Oil Supply Shocks and Sovereign Bond Yields

The Role of Local Currency Bond Markets

John Beirne[1] **Jamel Saadaoui**[2] Shu Tian[1]

[1]Asian Development Bank [2]Université Paris 8, LED

Research Workshop

Evidence from the ADB *Asia Bond Monitor* box

Presented by Jamel Saadaoui

Oil supply shocks and the cost of sovereign financing

The 2026 Iran war and the initial closure of Hormuz renewed concern about the transmission of oil supply disruptions to sovereign financing costs. Around 20 million barrels per day passed through the strait in 2025.

Research question

How do 10-year sovereign yields respond to identified oil supply shocks, and how does the response vary with local currency bond-market depth?

- A common global shock provides the basis for cross-market comparison.
- Existing LCY market depth captures differences in domestic financing capacity.

Source: IEA (2026); Natal and Sadikov (2026); Beirne, Saadaoui, and Tian, *Asia Bond Monitor* box.

The contribution links oil shocks to LCY market depth

Study	Evidence on bond pricing
Ioannidis and Ka (2018)	Oil shocks affect the term structure differently across economies and maturities.
Iania, Lyrio, and Nersisyan (2024)	Oil supply shocks help explain bond risk premia across 15 economies.
Chen, Huang, and Lin (2022)	Supply shocks have statistically insignificant effects on emerging-market dollar sovereign spreads.

Evidence from 51 economies, with LCY market-depth comparisons across 47 markets.

Source: Studies cited in the *Asia Bond Monitor* box.

Oil supply disruptions affect the pricing of sovereign debt

Inflation and monetary policy

Higher oil prices affect inflation expectations and the expected path of policy rates.

These expectations enter the pricing of long-term nominal debt.

Sovereign and duration risk

Weaker activity and external pressure affect sovereign risk premia and compensation for holding long-duration debt.

The resulting yield response depends on the economy's financial structure.

The empirical analysis measures the overall response of 10-year yields and its variation with local currency market depth.

Source: Beirne, Saadaoui, and Tian, *Asia Bond Monitor* box, economic motivation.

Monthly evidence from 51 sovereign bond markets

Market coverage

21 emerging and developing economies

30 advanced economies

The 51-economy panel excludes the United States, which enters as a financial control.

Ten-year sovereign yields: monthly averages of daily Bloomberg data.

Identified oil supply shocks

Baumeister and Hamilton (2019). Common normalization to a one-standard-deviation adverse shock.

Sample timing

Shock origins: January 1994–March 2026 on impact. Outcomes extend through July 2026.

Unbalanced panel. Usable observations vary by horizon.

Source: Beirne, Saadaoui, and Tian, *Asia Bond Monitor* box; Bloomberg and CEIC.

The baseline local projection

For each horizon $h = 0, \ldots, 24$, the specification can be written as

$$y_{i,t+h} = \alpha_i^{(h)} + \beta_h \varepsilon_t^{oil} + \sum_{\ell=1}^{12} a_{h\ell} y_{i,t-\ell} + \sum_{\ell=1}^{12} b_{h\ell} \varepsilon_{t-\ell}^{oil} + \sum_{\ell=1}^{12} \boldsymbol{c}_{h\ell}' \boldsymbol{x}_{i,t-\ell} + \sum_{\ell=0}^{12} d_{h\ell} y_{t-\ell}^{US} + u_{i,t+h}.$$

- y: 10-year sovereign yield. ε^{oil}: identified adverse oil supply shock, normalized to one standard deviation.
- $\boldsymbol{x}$: policy rate, inflation, industrial-production growth, and monthly log changes in exchange rates and stock prices.
- $\alpha_i^{(h)}$: market fixed effects. The global shock is common across markets, so calendar-time fixed effects are excluded.
- The baseline comparison omits the US-yield block in one specification while retaining identical observations.

Source: Beirne, Saadaoui, and Tian, *Asia Bond Monitor* box; Jordà (2005); Montiel Olea and Plagborg-Møller (2021).

Market depth conditions the response to the same oil shock

Three measures of LCY depth

Outstanding government bonds, corporate bonds and their combined stock, each as a percentage of GDP.

47 global bond markets

Coverage reflects the availability of market-depth data.

Predetermined annual classification

Previous-year depth at or above the annual cross-market median: **deep**.

Previous-year depth below the median: **shallow**.

Oil shocks interact with both states. Control coefficients remain common across states.

The comparison links existing LCY market depth to the subsequent sovereign yield response.

Source: Beirne, Saadaoui, and Tian, *Asia Bond Monitor* box. All depth specifications include the US yield control.

