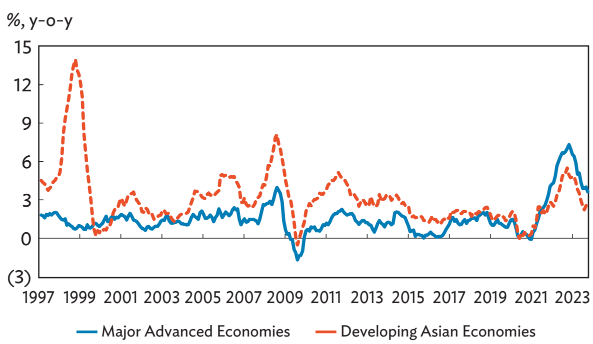
How Does Inflation in Advanced Economies Affect Emerging Market Bond Yields?

Increasing oil and food prices and persistent supply chain disruptions in the post-pandemic era have contributed to elevated inflation in advanced economies, reaching highs in 2022 that had not been seen for decades.[6] Inflation in developing Asian economies has also picked up, albeit at a relatively milder pace compared to major advanced economies (**Figure 19**). Existing literature finds that inflation plays a significant role in the term structure of domestic bond yields. Higher inflation can push up domestic bond yields through higher interest rates when the central bank tightens its monetary stance to ease inflationary pressure and market expectations of higher future inflation. In the international context, higher bond yields in advanced markets could also spillover to emerging market bond markets via bond market comovements and monetary policy tightening in emerging markets that follows advanced economies. Yet, there is limited evidence on how advanced economies' inflation transmits to emerging market bond yields in terms of a time series framework.

Figure 19: Average Inflation in Major Advanced Economies and Average Inflation in Developing Asian Economies



y-o-y = year-on-year.

Notes:

1. The solid line represents the average inflation rate of the euro area, Japan, and the United States. The dotted line represents the average inflation rate of the People's Republic of China; Hong Kong China; Indonesia; the Republic of Korea; Malaysia; the Philippines; Singapore; and Thailand.
2. Data cover the period January 1997 to September 2023.

Sources: Bloomberg LP and Haver Analytics.

After major advanced economies and most regional economies aggressively hiked interest rates in 2022, interest rates have remained high and inflation in major advanced economies has stayed well above policy targets. Thus, it is very timely to understand how inflation in major advanced economies can impact emerging East Asian bond markets. Assessing this relationship under current market conditions has important implications for policy makers and participants in emerging East Asian bond markets.

This study examines two distinct channels that transmit advanced economy inflation to emerging market bond yields by employing a novel multivariable smooth transition autoregressive–vector autoregressive (STAR-VAR) model. To do so, we investigate the following two research questions. First, we ask whether advanced economies' inflation is linked to emerging market bond yields; second, we seek to understand how such impacts are transmitted under different market conditions. In particular, we investigate the different impacts of advanced economy inflation on emerging market bond yields during expansionary versus contractionary regimes, which feature rising and declining interest rates, respectively. The findings will have important implications under current market conditions in which inflation in advanced economies remains persistent and interest rates in emerging markets are at relatively high levels following aggressive rate hikes by regional central banks in 2021.

