

# Beyond Energy Prices

## *Strait Closure Risk in Asian Supply Chains, with Evidence from Energy Productivity*

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### KEY MESSAGE

*A Strait of Hormuz closure would raise energy prices across Asia, but the more immediate economic risk is the disruption of regional supply chains in which Middle East energy dependence is deeply embedded. Beyond economics, strategic reserves exist as lifeline insurance against the more severe risk of physical energy supply disruption—not as a price stabilization tool.*

### WHY THIS MATTERS

Over the past quarter-century, Asian supply chains have deepened dramatically, with manufacturers in advanced economies sourcing components from China, Thailand, Vietnam, and other economies that are themselves heavily dependent on Middle East energy. A prolonged strait closure would not only raise energy costs directly—it would trigger production stoppages in these supplier economies, propagating through supply chains to halt downstream production before energy prices become the binding constraint. This indirect channel is likely to materialize earlier and prove harder to manage than the direct energy price effect.

### EVIDENCE FROM ASIA

Economies with lower energy productivity require more energy input per unit of output, making their production more vulnerable to disruptions in energy supply. Figure 1 shows energy productivity levels across Asian economies in 2022, measured as value added per unit of energy consumed. Economies such as China, Thailand, and Vietnam exhibit relatively low energy productivity. These economies form a critical backbone of regional supply chains serving advanced-economy manufacturers. Their dependence on affordable and stable energy supply—much of which transits the Strait of Hormuz—means that a prolonged closure would impose severe disruption on their production capacity and, by extension, on the supply chains they anchor.

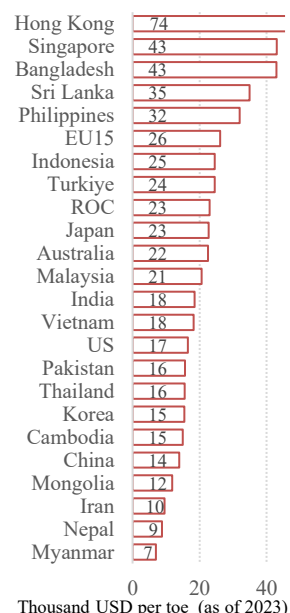


Figure 1. Energy Productivity Levels in Asia, 2022  
Source: APO Productivity Database (APO-PDB) 2025.

### EVIDENCE FROM JAPAN

Japan's exposure operates through two channels. First, approximately 95% of crude oil imports originate from the Middle East, making oil supply directly vulnerable to a prolonged closure. Second, while only around 6% of LNG imports transit the strait, Japan remains exposed through the Asian LNG market: China and other economies with higher Middle East LNG dependence would drive a regional price surge that Japan cannot avoid, as demonstrated in 2022–23. Taking both channels together, if crude oil reaches USD 150 per barrel and Asian LNG prices triple,

electricity tariffs could rise by roughly 30%, based on the authors' estimates—compounding an already elevated post-2022 baseline.

### INTERPRETATION

Energy-importing nations have sought to reduce their exposure to strait closure through energy mix diversification and import source dispersion. Yet the deepening of international production networks has fundamentally altered the calculus of energy security, partially offsetting these efforts. National stockpiles were conceived when supply disruption risks were largely bilateral—between an importing country and its energy suppliers. Today, energy disruption in one economy propagates rapidly across borders through intermediate goods trade: a closure that raises energy costs in Vietnam or Thailand translates into component shortages and production stoppages in downstream manufacturing economies before direct energy price effects become binding.

In this context, strategic reserves exist as lifeline insurance against physical supply disruption—not as a price stabilization instrument. Price pressures are better addressed through fuel tax reductions or targeted fiscal transfers, which do not deplete the national buffer against genuine supply emergencies. Japan, for example, holds combined public and private reserves equivalent to about 250 days of consumption—among the deepest relative to consumption among IEA member states—yet has released a substantial portion in response to price pressures, including as part of collective IEA drawdowns. The more consequential question is whether sufficient reserves are being preserved for the physical disruption scenario that now warrants serious attention.

### INTERPRETING ENERGY PRODUCTIVITY

Macro-level energy productivity requires careful interpretation. First, cross-country differences reflect not only energy efficiency per se but also industrial structure: economies with a larger share of energy-intensive manufacturing will exhibit lower energy productivity regardless of technical efficiency. Second, the relationship between energy and labor productivity is not straightforward. Raising labor productivity typically requires capital deepening, which tends to increase energy consumption and thus lower energy productivity in the short to medium run. The low energy productivity observed in Figure 1 should therefore be read as reflecting the current stage of capital accumulation and industrial structure of these economies, rather than as a simple indicator of inefficiency.

### IMPLICATIONS

<b>01</b> The primary risk of a Strait of Hormuz closure for advanced-economy manufacturers is not direct energy price increases but indirect supply chain disruption through energy-dependent supplier economies in Asia.	<b>02</b> Strategic petroleum reserves are insurance against supply disruption, not a price stabilization instrument; price pressures are more appropriately addressed through fiscal and tax measures.	<b>03</b> The deepening of international production networks partially reduces the economic rationale for unilateral national stockpiling and strengthens the case for coordinated reserve management among energy-importing nations.
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*This note is part of the Productivity Research Notes series, examining key issues in productivity and economic performance in Asia. The views expressed are those of the author(s). Inquiries may be directed to [sankenoffice@info.keio.ac.jp](mailto:sankenoffice@info.keio.ac.jp).*

