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FRONTIER MARKETS

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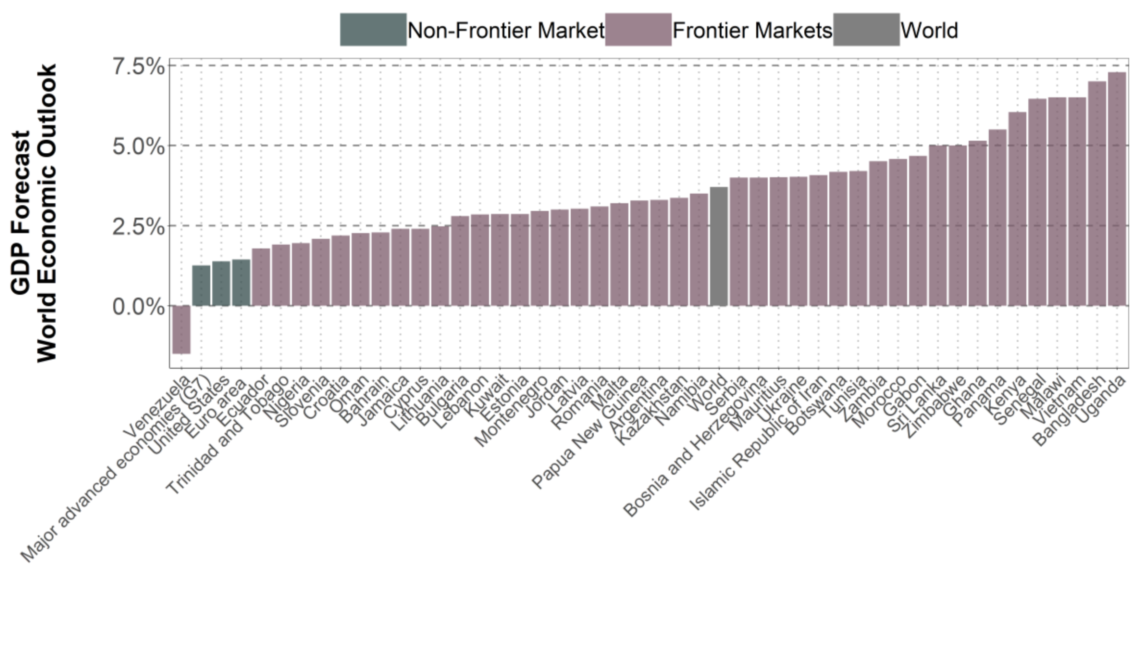
Throughout this paper we will use "Frontier Markets" as a general term to describe those markets in the least rich and developed economies. As shown in Appendix A, which countries are included within this classification depends on who is asked. However, regardless of exactly which set is adopted, these equity markets have tended to experience periods of strong returns with relatively low correlation to traditional asset classes. In this overview, we will discuss the equity investment opportunities offered by this asset class, the risks associated with an investment, and finally investment implementation.

In general, Frontier Markets offer strong growth opportunities and some diversification benefits, which can make an investment attractive to investors with a high target return who also seek diversification. The complexity, illiquidity, and other challenges indicate that an investment in this area will not be well suited to all investors. The risks and uncertainties associated with an investment in Frontier Markets are significant, but a modest allocation can make sense if the short to medium term risks are managed and monitored.

THE OPPORTUNITIES:
GROWTH, DEMOGRAPHICS, LOW DEBT, VALUATION

The opportunities that an investment in Frontier Markets offers can be summarized as a growth story at a good price. To get a sense of how the growth expectations within frontier markets compare with growth across the world, we examine the World Bank's growth expectations for different countries and groups.

5 Year Growth Outlook[1]



[1] World Economic Outlook, April 2018, International Monetary Fund.

