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BEYOND THE BOND BENCHMARK
A MULTI-SECTOR BOND STRATEGY FILTERED FOR OPPORTUNITY RATHER THAN INDEBTEDNESS

Key findings

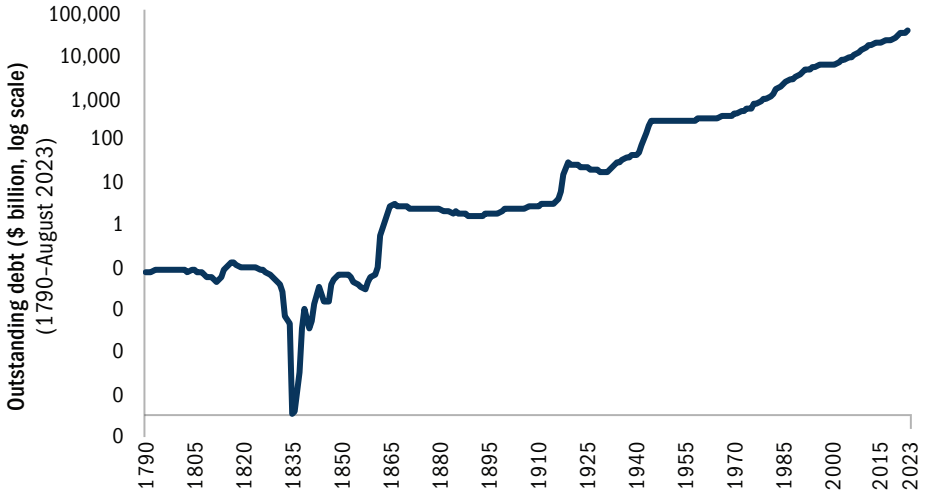
- Allocating by debt outstanding creates a lopsided yield distribution, with a barbell-like overconcentration both in relatively safe-haven assets with a limited income profile and in fundamentally risky debt profiles.
- The benchmark index does not foster diversification, with a two-thirds weighting to governnment-affiliated bonds and high correlation between the two largest sectors.
- Investors should consider a multi-sector bond strategy filtered for opportunity rather than indebtedness. Such a strategy could address the investment universe screened by yield, quality and liquidity.

The growth of the U.S. bond market

The United States, initially as the Continental Congress, first incurred debt in 1776 when it borrowed funds to finance the Revolutionary War.[1] Total Treasury debt remained fairly small in the first half of the 19th century but rose sharply with the Civil War and again with World War I (Exhibit 1). After declining slightly, the debt increased nearly threefold during the Great Depression and exploded in the 1940s as the government financed expenditures related to World War II.

From its postwar low in 1949, outstanding Treasury debt grew gradually for nearly two decades before accelerating at the time of the Vietnam War and during the subsequent period of high inflation. In the 1980s, the growth of the stock of debt picked up further, spurred by the tax cuts and rapid increases in defense spending of the decade.[2] America's continuing and growing budget deficits, combined with the unprecedented government intervention in U.S. financial markets in 2008 and 2020 — including the mortgage-backed securities (MBS) issued by Fannie Mae and Freddie Mac — have driven the explosion in U.S. government debt outstanding.

Exhibit 1: U.S. government debt outstanding
1790–2023



Source: U.S. Department of the Treasury. Data as of 08/31/23.

[1] Rafael A. Bayley, The National Loans of the United States of America from July 4, 1776 to June 30, 1880, as Prepared for the Tenth Census of the United States (Washington, D.C.: U.S. Government Printing Office, 1883).

[2] The Treasury Securities Market: Overview and Recent Developments, http://eh.net/database/u-s-government-bond-trading-database-1776-1835/.