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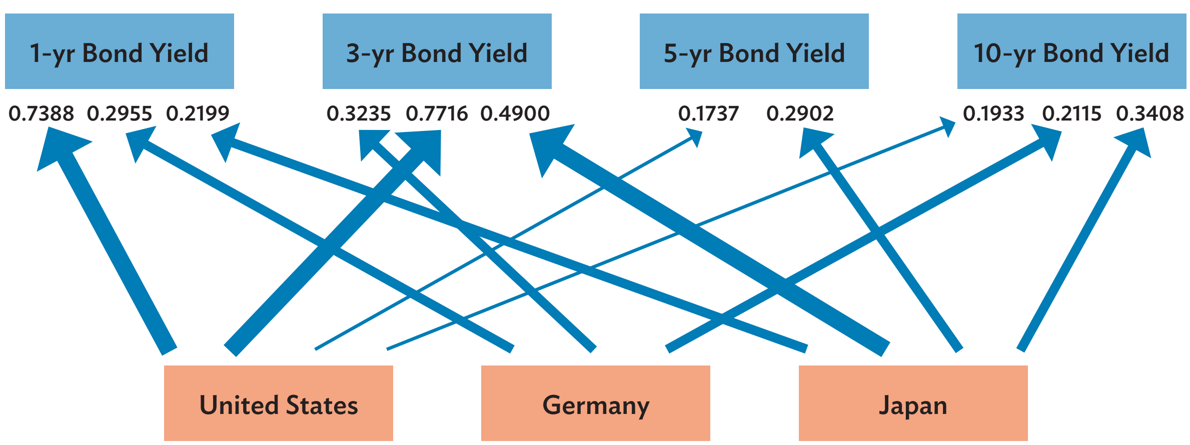
Our empirical analysis yields two new key findings. First, advanced economy inflation has a significant effect on regime changes between expansion and contraction in emerging market bond yields. Second, the short-run effect of advanced economy inflation on the bond yields of emerging markets is asymmetric between the expansion and contraction regimes. The effect is mostly positive in both regimes but stronger in a bond yield's contraction regime. This suggests that the response of emerging market bond yields to advanced economy inflation does not necessarily follow a simple Fisher equation relationship.[7] We further find that advanced economy inflation triggers regime changes in emerging markets bond yields in the long run.

Figure 20 illustrates the impacts of inflation in three advanced economies—the United States (US), Japan, and Germany—on Indonesia's bond yields with maturities of 1 year, 3 years, 5 years, and 10 years by employing a simple linear vector autoregressive model.[8] The cumulative net effects are visualized using arrows, where thicker arrows indicate stronger cumulative net effects. As shown, inflation from the three major advanced economies all have positive impacts on Indonesia's bond yields. US inflation has a larger cumulative net effect on Indonesia's short-term bond yields (1 year and 3 years) than long-term bond yields (5 years and 10 years). Compared to the US, Germany's and Japan's inflation have relatively smaller impacts on Indonesia's 1-year and 3-year bond yields, but larger impacts on Indonesia's 10-year bond yields.

Figure 21 further illustrates these impacts by employing a STAR-VAR model, which provides more information on how advanced economies' inflation affects bond yields in emerging markets asymmetrically during expansion and contraction regimes. In Figure 21, the upper part demonstrates impacts during the contractionary regime of bond yields, while the lower part depicts the impacts during the expansionary regime. Thicker arrows indicate stronger cumulative net effects. As shown, advanced economies' inflation has different impacts on Indonesia's bond yields during contraction and expansion regimes. First, inflation in advanced economies positively affects Indonesia's bond yields during contraction regimes (the upper part of the Figure 21). In particular, both the US' and Germany's inflation demonstrate larger impacts on long-term bond yields (5 years and 10 years) compared

Figure 20: Cumulative Net Effect of Inflation in the United States, Japan, and Germany on Indonesian Bond Yields



yr = year.