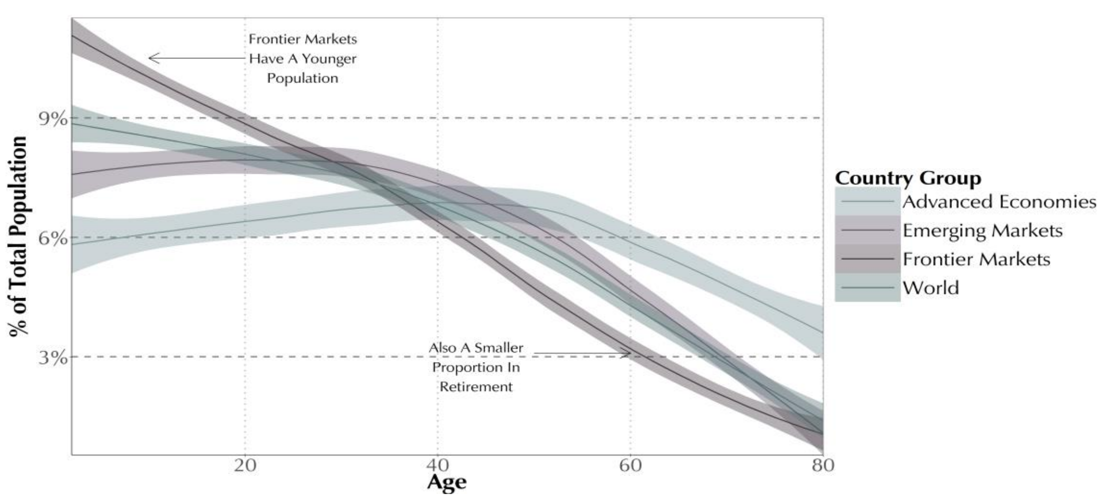
The chart above highlights that all but one of the Frontier Market countries have higher growth expectations than the U.S. and other advanced economies. We can also see that many are higher than the world average, which indicates that these economies tend to be a positive influence on the global average.

Frontier Market equity returns since inception have been less efficient when compared to U.S. equity market returns, but have still seen periods of very strong growth.

	Frontier Markets	Emerging Markets	United States
Return (May-2002 to Sep-2018)	7.6%	9.6%	7.9%
Volatility Since Inception	18.1%	21.3%	13.9%
Maximum Rolling 3-Year Return	51.9%	46.2%	25.6%
Minimum Rolling 3-Year Return	-21.4%	-11.9%	-15.4%
Correlation with U.S.	0.52	0.78	1.00

Closely tied to the growth opportunity in Frontier Markets are the demographics, which have been shown to be a driving factor in GDP growth across many studies.[2] Much of the growth story in these markets is driven by their relative youth.

Percent of Population by Age[3]



The previous chart shows that a larger proportion of the population in Frontier Markets are young and in their prime productive years while a much lower proportion are in older age which can act as a drag on growth.

[2] Notably: https://www.federalreserve.gov/econresdata/feds/2016/files/2016080pap.pdf
[3] World Bank Demographics database.

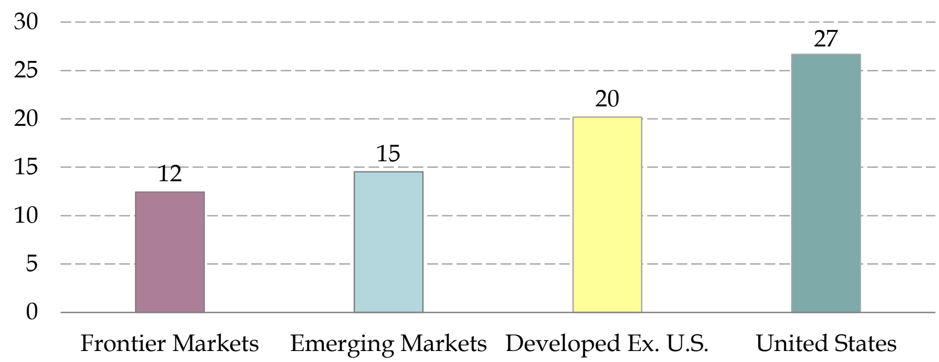
Another important drag on future growth is the debt burden on an economy. Again, here the Frontier Markets are in a strong relative position as seen in the table below.[4]

Government Debt Burden By Region

MSCI Region	Average Debt Burden (% of GDP)[5]
United States	82
Developed Markets ex. U.S.	109
Emerging Markets	47
Frontier Markets	46

The final metric we consider here is that this strong growth story comes at a relatively low price. Our favored metric is the Cyclically Adjusted Price-to-Earnings measure, which essentially indicates what price must be paid for average market earnings.

