# PETRODOLLAR TO DIGITAL YUAN

Diana Choyleva

## China, the Gulf and the 21st Century Path to De-Dollarization

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January 2025

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# Acknowledgements

This report would not have been possible without the steadfast support of the Asia Society Policy Institute's Center for China Analysis, led by Jing Qian. I am grateful to Jing for providing me with the best home for this project I could have asked for. The entire team at the Center made invaluable contributions to bringing this work to fruition. Special thanks go to Christopher Vassallo, Jennifer Choo, Lizzi C. Lee, Inger Marie Rossing, Wendy Ma and Ian Smith, whose collective expertise were instrumental in completing the project.

My colleagues at Enodo Economics have been invaluable in their unique ways. A huge thank you goes to my research team – Jiaming Gu, Alistair Burlinson, Daniel Kasabov and Staś Butler – for their sparky intellectual contributions, thorough investigation and tireless work. Several bright student interns – George Kelly, Siwei Chu, Finlay Sleeman, Matthew Bott, Alfie MacDonald and Avi Shekhar – helped along the way and kept us all on our toes. Lucy Hornby's superb editorial skills transformed complex ideas into clear prose, while Ani Manova's creative design work gave the report its polished and professional appearance. Finally, special thanks to Seamus Keaveney, Tsveta Andonova and Salma Abou Zaki for their constant encouragement and support.

This report benefited immensely from the guidance of a distinguished advisory panel. I am particularly grateful to Barry Eichengreen, whose thoughtful foreword frames the analysis and whose pioneering work on international currency dynamics has deeply influenced this research. Along with Barry, John Raine, Nigel Inkster, and Michal Meidan provided invaluable strategic insights and expert feedback that significantly enhanced the depth and rigor of this analysis. Their combined expertise in international finance, geopolitics, security, and energy markets helped shape this report's comprehensive examination of the evolving global monetary system.

We owe a large debt to all experts who took time out of their busy lives to help us deepen our knowledge, challenge our assumptions and give us new ideas: Mohammed Al-Sudairi, Naser Al-Tamimi, Tongjuan Cai, Alexander Feenie, Hussain Haqqani, Bert Hofman, Rachel Hulvey, Adi Imsirovic, Zennon Kapron, Joshua Kroeker, Shanshan Li, Diego Lopez, Matthew Martin, Craig Pirrong, Ben Simpfendorfer, Degang Sun, Rich Turrin, Jodie Wen, Jing Xue, Lu Xue, Tianqi Xu, Jinxiang Yao, Sir Alex Younger, Xiang Yu, Daojiong Zha, and all of those who spoke to us anonymously.

None of this would have been possible without the Smith Richardson Foundation whose grant provided the main financial support for our work, and in particular the guidance and advice Allan Song, our program director, so generously gave us.

**Diana Choyleva**

# Foreword

De-dollarization is much in the news. US enlistment of the dollar and the American banking system when levying sanctions again Russia has led other countries, imagining even the remote possibility that they too might become subject to such sanctions, to consider diversifying away from the dollar as a payments and reserve currency. More generally, the rise of the BRICS countries as an economic and political force to be reckoned with has encouraged them to contemplate alternatives to the dollar-based international monetary and financial system.

Yet the result has been mostly talk and little action. Talk of a BRICS currency and a BRICS payment system remains mostly that – talk. As a vehicle for cross-border payments and pivot of global foreign exchange markets, the dollar is as deeply entrenched as ever.

This should not be surprising. US financial markets are deep, liquid and efficient by the standards of the available alternatives. Russia has the strongest possible incentives to move away from the dollar, but the incentives of other countries are mixed. The BRICS are a heterogenous collection of countries with heterogenous motives. Some are closer than others to the United States. Some, such as China and India, are at odds with one another.

At the same time, the possibility of ongoing, if gradual, de-dollarization should not be dismissed. However, there are more plausible candidates for driving the process than the much-mooted if sterile idea of a BRICS currency. As Diana Choyleva shows in this report, the most consequential development is apt to be substitution, or more precisely supplementation, of the Petrodollar system with a Petroyuan system centered on China and Saudi Arabia. The Petrodollar system, which can be traced to the 1970s, has three elements: pricing oil in dollars, paying for purchases in dollars, and recycling oil revenues into dollar securities. As Diana shows, China and Saudi Arabia have a common interest in building a parallel Petroyuan system for China's oil imports (read: Saudi Arabia's oil exports). The pricing of oil in dollars may be difficult to dislodge, but China has every reason to prefer paying for its energy imports with its own currency. Saudi Arabia shares that interest insofar as it wishes to diversify away from the dollar, can use the yuan to pay for the services of Chinese construction companies, and can buy securities on China's financial markets.

Importantly, the two countries have a financial mechanism in place for completing these transactions securely and quickly without the need to go through the dollar and the US banking system. This is the blockchain-based Dashing protocol developed by the PBoC for Project mBridge, the once-but-no-longer BIS coordinated cross-border payments platform in which the Chinese and Saudi central banks are both full participants. The Dashing protocol is now being deployed beyond the confines of Project mBridge. It has largely flown under the radar. But no longer, now that we have this important report.

As Diana notes, what happens in Saudi Arabia is unlikely to stay in Saudi Arabia. Other countries, specifically in the Gulf, are likely to follow its example. As she also notes, the Petroyuan system is unlikely to supplant the Petrodollar system anytime soon. Until now, this important nexus of issues has been strangely overlooked. Diana Choyleva has now corrected this neglect.

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**Barry Eichengreen**
University of California, Berkeley

# Executive Summary

A quiet revolution is reshaping the foundations of global finance. The Petrodollar system, which has underpinned the international oil trade and US financial power for half a century, faces unprecedented challenges.

While headlines focus on geopolitical tensions between the United States and China and the increased use of US sanctions following Russia's invasion of Ukraine, a fundamental transformation is unfolding through technological innovation, shifting trade patterns, and the Gulf states' ambitious economic reinvention.

Three powerful forces are converging to drive this change: China's strategic push to reduce its dollar vulnerability as the world's largest oil importer, the Gulf states' pressing need for economic transformation through massive investment in technology and infrastructure, and breakthrough innovations in digital payment technologies initiated by China that make alternatives to the dollar-led global payments not just possible but potentially more efficient than traditional systems.

> Our report argues that these intertwining forces could accelerate changes to the dollar-based financial system in addition to the geopolitical shifts alone. While complete de-dollarization of the oil trade is highly unlikely over the next five years, expect gradual erosion of the dollar's use in oil trade settlement and the global recycling of oil revenues.

## The stakes

The Petrodollar system, born from 1970s agreements between the United States and Saudi Arabia, rests on three pillars: oil priced in dollars, transactions settled in dollars, and oil revenues recycled into dollar-denominated assets. This arrangement has served American interests by enabling persistent deficits at manageable costs while providing Gulf states with stable markets and US' security guarantees.

> The global oil trade, which is predominantly paid for in dollars, accounts for roughly one-fifth of all dollar-denominated global trade. The Gulf Cooperation Council (GCC) member states hold approximately 6% of global foreign exchange reserves, while the BRICS nations collectively account for 43%, in a world where the dollar makes up 57% of global reserves.

Today's landscape bears little resemblance to the world that created this system. The United States has achieved energy independence through shale production, China has emerged as the world's largest oil importer, and breakthroughs in digital innovation, largely initiated by China, are about to revolutionize global payment systems. Most significantly, the West's unprecedented financial sanctions following Russia's invasion of Ukraine have intensified the pursuit of alternative global payment systems even among nations traditionally allied with the United States.

For China, reducing dollar dependency represents both an economic imperative and a strategic safeguard against potential sanctions. For the Gulf states, particularly Saudi Arabia, the stakes involve balancing their vital security relationship with the United States against the pressing need to diversify their economies and deepen ties with their largest oil customer. For the US, preserving key elements of the Petrodollar remains crucial to maintaining its financial power and the dollar's global role, though not every aspect of the current system is equally vital to American interests.

> For the global monetary system, these changes signal a potential shift toward a more fragmented architecture where competing financial spheres coexist rather than a single dollar-dominated framework.

## China's strategy: technology, industry, and finance

Rather than directly challenging dollar pricing, China is focused on creating alternative settlement mechanisms and deeper economic integration with oil producers. Its digital yuan (e-CNY) and the Multiple Central Bank Digital Currency Bridge (mBridge) platform represent significant technological advances that could accelerate change by offering more efficient alternatives to traditional cross-border payment systems.

Early mBridge trials demonstrate dramatic improvements: transaction times reduced from days to seconds, costs potentially halved.

> While the withdrawal of the Bank for International Settlements (BIS) from the project in October 2024 highlighted geopolitical sensitivities, it may accelerate the mBridge platform's evolution into a China-led alternative payment system.

China's strategy extends beyond payment innovation to creating deeper structural ties with the Gulf states. Beijing is systematically building industrial and technological partnerships – from electric vehicles to artificial intelligence – that align with Gulf states' economic diversification plans. At the same time, China has opened its financial markets while providing Gulf investors with special assurances about capital controls, aiming to make Chinese assets an increasingly attractive destination for recycling oil revenues.

This comprehensive approach combines payment technology, industrial integration, and financial market access to reduce Gulf states' dependence on dollar-based systems and incentivize them to use yuan.

## The Gulf's careful dance

Saudi Arabia and its Gulf neighbors face complex choices in balancing their traditional security relationship with the United States against deepening economic ties with China. Their approach reflects careful calibration rather than dramatic realignment.

Saudi Arabia's Vision 2030 and similar programs for economic transformation initiated by the United Arab Emirates (UAE) create natural alignment with Chinese capabilities in technology, construction, and renewable energy.

Saudi Arabia and the UAE – two pivotal players in the Petrodollar system – are making deliberate efforts to enhance their geopolitical and economic resilience while maintaining strategic flexibility between the United States and China. Their state-led transformation plans prioritize sectors like digital finance, renewable energy, and digital infrastructure – areas where they find increasing synergies with Chinese capabilities and technology.

However, concerns about China's capital controls and the need for continued security cooperation with the United States constrain the pace of change.

The Gulf states are systematically building capabilities that could enable more significant shifts while maintaining strategic flexibility. Their participation in initiatives like the mBridge digital currency project demonstrates willingness to explore alternatives to traditional dollar-based systems, even while preserving existing relationships.

## The path forward

Looking ahead five years, three scenarios emerge:

1. **Managed Evolution (Most Likely):** Gradual expansion of yuan settlement and investment while maintaining core Petrodollar architecture.
2. **External Shock (Second Most Likely):** Sudden changes forced by geopolitical conflict, major political upheaval in key countries, technological breakthroughs, or

market disruption. Depending on the nature of the shock, this scenario could lead to either dramatic decline of the Petrodollar system or its reinforcement as nations seek the safety of established dollar markets and the US security umbrella.

3. **Rapid Shift East (Least Likely):** A decisive strategic pivot by Saudi Arabia and other Gulf states toward deeper integration with Chinese systems.

> The most immediate changes are appearing in payment settlement mechanisms and revenue recycling patterns. While oil pricing remains predominantly dollar-based, reflecting the depth and efficiency of US financial markets, the channels through which oil revenues flow are diversifying significantly.

## Strategic implications for the US

For the United States, maintaining international financial leadership requires strategic adaptation: modernizing dollar-based global infrastructure, strengthening Gulf partnerships, and developing frameworks for managing parallel payment systems. Success lies in preserving fundamental advantages while competing effectively with emerging alternatives.

China's strategy focuses on creating viable alternatives for specific functions rather than attempting to fully replace the dollar's international role. The Gulf states must balance their need to rapidly transform their fossil fuel-based economy against security considerations, with their choices significantly influencing the pace of change.

The report recommends several critical priorities for US policymakers.

**First,** accelerate innovation in cross-border finance by supporting development of central bank digital currencies while maintaining the advantages of existing dollar-based systems.

**Second,** strengthen strategic partnerships with Gulf states by supporting their economic transformation initiatives and facilitating US technology companies' participation in their mega-projects.

**Third,** lead efforts to reform international financial institutions to address the realities of an increasingly fragmented world, including developing new crisis response frameworks and expanding the Federal Reserve's swap line network with key partners.

**Finally,** modernize market infrastructure to ensure US markets remain the world's deepest and most reliable.

## Looking forward

The international monetary system appears to be moving toward a more fragmented structure, with distinct but interconnected spheres of financial influence. While the dollar is likely to remain dominant, its role may evolve from being the sole pillar of international finance to becoming one core currency of a bifurcated, US-led financial sphere.

Success in navigating this transition will require careful attention to four critical factors: the pace of technological innovation in global payment systems, China's ability to develop credible alternatives, maintain financial stability and continue to innovate, US success in modernizing its financial infrastructure while preserving its institutional strengths, and Saudi Arabia's strategic choices about adopting new payment systems and financial relationships.

The transformation of global finance will likely proceed through careful evolution rather than sudden disruption. However, the range of plausible outcomes has widened considerably.

> The key lies not in resisting change but in shaping it – modernizing payment infrastructure, strengthening relationships with key partners, and ensuring US markets remain the world's deepest and most reliable.

# 1 Intro-duction

De-dollarization, once dismissed as unlikely, has become a serious focus of global policy discussions. Evolving global trade patterns – augmented by China's efforts to reduce dollar dependency – and a backlash against the increasing use of financial sanctions by the US are creating challenges to the dollar's international role more significant than any since the 1970s.

> Among these forces, one stands out as potentially transformative: the prospect of major oil producers moving away from dollar-denominated sales, ending the era of the Petrodollar.

The Petrodollar system, one of the most consequential developments in American economic history, has been a linchpin of US financial dominance for half a century. It ensures that oil – the most traded good around the world, accounting for roughly one-fifth of all dollar-denominated global trade – is priced and paid for in dollars, fundamentally underpinning both global demand for the currency and America's extraordinary monetary privilege.

Just as the Petrodollar system helped cement US financial power after the collapse of Bretton Woods, its unwinding will undoubtedly reshape the architecture of global finance. Indeed, US sanctions on major oil producers like Russia and Iran have already pushed a significant portion of oil trade away from dollar settlement.

> So the key question now is not whether this transformation is occurring, but rather its pace and scope.

The most potent challenge to the Petrodollar system, however, stems from China's rise as a great power. While Russia and Iran were left with no choice but to de-dollarize their oil trade, Beijing is methodically working to proactively reshape the system, seeking to safeguard its national security and economic stability by ensuring unfettered access to essential oil and gas supplies. At the heart of this effort is its deepening relationship with Saudi Arabia, the de facto leader of the Organization of Petroleum Exporting Countries (OPEC) and longstanding pillar of the Petrodollar system.

> Growing ties between China and Saudi Arabia, including discussions of oil sales in yuan, have fueled speculation about the emergence of a Petroyuan – meaning the use of yuan for oil trade settlement and pricing – a prospect that would profoundly shake the global monetary order.

And yet, while a Petroyuan may gain ground, it is unlikely to fully supplant the Petrodollar in the foreseeable future. Instead, we are likely to see a new dynamic at play – one shaped by the complex three-way interaction between China, Saudi Arabia, and the United States. This strategic triangle will determine how the yuan and dollar jostle over the privilege of being oil exporters' currency of choice.

This report examines the complex interplay of economic, technological, and geopolitical forces driving this monetary evolution, and analyzes its implications for both the dollar's global role and America economic power.

China faces the same fundamental challenge today as the US did in the 1970s: how to protect economic stability while remaining heavily dependent on foreign oil. Beijing also sees its dependence on the dollar-based financial system as a strategic vulnerability. These challenges converge in China's relationship with Saudi Arabia, and the Gulf states more broadly (Chapter 2).

In the aftermath of the Bretton Woods collapse, the United States transformed the 1970s oil crisis into an opportunity. By leveraging its military power, it secured a pivotal agreement with Saudi Arabia that both neutralized oil as an economic weapon and reinforced the dollar's preeminent position in global finance.

Today, China faces different circumstances and pursues different methods. While Beijing has been trying to expand the international use of the yuan for fifteen years, it remains at the foothills of its journey to turn it into a globally significant currency. Unlike the US, Beijing relies on its economic heft and technological prowess to safeguard its interests in the Gulf.

But a technological revolution is quietly reshaping the landscape of global finance. Distributed ledger technology (DLT) – a digital system for recording, sharing, and synchronizing transactions across a network of computers – is on course to revolutionize global payments and trade. China's leading role in harnessing DLT in the creation and use of central bank digital currency (CBDC) for cross-border payments represents the cutting edge of this transformation (Chapter 3).

This technological prowess, often overlooked in discussions of global finance, may prove to be China's most potent tool in disrupting both traditional oil trade and the broader financial system.

China's digital currency innovations could provide a compelling commercial reason for countries to participate in yuan-based trade settlement, independent of geopolitical considerations. Meanwhile, the expanding reach of US financial sanctions is pushing countries, including in the Gulf, to seek alternatives to dollar-based trade (Chapter 4).

Together, these pull and push factors could accelerate the adoption of yuan-based trade settlement for oil and all trade in ways that previous attempts at de-dollarization have not achieved.

Today's world is radically different from the one that gave birth to the Petrodollar. The global shift away from fossil fuels towards renewable energy has incentivized Saudi

Arabia and other Gulf countries to rethink their long-term strategy and aim for radical economic diversification and strategic autonomy. US energy independence has reduced its reliance on Saudi oil and reshaped its relations with the Gulf (Chapter 5).

> While Saudi Arabia continues to value its security relationship with the US, it is keen to leverage China's economic and technology opportunities that align with Riyadh's development strategy.

China and Saudi Arabia's mutual interest in diversification and their top-down approach to industrial development are creating a self-reinforcing momentum, producing tangible results in increased business, investment and digital payment systems cooperation. Saudi Arabia and the United Arab Emirates, the other key Gulf economy, are systematically building capabilities that could enable more dramatic shifts in the Petrodollar.

The Petrodollar system consists of three distinct elements – dollar settlement, dollar pricing and "Petrodollar recycling" – which we need to disentangle to understand the changes underway. We also must place the analysis in the context of the three-way dynamic among China, Saudi Arabia and the US.

> While there is little in the Chinese academic or policy discourse that refers to a grand plan for creating a Petroyuan system, China's actions show that it would prefer to settle as much of its oil trade in yuan as possible, price its oil purchases in yuan, and encourage Petroyuan to flow back into China.