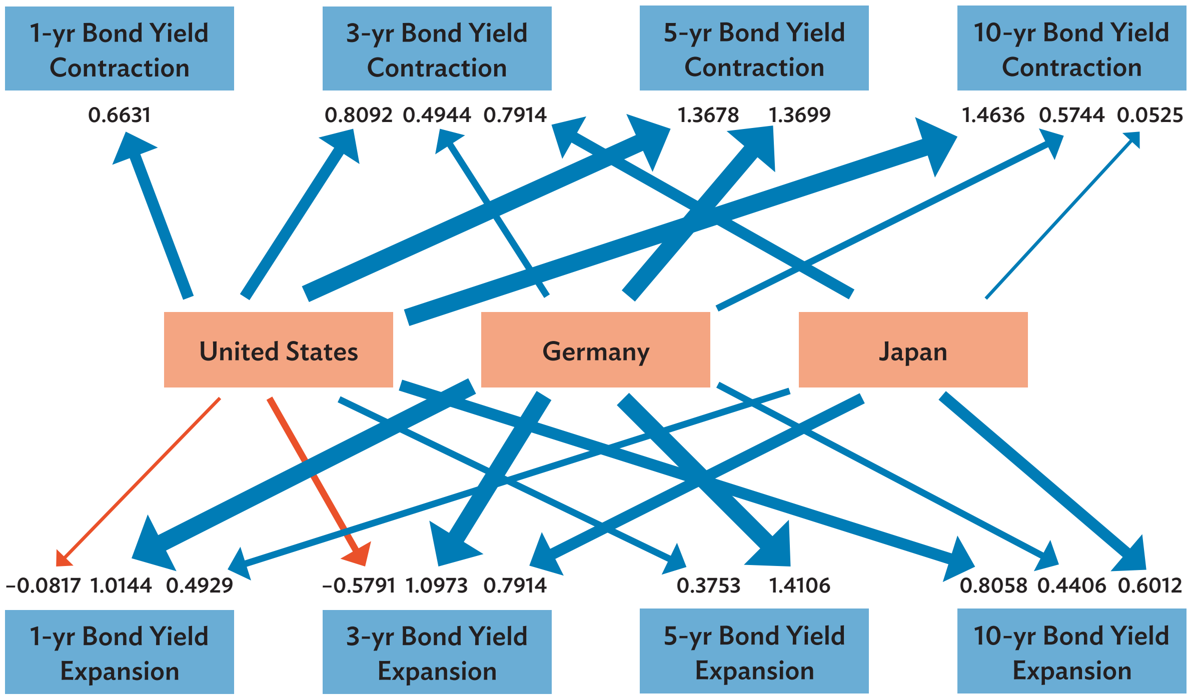
Note: The blue arrows indicate positive cumulative net effects.

Source: Asian Development Bank. 2023. "How Does Inflation in Advanced Economies Affect Emerging Market Bond Yields? Empirical Evidence from Two Channels." ADB Economics Working Paper 695.

[7] The simple Fisher equation relationship expresses the one-to-one relationship between nominal interest rates and inflation. Mathematically it can be expressed as the nominal interest rate being the sum of the real interest rate and inflation.

[8] The same empirical analysis was implemented for other emerging East Asian markets, including the People's Republic of China; Hong Kong, China; the Republic of Korea; Malaysia; the Philippines; and Thailand. Market-specific evidence can be found in Asian Development Bank. 2023. "How Does Inflation in Advanced Economies Affect Emerging Market Bond Yields? Empirical Evidence from Two Channels." ADB Economics Working Paper 695.

Figure 21: Cumulative Net Effect of Inflation in the United States, Japan, and Germany on Indonesian Bond Yields—Nonlinear STAR-VAR Model



STAR-VAR = smooth transition autoregressive–vector autoregressive, yr = year.

Note: The blue arrows indicate positive cumulative net effects, while the red arrows indicate negative cumulative net effects.

Source: Asian Development Bank. 2023. "How Does Inflation in Advanced Economies Affect Emerging Market Bond Yields? Empirical Evidence from Two Channels." ADB Economics Working Paper 695.

to short-term bond yields (1 year and 3 years) during a bond yield contraction period. Japan's inflation has a relatively larger impact on 3-year bond yields during the same period. Second, during a bond yield expansion regime, US inflation only positively affects long-term bond yields (5 years and 10 years), and its impact switches to negative for short-term bond yields (1 year and 3 years), as represented by red arrows in the lower part of graph. Meanwhile, Japan's and Germany's inflation both have positive impacts on Indonesian bond yields for all maturities, with relatively larger impacts for 3-year and 5-year bond yields, respectively. In sum, STAR-VAR model estimation reveals the presence of asymmetric impacts of advanced economies' inflation on short-term bond yields in Indonesia. Moreover, during an expansion regime, US inflation has a larger impact on Indonesia's long-term interest rates (10-year bond yields) than either Germany's or Japan's.

Evidence from other emerging East Asian markets shows positive impacts from inflation in advanced economies on bond yields under both contractionary and expansionary bond market regimes. However, the effect is relatively weak or inelastic under an expansionary regime, but stronger or more elastic under a contractionary regime in most cases. More importantly, there is evidence that inflation in advanced economies triggers switches in emerging market bond yield regimes. This suggests that the response of emerging market bond yields to advanced economy inflation does not necessarily follow a simple Fisher equation relationship; the Fisher relationship becomes more regime dependent. Since the intensity of the positive effects of advanced economy inflation changes between contractionary and expansionary regimes, we refer to the effects as "dynamic Fisher effects."