State-dependent local projections retain common controls

Let $D_{i,t} = 1$ when previous-year LCY depth is at or above the annual median.

$$y_{i,t+h} = \alpha_i^{(h)} + \beta_h^{deep} D_{i,t}\varepsilon_t^{oil} + \beta_h^{shallow}(1 - D_{i,t})\varepsilon_t^{oil} + \delta_h D_{i,t} + \gamma_h' \boldsymbol{W}_{i,t} + u_{i,t+h}.$$

- $\boldsymbol{W}_{i,t}$ contains the lagged yields, oil shocks and domestic controls, together with current and lagged US yields.
- The shock response varies across depth states. Control coefficients remain common across states.
- The state intercept enters when classification varies over time.

Source: Beirne, Saadaoui, and Tian, *Asia Bond Monitor* box.

Split-panel jackknife adjustment and confidence intervals

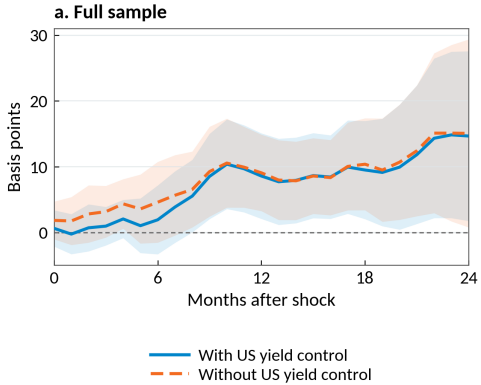
The split-panel jackknife reduces leading fixed-effect bias:

$$\widehat{\beta}_h^{SPJ} = 2\widehat{\beta}_h^{full} - \frac{\widehat{\beta}_h^{first} + \widehat{\beta}_h^{second}}{2}.$$

- The first and second subpanels divide the time dimension.
- Driscoll–Kraay standard errors use 12 lags for temporal and cross-country dependence.
- Figures report pointwise 95% confidence intervals.
- Responses measure yield levels in basis points.

Source: Dhaene and Jochmans (2015); Driscoll and Kraay (1998); Mei, Sheng, and Shi (2026).

The full-sample response reaches about 15 basis points



Persistent increase

Positive and statistically significant from months 8 to 24.

US yield control

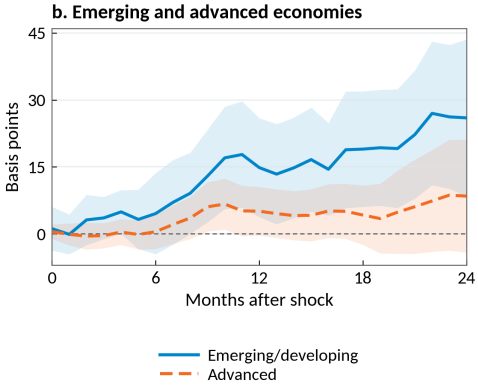
The estimated response remains similar when US yields enter.

Both specifications use identical observations.

Yield-level responses in basis points to a one-standard-deviation adverse oil supply shock. Shading: pointwise 95% confidence intervals.

Source: Beirne, Saadaoui, and Tian, *Asia Bond Monitor* box, Figure B.1a.

Emerging economies show the larger long-horizon response



At month 24

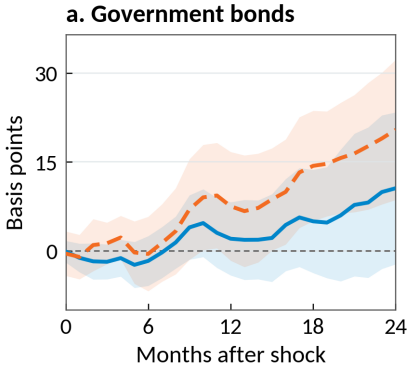
26.0 bp
Emerging/developing
Statistically significant.

8.5 bp
Advanced economies
Statistically insignificant.

Yield-level responses in basis points to a one-standard-deviation adverse oil supply shock. Shading: pointwise 95% confidence intervals.

Source: Beirne, Saadaoui, and Tian, *Asia Bond Monitor* box, Figure B.1b. Both groups include the US yield control.

Deeper government bond markets show smaller yield increases



At month 24

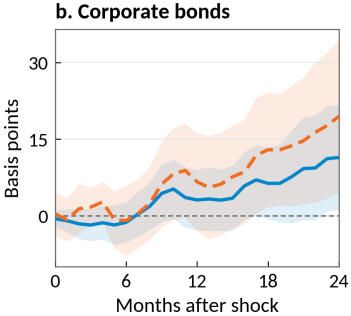
10.5 basis points
Deeper LCY government markets.
Statistically insignificant.