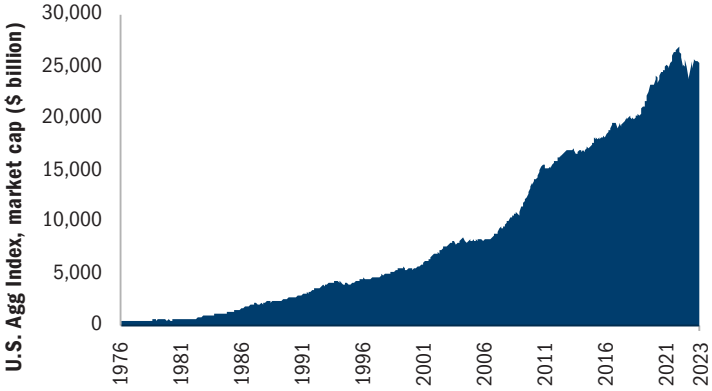
The birth of a bond benchmark

On May 26, 1896, Charles Dow created what we now know as the Dow Jones Industrial Average. But total return bond indices weren't developed until 1973. The growth of asset allocation in portfolio management in the 1970s necessitated a measure of bond performance. Hence, the need for a bond return benchmark. Until then, bonds were rarely traded, and most investors just bought and held them to maturity.

In 1973, Art Lipson and colleague John Roundtree at Kuhn, Loeb & Co. created an index that would later be called the Agg. Lehman Brothers purchased Kuhn, Loeb & Co. at the end of 1977, and Barclays Capital took over the index business of the now-defunct Lehman Brothers in 2008. In 2016, Bloomberg acquired Barclays Risk Analytics and Index Solutions Ltd., giving us what is currently called the Bloomberg U.S. Aggregate Bond Index — the Agg.

While manually calculating the value of a 30-stock index (the Dow Jones Industrial Average) was feasible, it was the appearance of computers in the financial industry in the 1970s that enabled Lipson, an engineering major in college, to develop a program to keep track of more than 3,500 bonds. These bonds had a total value of $221 billion at inception.[3] Now the Agg comprises a total of 13,370 bonds and is worth more than $25 trillion (Exhibit 2).

Exhibit 2: Bloomberg U.S. Aggregate Bond Index market value
1976–2023



Source: Bloomberg, data as of 08/31/23.

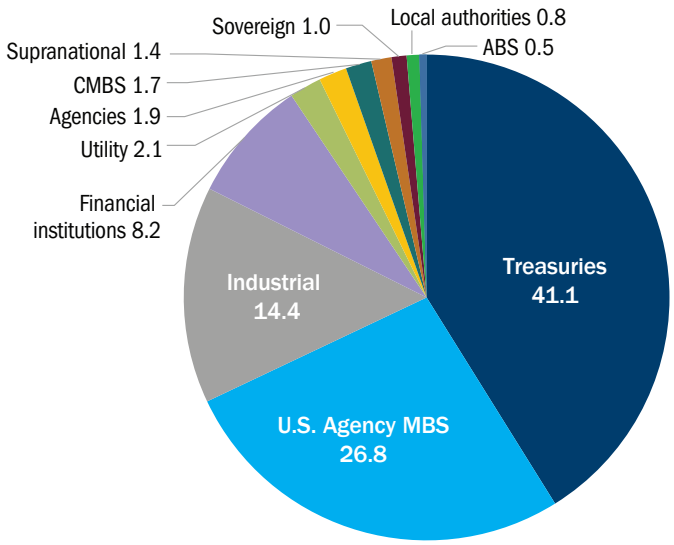
The Agg is more than an index. It is the basis for financial products that represent a majority of fixed-income allocations for many investors. For example, the iShares Core U.S. Aggregate Bond ETF, launched September 26, 2003, is the world's largest bond ETF,[4] with assets of $90 billion. That's equal to around 7% of the total assets invested in U.S.-listed domestic fixed-income ETFs — 554 funds in all.

Challenges with the bond benchmark: Sector diversification

The 2008 financial crisis, 2020 COVID-19 pandemic and subsequent government intervention have changed the complexion of the U.S. bond market. In 2007, the Agg was 22% U.S. Treasuries, but that has increased to 41% today. Factoring in debt issued by government agencies and mortgage-backed securities, the total government exposure is now over 73% (Exhibit 3).[5] Additionally, the Agg weightings historically exhibit high correlations among the top components (Exhibit 4). The correlation of the top two components, U.S. Treasuries and MBS, is 82%, with minimal exposure to those components with low-cross-correlations.

By default, bond market investors who use the Agg have their largest position in the lower left of the fixed-income risk/reward profile (Exhibit 5); these types of bonds have historically exhibited low return and low volatility.

Exhibit 3: Bloomberg U.S. Aggregate Bond Index, sector breakdown (%)



Source: Bloomberg, data as of 08/31/23.