The elements of the Petrodollar system most vulnerable to Chinese disruption are settlement – given deeper industrial integration and the promise digital currencies hold for making cross-border payments cheaper and more efficient – and recycling as China's opening and development of its financial markets offers Gulf investors attractive diversification opportunities. Pricing is the most resilient element thanks to America's deep, liquid and transparent markets (Chapter 6).

Saudi Arabia's approach to potential changes in the Petrodollar reflects a careful balancing act: between its ambition for economic diversification and desire for stability, between its need for external security guarantees and growing independence in foreign policy, and between its various domestic political priorities (Chapter 7).

> While Riyadh is gradually changing how it recycles its oil revenues and how it will settle its oil trade, the kingdom is proceeding cautiously and strategically, aiming for stability and strategic autonomy – a stance that will prove increasingly difficult with escalating Sino-US great power competition.

The Petrodollar has helped the US sustain fiscal and current account deficits at lower cost, fueling domestic consumption and economic growth. It has also enhanced Washington's strategic leverage and has more broadly reinforced the dollar's dominance in international finance.

While the dollar remains the dominant global reserve currency, its share has diminished. Its use for trade settlement has declined as China has managed to shift a large part of its trade and financial flows to the yuan and some to its cross-border payment system. But the dollar continues to dominate financial markets, especially foreign exchange trading, and its invoicing role remains deeply entrenched (Chapter 8).

> Our analysis suggests that all the elements of the Petrodollar system will not be completely replaced by a Petroyuan in the foreseeable future – i.e., the next five years. But the Petrodollar's decline in the Gulf isn't a question of if, but when – and 'when' is coming faster than most realize. That's due to rapid changes in the technology of finance.

The dollar will likely continue to see an overall erosion of its use, and the emergence of a China-led sphere where it is not the currency of choice at all. It's a matter of geopolitics and shifts in the economic center of gravity to Asia, yes, but also a question of innovation.

The evolving global financial and monetary system in the context of intense great power competition with China presents the US with strategic challenges in preserving the advantages of dollar leadership. As our analysis shows, maintaining this leadership requires addressing both the technological revolution in global payments and the changing dynamics of Gulf relations. This complex challenge raises several critical questions for US policymakers, for which we offer specific recommendations:

- Should the US emulate China's digital cross-border payments strategy or seek other ways to ensure dollar-based systems are an attractive option for global trade and finance?
- Should the US take proactive measures to shore up the Petrodollar system and, if yes, what are they?
- How can the US engage with China to avoid dangerous financial and economic instability while defending its strategic interests?
- Should the US rethink the usefulness of the current global financial architecture to enhance the resilience of the dollar?
- How should Washington respond in order to ensure the US-led sphere of influence maintains critical mass?

The policy answers to these questions will have far-reaching implications for the US and the balance of economic power in the 21st century.

# 2

# China's quest for economic security

ASIA SOCIETY POLICY INSTITUTE / Center for China Analysis

## 2.1 Introduction

Under Xi Jinping, China's vision of "standing tall in the East" is inextricably linked to an expansive concept of national security, with economic security as a central pillar. [1] At the heart of Beijing's economic security concerns lie two critical and interrelated vulnerabilities: China's persistent dependence on the US dollar and its growing reliance on imported oil and gas. These twin challenges have profound implications for China's strategic autonomy and its ability to project power on the global stage.

> Beijing views its dollar dependency and oil and gas imports not merely as economic constraints, but as strategic vulnerabilities that must be systematically addressed to realize China's broader geopolitical ambitions.

***"Strengthening energy trade cooperation with countries along the Belt and Road Initiative (BRI) initiative, particularly energy-rich nations, serves multiple strategic goals for China. It helps address China's growing oil consumption needs to sustain its economic development while reducing the economic challenges posed by its historically passive position in global oil trade... As China enhances its influence and pricing power in the global energy sector, it simultaneously promotes the use of the yuan in oil transactions, paving the way for the establishment of a Petroyuan circulation system. Over time, this shift has the potential to weaken the dominance of the US dollar and the European-led oil trade framework. "***

Bian Weihong, Director at Bank of China Research Institute, wrote in 2020. [2]

Beijing's sophisticated, multi-prong strategy to overcome these interconnected challenges encompasses everything from the internationalization of its currency, and technological innovation to restructuring its energy supply chains and deepening ties with oil-producing nations, particularly in the Gulf region.

These efforts reflect a broader vision for reshaping the global economic order – one that seeks to reform, if not transform, the fundamental norms and systems of international trade and finance to better align with China's strategic interests. The first stage is to reduce China's exposure to what it perceives as Western-dominated trade and financial architecture.

This chapter examines these challenges and China's responses through four interconnected analyses: Why China views dollar dependence as an existential threat; its comprehensive approach to energy vulnerability; how these challenges converge in China's relationships with the Gulf states, and, finally, the evolution of China's de-dollarization strategy. The transition from conventional currency internationalization to technological innovation sets the stage for a detailed examination of the digital yuan revolution and its impact on China's efforts to promote the global use of the yuan in Chapter 3.

# 2.2 The Dollar Trap: Dependence as a Strategic Vulnerability

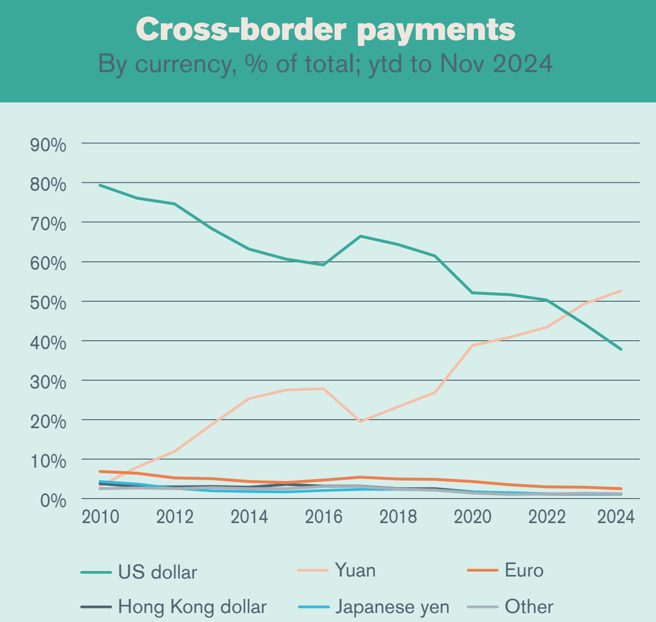
China's drive to reshape the global economic order stems from an acute awareness of its strategic vulnerabilities within the current dollar-dominated system. At present, approximately 47% of China's trade and financial transactions with the outside world are conducted in dollars and processed through US-controlled global payment systems.[3] Beijing views this dependence on the dollar as a fundamental obstacle to its rise as a global superpower.

The urgency for China stems from multiple strategic considerations. First and foremost is Beijing's growing unease about the weaponization of the dollar-based financial system (examined in detail in Chapter 4). The US has both the capability and the willingness to leverage its control over global financial infrastructure by imposing far-reaching sanctions on foreign entities and individuals, effectively cutting them off from US financial markets and dollar payment networks. The West's financial response to Russia's invasion of Ukraine demonstrated just how dollar dominance can be leveraged to impose severe economic costs.

## China's Cross-Border Currency Use

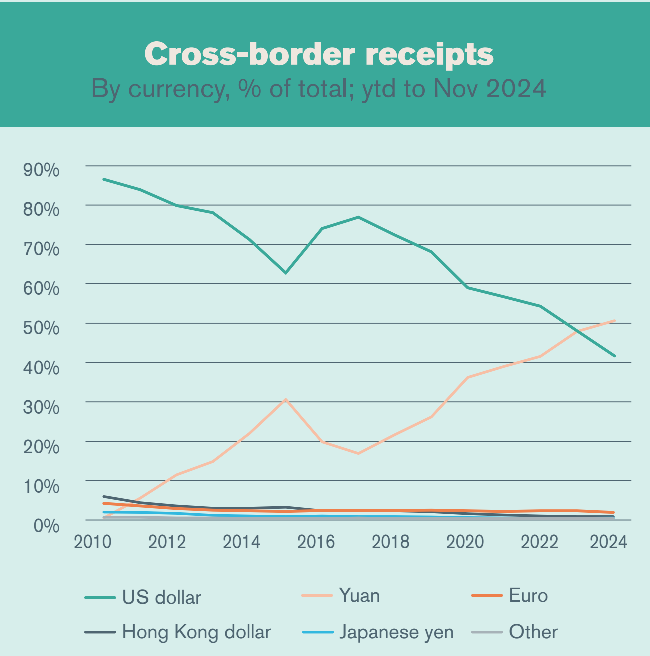
**Cross-border payments**

By currency, % of total; ytd to Nov 2024




**Cross-border receipts**

By currency, % of total; ytd to Nov 2024




*Source: Enodo Economics, State Administration of Foreign Exchange (SAFE)*

> For Beijing, sweeping US financial sanctions highlight how dollar dependence could constrain its strategic options in any future confrontation with the US, particularly over Taiwan. The unprecedented scope of the sanctions against Russia serves as a stark warning to Beijing, accelerating its efforts to reduce vulnerability to similar measures.

Beyond the immediate threat of sanctions, China harbors deep concerns about the sustainability and reliability of US economic stewardship. Beijing views US's fiscal trajectory with growing alarm, particularly its mounting government debt, the Federal Reserve's dramatic balance sheet expansion, and what it perceives as reckless monetary policy responses to crises such as the COVID-19 pandemic. [4] From China's perspective, these actions demonstrate that the US conducts monetary policy with little regard for its global implications, undermining the very foundation of the dollar-based international financial system.

China's push to reduce dollar dependence also aligns with its broader geopolitical ambitions. The ability to conduct international trade and investment in yuan is crucial for Beijing's strategy of building its own sphere of influence. Financial integration, particularly through yuan-based transactions, serves as a vital tool for deepening economic ties with partner nations and expanding China's global economic footprint. Moreover, the internationalization of the yuan represents a key component of China's vision for a reformed global governance structure – one that better reflects and accommodates its interests as a rising power.

> ***"The internationalization of the yuan provides new options for international payment currencies and reserve currencies for a wide range of emerging markets, developing economies, and other countries or individuals in need. It also promotes the international monetary system to move toward a multipolar, mutually-restraining direction, better matching the multipolar pattern of the world economy and trade, and adding stability factors to global financial governance."***

Chen Yulu, President of Nankai University and former vice governor of the People's Bank of China (PBoC), one of the key architects of RMB internationalization, said at an event in July 2023. [5]

This multifaceted challenge of dollar dependence has prompted Beijing to pursue a comprehensive strategy of financial self-reliance combined with currency outreach to its trading partners.

> The stakes are high: China's ability to achieve its great power ambitions and build a more China-centric international order depends significantly on its success in reducing its vulnerability to the dollar-based financial system and expanding the global role of the yuan

BOX 2.1

## Beijing's Quest for Financial Self-Reliance

Enodo Economics 2022 report, *"China's Quest for Financial Self-Reliance,"* analyzes Beijing's strategic efforts to decouple from the dollar-dominated global financial system and internationalize the yuan.[1]

### Motivations and Strategic Goals

China's push for yuan internationalization is driven by:

- US-related risks: Concerns over destabilizing monetary policies and vulnerability to financial sanctions
- Strategic vision: Creating a multipolar system where the yuan serves as a regional and global currency, alongside the dollar and euro

### Strategic Evolution

China's strategy has progressed through three phases:

1. Initial infrastructure (2009–2015): Establishing basic frameworks for yuan use in trade and finance
2. Market realignment (2015–2017): Managing speculative trading and arbitrage-driven currency flows
3. Value creation (2017–Present): Developing the yuan as a viable medium of exchange, store of value, and unit of account to drive sustainable international demand

### Current Implementation

Beijing is advancing yuan internationalization through several strategies:

- Creating RMB-based commodity pricing and settlement systems
- Promoting RMB invoicing and settlement within Asian and BRI supply chains to strengthen economic integration
- Opening domestic markets to foreign investment via yuan-denominated instruments
- Facilitating cross-border payments through the digital yuan (e-CNY) and the Cross-Border Interbank Payment System (CIPS)

### Challenges

Despite progress, significant challenges remain:

- Regulatory constraints: Beijing's reluctance to fully liberalize capital flows and loosen regulatory oversight limits adoption of the yuan
- Economic headwinds: An aging population and slowing growth inhibit long-term financial reform
- Trust deficit: Regional wariness of financial dependence on China and global concerns about transparency and governance

### Five-year Outlook

By 2027, China is expected to achieve incremental progress in key areas:

- Expanded issuance and use of yuan-denominated securities in hubs like Hong Kong
- Greater acceptance of Chinese government bonds as global collateral
- Growth in yuan-focused financial services in key cities like Shanghai and Shenzhen

Although these efforts will advance yuan adoption, full internationalization remains a long-term objective extending beyond the next decade.

### Policy Implications

For the US, the emergence of the yuan as a regional currency requires careful monitoring. Key considerations include:

- Ensuring the dollar-based system remains inclusive and efficient to sustain global trust
- Strengthening ties with economic partners to reinforce regional influence
- Preparing for gradual changes in global financial governance

### Conclusion

While yuan internationalization poses no immediate threat to dollar dominance, China's persistent efforts will influence global trade and finance and erode the dollar's global role. This requires strategic adaptation from the US to maintain financial leadership in an evolving landscape.

While China's dollar dependence represents a critical strategic vulnerability, it is intimately connected to another fundamental challenge: the country's growing reliance on imported energy resources. Beijing's need for vast quantities of oil and gas, predominantly traded in US dollars, amplifies its exposure to both dollar dominance and energy security risks, making its quest for energy security equally vital to its national interests.

## 2.3 Beijing's Multifaceted Approach to Energy Vulnerability

China's transformation into the world's largest energy consumer marks both a triumph of economic development and a source of strategic vulnerability. For Beijing, energy security is not merely an economic consideration but a fundamental pillar of national security, intrinsically linked to its territorial integrity, industrial capabilities, and economic stability.

> The complexity of China's energy security challenge lies in the stark contrast between its domestic resources and

needs – a disparity that has profound implications for its strategic autonomy.

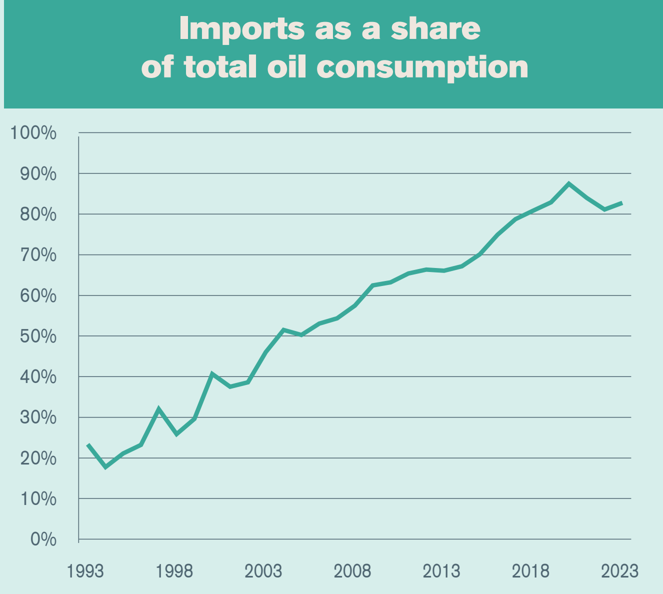
China is strong in terms of coal, its primary fuel. With extensive domestic reserves, coal continues to dominate China's energy mix, accounting for approximately 53% of total energy consumption. [6] This domestic abundance provides Beijing with a degree of self-sufficiency that serves as a strategic buffer against external pressures, even as environmental concerns increasingly constrain its usage.

However, oil presents a far more challenging strategic picture. The gap between domestic production and consumption is striking: while China consumed approximately 16.6 million barrels per day in 2023, its domestic production reached only 4.2 million barrels per day. [7] Since surpassing the US in 2017 as the world's largest oil importer, China has found itself increasingly dependent on foreign sources, with imports accounting for 80% of its oil consumption – a dramatic increase from 50% in 2008. [8]

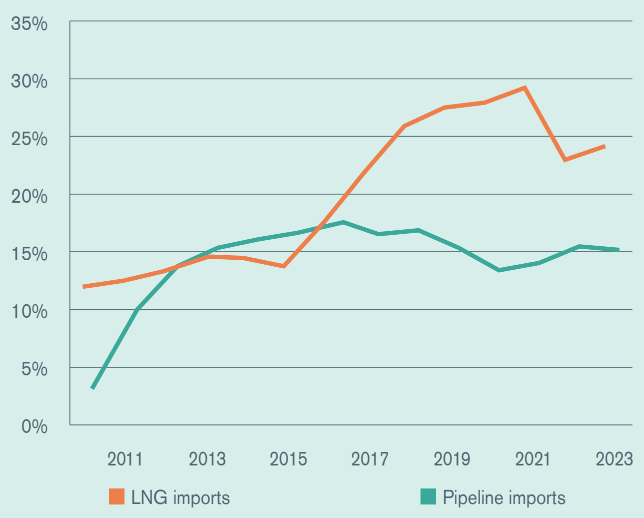
China's natural gas situation mirrors its oil predicament, though with even more dramatic recent growth in import dependency. As China shifts away from coal for environmental reasons and urban air quality, its appetite for natural gas has surged. By 2023, China had become the world's largest importer of liquefied natural gas (LNG), and import dependency has reached 40% of total gas consumption. [9] This growing reliance on imported gas – whether through pipelines from Central Asia and Russia or as LNG from global markets – adds another layer to China's energy security challenges. Like oil, most global gas trade is conducted in dollars, further amplifying the intersection between China's energy and financial vulnerabilities.

## China's Oil and LNG Dependence

**Imports as a share of total oil consumption**




**LNG and pipeline imports as a share of total gas consumption**




*Source: Enodo Economnics, The Energy Institute (EI)*

In response to these vulnerabilities, Beijing has implemented a sophisticated, multi-pronged strategy to enhance its energy security. The first pillar of this approach involves aggressive supply diversification. China's state-owned oil companies – China National Petroleum Corporation (CNPC), China Petroleum and Chemical Corporation (Sinopec) and China National Offshore Oil Corporation (CNOOC) – have pursued strategic investments in upstream oil and gas assets around the world, from Kazakhstan to Australia, from Venezuela to Angola. [10] This global portfolio approach not only secures direct access to resources but also reduces dependency on any single supplier or region.