Cyclically Adjusted Price-to-Earnings Ratio[6]



The graphic shows that the price paid to access average earnings from companies in Frontier Markets are substantially cheaper relative to other major market groups.

THE CHALLENGES:

ILLIQUIDITY, RISKS/COSTS, ECONOMIC EXPOSURES

The lack of liquidity in frontier markets is the most prominent differentiator between these markets and both developed and emerging markets. Frontier market stocks tend to be thinly traded and thus are less liquid than developed market stocks. For example, Frontier equity markets tend to trade about only 16% of the volume of Emerging Markets[7] and only 5% of the

[4] The astute reader may point out that the low debt burden could be a result of unwillingness for lenders to take on the risks associated with these markets rather than good fiscal management. While high risk is certainly a possible cause, the forward-looking result of a low debt-burden is the same regardless of the contributing factors.

[5] Source: CIA Factbook 2017 estimates.

[6] Data from MSCI and S&P. Listing the proxy indices in order: 1.) MSCI Frontier Markets, 2.) MSCI Emerging Markets, 3.) MSCI EAFE ex. U.S., and 4.) S&P 500.

[7] Data from MSCI.

volume of Developed Markets ex. U.S. and Canada. As a result of this illiquidity, frontier market managers may need an extended period of time to build a position in a security and, conversely, may need even more time to exit.

This lack of liquidity can affect an investor in three ways. First, the low volume of trading generally results in wider bid-ask spreads and thus higher trading costs. Second, it may be difficult to trim or to liquidate an investment on short notice—especially during a market downturn. Finally, cash flows from other investors can have a significant impact on the market's returns. For example, during the Global Financial Crisis, there was a widespread move toward liquidity and quality, which resulted in investors reducing frontier market exposure. This flight to quality by foreign investors during the period contributed to a 53% decline in the MSCI Frontier Markets index in 2008.

While we focus on illiquidity, there is a long list of other important risks and costs to carefully consider before committing assets in Frontier Markets.

1. **Political and Social Risks**

   Being prone to political, social, and economic instability, Frontier Markets can experience severe periods of stress that can last for extended periods of time.

2. **The Cost of Graft**

   The World Bank recently did a study on the drag caused by corruption. Globally, the drag from graft is close to 2%, but in Frontier Markets this figure can be much higher.[8] This important cost erodes the growth potential in these countries.

3. **Overall Volatility and Uncertainty**

   For many reasons, including some of those already mentioned, the volatility and uncertainty in these markets is greater than for developed markets. In practice, this can mean that when combined with illiquidity, market values can become severely depressed for extended periods. For example, during the GFC, the Serbian market declined 84%, and 10 years later it had yet to regain its pre-crisis value.

4. **Commodity and Currency Risks**

   Two major risk factors associated with this asset class are commodity and currency risk. Commodity risk because these economies tend to be largely driven by commodity resources. In practice, this means that returns can be highly dependent on demand for raw materials. Currency risk because an investment in this asset class is an investment in a basket of economies and therefore their basket of currencies. Exposure to these asset classes can be diversifying for some investors but for others they will find it either prohibitively expensive or practically impossible to hedge against these risks.

[8] Combating Corruption, September 2017, World Bank.