[3] "Barclays Agg Had Modest Origin," used with permission from *The Wall Street Journal*, WSJ.com. Copyright 2013 Dow Jones & Company, Inc. All rights reserved.

[4] The iShares ETFs are not sponsored, endorsed, issued, sold or promoted by Columbia Threadneedle Investments.

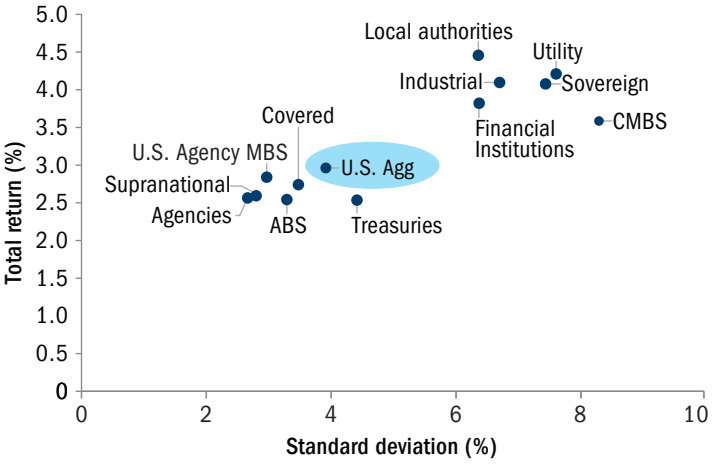
[5] Government agencies includes agencies, supranational and local authorities as shown in Exhibit 3.

Exhibit 4: Agg components, correlation
(01/31/06–08/31/23)

	Treasuries	U.S. Agency MBS	Industrial	Financial institutions	Agencies	Utility	Supranational	CMBS	Sovereign	Local authorities	ABS	Covered
Treasuries	1.00											
U.S. Agency MBS	0.82	1.00										
Industrial	0.59	0.69	1.00									
Financial institutions	0.39	0.51	0.81	1.00								
Agencies	0.95	0.85	0.67	0.51	1.00							
Utility	0.63	0.69	0.96	0.76	0.68	1.00						
Supranational	0.92	0.83	0.61	0.48	0.94	0.61	1.00					
CMBS	0.19	0.25	0.53	0.51	0.31	0.45	0.27	1.00				
Sovereign	0.60	0.68	0.87	0.71	0.69	0.79	0.64	0.50	1.00			
Local authorities	0.81	0.73	0.78	0.58	0.80	0.82	0.78	0.33	0.73	1.00		
ABS	0.20	0.37	0.58	0.53	0.29	0.61	0.29	0.42	0.42	0.40	1.00	
Covered	0.72	0.68	0.52	0.48	0.74	0.53	0.86	0.24	0.56	0.68	0.30	1.00

Source: Bloomberg, correlation calculated is based on monthly returns, data as of 08/31/23. Correlation ranges from +1 to -1. Positive correlation indicates returns moving in the same direction, negative correlation indicates returns moving in opposite directions, and a correlation of 0 would indicate no relationship between the movement of the two returns. For index definitions, please refer to the back page.

Exhibit 5: Agg components, risk/reward profile
2006–2023



Source: Bloomberg, data as of 08/31/23.

The top two components of the Agg have an 82% correlation.

Opportunity: Targeting less correlated sectors

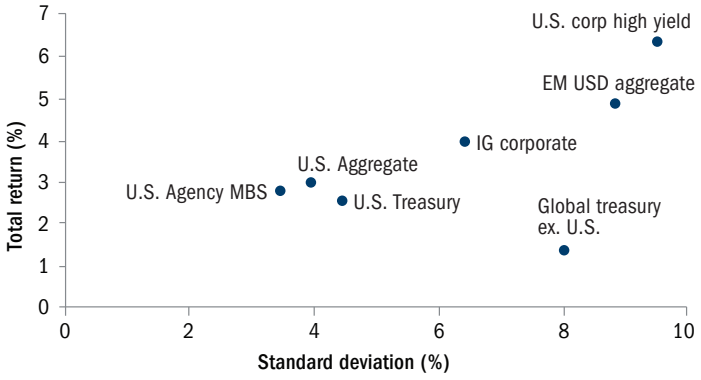
There is diversification potential if you examine other sectors of the bond market. Moving out along that risk/reward profile reveals opportunities that are both less correlated (Exhibit 6) and have historically offered relatively higher returns (Exhibit 7). Sectors like U.S. corporate high yield, global treasuries and the emerging market USD aggregate historically have had much lower cross-correlations and are not found in the Agg (see Exhibit 6). Investors may benefit from diversifying their portfolios with these uncorrelated assets.