20.4 basis points
Shallower LCY government markets.
Statistically significant.

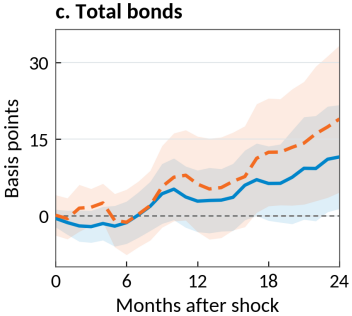
Yield-level responses in basis points to a one-standard-deviation adverse oil supply shock. Shading: pointwise 95% confidence intervals.

Source: Beirne, Saadaoui, and Tian, *Asia Bond Monitor* box, Figure B.2a. Depth groups have common controls, including US yields.

Corporate and total depth show the same ordering



Month 24: **11.4 bp deep** versus **19.5 bp shallow**.



Month 24: **11.5 bp deep** versus **18.9 bp shallow**.

Deep: at or above median Shallow: below median

Yield-level responses in basis points to a one-standard-deviation adverse oil supply shock. Shading: pointwise 95% confidence intervals.

Source: Beirne, Saadaoui, and Tian, *Asia Bond Monitor* box, Figures B.2b–B.2c. Comparisons refer to point estimates.

Month-24 responses across specifications

Comparison	Group	Basis points
Full sample	All economies	≈ 15
Development	Emerging/developing	26.0
	Advanced	8.5
LCY government depth	Deep / shallow	10.5 / 20.4
LCY corporate depth	Deep / shallow	11.4 / 19.5
LCY total depth	Deep / shallow	11.5 / 18.9

Responses to a one-standard-deviation adverse oil supply shock. Depth comparisons use the previous-year ratio to GDP and annual median. These entries report point estimates.

Source: Beirne, Saadaoui, and Tian, *Asia Bond Monitor* box, Figures B.1–B.2 and accompanying text.

LCY market development supports financial resilience

Deeper local currency markets are associated with smaller increases in long-term sovereign financing costs after an oil supply shock.

Domestic financing capacity

Broader domestic investor bases and stronger market infrastructure support the capacity to absorb external financing pressure.

A predictable policy environment

Deep and liquid LCY markets can support resilience and reduce reliance on foreign-currency financing.

Source: Beirne, Saadaoui, and Tian, *Asia Bond Monitor* box, policy implications.

CONCLUSION

Oil supply shocks have persistent sovereign financing consequences.

- Ten-year yields rise over the two-year horizon.
- Emerging economies display larger responses.
- Deeper LCY markets are associated with smaller yield increases.

Thank you.

Jamel Saadaoui
jamelsaadaoui@gmail.com
RBV–ADB–APAEA 20 November 2026

Research references

- Baumeister, C., and J. D. Hamilton (2019). Structural Interpretation of Vector Autoregressions with Incomplete Identification: Revisiting the Role of Oil Supply and Demand Shocks. *American Economic Review* 109(5), 1873–1910.
- Chen, S.-S., S. Huang, and T.-Y. Lin (2022). How Do Oil Prices Affect Emerging Market Sovereign Bond Spreads? *Journal of International Money and Finance* 128, 102700.
- Iania, L., M. Lyrio, and L. Nersisyan (2024). Oil Price Shocks and Bond Risk Premia: Evidence from a Panel of 15 Countries. *Energy Economics* 139, 107940.
- Ioannidis, C., and K. Ka (2018). The Impact of Oil Price Shocks on the Term Structure of Interest Rates. *Energy Economics* 72, 601–620.
- International Energy Agency (2026). Strait of Hormuz. Oil security factsheet, February.
- Natal, J.-M., and A. Sadikov (2026). The Oil Market Absorbed the War Shock, but Buffers Are Running Low. IMF Blog, 15 July.

Methodological references

- Jordà, Ò. (2005). Estimation and Inference of Impulse Responses by Local Projections. *American Economic Review* 95(1), 161–182.
- Montiel Olea, J. L., and M. Plagborg-Møller (2021). Local Projection Inference Is Simpler and More Robust Than You Think. *Econometrica* 89(4), 1789–1823.
- Dhaene, G., and K. Jochmans (2015). Split-Panel Jackknife Estimation of Fixed-Effect Models. *Review of Economic Studies* 82(3), 991–1030.
- Driscoll, J. C., and A. C. Kraay (1998). Consistent Covariance Matrix Estimation with Spatially Dependent Panel Data. *Review of Economics and Statistics* 80(4), 549–560.
- Mei, Z., L. Sheng, and Z. Shi (2026). Nickell Bias in Panel Local Projection: Financial Crises Are Worse Than You Think. *Journal of International Economics* 160, 104210.