5. **Costs: Taxes, Trading, and Currency Hedging**

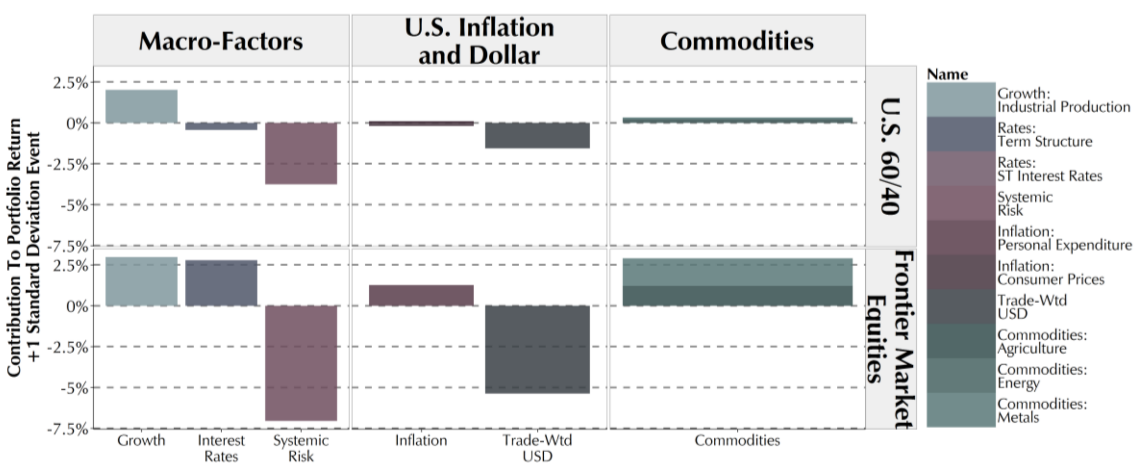
   Some frontier market countries impose taxes on foreign investors, which can be significant and are subject to change seemingly at random.[9] Furthermore, custody costs and investment management fees tend to be higher, thus driving down the net return to investors. Finally, currency risk in these markets can be either prohibitively expensive to adequately hedge.

6. **The Definition Uncertainty**

   While the general idea of what a 'frontier market' is may seem relatively obvious, there is no clear rule. In practice, this results in countries shifting in and out of the universe, which in turn changes the characteristics of the opportunity set (i.e., what you buy today may be different tomorrow). For example, Pakistan was recently removed by MSCI and Argentina is likely to be removed in 2019; as the 4th and 3rd largest country weightings at the time of removal, these represent significant changes.

The final important challenge can also be an opportunity. While frontier markets are often thought of as simply higher risk/reward types of equities, these markets tend to have different economic and fundamental drivers of returns. Furthermore, it is important to note that the exposures from Frontier Markets will affect the total portfolio (and not just the equities portion). In the next graphic, we compare these exposures to a traditional 60% U.S. Equity/ 40% Fixed Income portfolio as a proxy for a 'normal' portfolio.

Macro-Factor Exposures
U.S. 60/40 vs. Frontier Market Equities



We can garner several takeaways from the previous chart. First, in general, the risk exposures in Frontier Markets are higher than the traditional U.S. 60/40 portfolio. This means that (dollar for dollar) any investment in Frontier Markets can have a significant impact on the economic drivers of return at the total portfolio level.

[9] For example, Ukraine imposed a 15% withholding tax on all security sale proceeds in July 2007. It is important to note that Ukraine is not currently included in the MSCI FM Index, but it was when this change occurred.

We can also see that Frontier Markets will add more risk sensitivity to Growth, Systemic Risk (also known as 'fat-tail' risk), the U.S. Dollar, and Commodities. In practice, this means that a portfolio that contains Frontier Markets will have higher than 'normal' exposure to these risks.

Moving on to comparisons where exposures move in the opposite direction, we can see that an investment in Frontier Markets will add positive exposure to interest rates and inflation where the U.S. 60/40 'normal' proxy has a negative exposure and roughly zero exposure respectively.

Obviously, using the U.S. 60/40 as a proxy for 'normal' is a very rough approximation, but the takeaways are likely to be similar for most investors. Some important risks will be emphasized while others are decreased in some way. While changing risk exposures is not necessarily a negative or positive, it is an important consideration for each investor to examine in detail and to incorporate into their specific needs and preferences when constructing their portfolio.