Exhibit 6: Multi-sector, correlation
(01/31/06–08/31/23)

	U.S. Treasury	U.S. Agency MBS	Global treasury ex U.S.	EM USD aggregate	Investment-grade corporate	U.S. corp high yield
U.S. Treasury	1.00					
U.S. Agency MBS	0.82	1.00				
Global treasury ex U.S.	0.59	0.61	1.00			
EM USD aggregate	0.24	0.46	0.55	1.00		
Investment-grade corporate	0.55	0.66	0.64	0.80	1.00	
U.S. corp high yield	-0.10	0.19	0.35	0.81	0.66	1.00

Source: Bloomberg, correlation calculated is based on monthly returns, data as of 08/31/23. Throughout this paper, emerging market USD aggregate or emerging market debt represents emerging market (EM) sovereign debt denominated in U.S. dollars; global treasuries or global tsy ex U.S. represent non-U.S. treasuries. For index definitions, please refer to the back page.

Exhibit 7: Multi-sector, risk/return profile
2006–2023



Source: Bloomberg, data as of 08/31/23. For index definitions, please refer to the back page.

Challenges with the bond benchmark: Yield, quality and liquidity

In equity markets, investors typically rely on market-capitalization-weighted benchmark indices. Arguably size can be associated with quality. However, many investors have traditionally used products that track the debt-weighted Bloomberg U.S. Aggregate Bond Index as their core fixed-income allocation, and when it comes to fixed income the largest issuers do not follow the same logic. These challenges are illustrated in a number of ways.

First, allocation by debt outstanding creates a lopsided yield distribution, with a barbell-like overconcentration between relatively safe-haven assets with a limited income profile (e.g., U.S. Treasury, Japan government bonds, highly rated large-cap corporates) on one end and fundamentally risky debt profiles (e.g., Italy, Venezuela, highly indebted/low-rated corporates) on the other end.

Second, archaic segmentation creates distortion in credit quality, which may present a challenge for investors, especially within the investment-grade and high-yield markets. The investment-grade market includes high-rated/low-yielding bonds, while the high-yield market includes issuers with bloated capital structures and spotty liquidity. While the investment-grade market may have attractive characteristics for investors, there is a large range of issuers in the market, with only about 11% of bonds actually trading at the average yield. For example, certain highly rated, liquid bonds issued by large companies trade at essentially government bond yields.

Similarly, the developed market and emerging market distinctions create anomalies. Highly indebted Italy — with a 141% debt/gross domestic product ratio — and Portugal (119%) are classified as developed markets, and Chile (38%) and South Korea (48%) are classified as emerging markets.[6]

Lastly, post-crisis regulation has created a broad spectrum of liquidity. High-quality securities — U.S. Treasuries, Agency mortgage-backed securities — are generally more liquid and offer lower yields. While riskier, higher yielding securities may trade less frequently, if at all. Trading in these less liquid markets can create high volatility.

Opportunity: Cleaning up the bond benchmark

We believe a multi-sector bond strategy filtered for opportunity rather than indebtedness may provide a better balance of yield, quality and liquidity than the benchmark. Such a strategy could address the investment universe screened by:

- **Yield:** Include multiple sectors throughout the U.S. and around the globe, including some that are not part of the Agg.
- **Quality:** Avoid the "tails of the market" by removing certain sectors (e.g., Japan, highest grade/low-yield corporates) that offer no risk premium and low-quality tiers (e.g., Venezuela, lowest grade/high-yield corporates) that could potentially have massive downside risk.
- **Liquidity:** Focus on issues with sufficient tradability to provide investors with liquidity when they need it, with volatility that is tolerable.

Additionally, by incorporating the points above, investors seeking higher returns could be well-served to move out along that risk/return profile, appropriately reweighting components and, importantly, filtering those components to reduce market factor idiosyncrasies, as seen on the next page.

[6] International Monetary Fund (IMF), data as of December 2022.