The second pillar focuses on developing alternative energy transportation infrastructure. China has invested heavily in cross-border pipelines to reduce its reliance on vulnerable maritime chokepoints, particularly the Strait of Malacca. The Kazakhstan-China oil pipeline and the Myanmar-China oil and gas pipelines exemplify this strategy, simultaneously diversifying supply routes and strengthening regional geopolitical ties.

Strategic petroleum reserves constitute the third pillar of China's energy security strategy. Since establishing its Strategic Petroleum Reserve in the mid-2000s, China has rapidly expanded its capacity to cover around 80 days' worth of imports, providing a crucial buffer against supply disruptions and enhanced leverage in global oil markets. [11]

The fourth pillar represents China's ambitious push into renewable energy. By positioning itself as a global leader in renewable technology and production, China aims to reduce its long-term dependency on fossil fuels while committing to reduce carbon emissions starting in 2030. [12] The country's dramatic expansion in wind, solar and nuclear capacity, coupled with its dominance in photovoltaic cell and wind turbine production, demonstrates the scale of this commitment.

Finally, China has aggressively promoted electrification of its transportation sector, emerging as the world's largest electric vehicle (EV) market. [13] This initiative serves multiple strategic objectives: reducing oil demand in the transport sector, addressing urban pollution, and establishing leadership in emerging automotive technologies.

These five strategies work in concert as part of a comprehensive approach to energy security, reflecting Beijing's understanding that modern energy security encompasses not only supply assurance but also technological leadership and environmental sustainability.

> However, despite these efforts, China's energy vulnerability – particularly its dependence on imported oil and gas – remains inextricably linked to its exposure to the dollar-based international trading system, creating a nexus of strategic challenges that is the cornerstone of its relations with the Gulf states.

# 2.4 The Gulf Nexus: Where Energy and Dollars Converge

The Gulf states represent a critical intersection where China's twin vulnerabilities – dollar dependence and energy security – converge. This confluence has transformed traditional energy trade relationships into complex, multifaceted partnerships that span across the energy, technology and financial sectors.

> ***China will continue to import significant volumes of crude oil from Gulf Cooperation Council (GCC) countries and expand its LNG imports. It will also deepen cooperation in upstream oil and gas development, engineering services, and storage and refining. Additionally, China will leverage the Shanghai oil and gas trading platform to facilitate RMB-denominated trade in oil and gas,"***

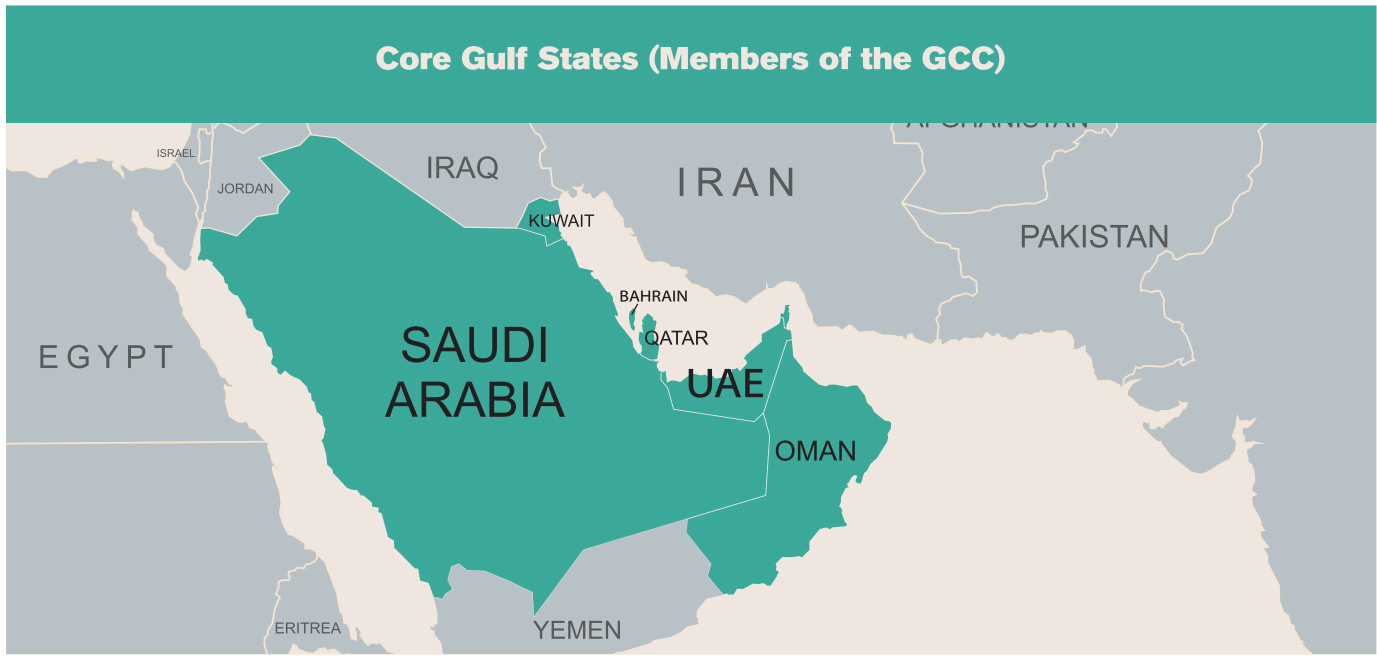
Xi Jinping stated in his keynote speech during his state visit to Saudi Arabia in 2022.[14]

At the core of this evolving partnership lies the hydrocarbon trade, which continues to anchor broader economic cooperation.

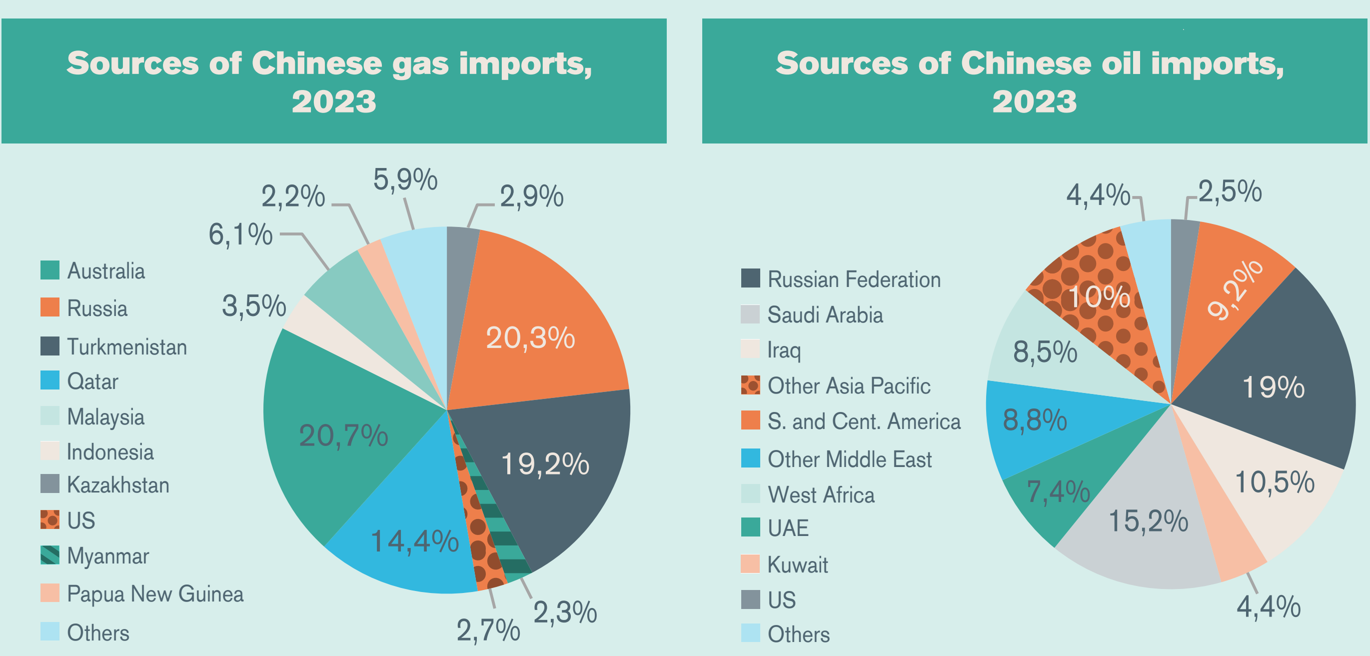
## Hydrocarbons: the foundation

Hydrocarbons remain the foundation of these relationships, with Saudi Arabia and the UAE ranking as China's second and fifth largest oil import sources in 2023. The member states of the GCC together account for over a third of China's total oil imports. The GCC states collectively provide over a quarter of China's gas imports, with Qatar alone providing 14%.

**Core Gulf States (Members of the GCC)**



## Sources of Chinese Oil and Gas Imports




*Source: Enodo Economnics, The Energy Institute (EI)*

The Gulf states would play an even greater role were it not for Russia's break with the West, following its invasion of Ukraine. Russia is now China's top oil supplier, and purchases from Russia and Iran at discounted rates outside the dollar-based trading system have eroded the GCC's share of China's imports. Russia's role in China's natural gas supply has grown significantly following the completion of the Power of Siberia pipeline and new LNG projects. [15] [16]

> What began as transactional relationships between China and the Gulf countries based on simple hydrocarbon-for-consumer-goods exchanges has evolved into deep, structural partnerships involving joint ventures, large infrastructure projects, and integrated supply chains.

Aramco, the Saudi national oil and gas company, exemplifies this deepening engagement with China. The 2014 establishment of the Yanbu Aramco Sinopec Refining Company marked a watershed moment, with Saudi Aramco and China's Sinopec jointly investing $10bn in a refining facility on the Red Sea coast. [17] This successful venture catalyzed further cooperation, leading to significant cross-investments: Saudi capital from Aramco and Saudi Basic Industries Cooperation – one of the world's largest petrochemical firms, 70% owned by Aramco – flowed into Chinese refining and petrochemical facilities. Meanwhile, China's state-owned Silk Road Fund acquired a 49% stake in Aramco's gas pipeline company in 2022. [18]

In parallel, China has strategically expanded its natural gas relationships with Gulf partners, particularly Qatar. This strategic pivot is exemplified by two landmark 27-

year LNG supply contracts with Qatar: one with CNPC and another with Sinopec, each securing 4 million metric tons of LNG annually. [19] [20] These deals are more than simple supply contracts – they include significant equity stakes in Qatar's ambitious North Field expansion project. For China, Qatar represents a diplomatically stable alternative to its traditional LNG suppliers, Australia and the US, with whom relations have become strained.

The UAE has similarly deepened its energy ties with China. A milestone was reached with the China Petroleum Engineering and Construction Company's completion of the Habshan-Fujairah oil pipeline in 2012, which provides a crucial alternative to the Strait of Hormuz, allowing exports from the UAE to bypass it. [21] The Abu Dhabi National Oil Company (ADNOC) has formed significant partnerships with Chinese state oil companies, including PetroChina and CNOOC's joint 10% stake in key Abu Dhabi concessions. [22]

While hydrocarbons remain fundamental to China-Gulf relations, both sides are leveraging this established cooperation to expand into future-oriented energy technologies.

## Renewables and new energy technologies

China's dominance in clean energy supply chains is a perfect match with the Gulf's ambitious decarbonization agenda. This partnership has evolved from simple component supply relationships to deep strategic investment, reflecting China's growing influence in the region's energy transition.

> ***"China's relationship with Gulf states is currently at its best point in history. From an international political perspective, this is also the best period for China to strengthen economic and energy cooperation with Middle Eastern countries. Middle Eastern countries demonstrate a greater sense of urgency in advancing renewable energy sources compared to major energy-importing nations like China. This urgency stems from the fact that Middle Eastern countries are experiencing the fastest population growth in the world, with per capita energy consumption among the highest globally, "***

Niu Xinchun, Vice President of Ningxia University and Executive Director of the China Institute of Arab Countries, a renowned expert in China-Arab relations, wrote in 2024. [23]

The progression from simple trade to strategic investment is exemplified by the 2019 acquisition by China's Silk Road Fund of a 49% stake in ACWA Power Renewable Energy Holding. [24] With investments exceeding $10bn by October 2023, this partnership gives China significant influence over regional renewable energy development. Similar patterns are emerging in the EV sector, where Chinese manufacturers are establishing a comprehensive market presence through both direct investment and technology partnerships. [25]

For more than a decade, China has actively supported Saudi Arabia's nuclear power ambitions through diplomatic and technical initiatives. During the Trump Administration, the US expanded its own outreach to Saudi Arabia on nuclear cooperation, motivated by strategic competition with China and concerns about proliferation risks. [26]

The evolution of China-Gulf financial cooperation across the energy sector represents a critical test case for Beijing's broader de-dollarization strategy.

The Gulf states' position as both major energy exporters and ambitious technological modernizers make them ideal partners for experimenting with alternatives to dollar-based trade and payment systems, as we shall explore in Chapter 5.

## Financial linkages

Parallel to these energy partnerships, China has actively pursued financial cooperation with Gulf states as part of its broader de-dollarization strategy. At the inaugural China-GCC Summit in 2022, President Xi Jinping explicitly outlined plans for yuan settlement in oil and gas trades through the Shanghai Petroleum and Natural Gas Exchange (SHPGX) platform, alongside initiatives for currency swap cooperation and digital currency development. [27]

The convergence of China's twin challenges – dollar dependence and energy security – in its Gulf relationships reveals both the potential and limitations of Beijing's strategy to reduce its strategic vulnerabilities.

### China's Bilateral Swap Agreements with the Gulf

**Jan 17, 2012**
The PBoC and the Central Bank of the UAE (CBUAE) signed a bilateral local currency swap agreement valued at Rmb35bn.

**Nov 3, 2014**
The PBoC and the Qatar Central Bank (QCB) signed a Memorandum of Understanding (MoU) to establish RMB clearing arrangements in Doha, along with a bilateral local currency swap agreement worth Rmb35bn.

**Dec 14, 2015**
The PBoC and the CBUAE renewed their bilateral local currency swap agreement, maintaining the value at Rmb35bn.

**Sep 26, 2016**
The PBoC authorized the China Foreign Exchange Trade System (CFETS) to conduct direct trading between RMB and UAE Dirham in the interbank foreign exchange market.

**Nov 2, 2017**
The PBoC and the QCB renewed their bilateral local currency swap agreement of Rmb35bn, valid for three years.

**Jan 6, 2021**
The PBoC and the QCB renewed their bilateral local currency swap agreement valued at Rmb35bn.

**Nov 20, 2023**
The PBoC and the Saudi Central Bank (SAMA) signed a bilateral local currency swap agreement worth Rmb50bn, valid for three years.

**Nov 28, 2023**
The PBoC and the CBUAE renewed their bilateral local currency swap agreement, this time still valued at Rmb35bn but valid for five years.

The Gulf states' engagement with Chinese financial initiatives has evolved progressively since 2015, moving from basic clearing facilities to comprehensive financial cooperation frameworks. [28] [29] [30] This includes currency swap arrangements, capital market integration, and digital currency experiments.

However, this financial cooperation remains largely exploratory rather than transformative. Despite occasional suggestions of increased yuan usage, particularly from Saudi Arabia, experts generally view these moves as strategic hedging rather than as a serious challenge to dollar dominance. [31] The UAE's simultaneous exploration of rupee-based trade with India suggests that Gulf states are diversifying their financial options rather than decisively pivoting away from the dollar-based system. [32]

> Nevertheless, the momentum behind China-Gulf cooperation continues to build, driven by compelling complementarities: China's need for energy security and petrochemical supplies aligns with Gulf states' desire to access Chinese technology and secure long-term markets for their hydrocarbons.

While this alignment of interests is gradually pulling Gulf states deeper into China's economic orbit, they will still balance their international relationships carefully. This nuanced approach suggests that rather than representing a decisive strategic pivot, China-Gulf cooperation is creating new patterns of interdependence to coexist with, rather than replace, established international relationships.

## 2.5 China's De-Dollarization Strategy: from Currency Internationalization to Technological Innovation

China's fifteen-year journey toward reducing dollar dependence reflects Beijing's growing determination to address what it sees as a critical strategic vulnerability, despite the complexity of challenging an established global financial order. This effort has evolved from relatively simple initiatives to internationalize the currency to a sophisticated strategy leveraging China's technological prowess and growing economic influence.

The evolution of China's approach can be understood through three distinct phases:

The initial stage (2009-2015) focused on establishing the basic infrastructure for the yuan's international use, primarily through enabling overseas transactions and creating opportunities for foreign participation in yuan markets.

The second phase (2015-2017) marked a period of reassessment when Chinese policymakers recognized that much of the early progress was driven by arbitrage opportunities rather than genuine demand for the currency.

