium	Medium	High	High	High	High	High	High	High	High	
Environment for Innovation and Entrepreneurship	IP Protections	High	Medium	Medium	Medium	Medium	Medium	Medium	Medium	Medium	Medium	Medium	
	Internet and Mobile Connectivity	High	Medium	Medium	High	High	High	High	High	High	High	High	
	New Businesses Density	Medium	Medium	Medium	Medium	Medium	Medium	Medium	Medium	Medium	Medium	Medium	
	Ease of Doing Business	High	Medium	Medium	Medium	Medium	Medium	Medium	Medium	Medium	Medium	Medium	
	Capital Controls / Distortional Policies	High	Medium	Medium	High	High	High	High	High	High	High	High	
Structural Imbalances	Financial Sector Health	Medium	Medium	Medium	Medium	Medium	Medium	Medium	Medium	Medium	Medium	Medium	
	Economic Diversity	High	Medium	Medium	Medium	Medium	Medium	Medium	Medium	Medium	Medium	Medium	
	Ability to Adjust to Shock	Medium	Medium	Medium	Medium	Medium	Medium	Medium	Medium	Medium	Medium	Medium	
	External Solvency	High	Medium	High	Medium	High	High	High	High	High	High	High	
	External Liquidity	High	Medium	High	Medium	High	High	High	High	High	High	High	
Sustainable Growth	Fiscal Stability	High	High	Medium	Medium	High	High	High	High	High	High	High	
	Financial Stability	Medium	High	Medium	High	High	High	High	High	High	High	High	
Demographics / Middle Class Growth	Market Scale / Liquidity	High	High	High	High	High	High	High	High	High	High	High	
		Medium	High	Medium	High	High	High	High	High	High	High	High	

Note: See endnotes for definitions of investment time horizons.

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- 49 Developed markets that have real estate investment trusts (REIT) or REIT-like regimes include Australia, Belgium, Canada, Finland, France, Germany, Greece, Hong Kong, Ireland, Israel, Italy, Japan, Netherlands, New Zealand, Singapore, Spain, the United Kingdom, and the United States. Emerging markets that have REIT or REIT-like regimes include Bahrain, Brazil, Bulgaria, Costa Rica, Hungary, India, Kenya, Malaysia, Mexico, Pakistan, Philippines, South Africa, South Korea, Taiwan, Thailand, Turkey, the United Arab Emirates, and Vietnam; Global Perspectives: 2016 REIT Report, Ernst & Young, 2016, [www.ey.com/Publication/vwLUAssets/ey-global-perspectives-2016-reit-report/\\$FILE/ey-global-perspectives-2016-reit-report.pdf](http://www.ey.com/Publication/vwLUAssets/ey-global-perspectives-2016-reit-report/$FILE/ey-global-perspectives-2016-reit-report.pdf).
- 50 Peter Grant and Janet Morrissey, "A Young Mexican REIT Market Evolves," *The Wall Street Journal*, November 10, 2016, www.wsj.com/articles/a-young-mexican-reit-market-evolves-1478009286.
- 51 Real estate invested stock is defined by Morgan Stanley Capital International/Investment Property Databank (MSCI/IPD) as "the aggregation of real estate assets that meet all of the following conditions: They are held as investments for the purposes of delivering a mix of income and capital returns; They are professionally managed for the achievement of these purposes, either by the beneficial owners or by a third-party management business; They are structured as investment interests within portfolios." To calculate the value of the investable real estate market within each country, we started by classifying the country as developed or developing, depending on whether it meets a real gross domestic product (GDP) per capita threshold. Our threshold is a real GDP per capita of \$20,000, with the year 2000 as the base year. For developed countries, whose GDP per capita is above our threshold level, we calculated the value of investable stock as 45 percent of nominal GDP, which is consistent with our experience. However, for those whose GDP per capita is below our threshold, we devised an adjustment factor to this 45 percent rule to recognize the proportionately smaller stock of investable real estate. The adjustment factor, based off 2000 year prices, is (country real GDP per capita/threshold real GDP per capita). Note that we adjusted upward the value of the real estate market in seven countries that have very high population densities. Hong Kong and Singapore were adjusted upward by 100 percent. The United Kingdom and four of the Gulf Cooperation Council countries (Bahrain, Kuwait, Qatar, and the United Arab Emirates) were increased by 25 percent.

- 52 As of 2016, the total investable stock in China was \$2.7 trillion; *A Bird's Eye View of Real Estate Markets: 2017 Update*, PGIM Real Estate, 2017.
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- 58 Pratima Desai, "Electric Car Boom Spurs Investor Scramble for Cobalt," *Reuters*, February 14, 2017, www.reuters.com/article/us-cobalt-demand-investors-idUSKBN15T1VR.
- 59 Public equity time horizons are defined as one to two years for the medium term and three to seven years for the long term. The fixed income time horizon is defined as three to five years for long term, except for EM FX, for which the long term is defined as one year. Given the longer investment horizon associated with real estate investments, no time horizon is noted, but it is assumed that the investment time horizon will be longer than five years.

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