IMPLEMENTATION

An investor can gain exposure to Frontier Markets through index funds, ETFs, actively managed long only strategies, and long-short hedge funds. However, one barrier to Frontier Market investing is the relative dearth of investment products and managers. Though the numbers of products and managers is constantly changing, the number of products available to investors in each category is only a small fraction of that for other markets.

There is a strong rationale for active management in Frontier Markets. Since the indices are not necessarily well diversified (by geography, industry, etc.), an active manager may construct a portfolio that provides improved diversification. Furthermore, active managers can position their portfolios to take advantage of possible macroeconomic insights. The volatile nature of individual stocks and markets provides a wider range of entry and exit points that skilled managers can use to their advantage.

When implementing a Frontier Market investment, the two key issues that must be faced are 1.) How large should an investment be? and 2.) What investment product(s) should be chosen?

While this decision will and should be specific to each investor, we can add some helpful guidance. The major areas of consideration will be fourfold; 1.) Risk/return profile of the investment, 2.) Economic exposures and other risks the investment has embedded within it, 3.) Tracking error relative to peers, and 4.) Fees associated with the investment.

In the vast majority of cases, Frontier Markets will be used to increase the expected return of the portfolio, which will unfortunately also require accepting more volatility. Again, in almost all cases, an investment will lead to more exposure to commodities at the portfolio level. In practice this means that an investment in Frontier Markets will be more 'valuable' to an investor without a pre-existing investment in the commodities space than to one with a large current holding in this area.

While the size of an allocation to Frontier Markets should vary based on each investor's needs and their size, we believe that even in cases where the benefits of growth and economic exposures are highly valued by the investor, an investment in Frontier Markets should very rarely exceed 10% of the total equity portfolio. It is quite possible that an investment in Frontier Markets is not appropriate for many types of portfolios.

CONCLUSION

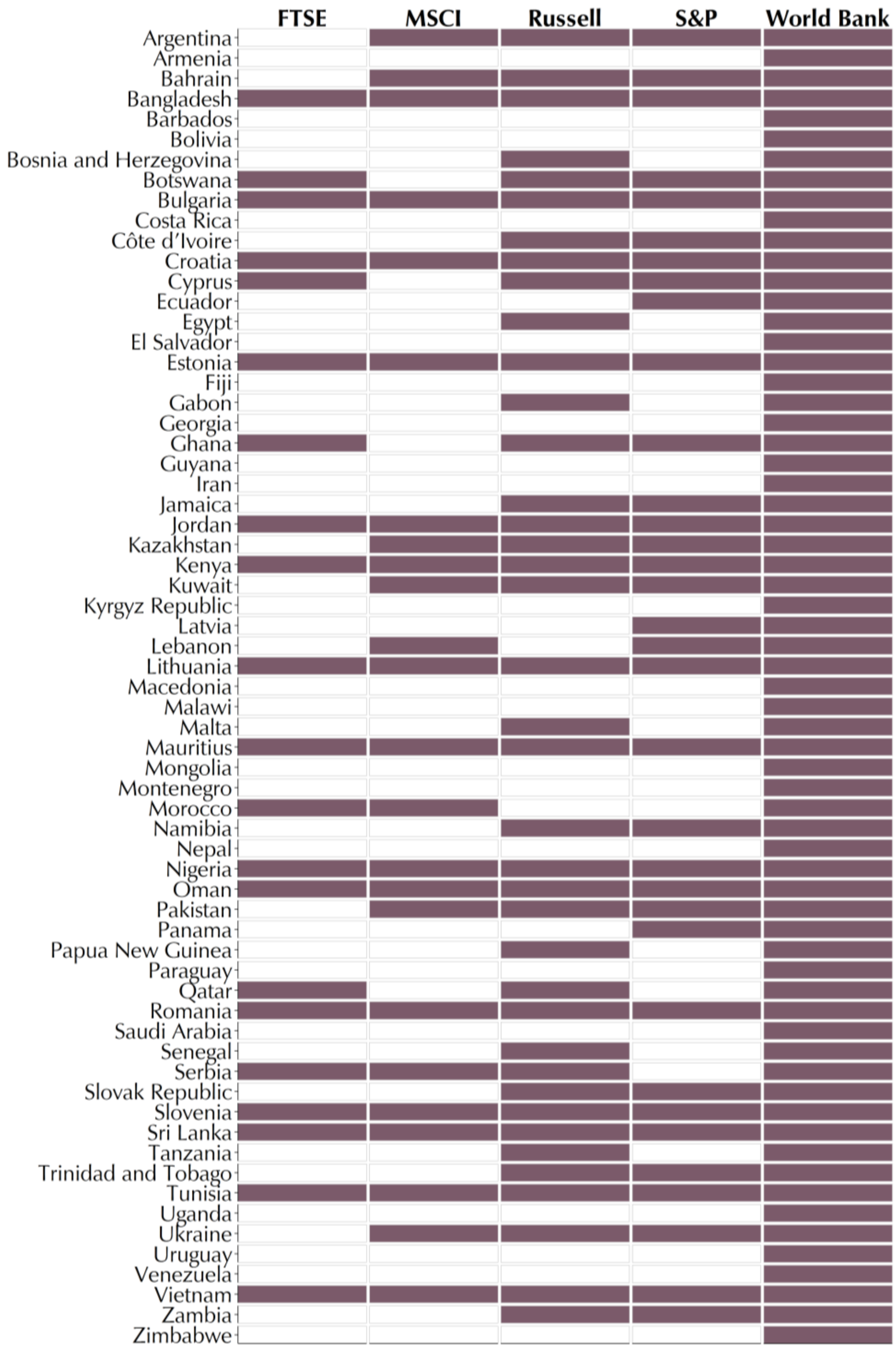
It is clear that Frontier Markets have strong growth potential underpinned by solid fundamental characteristics. As is often the case, high growth opportunity investments come with substantial risks, costs, and uncertainties.