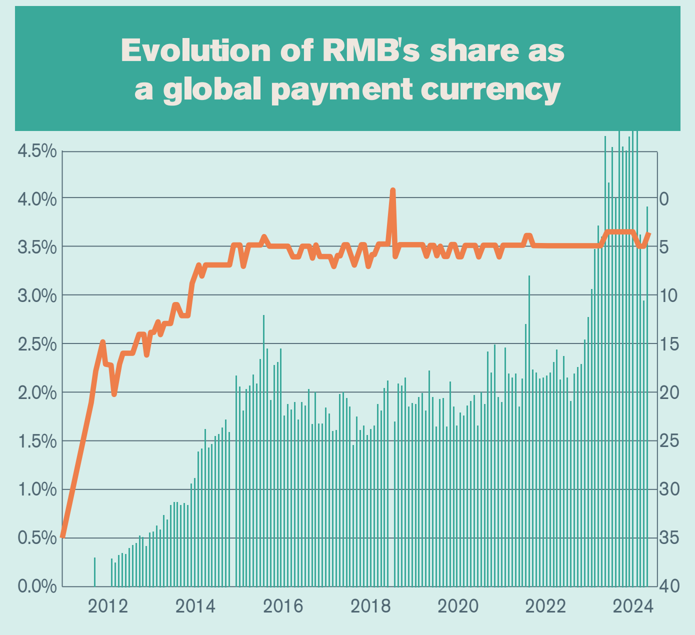
The current third phase, beginning in mid-2017, represents a more comprehensive and nuanced approach to yuan internationalization, focusing on establishing the currency as a legitimate medium of exchange, store of value, and unit of account. [33]

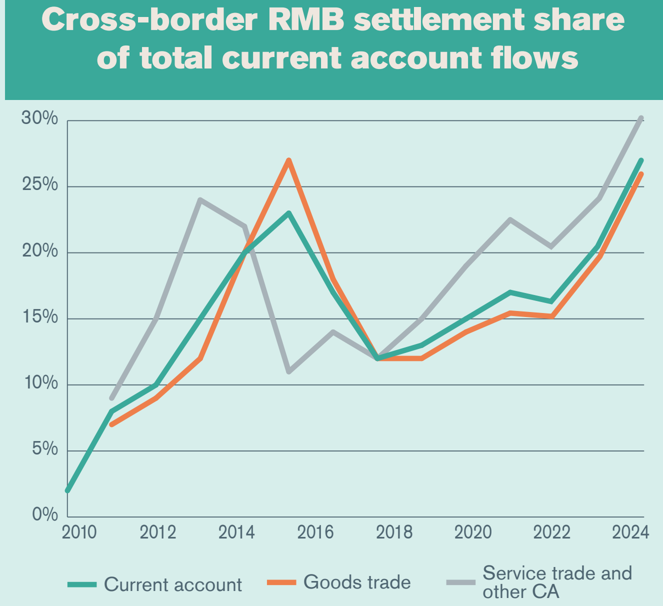
***Since 2018, the Chinese government has been advancing the internationalization of the yuan through a new "three-pronged" strategy. This includes RMB-denominated crude oil futures trading, accelerating the opening of domestic financial markets, and encouraging RMB usage in countries along the BRI. Specifically, this strategy involves:***

- ***Developing RMB-Denominated Crude Oil Futures: This initiative strengthens the RMB's role in global energy markets, particularly oil trading, making it a widely used currency in international oil transactions.***
- ***Expanding Access to China's Financial Markets: By opening domestic financial markets to foreign investors, China attracts global capital flows, further integrating the RMB into international trade and investment systems.***
- ***Cultivating RMB Demand Along the BRI: In BRI countries and regions, China is fostering practical and sustained use of the RMB, creating genuine demand for the currency.***

***This approach marks a significant evolution from earlier phases of RMB internationalization, addressing key challenges and shortcomings more effectively. It***

## Progress with RMB Internationalization

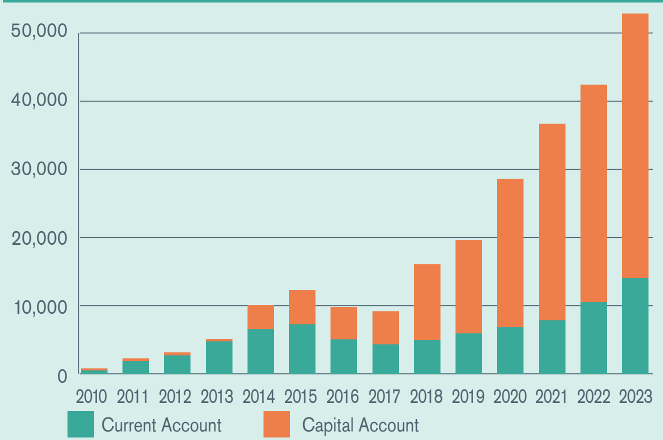



*Source: Enodo Economnics, Wind, CEIC*

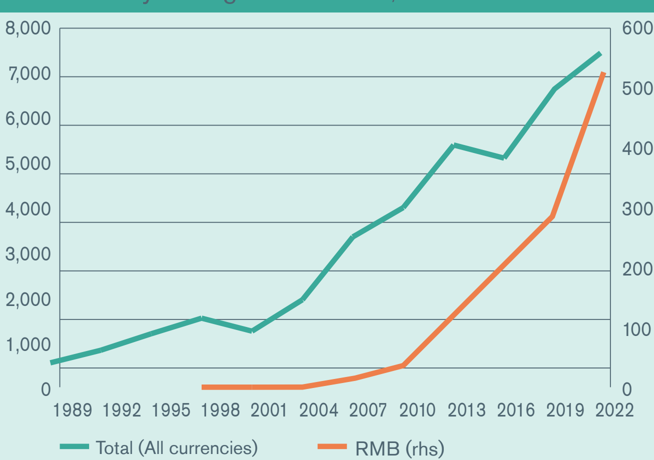
## Yearly cross-border RMB settlement during 2010-2020

Rmb, bn



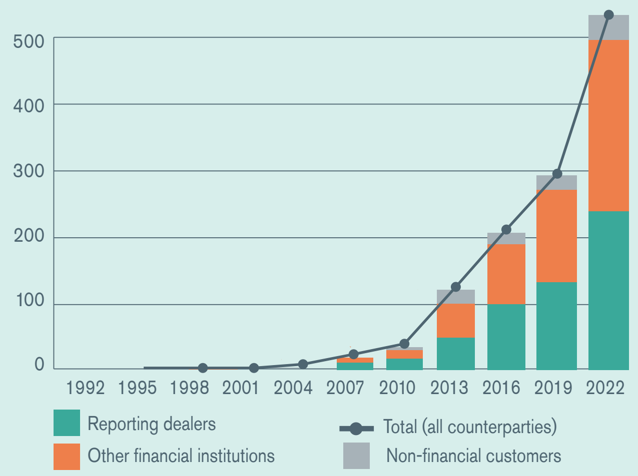

## Global foreign exchange market turnover

Daily averages in USD bn, Net-net basis



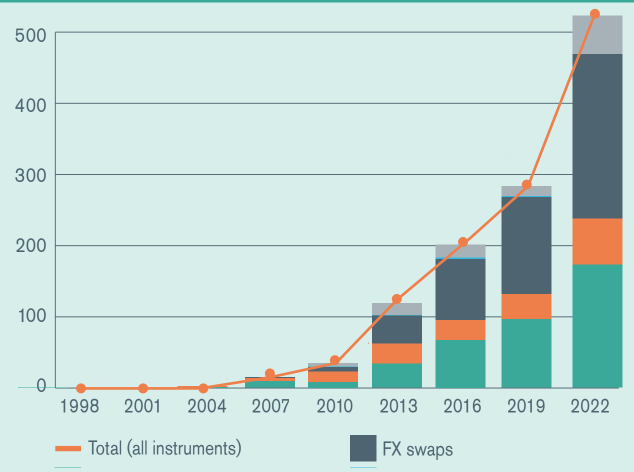

## RMB foreign exchange market turnover by counterparty

Daily averages in USD bn, Net-net basis



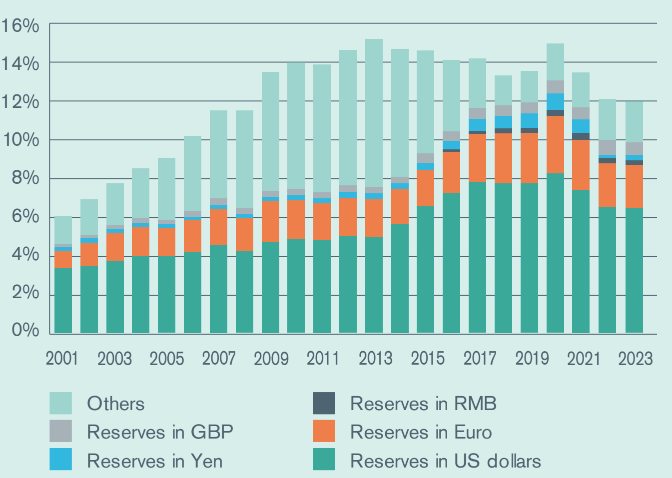

## RMB foreign exchange market turnover by instrument

Daily averages in USD bn, Net-net basis



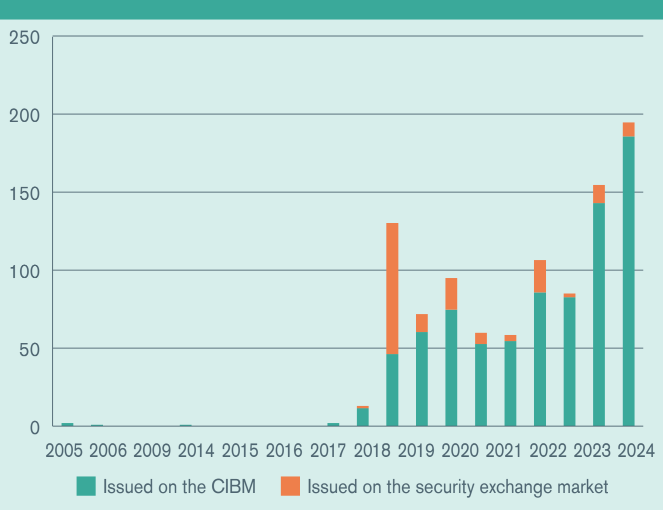

## Global foreign exchange reserves by currency

% of world GDP



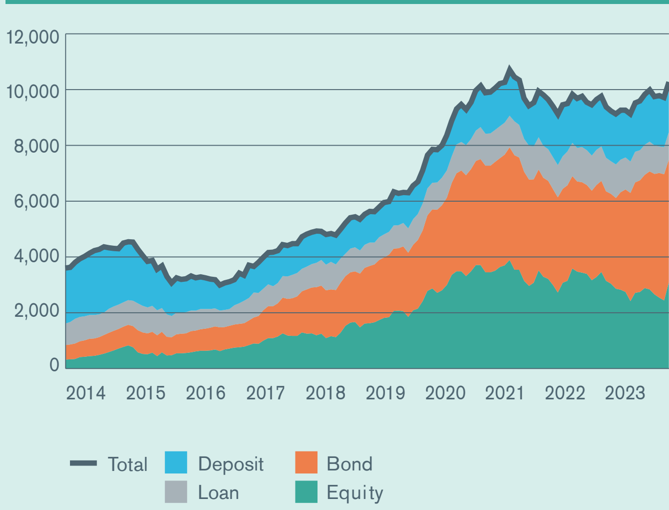

## The issuance of panda bonds

Rmb, bn



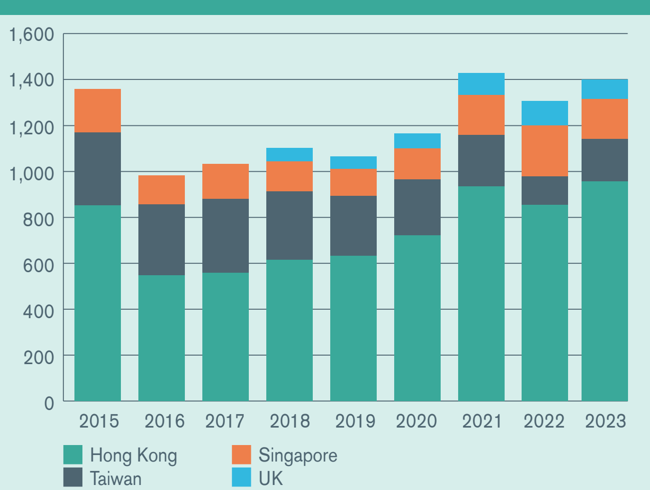

*Soure: Enodo Economics, IMF, PBoC, BIS*

Rmb, bn



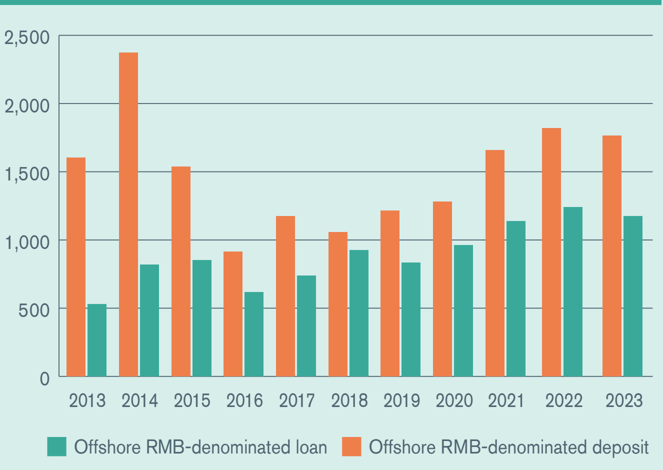

**Offshore RMB-denominated deposits**

Rmb, bn



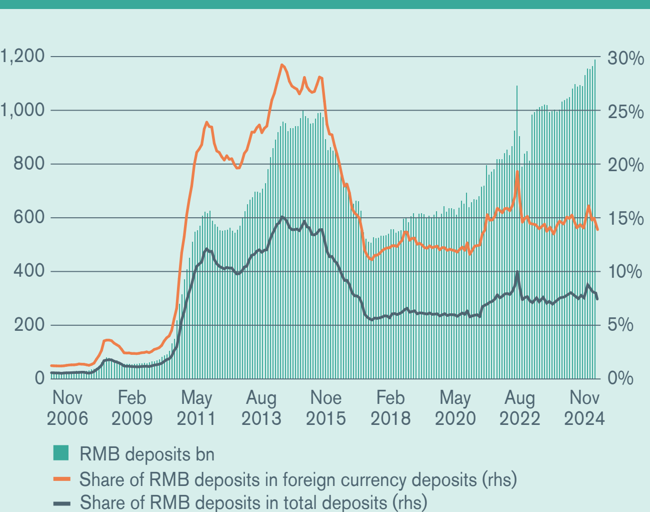

**Offshore RMB-denominated deposits & loans**

Rmb, bn




**RMB deposits in Hong Kong**

Rmb, bn




*Source: Enodo Economics, PBoC, HKMA, Central Banks & Monetary Authorities*

***strengthens the cross-border inflows and outflows of the RMB, creating a more robust system for its global circulation.***

***By focusing on both immediate needs – such as increasing RMB demand and usage – and long-term objectives like market integration and financial openness, this comprehensive strategy lays a solid foundation for elevating the RMB's position in the international financial system,"***

Zhang Ming, Senior Fellow and Deputy Director of Institute of Finance & Banking, Chinese Academy of Social Sciences, wrote in September 2024. [34]

Beijing's current strategy targets four strategic sectors: commodities, industrial goods, supply chains, and e-commerce. In commodities, China aims to shift global futures

trading to its own exchanges, potentially affecting the currency in which vital resources are priced. Through the BRI, China is establishing yuan-denominated trade networks in industrial goods, while transforming its role in Asian supply chains from processor to consumer. E-commerce provides another avenue for yuan internationalization, with new technologies facilitating cross-border direct business-to-consumer trade transactions.

The strategy's success depends heavily on creating compelling incentives for other nations to adopt the yuan for both transactions and as a store of value. Here, China's technological innovation in financial infrastructure plays a crucial role. While previous attempts at yuan internationalization were constrained by traditional financial architecture, new digital solutions offer potential advantages in cost, speed, and functionality that could accelerate the process.

> ***"As a leading example of national sovereign digital currencies, the digital yuan holds significant potential as a medium for pricing, payment, and settlement in international trade, cross-border capital flows, and multinational investment. It also has the capacity to serve as an important reserve currency within the international community,"***

Zhou Guangyou, Professor of Institute of Finance, School of Economics, and Director of Digital Finance Research Center, Fudan University, wrote in September 2023. [35]

However, significant challenges remain. The dollar's advantages include vast pools of the currency outside the US, deeply entrenched market preferences, and established institutional arrangements. China's domestic challenges, including its aging population and uncertain economic restructuring, raise questions about long-term growth prospects. Moreover, the interventionist tendencies of the Chinese Communist Party have led some global investors to view China as an unreliable investment destination.

> Given these shortcomings, China's technological prowess in areas crucial to 21st-century finance could prove the decisive factor in the long-term contest for global currency dominance.

The Gulf states represent a critical testing ground for this strategy. Should the yuan become the currency of choice for the Gulf's trade with China, particularly non-oil trade as Gulf economies diversify beyond hydrocarbons, it would significantly impact the dollar's global role.

This evolution of China's de-dollarization strategy reflects a broader shift in how global power is exercised in the digital age. While traditional elements of financial power remain important, innovation in areas like digital payments and cross-border settlements could accelerate changes in the international monetary system faster than previously anticipated. The success of China's strategy will ultimately depend on its ability to leverage these technological advantages while addressing fundamental questions about its economic model and international credibility.

## In conclusion

China's quest for economic security through de-dollarization has evolved from conventional currency internationalization efforts to a technology-driven strategy that could fundamentally alter the global financial landscape. At the heart of this evolution lies the digital yuan – a revolutionary tool that represents Beijing's most ambitious attempt yet to increase the use of its own currency and platforms for payment.

Understanding how this technological innovation could accelerate de-dollarization requires a deeper examination of China's digital currency capabilities and their potential to reshape cross-border trade and payments.

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**Box 2.1**

1.Choyleva, Diana & McMahon, Dinny, “China’s Quest for Financial Self-Reliance: How Beijing Plans to Decouple from the Dollar-Based Global Trading and Financial System”, September 08, 2022, Enodo Economics & the Wilson Center, https://enodoeconomics.com/view_publication/O2PWTS/trial

# 3 The digital yuan revolution

## 3.1 Introduction

In October 2024, the Bank of International Settlements (BIS) abruptly announced it was quitting mBridge, a Chinese-backed experiment in using digital currencies for cross-border settlements, just weeks after a BRICS summit in Kazan, Russia, called for more local currencies to be used in trade and financing. [1]

> BIS' abrupt withdrawal illustrates the disruptive potential (if not yet the reality) of China's embrace of digital currency as it seeks to carve out a sphere of action independent of Washington's influence.

China's late development of financial services has paradoxically become its greatest asset in the global payments revolution. While established financial centers like the US have substantial existing infrastructure to maintain, China has leveraged its relatively clean slate to leapfrog directly to cutting-edge solutions. The US, on the other hand, benefits from deep expertise and trusted networks that new systems must match if they are to be accepted broadly.

> Building on its clear global leadership in mobile payments, Beijing is now poised to transform the inefficient landscape of international transactions through its pioneering work in central bank digital currencies.

The e-CNY represents far more than a technological achievement – it embodies China's broader strategy to reduce its dependence on dollar-based payment systems and create compelling incentives for global adoption of yuan-based transactions.