A diversified approach seeks to balance yield, liquidity and quality to maximize investor outcomes

YIELD FILTER

Include multiple sectors throughout the U.S. and around the globe

- Exclude short-term government with limited yield
- Exclude non-government with limited risk premium
- Exclude negative-yielding bonds

QUALITY FILTER

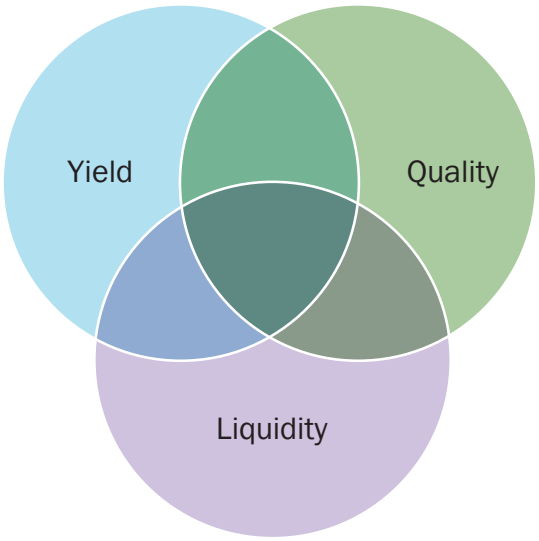
Aim to avoid the "tails of the market" by removing sectors that offer no risk premium and lower quality tiers that have outsized risk

- Exclude corporates rated below B
- Exclude sovereigns rated below BB
- Exclude corporates longer than 15-year maturity

LIQUIDITY FILTER

Focus on issues with sufficient tradability to provide investors with liquidity, managed against volatility

- Screen for larger issues
- Screen for recently issued securities
- Limit number of bonds per issuer



Here are some examples of how yield, quality and liquidity filters could be implemented at a sector level, keeping in mind that these strategies may not be appropriate for all investors:

Sector	Filtering criteria	Rationale
U.S. Treasuries	Consider Treasuries with a maturity of greater than 7 years.	Removes short-term securities that typically have low yields and limited diversification benefit
Global treasuries	Consider treasury bonds between 7 and 12 years to maturity with a yield greater than 0% from the countries Australia, Canada, France, Germany, Great Britain, Italy, Japan, New Zealand, Norway, Sweden and Switzerland.	By selecting treasury bonds from each country, investors may benefit from country diversification. Focusing on the 10-year sector provides liquidity and moderate duration. Investors may also see an increased yield profile due to the avoidance of negative yielding bonds.
Mortgage-backed securities	Consider Fannie and Freddie 30-year MBS issued within the last 1,000 days.	Investors may gain improved liquidity by removing 15-year MBS, which have limited yield and GNMA securities, which trade at a premium (lower yield) due to explicit government support.
Investment-grade corporate bonds	Consider bonds that have a maturity between 5 and 15 years, an index rating between BAA1 and BAA3, and within 1,000 days of issuance.	By eliminating shorter term securities and higher rated securities, investors may see improved yields. Also by removing all 30-year bonds, risk can be improved. Liquidity may be improved because the focus is on recent issues.
High-yield corporate bonds	Consider bonds that have an index rating above B3, an amount outstanding of greater than $800 million, a maturity of <14 years, coupon type is not a partial payment-in-kind (PIK) or PIK, and has been issued within the past 5 years.	Risk may be improved by removing CCC-rated and longer maturity securities. By focusing on larger, recent issues, investors may gain improved liquidity.
Emerging market debt	Remove all corporate issuers, consider bonds that have an index rating between BAA1 and BA3 and a maturity of between 5 and 15 years, and a minimum amount outstanding of at least $2 billion.	Single-A rated bonds are removed due to limited yield and B and CCC rated issuers, which tend to have political uncertainty, are also removed. The limited maturity may also help to reduce volatility.

Bond credit ratings are assigned by third-party agencies and are divided into categories ranging from AAA (highest) to D (lowest). Credit ratings are subjective opinions of the credit rating agency and not statements of fact, may become stale and are subject to change.