In this paper, we have shown that Frontier Equity Markets have strong growth potential, partly driven by demographics, low debt burdens, and low valuations, but also substantial headwinds, risks, and costs. These characteristics combine into a diversifying set of risks and economic exposures. While we attempt to give general guidance, the actual 'best' implementation will be highly variable based on investor preferences as these will determine which aspects of a Frontier Markets investment are most suitable to their specific portfolio.

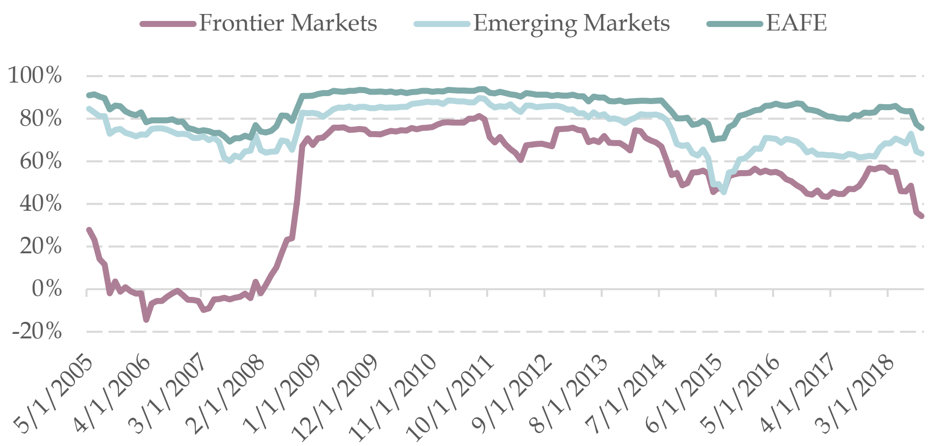
Frontier Markets equity in many ways is at the extreme of the investment spectrum. This fact means that it will not be appropriate for many investors. But for those investors that are willing and able to take on the complexity, uncertainty, and risks, this asset class offers some of the highest growth potential with added diversification benefits.

APPENDIX

Frontier Market Classification by Institution



Rolling 3 Year Correlation with U.S. Equity



Correlation with U.S. Equity June 2002 to September 2018

	FM	EM	EAFE
Correlation	52%	78%	88%

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