> By applying the principles that drove the internet commerce revolution – convenience, efficiency, and cost-effectiveness – China could make its digital currency solution an irresistible choice for international trade settlement.

Moreover, China's development of central bank digital currencies for cross-border use puts it in the powerful position of setting technical standards and operational norms that others will likely need to follow, fundamentally shaping the future of international payments.

This chapter examines this technological transformation. First, we explore China's entrance into digital currency development and DLT, highlighting how early innovation has translated into strategic advantage. Second, we look at how these digital innovations change the dynamics of cross-border trade and payments. Third, we examine evidence from pilot programs and bilateral agreements that demonstrate the practical impact of these new systems. Finally, we assess why the digital yuan, combined with China's broader technological ecosystem, could accelerate de-dollarization at a pace few have anticipated.

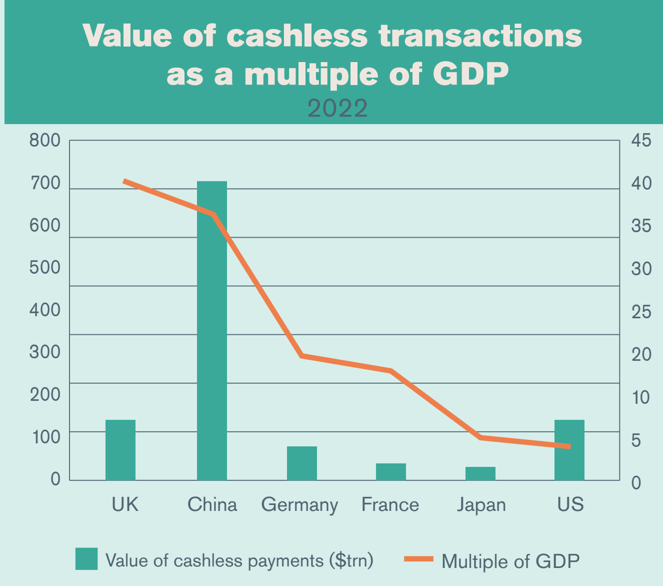
# 3.2 China Leapfrogs into Digital Currency

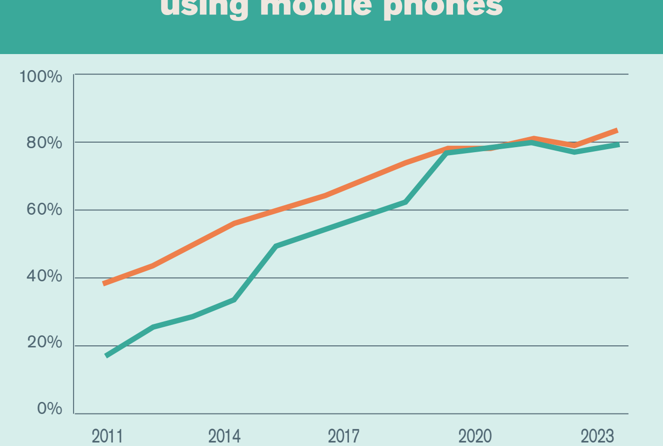
China's de-dollarization strategy pursues multiple paths simultaneously, with technological innovation through the digital yuan complementing traditional approaches to currency internationalization.

> The e-CNY represents a significant dimension in Beijing's overall strategy, leveraging China's digital payment expertise to address specific friction points in cross-border transactions and reduce vulnerability to dollar-based systems.

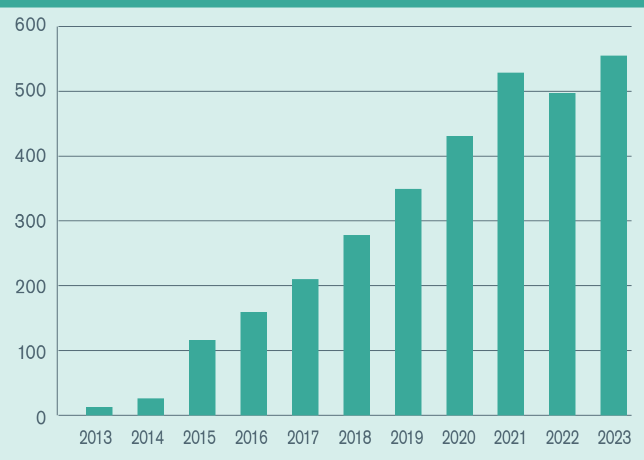
China's leadership in rolling out a central bank digital currency (CBDC) builds upon an earlier technological leap: its revolution in domestic mobile payments.[2] While developed economies remained tethered to credit cards and legacy banking infrastructure, China jumped directly to digital payments through Alipay and WeChat Pay. These platforms transformed China's payment landscape, growing from simple payment tools to comprehensive digital financial ecosystems serving over a billion users. By 2023, mobile payment transactions in China had reached $555trn, demonstrating the country's ability to rapidly scale digital financial innovations.

## China's Lead in Mobile Payments




*Note: Data for Dec 2019-Mar 2020 likely adjusted for Covid*




*Source: Enodo Economics, China Internet Network Information Center(CINIC), BIS*

The e-CNY's technical architecture incorporates these digital payment innovations while maintaining the robust centralized control that the Chinese Communist Party sees as an advantage. [3] Unlike decentralized cryptocurrencies, the e-CNY operates through a two-tier system that is more like conventional money supply. At the top level, the PBoC maintains oversight while leveraging commercial banks and existing payment platforms

BOX 3.1

## What is a CBDC and the e-CNY?

A CBDC is a digital form of a country's sovereign currency, issued and regulated by its central bank. Unlike private cryptocurrencies such as Bitcoin or Ethereum, CBDCs are a liability of the central bank and can constitute legal tender. They can be accessed either by individuals and firms (known as "retail" CBDCs) or by select financial institutions for interbank transfers and settlements ("wholesale" CBDCs).

The e-CNY is a retail CBDC and a claim on the central bank, included in China's base money supply. It follows a two-tier system where the PBoC distributes e-CNY through commercial banks and other authorized payment operators, like Alipay and WeChat Pay, who then provide it to retail users.

Its design allows for some wholesale functions through the commercial banks and operators that serve as intermediaries. But its primary focus and current implementation is as a retail CBDC accessible to individuals and businesses for regular payments.

The e-CNY is an encrypted numeric string representing a specific amount of money. People must possess the relevant software and a specialized e-wallet to use the currency, which can be used offline as well. Transactions are processed by a centralized PBoC ledger, making payments quick and secure and granting the central bank complete oversight over who is paying whom. Commercial banks handle customer-facing operations like account opening, know your customer (KYC) verification, wallet services.

The e-CNY has now become the world's largest CBDC pilot. As of June 2024, the total transaction value of the e-CNY amounted to Rmb7trn ($968bn), according to the central bank's governor. This represents a quadrupling of the volume since June 2023.

Still, it accounts for only about 0.1% of M0 - money in circulation and reserves held by commercial banks at the central bank. It remains a pilot, albeit a very large one.

for distribution. This pragmatic approach allows rapid scaling by utilizing Alipay and WeChat Pay's expertise and vast user bases.

The e-CNY system is enhanced by advanced encryption technologies and specialized e-wallet systems that enable secure, efficient transactions without sacrificing regulatory visibility. China has made significant progress in rolling out the e-CNY domestically across multiple cities, [4] although reported transaction volumes suggest uptake by the public has been slow. [5]

> The e-CNY's impact on global financial architecture could be most transformative in the areas of cross-border payments and international trade settlement.

As Zhou Guangyou, Director of the Digital Finance Research Center at Fudan University, said in November 2023,

> ***"At present, no country holds absolute dominance in the digital currency space. For China, this represents a unique opportunity to leapfrog ahead. Hence, China should continue to promote and issue the digital yuan, expanding its user base, usage scope, and application areas, thereby gaining a first-mover advantage in digital currencies and setting global standards and regulations. This will enable China to take a leading role in the digital currency era, strengthening its influence and voice, while using the state-backed legal digital yuan to accelerate the internationalization of the renminbi."*** [6]

China's ambitious push into central bank digital currencies began in 2014 when then-PBoC Governor Zhou Xiaochuan established a dedicated digital currency research group. In 2016, the PBoC's Digital Currency Research Institute was launched, attracting some of the brightest minds from within the central bank. The project received high-level backing in 2016 when blockchain was declared a national technology priority in China's 13th Five-Year Plan for national informatization. [7]

Development accelerated in 2019 after Facebook announced its Libra (later Diem) project, which Beijing perceived as an extension of dollar-based financial dominance into the digital realm. That year, President Xi Jinping himself emphasized blockchain as "an important breakthrough" during a dedicated Politburo study session, promising that China would "seize the opportunity." [8] In 2021 China's 14th Five-Year Plan outlined the objectives for a digitally-driven economy in a chapter titled, "Accelerate digitalization-based development and construct a digital China". Among the list of digital technologies, blockchain was one of the standouts. [9]

Although dwarfed in China by the extremely popular Alipay and Wechat Pay, the e-CNY operates at a far greater volume than similar experiments in Europe and India, offering the PBoC more practical experience in this field than its counterparts elsewhere. Over 130 countries (representing 98% of global GDP) are exploring CBDCs, with about 60 countries in advanced pilot or development phases and 3 countries (mostly in the Caribbean) that have fully launched the product. [10]

Meanwhile, international pilots are exploring how digital currencies could facilitate cross-border settlement, avoiding the current, cumbersome process that rests on the dollar's ubiquity. In 2019, Saudi Arabia and the UAE conducted a three-month pilot, dubbed Project Aber, that used distributed ledger technologies (DLT) and real

# Global CBDC development

**LEGEND**

| | |
|---|---|
| BoE: Bank of England | CBOB: Bank of the Bahamas |
| BoC: Bank of Canada | SNB: Saudi National Bank |
| ECB: European Central Bank | BoI: Bank of Israel |
| MAS: Monetary Authority of Singapore | BoF: Bank of France |
| BoJ: Bank of Japan | BoT: Bank of Thailand |
| Riksbank: Swedish Central Bank | |

| Year | China | | | | | |
|---|---|---|---|---|---|---|
| **2014** | PBoC's CBDC research group was established | | | | | |
| **2015** | Research on CBDC was published and two proto-types were made | BoE included CBDC in its 2015 research agenda | | | | |
| **2016** | PBoC announced that it would issue a CBDC | BoC launched project Jasper | MAS announced a DLT-based payment system project | ECB and BoJ launched project Stela to explore DLT | | |
| **2017** | Trial run of digital bank acceptance exchange | The Riksbank released the first report on e-krona | Central bank of Uruguay announced a CBDC plan | BoF launched MADRE using DLT | | |
| **2018** | Shenzhen and Nanjing research institutes set up | BoE studies DLT-based settlement | BoT initiated CBDC project | | | |
| **2019** | PBoC announced upcoming release of e-CNY | Facebook announced Libra project | ECB confirmed its work on a digital Euro | | | |
| **2020** | e-CNY pilot launched | Riksbank announced launch of pilot e-krona | BoF started CBDC experiment with 8 firms | US Federal Reserve and MIT launch Digital Currency initiative | BoJ set up a new team to study digital currencies | BoE began exploring CBDC |
| | | ECB announced public consultation on the digital euro | CBoB officially launched the sand dollar digital currency | PBoC pilot testing of digital yuan in Suzhou and Shenzhen | MAS conducted extensive blockchain-based CBDC experiments | |
| **2021** | e-CNY testing expanded to more cities and regions | BoJ began its first phase of digital yen experiments | Riksbank expands e-krona pilot | Project Dunbar launched by central banks of Australia, Malaysia, Singapore, and South Africa | | |
| **2022** | e-CNY offered to foreign attendees at Beijing Winter Olympics | SNB extended Project Helvetia, a collabora-tion with the BIS | ECB and BoF experiment with cross-border wholesale CBDC payments | US Federal Reserve releases discussion paper on the US digital dollar | India began digital rupee pilot in select cities | UAE and Saudi Arabia completed a joint CBDC exploration project (Project Aber) |
| **2023** | PBoC expanded e-CNY trials significantly | Digital yuan used for PetroChina cross-border crude oil settlements | ECB initiated digital euro experimentation phase | US Federal Reserve began public consultations and CBDC pilot study | BoE launched 'Britcoin' consultation regarding digital pound | |
| **2024** | PBoC expanded e-CNY trials significantly | SAMA joined the mBridge project as a full participant | BoI paused plans for digital shekel pending developments from ECB | ECB digital euro pilots began | BoE moved forward on design of digital pound | |

## mBridge Journey

**2017**
- HKMA conducted project LionRock
- Digital Currency Institute of the People's Bank of China (PBCDCI) begins work on developing and testing e-CNY

**2018**
- BoT initiated project Inthanon

**2019**
- PBCDCI launched e-CNY pilots in various cities across Mainland China
- Jan — *Phase 1 of BoT project Inthanon concluded*
- Jun — *Phase 2 of BoT project Inthanon concluded*
- Dec — *HKMA and BoT completed project Inthanon LionRock*

**2020**
- Central Bank of the UAE announced project Aber in partnership with Saudi Central Bank
- Sep — *HKMA and BoT project Inthanon LionRock - phase 2 started*
- Nov — *CBUAE and SAMA partnership completed*

**2021**
- Project Inthanon-LionRock was renamed "mBridge" upon joining of BIS Innovation Hub HKC, PBCDCI and CBUAE
- Sep — *HKMA and BoT project Inthanon LionRock - phase 2 completed*

**2022**
- mBridge pilot was succesfully conducted using real value transactions

**2023**
- A significant multi-country pilot demonstration was conducted

**2024**
- Minimum Viable Product (MVP) stage started
- The Saudi Central Bank joined the project as a full participant
- BIS exits the project

transactions in settlement. That same year, the Hong Kong Monetary Authority (HKMA) joined the Bank of Thailand in Project Inthanon-LionRock, trialling the use of CBDC for efficient cross-border payments.

These two trends – e-CNY and the experiments with using CBDC for cross border payments – coalesced into the Multiple Central Bank Digital Currency Bridge (mBridge) project, initiated in 2021. [11] mBridge is a collaboration between the PBoC, the HKMA, the Bank of Thailand (BoT), the Central Bank of the UAE (CBUAE), and (until October 2024) the BIS Innovation Hub. The Saudi Central Bank joined in 2024, indicating the project's potential significance to the Gulf region. [12]

> The mBridge project represents the world's most advanced experiment in using CBDCs for cross-border payments.

In 2024, before it exited the pilot, the BIS announced that mBridge had reached minimum viable product stage [13] – in other words, it was ready to be commercialized – with successful cross-border transactions completed in 2024 by both central banks and commercial institutions. Since its exit, however, the BIS has downplayed mBridge as "not mature enough to start operating." [14] Our discussions suggest that the project is more advanced than the BIS has implied.

Eddie Yue, chief executive of the HKMA, said in a speech in September 2024,

> ***"Another ground-breaking initiative is Project mBridge... With RMB being one of the CBDCs used on mBridge, this provides another opportunity to allow the easier use of RMB in cross-border payment, and Hong Kong as an offshore hub stands to benefit from its success. The project has entered the Minimum Viable Product stage, and we encourage banks in Hong Kong to work with their business partners to make good use of this platform for efficient cross-border payments."*** [15]

These developments position China to set global standards for digital currency development. Through comprehensive initiatives like China

BOX 3.2

## Hong Kong as a Digital Bridge

The HKMA has positioned itself as a bridge between mainland China's CBDC developments and the international financial system, while also pursuing its own independent CBDC research.

Its unique position allowed it to use its separate currency system to conduct experiments with Thailand and others while also engaging with the digital yuan pilots in southern China's Greater Bay Area.

| Timeline for HKMA and the e-CNY | Timeline for HKMA cross-border pilots |
|---|---|
| | **2017:** HKMA launches Project LionRock to explore CBDC for domestic wholesale interbank payments |
| | **2018:** HKMA collaborates with the BoT's project Inthanon to research cross-border payments |
| **2019:** Initial technical preparation discussions between HKMA and PBOC | **2019:** Project Inthanon-LionRock officially launches with Bank of Thailand |
| **2020:** HKMA announces technical testing with PBCDCI for e-CNY cross-border usage | |
| **2021:** Soft launch allowing some Hong Kong residents to use e-CNY wallets | **2021:** Project expands to become mBridge |
| **2022:** Expansion of e-CNY testing in Hong Kong retail settings | **2022:** mBridge pilot successfully conducts using real value transactions |
| **2023:** The use of the Hong Kong's Faster Payment System for topping up e-CNY wallets successfully tested | |
| **2024:** e-CNY pilot in Hong Kong expands to allow residents to more easily create and fund e-CNY wallets through 17 retail banks in Hong Kong | **2024:** mBridge reaches minimum viable product stage and BIS exits |

Standards 2035 and the practical implementation of cross-border payment systems, Beijing is establishing technical norms that other nations may need to follow.[16]

> The infrastructure of digital and economic connectivity, once established, creates lasting dependencies that are difficult to unwind, potentially giving China significant influence over the future of global financial technology.

China's approach to digital currency development reflects a comprehensive ecosystem strategy lifted from its successful e-commerce platforms. Just as Alibaba's Alipay and Tencent's WeChat Pay created integrated digital environments that transformed domestic commerce, the e-CNY and associated cross-border payment systems aim to create an interconnected environment for international trade. [17]

This ecosystem approach could combine low transaction costs with user convenience and integrated services, representing a fundamental reimagining of how international payments can function.

> While CBDC remain in an exploratory phase globally, China's combination of technical innovation, practical implementation experience, and ecosystem-level thinking provides significant advantages.

China's technological innovation in this area was most recently demonstrated by the deployment of its homegrown Dashing consensus protocol – a technical breakthrough we will examine in detail in the next section – to mBridge. [18] [19] Recent milestones validate China's technological contributions, underscoring its ability to shape the fundamental architecture of next-generation payment systems. China's real-world experience combined with its strategic vision of digital currency as a tool for reducing dollar dependency may be more transformative than many currently anticipate.

## 3.3 How Digital Innovation Changes the Game for Cross-Border Trade and Payments

Globally, we are moving towards a bifurcated payment architecture rather than a single unified system, with the BIS exit from mBridge a harbinger of the direction of travel. The international payment infrastructure is likely to mirror distinct US-led and China-led spheres of influence rather than a multipolar system. US and China have the scale and unmatched leadership in the technologies of the future, with no other country or region being able to offer a credible alternative. It remains to be seen how these systems themselves reflect other countries' desire to increase the use of their own currencies for cross-border payment as well as how the US and Chinese systems will interact.