Conclusion

Investors have traditionally used products that track the Bloomberg U.S. Aggregate Bond Index as their core fixed-income allocation. As we enter a new rate regime, investors may need to adjust their fixed-income portfolios to avoid overconcentration and minimize interest rate risk. Allocation by debt outstanding creates a lopsided yield distribution, with a barbell-like overconcentration both in relatively safe-haven assets with a limited income profile and in fundamentally risky debt profiles. The bond benchmark does not foster diversification with historically high correlations among the largest components. Additionally, archaic segmentation creates distortion in credit quality. Investors should consider a multi-sector bond strategy filtered for opportunity rather than indebtedness. Such a strategy could address the investment universe screened by yield, quality and liquidity. In the current lower rate environment, investors seeking higher returns could be well-served by appropriately reweighting components and, importantly, filtering those components to reduce market factor idiosyncrasies.

To find out more, call **888.800.4347**
or visit **columbiathreadneedle.com**

Bloomberg US Agg Industrial Total Return Value Unhedged USD (Industrial) is part of the US Corporate Index (credit) representing the industrial sector. **Bloomberg US Agg Finance Total Return Value Unhedged USD (Financial institutions)** is part of the US Corporate Index (credit) representing the finance sector. **Bloomberg US Agg Utility Total Return Value Unhedged USD (Utility)** is part of the US Corporate Index (credit) representing Utility sector. **Bloomberg US Agg Supranationals Total Return Value Unhedged USD (Supranationals)** is part of the US Credit (non-corporate) Index. Supranational bonds are issued with the purpose of promoting economic development for the countries like International Bank for Reconstruction & Development, Inter-American Development Bank, etc. **Bloomberg US Agg CMBS Erisa Eligible Total Return Value Unhedged USD (CMBS)** is an Index that measures the market of conduit and fusion CMBS deals with a minimum current deal size of $300mn. **Bloomberg US Agg Sovereign Total Return Value Unhedged USD (Sovereign)** includes bonds issued by foreign governments. Bloomberg US Local Authority TR TR Index Value Unhedged USD (US Loc Auth) includes bonds issued by the local governments such as the State of Illinois, State of California, New Jersey State Turnpike Authority. **Bloomberg US Agg ABS Total Return Value Unhedged USD (ABS)** includes asset backed-auto loans, home equity loans, and credit card debt. **Bloomberg Covered Bonds USD Total Return Index Value Unhedged USD (Covered)** includes bonds issued by banks, institutions and collateralized against a pool of assets. **The Bloomberg US Aggregate Bond Index (U.S. Aggregate)** is a broad-based benchmark that measures the investment grade, US dollar-denominated, fixed-rate taxable bond market. The index includes Treasuries, government-related and corporate securities, MBS (agency fixed-rate and hybrid ARM pass-throughs), ABS and CMBS (agency and non-agency). **The Bloomberg US Treasury Index (U.S. Treasury)** measures US dollar-denominated, fixed-rate, nominal debt issued by the US Treasury. Treasury bills are excluded by the maturity constraint, but are part of a separate Short Treasury Index. **The Bloomberg US Mortgage Backed Securities Index (U.S. MBS)** tracks agency mortgage backed pass-through securities (both fixed-rate and hybrid ARM) guaranteed by Ginnie Mae (GNMA), Fannie Mae (FNMA), and Freddie Mac (FHLMC). The index is constructed by grouping individual TBA-deliverable MBS pools into aggregates or generics based on program, coupon and vintage. **The Bloomberg Global Aggregate Index (Global Treasury)** is a flagship measure of global investment grade debt from twenty-four local currency markets. This multi-currency benchmark includes treasury, government-related, corporate and securitized fixed-rate bonds from both developed and emerging markets issuers. **The Bloomberg Emerging Markets Hard Currency Aggregate Index (EM USD Aggregate)** is a flagship hard currency Emerging Markets debt benchmark that includes USD-denominated debt from sovereign, quasi-sovereign, and corporate EM issuers. **The Bloomberg US Corporate Bond Index (U.S. Investment Grade Corporates)** measures the investment grade, fixed-rate, taxable corporate bond market. It includes USD denominated securities publicly issued by US and non-US industrial, utility and financial issuers. **The Bloomberg US Corporate High Yield Bond Index (U.S. Corp High Yield)** measures the USD-denominated, high yield, fixed-rate corporate bond market. Securities are classified as high yield if the middle rating of Moody's, Fitch and S&P is Ba1/BB+/BB+ or below. Bonds from issuers with an emerging markets country of risk, based on Barclays EM country definition, are excluded.

Indices shown are unmanaged and do not reflect the impact of fees. It is not possible to invest directly in an index.

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