> China's first-mover advantage in digital currency and its use in cross-border payments could attract users to its system based on purely practical considerations, rather than geopolitical alignment.

This market-driven adoption could reshape the global payments landscape more rapidly than geopolitical developments would suggest. As these systems become more established, network effects and the integrated nature of the infrastructure could shift global payment patterns, potentially accelerating the trend toward a bipolar international financial system.

The current architecture for international payments, built around correspondent banking relationships and SWIFT, reflects the financial world of the pre-digital age. To understand how digital innovation transforms international payments, we must first understand the complexities of the current system.

Consider a Saudi petrochemical company paying $1mn to a Chinese manufacturing equipment supplier. In today's world, this seemingly simple transaction involves multiple steps and intermediaries. The Saudi company's local bank must work through a network of correspondent banks – typically large international institutions that have established relationships with banks in different countries. Each intermediary maintains accounts with the others, creating a chain that can ultimately connect the Saudi bank with the Chinese bank.

## The Inefficiency of Traditional Cross-border Payments

### Typical correspondent banking payment process

Saudi Arabia

Payer corporate

Payer bank

Payer bank's correspondent bank

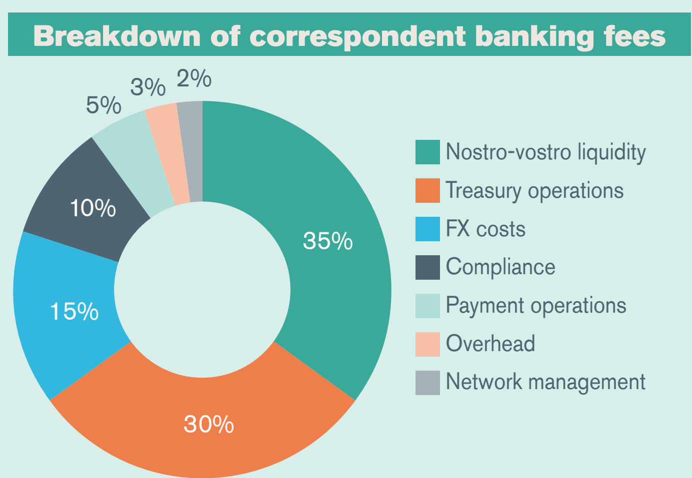
Payee bank's correspondent bank

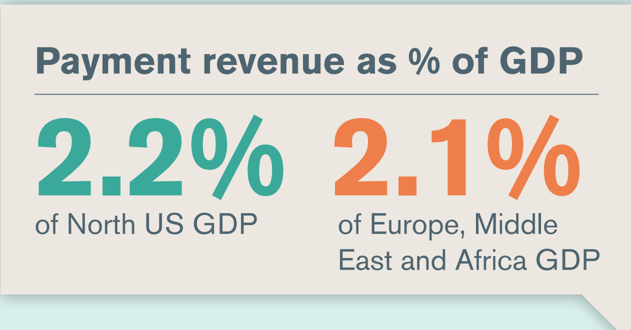
Mainland China

Payee bank

Payee corporate

### Breakdown of correspondent banking fees



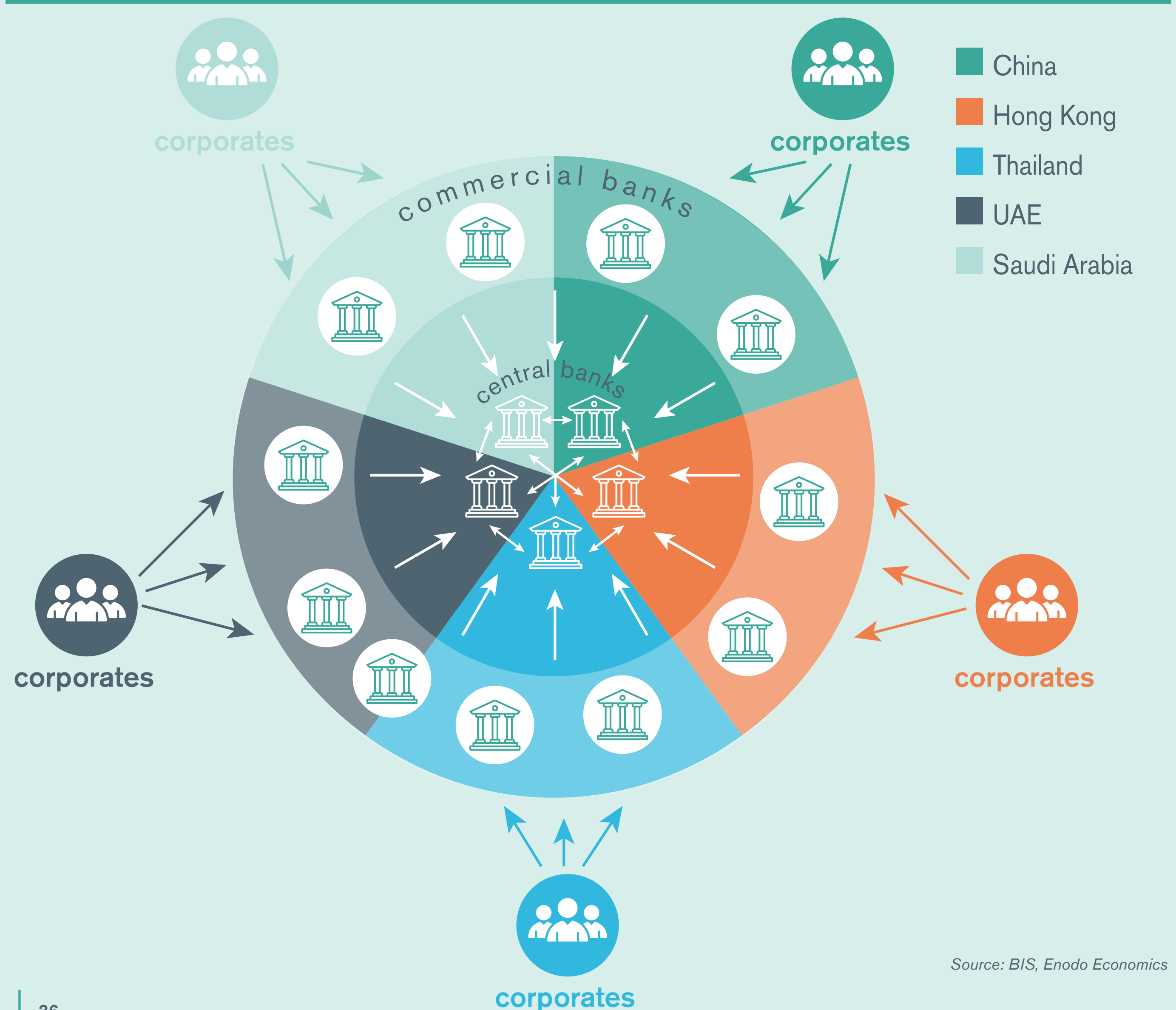




*Source: HKMA, McKinsey, Rich Turrin*

This process requires sophisticated liquidity management. The intermediary banks must maintain substantial currency reserves in various countries to facilitate transactions, essentially parking large sums of money in different jurisdictions. They must also carefully manage foreign exchange risk – the possibility that currency values will fluctuate during the time it takes to complete the transaction. The transaction has to pass through potentially multiple regulators as well as satisfy any currency controls. The process involves multiple checks for compliance, anti-money laundering regulations, and security, with each intermediary bank performing its own verification procedures.

> Digital currencies offer major advantages for cross-border payments through innovations like DLT, though these systems also currently face significant technical and operational challenges.

## How mBridge Works




Source: BIS, Enodo Economics

Traditional blockchain, a specific type of DLT made famous by cryptocurrencies, is just one approach to maintaining this distributed record. At the heart of these systems is the consensus protocol – the mechanism by which all participants in a payment network agree on the validity of transactions. Traditional blockchain systems face what is known as the "Blockchain Trilemma": the challenge of simultaneously achieving decentralization, security, and scalability. Typically, enhancing one of these aspects comes at the cost of another.

China's Dashing Protocol, developed by the PBoC's Digital Currency Research Institute and Tsinghua University, represents a novel approach to this challenge that suits China's economic and political model. [20] Rather than pursuing the traditional blockchain emphasis on decentralization, it prioritizes the practical requirements of central bank digital currencies: security and scalability. [21] It achieves this through an innovative approach to transaction verification. While traditional systems require strong security certificates for all operations, Dashing selectively employs different levels of verification. It uses computationally lighter "weak certificates" for routine operations while maintaining rigorous "strong certificates" for critical transactions. [22]

In practical terms, this means cross-border payments can be processed much faster without compromising security. The Dashing Protocol shows a modest 30% improvement in tests of small networks of 4 nodes (connecting 4 banks or central banks), but demonstrates its real power in larger networks of 91 nodes where it would perform 10 times better than traditional systems, according to its lead developer – particularly impressive because blockchain networks typically slow down significantly as more participants join. [23]

> This directly translates into practical benefits: faster settlement times, reduced computational costs, and improved scalability for large-scale payment networks. It is especially important for China's vision of a controlled, permissioned financial network that can handle international transactions quickly while maintaining central authority. [24]

The mBridge platform demonstrates how DLT transforms cross-border payments. Instead of the complex correspondent banking chain, mBridge enables direct foreign exchange payment-versus-payment (PvP) settlement between participating banks – when the transfer of one currency occurs if and only if the transfer of the other currency takes place, eliminating settlement risk. Returning to our example of the Saudi company, its payment would now flow directly to the Chinese supplier's bank through the mBridge platform. The transaction is processed through a permissioned DLT network where participating central banks maintain nodes (specialized computers that validate transactions).

This new system fundamentally changes liquidity management and foreign exchange handling. Rather than maintaining large currency reserves in multiple jurisdictions, banks can manage liquidity more efficiently through the platform's real-time settlement capability. Foreign exchange transactions are executed simultaneously with the payment, eliminating the risk from multi-day settlement periods. Smart contracts – self-executing programs stored on the DLT – automate many processes that previously required manual intervention. [25]

The technical improvements translate into dramatic practical benefits.

Transaction costs can be reduced by up to 50% through the elimination of intermediary fees and more efficient liquidity management. Settlement times shrink from days to seconds – mBridge pilot programs have demonstrated completion times of 7 seconds for transactions that traditionally take 3-5 days. [26] Security is enhanced through cryptographic verification, while privacy is maintained through a sophisticated system whereby central banks oversee transactions within their jurisdiction (commercial banks can only access transactions in which they're directly involved).

DLT could also transform trade finance. Traditional processes like letters of credit, which often involve multiple document exchanges and verifications, can be automated through smart contracts. The immutable record-keeping inherent in DLT reduces fraud risk while accelerating verification processes. These improvements are particularly significant for emerging economies, which have historically faced higher costs and longer delays in international transactions.

The adoption of such novel technology raises important questions about trust and control. As one Federal Reserve Governor noted, central banks might be uncomfortable deploying their money on platforms they don't fully control. [27] This tension between innovation and institutional trust will influence how rapidly and widely these new protocols are adopted. China's approach suggests a middle path: maintaining central bank control while leveraging new technology to improve efficiency.

## 3.4 From Theory to Practice: mBridge Turns Commercially Viable

The transition from theoretical possibility to practical implementation of cross-border CBDCs has progressed rapidly since 2022, with the mBridge platform moving from initial pilots to minimum viable product stage.

China's digital innovation is on the cusp of reshaping international payments, while also highlighting the challenges that must be addressed for broader adoption.

The first major pilot in September 2022 demonstrated the platform's potential. Twenty commercial banks from four jurisdictions conducted over 160 payment and foreign exchange transactions totaling more than $22mn in value, over the course of six weeks. [28] The platform facilitated both standard payment and foreign exchange PvP transactions between jurisdictions, testing multiple currencies and use cases. Even

in this early stage, the system demonstrated the ability to complete transactions in as little as 7 seconds – a dramatic improvement over traditional 3-5 day settlement times.

In 2024, the project achieved these significant milestones that demonstrated its evolution from experimental pilot to practical tool:

- In January, the CBUAE conducted the first real-value cross-border transaction, transferring 50 million dirhams ($13.6 mn) to China [29]
- In February, the CBUAE made another transfer from an Abu Dhabi bank to one in Beijing in just ten seconds, according to Li Shu-Pui, Advisor to the CBUAE. [30]
- In September, UAE's RAKBANK announced a successful commercial transaction. As RAKBANK's Co-Head of Wholesale Banking explained, this represented "one of the first UAE-led foreign currency transfers executed in local currencies without involving a third currency to China and without using conventional payment rails." [31]
- In October, Li Shu-Pui, advisor to the Governor of the CBUAE, shared at Swift's SIBOS conference in Beijing that mBridge has seen ***"a few hundred transactions so far, representing the equivalent of a few billion dollars."*** [32]

The implementation process reveals both the promise and complexity of transforming international payments. While much attention focuses on technological aspects, early evidence suggests that non-technical factors – legal, regulatory, and operational – present the most significant challenges.

> Project participants note that technical development typically accounts for only 20% of the effort, with legal and regulatory considerations consuming the remaining 80%.

From a Chinese point of view, three core principles are crucial for successful implementation: [33]

1. **"No Loss":** CBDCs must be compatible with other international systems without undermining any central bank's monetary sovereignty. This requires careful balance in system design and governance.
2. **Compliance Principle:** The platform must adhere to all participating jurisdictions' regulations on foreign exchange management, capital controls, anti-money laundering, and counter-terrorist financing. It has to allow information to flow along with capital.
3. **Interoperability:** The system must work seamlessly with existing financial infrastructure and enable interconnection between different CBDC systems. A modular design approach enhances flexibility and adaptability across jurisdictions.

> Early implementation has also revealed operational challenges that must be addressed before it can be adopted more broadly.

The limited number of foreign exchange PvP transactions in early pilots highlighted the need for more efficient liquidity management and foreign exchange price discovery mechanisms. Some central banks required end-of-day balance clearing, while others allowed overnight positions, which complicated transaction scheduling and settlement.

Success depends on addressing several critical factors:

1. **Liquidity management:** banks need to pre-fund their payments on mBridge for their customers (no need for this in the correspondent banking system), so they need to ensure sufficient liquidity in both the fiat and CBDC currency. [34]
2. **Currency Conversion:** Reliable mechanisms for foreign exchange within the digital system
3. **Trust Mechanisms:** Frameworks for inter-bank trust and settlement finality
4. **Regulatory Compliance:** Robust oversight while enabling innovation
5. **Operational Integration:** Seamlessly connecting with existing payment systems and processes

The pilots revealed that while digital currencies can streamline payment processes, they cannot entirely bypass traditional financial infrastructure. When a payment is made in one currency and needs to be received in another, the underlying foreign exchange transaction must still occur. Currently, this happens "off-bridge" in traditional FX markets. As one senior banker involved in the project explained to us, creating direct exchange markets between smaller currency pairs presents significant challenges in pricing and liquidity.

Regulatory compliance remains paramount. Digital currencies do not bypass existing regulatory requirements – every transaction must still undergo anti-money laundering checks, sanctions screening, and post-transaction monitoring. The information captured still adheres to international standards like ISO 20022, ensuring compatibility with existing systems while maintaining regulatory oversight.

> The project has responded to these challenges with both technical and operational innovations.

The transition from the original consensus protocol (called HotStuff+) to the more efficient Dashing Protocol improved performance. The platform evolved to support both manual and automatic integration modes with domestic payment systems, allowing participation from jurisdictions without existing CBDC infrastructure.

The governance structure developed for mBridge reflects these complex requirements. The platform operates under a comprehensive legal rulebook and a fit-for-purpose governance structure, with a Steering Committee and four specialized subcommittees focusing on Compliance, Technology, Legal, and Policy issues. This framework ensures that the platform adheres to international standards and different jurisdictions' regulations while maintaining central bank control over their respective currencies.

Privacy and security considerations have been carefully balanced with operational requirements. The platform implements pseudonymous addresses using randomly

generated self-issued key pairs, ensuring that sensitive transaction details are visible only to the counterparties and their respective central banks. This allows both confidentiality and necessary oversight.

mBridge has attracted broader interest. The project now has over 31 observer members, including major institutions like the Federal Reserve Bank of New York, Bank of France, World Bank, International Monetary Fund, Asian Infrastructure Investment Bank, and Bank of Korea. [35]

> Saudi Arabia's decision to join as a full member in 2024 strengthened the platform's potential role in energy trade settlement.

While significant challenges remain, the practical implementation of CBDCs for cross-border payment under mBridge is progressing faster than many anticipated. The experience gained through these early implementations is rapidly moving the technology from experimental concept toward practical reality.

The BIS's announced exit from mBridge marks a significant turning point in the project's evolution. While this development will likely lead to more visible Chinese leadership of the initiative, it is unlikely to slow its technical or operational progress. Indeed, the project may accelerate as decision-making becomes more streamlined under clearer Chinese direction.

The BIS's departure will likely transform mBridge into the backbone of a China-led CBDC cross-border payment system. This aligns with China's broader strategy of developing alternative financial infrastructure that can operate independently of Western-dominated systems. However, if other central banks from advanced economies follow the BIS in departing, Western regulators and policymakers will lose valuable visibility into the development of what could become a major alternative international payment rail.

The legal and governance structure that emerges post-BIS will be particularly significant. It will provide important signals about how China envisions structuring a parallel international financial system and how attractive it will be to emerging market and developing economies, thus setting the pace of de-dollarization.

## 3.5 Why the Digital Yuan Could Accelerate De-dollarization

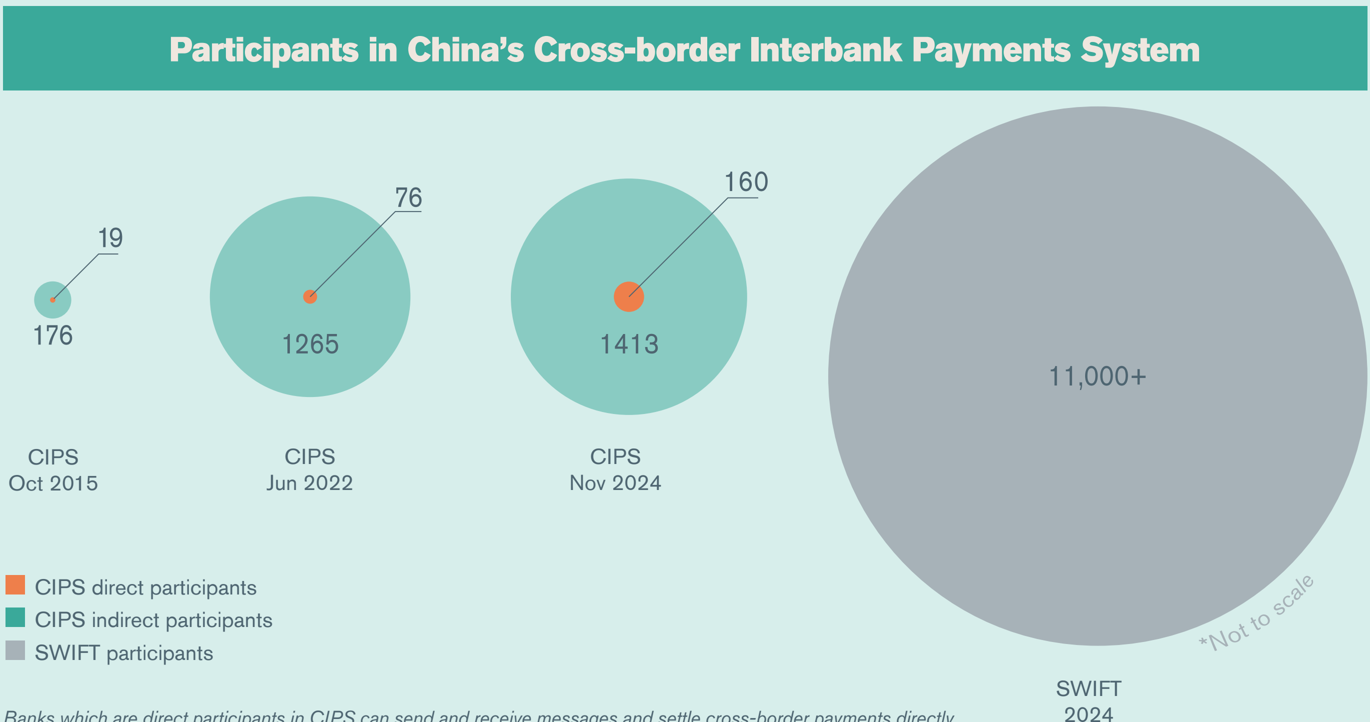
The potential impact of China's digital currency innovation on global de-dollarization requires a reassessment. In our 2022 report, *"China's Quest for Financial Self-reliance,"* Enodo argued that while both the Cross-Border Interbank Payment System (CIPS) – China's current alternative system to handle international payments and messaging between banks in yuan – and the e-CNY would support yuan internationalization, neither would be capable of driving the process. [36]

## CIPS and mBridge: Complementary Tools in China's Global Payments Strategy

CIPS and using the digital yuan for cross-border payments are both crucial components of Beijing's broader strategy to internationalize the yuan, reduce reliance on the dollar, and enhance its financial sovereignty.

As we argued in Enodo's 2022 report *"China's Quest for Financial Self-Reliance"*, CIPS is at the core of China's efforts to clear and settle international transactions in yuan.[1] Over the past couple of years, CIPS has also continued to develop, more than doubling its direct participants, messaging and transaction volume.

In 2023, CIPS transitioned from a solely yuan-focused payment system to a multi-currency platform by introducing Hong Kong dollar payment services. This shift enhanced transaction speed, transparency, and cost efficiency.[2] By the end of 2024, CIPS's Hong Kong dollar services had 21 direct participants and 10 indirect participants.[3]

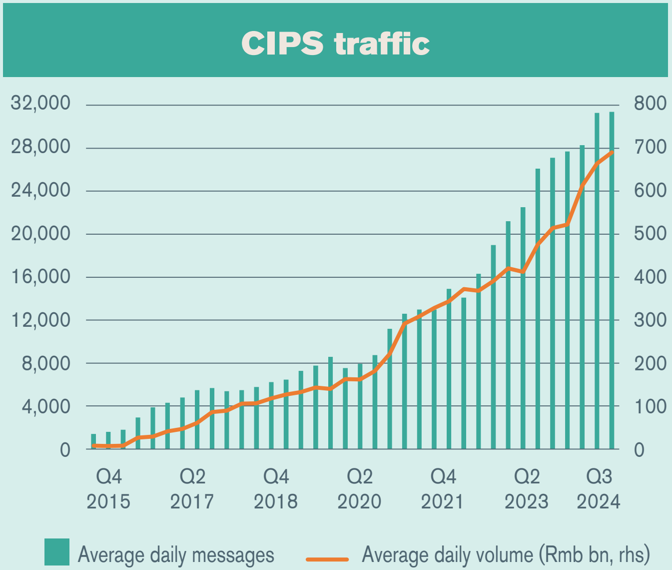



*Banks which are direct participants in CIPS can send and receive messages and settle cross-border payments directly, while indirect participants can only access CIPS services via the direct participants.*

Beijing sees CIPS and using the digital yuan for cross-border payments as complimentary and interoperable systems. While CIPS replicates existing payment infrastructure for yuan-based international trade, the e-CNY and mBridge represent the next generation of payment technology.

On the technical front, both CIPS and mBridge are built on ISO standardization, which enables basic interoperability between the payment systems. As more central banks join the mBridge initiative and work to establish common protocols for cross-border payments, opportunities for integration between CIPS and mBridge are likely to expand.

From an operational perspective, CIPS can potentially enhance its capabilities by incorporating some of mBridge's technological innovations. For example, mBridge's real-time settlement functionality could help CIPS process high-volume transactions more efficiently, particularly during peak periods. This technical complementarity could lead to improved service delivery across both platforms.[4]




The integration of CIPS and mBridge faces significant challenges, including regulatory uncertainty around central bank digital currencies and the need for a unified cross-border framework among participating countries.

*Source: Enodo Economics, PBoC*

However, the rapid advancement of these technologies and their practical implementation through mBridge suggests that the transformative potential of digital currencies may be greater and come faster than initially anticipated.

This reassessment stems from a basic truth about technological innovation: as noted by Mustafa Suleyman, co-founder of DeepMind and currently Head of Microsoft AI,

> ***Almost every foundational technology ever invented, from pickaxes to plows, pottery to photography, phones to planes, and everything in between, follows a single, seemingly immutable law: it gets cheaper and easier to use, and ultimately it proliferates, far and wide."*** [37]

Digital currency technology, particularly in cross-border payments, is likely to follow this pattern, with increasing efficiency and declining costs driving adoption.

## Gulf innovation hubs as critical testing ground

The Gulf states' embrace of digital currency experimentation represents a crucial testing ground for China's technological solutions. The UAE and Saudi Arabia's participation in the mBridge project aligns with their broader digital agendas and ambitions to become global fintech hubs. Digital currency experiments dovetail with the Gulf states' broader economic diversification strategies, as Chapter 5 explores in detail. Their willingness to experiment with new payment technologies reflects both their appetite for innovation and their strategic interest in developing alternative financial infrastructures.

The digital yuan's architecture offers particular advantages in addressing vulnerability to financial sanctions – a key concern explored in Chapter 4. By enabling direct settlement between parties without touching the US financial system, and by providing enhanced visibility and control over payment flows, the system reduces exposure to potential sanctions.

The ability to conduct trade settlement without using SWIFT or US correspondent banks represents a significant shift in the architecture of international payments.

The effectiveness of these sanctions depends on building sufficient network effects and alternative financial infrastructure.

China's domestic mobile payment revolution provides a compelling template for how quickly such systems can achieve widespread adoption. Just as Alipay and WeChat Pay transformed China's payment landscape seemingly overnight, the e-CNY's cross-border capabilities could suddenly transform international trade settlement. As Rich Turrin argues in *"Cashless: China's Digital Currency Revolution,"*:

> ***With the digital RMB and blockchain-based trade systems, China will do for trade what Alibaba did with mobile payment and e-commerce sales in China."*** [38]

The e-CNY's approach to trade settlement could make transactions safer and quicker for small companies in particular. Traditional trade finance exposes importers to significant foreign exchange risk during the lengthy period between currency conversion and transaction completion. The e-CNY system allows for much briefer holding periods and lower entry and exit costs. A company in a BRI country, for example, could maintain savings in their local currency or dollars, converting to e-CNY only when needed for specific transactions. This "bridge currency" function means users need not maintain long-term yuan positions if they prefer alternatives.

## Digital control versus capital account liberalization

The standard push-back is that digitalization of China's currency will not by itself lead to international adoption unless Beijing lifts its capital controls. [39] Without the free movement of the yuan, why would anyone outside China adopt the e-CNY?

We argue that using digital currencies for cross border payments is likely to change the direction of causation in the relationship between capital account openness and RMB internationalization. [40] Rather than capital account liberalization being a prerequisite for yuan internationalization, the enhanced control and visibility provided as the e-CNY cross-border payment system is adopted may encourage Chinese authorities to allow more capital flows.

The digital architecture gives Beijing unprecedented insight into currency flows, potentially making regulators more comfortable with greater movement of capital because they can control the movement of this capital beyond China's borders. This is especially relevant for large cross border transactions.

As Rich Turrin writes,

> ***It is also likely that the DC/EP [e-CNY] will someday contribute to eliminating capital controls on digital markets. Capital controls are an old concept that suited banking markets. A new concept, more apropos in our digital world, will be "programmed capital" whereby capital can be deployed with embedded programming that controls its use and eliminates capital flight. This is an excellent example of how our new digital world will bring new policy tools with it."*** [41]

Moreover, the growth of e-CNY usage in international trade does not require full capital account convertibility. The system's design allows for trade settlement while maintaining existing capital controls. The key advantage lies in the system's ability to reduce transaction costs and settlement times while providing better visibility and control over payment flows.

More generally others like Barry Eichengreen have argued that the RMB, digital or not, can in fact develop into an international reserve currency in the absence of capital-account convertibility, with trade and investment links driving its use. [42]

Huang Qifan, professor of Fudan University and former mayor of Chongqing, argued in November 2024 that,

*“In recent years, relevant departments have done a lot of work on convertibility under the capital account and have made considerable progress. However, it should be pointed out that the internationalization of the RMB is both related to and different from the free convertibility under the capital account.”* [43]

He said that when the level of internationalization of the RMB reaches a level commensurate with China’s position in the world economy, the necessary conditions for freer convertibility under the capital account will be met.

## Network effects and merchant incentives

Implementation examples are already emerging across key trade corridors. The Gulf states’ participation in mBridge reflects both their substantial trade with China and their ambitions to become digital finance hubs. Beyond mBridge, several BRI countries are exploring e-CNY integration into their trade settlement systems while the UAE has also conducted pilot bilateral digital currency cross-border transactions with China. [44] The pattern of adoption typically follows existing trade relationships – countries with significant China trade are naturally prioritizing these payment innovations.

> Network effects in digital payment systems can be particularly powerful, and the mBridge system is now entering the phase where we may see network growth.

As more merchants and financial institutions join the system, the cost per transaction decreases while the utility increases. This creates a self-reinforcing cycle where practical benefits – lower costs, faster settlement, reduced FX risk – drive adoption independent of geopolitical considerations. The technology adoption curve in payment systems typically reaches a tipping point where convenience and cost advantages trigger accelerating uptake.

Global merchants and businesses will likely make pragmatic choices about which payment systems to adopt, responding to cost efficiency and convenience rather than political considerations. China’s more efficient, less expensive alternative to traditional dollar-based payment channels could accelerate the adoption of its system in parts of the world where such practical advantages outweigh other considerations.

The merchant incentive structure is particularly compelling. Consider a Chinese supplier and their Gulf trading partners: once the e-CNY system is established, each additional transaction becomes progressively easier and cheaper. The reduction in foreign exchange costs, elimination of correspondent banking fees, and near-instantaneous settlement create strong incentives for continued use. As merchants experience these benefits, they are likely to encourage their other trading partners to join the system, creating organic network growth.

> This flexibility could prove particularly attractive in emerging markets where traditional dollar-based trade settlement imposes significant costs and delays.

In many BRI countries, the yuan is already viewed as a relatively stable currency for trade purposes. The addition of efficient digital payment infrastructure could accelerate its adoption for trade settlement, creating positive network effects that further reduce costs and increase convenience.

The evolution of digital payment systems introduces new dynamics to the strategic relationship between China, the US, and the Gulf states. For Gulf states, adopting Chinese payment technology offers efficiency gains and potential leverage in negotiations with the US, but raises questions about technological dependence. For China, successfully deploying its digital currency infrastructure in the Gulf would represent a significant strategic advance, but requires carefully managing US reactions. For the US, the spread of Chinese payment technology in the Gulf challenges its traditional financial influence in the region.

We are not suggesting the e-CNY will challenge the dollar's position as the dominant global reserve currency. Rather, we argue that it could accelerate de-dollarization in specific spheres, particularly in trade settlement and regional commerce, as well as affect the traditional Petrodollar mechanism (explored in Chapter 6). This distinction is crucial – while the dollar's reserve currency status rests on multiple pillars including deep financial markets and strong institutions, trade settlement patterns shift more readily when practical advantages are sufficient.

BOX 3.5

## What Factors Could Accelerate the Adoption of e-CNY for Cross-border Payments?

**1. Technical Evolution**

- Continued improvement in system efficiency
- Better integration with existing trade finance platforms
- Development of sophisticated FX management tools
- Expansion of smart contract capabilities

**2. Network Growth**

- Increasing merchant adoption across trade corridors
- Financial institution participation expansion
- Development of supporting service ecosystems
- Integration with regional payment systems

**3. Market Drivers**

- Growing comfort with digital payment systems globally
- Rising demand for cost-efficient trade settlement
- Increasing south-south trade volumes
- Evolution of supply chain finance needs

## In conclusion

Technological innovation in payments can drive changes in currency usage patterns more rapidly than traditional policy measures or gradual economic evolution. The e-CNY system, by addressing specific pain points in international trade settlement while providing Chinese authorities with the control and visibility they require, could accelerate de-dollarization in practical, market-driven ways that previous attempts have failed to achieve.

Adoption is likely to be uneven but potentially rapid in specific regions where the weight of trade with China makes the practical advantages most compelling. As the mBridge system proves its utility, the network effects and efficiency gains could drive faster adoption than many currently anticipate, reshaping patterns of international trade settlement well before any challenge to the dollar's broader global role emerges.

In that light, the geostrategic opposition to projects like mBridge could be swept away by the overwhelming logic of economics and trade.

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# 4 Dollar weaponization and its discontents

## 4.1 Introduction

Washington's expanded use of financial sanctions marks a significant shift in global monetary relations. The comprehensive sanctions imposed following Russia's invasion of Ukraine have led many nations to reassess their relationship with dollar-based systems.

> Dollar-based infrastructure – once seen as a neutral financial architecture – is now widely recognized as a powerful instrument of US foreign policy.

This recognition has catalyzed an unprecedented coalition of countries seeking to reduce their dollar exposure. This group extends far beyond traditional US adversaries to include nations that view dollar dependence as an unacceptable strategic vulnerability. China's technological innovations in cross-border payments could provide these countries with practical alternatives that were previously unavailable.

Three factors distinguish the current challenge to dollar dominance from previous episodes:

- The scale and scope of recent financial sanctions have demonstrated that no country, regardless of size, is immune from potential dollar weaponization.
- Technological innovation, particularly in digital currencies and distributed ledger technology, could soon offer viable alternatives to traditional dollar-based payment systems.
- China's emergence as both an economic competitor to the US and a leader in financial technology provides the necessary scale and sophistication to make dollar alternatives credible.

> The combination of these forces – aggressive dollar weaponization, technological innovation, and China's rise – creates conditions where meaningful de-dollarization has become not just possible but increasingly probable.

Understanding how these elements interact and reinforce each other is crucial for assessing the future of global finance and the broader international order.

In this chapter, we explore how the aggressive use of financial sanctions has led to the formation of a coalition of countries actively seeking alternatives to dollar-based systems. Next, we analyze the unintended consequences of US financial dominance and how its weaponization has accelerated the search for alternative payment systems. Finally, we examine why current de-dollarization efforts differ fundamentally from previous challenges to dollar supremacy.

# 4.2 How Sanctions Created a Coalition of the Unwilling

Washington's expanding use of financial sanctions has transformed what was once a targeted foreign policy tool into a systemic threat that is reshaping global attitudes toward the dollar-based financial system. While sanctions have long been part of US's arsenal, their dramatically increased deployment in the 21st century has created unprecedented pressure for change in the international monetary order.

BOX 4.1

## Timeline of US Financial Sanctions

**1917:** Congress passes the Trading with the Enemy Act (TWEA), establishing the first comprehensive framework for US economic sanctions and trade restrictions during wartime.

**1950-1972:** The US & UN impose a trade embargo on China in response to the Korean war. Although the UN lifts the embargo after the war concludes, the US maintains it until 1972's Shanghai Communique.

**1962-3:** President Kennedy establishes the comprehensive Cuban trade embargo, creating one of the US's most-enduring sanctions programs.

**1977:** Congress passes the International Emergency Economic Powers Act (IEEPA), modernizing the president's sanctions authorities and providing more flexible tools for economic pressure.

**1979:** The US imposes its first sanctions on Iran following the Islamic Revolution and hostage crisis, freezing approximately $12bn in Iranian assets.

**1995:** The Clinton administration introduces "smart sanctions" targeting specific entities and individuals rather than entire economies, starting with Colombian drug cartels.

**2010:** The Comprehensive Iran Sanctions, Accountability, and Divestment Act significantly expands sanctions against Iran's energy and financial sectors.

**2012:** The US implements Section 1245 of the National Defense Authorization Act, imposing sanctions on foreign financial institutions conducting transactions with Iran's central bank.

**2014:** Implementation of sophisticated sectoral sanctions against Russia following the annexation of Crimea, targeting key sectors including finance, energy, and defense. The US restricts access to capital markets for major Russian banks and energy companies.

**2017-2021:** President Trump uses the IIEEPA to sanction over 3,700 entities.

**2022-onwards:** Following Russia's invasion of Ukraine, the US coordinates unprecedented sanctions including SWIFT restrictions, export controls on critical technologies, and targeting of Russia's central bank reserves.

The effectiveness of US sanctions stems directly from the dollar's central role in global commerce. [1] Dollar dominance in international trade, US control over key

payment infrastructure, and the size of US financial markets means that exclusion from the dollar system effectively cuts targets off from the global economy. This power has made sanctions an attractive policy tool, resulting in their widespread use for an increasingly broad range of objectives.

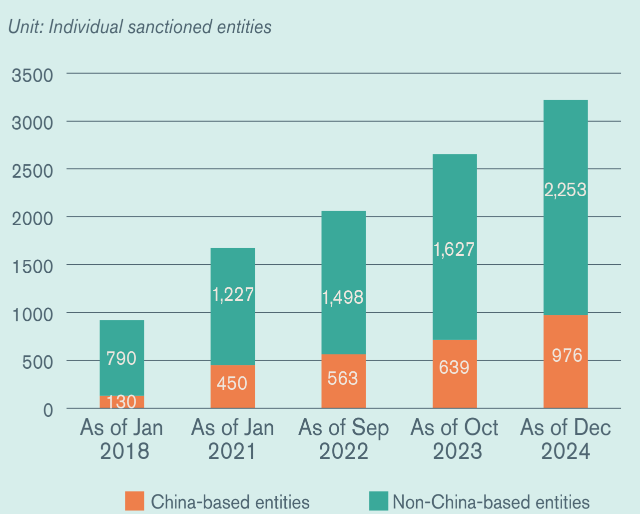
The nature of sanctions has evolved significantly, moving from broad measures targeting entire countries to more precise actions aimed at individuals, entities, and specific behaviors. This increased precision has made sanctions a more flexible tool but has also heightened their impact on the global financial system by requiring more extensive compliance efforts from international financial institutions and exposing them to greater operational risks. [2]

The effectiveness of these sanctions was most dramatically demonstrated in the US-led response to Russia's invasion of Ukraine. The freezing of approximately $300bn in Russian central bank assets, combined with the exclusion of major Russian banks from SWIFT, represented an unprecedented use of financial sanctions.[3] This financial isolation has imposed severe economic costs on Russia, which relies on oil and gas revenues for 30-50% of its federal budget.[4]

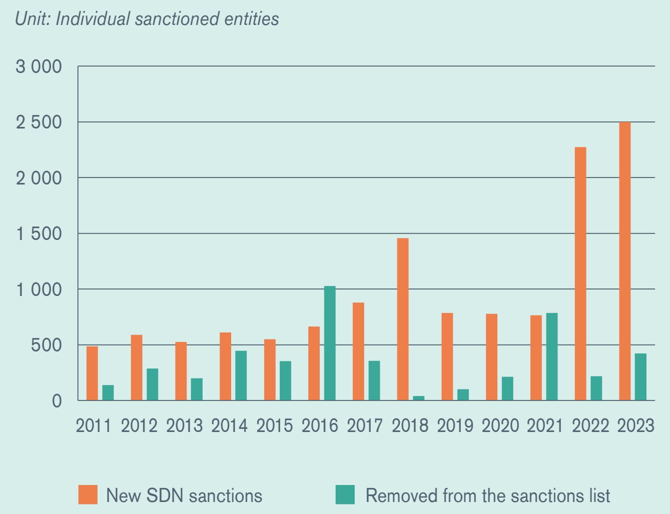
> It is precisely this effectiveness that has catalyzed the formation of what can be termed a "coalition of the unwilling" – countries actively seeking to reduce their vulnerability to dollar-based sanctions.

## Increase in Specially Designated Nationals (SDNs) Sanctions

Chinese firms and subsidiaries, and geographic divisions including Hong Kong counted as a single entity




### New SDN sanctions, 2011-2023




Source: Enodo Economics, US Dept of Commerce, Center for a New US Security

***The more sanctions the US imposes, the more countries... will seek financial transaction methods that do not involve the US dollar",*** then-US-Treasury Secretary Janet Yellen warned in July 2024. [5]

The US's willingness to deploy comprehensive financial sanctions has elevated de-dollarization to a strategic imperative for China. Although China is the world's second-largest economy, its financial autonomy continues to be limited by its reliance on the dollar. This vulnerability is particularly acute given China's growing energy needs and reliance on dollar-denominated oil markets.

Dollar dependency presents a notable challenge to China's aspirations as a global superpower. For example, US sanctions pressured China's financial institutions to reduce interactions with Russian counterparts, despite Beijing's political alignment with Moscow, [6 7] highlighting the constraints dollar reliance imposes on China's foreign policy flexibility.

For decades, China has had to navigate around US sanctions on Iran, in many ways the poster child for US sanctions regimes. It has done so more effectively and more blatantly than European countries, but it has still steered clear of outright defiance.

The potential impact of sanctions becomes even more significant when considering the possibility of a military conflict involving Taiwan, a scenario that remains a key area of speculation in discussions about China's strategic planning. US lawmakers have explicitly threatened sanctions in response to any direct attack by China on Taiwan. Former US house representative Mike Gallagher's proposed legislation promising "crippling and comprehensive economic sanctions" should China attack Taiwan underscores how dollar dependence constrains China's strategic options in its immediate security domain. [8]

Sanctions concerns have spread to US's traditional allies and partners. The case of Saudi Arabia is particularly instructive. Following the killing of Washington Post columnist Jamal Khashoggi, President Biden threatened to make Riyadh "the pariah that they are." [9] While relations subsequently improved, the episode demonstrated how quickly financial leverage could be deployed even against longtime strategic partners.

Saudi anxiety is well-founded. Its vulnerability to US financial pressure is arguably greater than Russia's, given that its entire economy is tied to dollar-denominated oil trade. As the International Institute of Strategic Studies, a UK-based think tank with in-depth expertise in the Middle East, noted in 2024:

> ***The Saudis are concerned that Washington's no-holds barred approach to targeting Russia's economy could end up threatening any country, including their own, that relies on the US-led financial system."*** [10]

This realization has also pushed the Gulf states to explore alternatives to complete dollar dependence.

The current challenge to dollar dominance, unlike previous episodes, stems not from the system's weakness but from its

strength – and the growing concerns of a diverse coalition of states about the system's reach and their desire to develop alternative arrangements.

BOX 4.2

## The Coalition of the Unwilling

1. **Strategic Competitors:** China, Russia and Iran view dollar dependence as an unacceptable constraint on their geopolitical autonomy.
2. **Pragmatic Hedgers:** Saudi Arabia and the UAE maintain strong US ties but seek to reduce their vulnerability to financial pressure.
3. **Regional Powers:** India and Brazil see reduced dollar dependence as aligned with their aspirations for greater strategic autonomy.
4. **Collateral Participants:** Countries like Turkey, Pakistan, and Bangladesh that seek to insulate their economies from US sanctions on major trading partners.

The anti-sanction "coalition of the unwilling" represents a novel development in international monetary politics. Unlike previous challenges to dollar dominance, which typically came from individual countries or small groups of ideologically aligned states, today's coalition encompasses a broad spectrum of nations with diverse motivations.

What makes this coalition particularly significant is not just its breadth but its capacity for action. Technological innovations in cross-border payments, particularly through the e-CNY and mBridge platform, combined with China's economic heft, provide practical alternatives that are cheaper and more efficient than traditional payment methods (see Chapter 3). The participation of major energy exporters like Saudi Arabia adds crucial weight to these efforts.

However, these countries remain cautious about overreliance on any single financial system, given China's potential to weaponize economic access in pursuit of its interests, much like the Western precedent they seek to hedge against. As a result, many countries are likely to pursue a balanced approach, maintaining access to both Chinese and Western financial architecture to maximize their strategic autonomy.

# 4.3 Unintended Consequences of Financial Dominance

The weaponization of dollar dominance has triggered countervailing forces, as highlighted by warnings from former US Treasury Secretary Janet Yellen.

> The aggressive use of sanctions may ultimately (and ironically) undermine their effectiveness by accelerating the development of alternative financial channels.

Of course, the weaponization of the dollar-based financial system is not the sole driver of de-dollarization efforts. Long before the recent expansion of financial sanctions, many countries harbored deep concerns about the structural implications of dollar dominance for their economic sovereignty and development prospects. The aggressive use of sanctions has merely brought to the surface the tensions underlying the international monetary system.

These concerns operate on multiple levels, from fundamental questions of monetary fairness to practical challenges of economic management. A 2023 white paper by China's Ministry of Foreign Affairs crystallized many of these arguments, particularly the fundamental inequity of seigniorage – the fact that while it costs the US mere cents to produce $100, other nations must trade real goods and services of equivalent value to obtain the same dollars. [11] This critique resonates well beyond China's borders, especially among developing economies like Brazil.

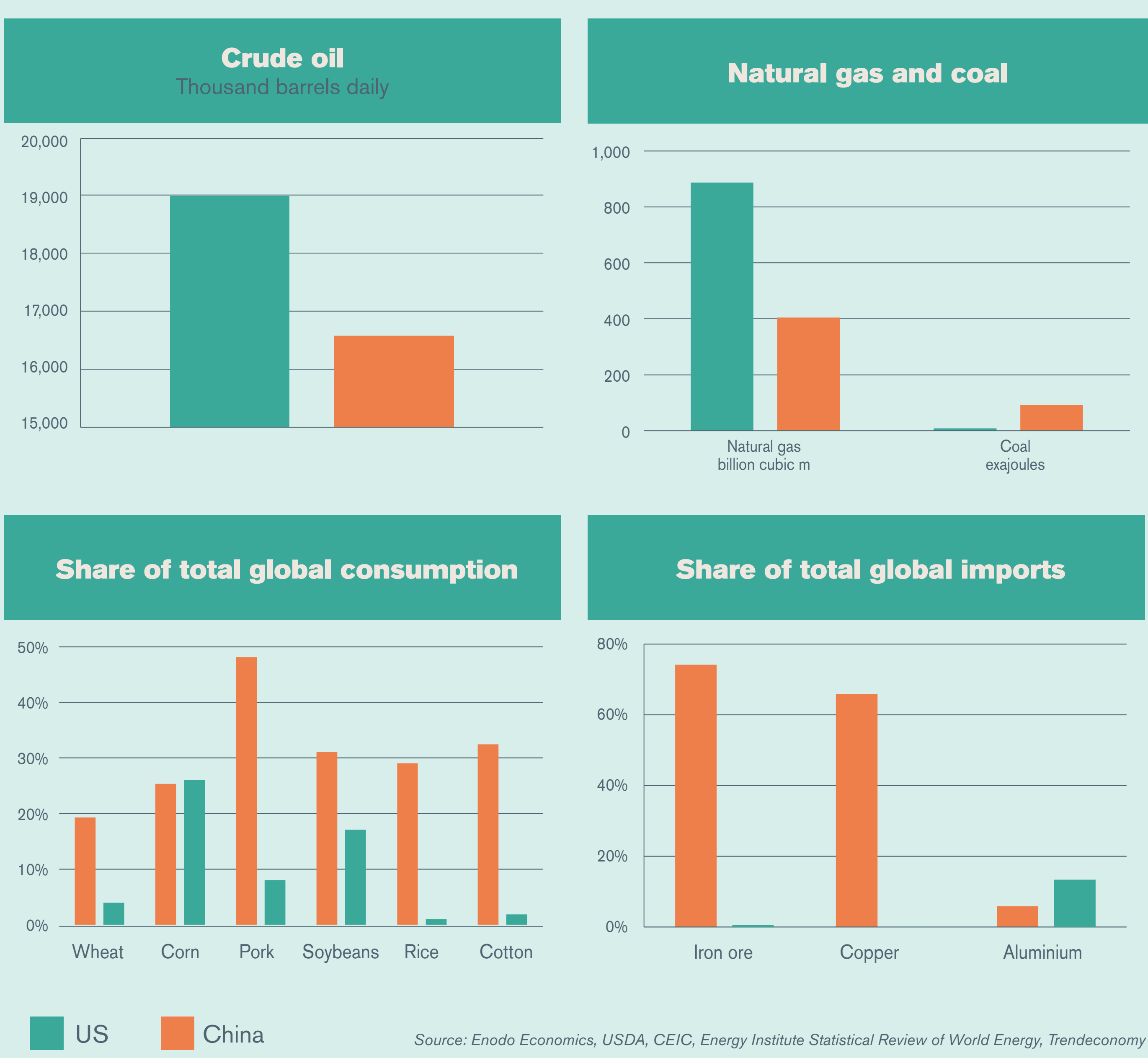
The distortionary effects of dollar dominance are evident in two key areas: commodity trade vulnerabilities and monetary policy transmission.

## Commodity trade vulnerabilities

For commodity-exporting nations, dollar dominance creates systemic vulnerabilities that extend far beyond their direct economic relationship with the US. Dollar-denominated commodity trading originally reflected US's position as the world's largest commodity consumer, but now China is the largest consumer of many key commodities. There is a growing disconnect between economic fundamentals and the prevailing financial architecture. This misalignment between physical trade flows and financial settlement patterns creates stress in the current system (see Chapter 7 for more).

Brazil provides a telling example of this disconnect: while only 13% of its trade is with the US, 95% of its export invoicing is conducted in dollars. [12] With commodities priced in dollars accounting for two-thirds of total exports, [13] Brazil's economic fortunes are disproportionately tied to dollar fluctuations rather than underlying trade fundamentals.

Brazil's approach to reducing this vulnerability illustrates the complex calculations facing commodity exporters. Brazilian President Luis Inácio "Lula" da Silva has been one of the most vocal advocates for de-dollarization, questioning during his April 2023




*Source: Enodo Economics, USDA, CEIC, Energy Institute Statistical Review of World Energy, Trendeconomy*

visit to China ***"why all countries are forced to do their trade backed by the dollar,"*** but Brazil's actual policy moves have been more measured. [14] In October 2024, Brazil decided against formally joining China's BRI, instead seeking what one presidential adviser described as "synergy between Brazilian infrastructure projects and the investment funds associated with the initiative." [15] This careful balancing act – criticizing dollar dependence while maintaining strategic flexibility – reflects how even vocal critics of the dollar system must navigate between reducing vulnerabilities and maintaining access to existing financial networks as the US defends the position of the dollar.

As the world's largest oil exporter, Saudi Arabia faces the most complex strategic calculations. The Kingdom's position is particularly precarious due to its triple exposure of dollar-denominated oil sales, massive dollar-denominated reserves, and a currency pegged

to the dollar. Even more than Brazil, Saudi Arabia's entire economic model is structurally tied to the dollar system.

This financial relationship with the dollar exists in tension with evolving economic and geopolitical realities. China has become Saudi Arabia's largest oil export market, but the Kingdom continues to rely on US security guarantees. These cross-cutting pressures are further complicated by Saudi Arabia's ambitious diversification agenda, which aims to reduce oil dependence through technological modernization and economic restructuring. This multifaceted situation helps explain why Saudi Arabia has begun exploring alternative payment arrangements while carefully maintaining its traditional dollar linkage.

## Monetary policy transmission

The second major distortion stems from the dollar's dominance in international lending markets. When the US Federal Reserve adjusts interest rates in response to US domestic conditions, the effects reverberate globally through dollar-denominated debt channels, often causing significant challenges for developing economies. The impact of the Federal Reserve's 2022 interest rate hikes provides a stark illustration of these consequences.

By 2023, 23% of emerging and developing countries faced borrowing costs 10 percentage points higher than US rates, up from just 5% in 2019, according to World Bank data. The resulting surge in debt servicing costs relative to government revenues reached levels not seen since 2010, prompting World Bank Deputy Chief Ayhan Kose to characterize the situation as a "nightmare" and a "silent debt crisis." [16]

Beijing is acutely aware of the debilitating effects of the Asian financial crisis of the late 1990s on the Southeast Asian "tigers", and has structured its currency controls to avoid sudden outflows or speculative trading. [17] It is determined to reduce its vulnerability to dollar-based financial systems. In a 2023 white paper, Beijing accused the US of plunging developing countries into "high inflation, currency depreciation and capital outflows." [18]

Structural concerns about dollar dominance have converged with three factors that make meaningful change possible:

1. **Technological Innovation:** China's breakthroughs in digital currency and cross-border payment systems could provide practical alternatives that were previously either unavailable or expensive. Systems like mBridge demonstrate that better alternatives to dollar-based infrastructure are technically feasible.

2. **Economic Scale:** China's economy alone provides sufficient scale to support an alternative payment infrastructure, while the participation of other major emerging economies will add the critical mass that enable such systems to be adopted multilaterally.

3. **Political Will:** The potency of financial sanctions has motivated US partners as well as adversaries to explore alternatives to complete dollar dependence.

> Unlike previous, largely rhetorical, episodes of dollar criticism, today's challenge is backed by both the technical means, the economy of scale and the political determination to create functional alternatives.

The unintended consequence of US financial dominance has been to accelerate developments that could ultimately constrain that dominance. By demonstrating both the power of dollar-based sanctions and the structural vulnerabilities created by dollar hegemony, the US has inadvertently made the case for creating alternatives.

## 4.4 Why This Time is Different

Predictions of the dollar's decline are a recurring feature of international monetary discourse. Since the end of the Cold War, critics have regularly questioned the sustainability and fairness of dollar hegemony. As early as 1999, Chinese officials argued that

> ***"The role of international reserve currency played by a few countries' national currency has been a major source of instability in the international monetary system."*** [19]

During the Cold War, the Soviet bloc's limited integration into the global economy meant that the ruble and dollar effectively circulated separately, in two parallel spheres. Despite Japan's attempt to maintain the yen's importance in international gas contracts and certain commodities markets, the yen's role has waned since the Japanese economy lost its outsize role.

The euro's emergence in the early 2000s represented a more substantial challenge, as its growing role in international debt issuance and reserve holdings prompted speculation about a new bipolar currency order. However, the 2008 financial crisis ended such speculation, once the Federal Reserve's aggressive provision of dollar liquidity through swap lines actually reinforced dollar dominance through an explosion in dollar-denominated borrowing. [20] The subsequent euro-crisis revealed the fragility of the euro-zone's monetary regime.

> Today's challenge, led by China, is more measured. Beijing's immediate goal appears to be creating viable alternatives for international trade settlement and specific financial functions.

This targeted approach, focused on reducing specific vulnerabilities rather than wholesale dollar replacement, may prove more sustainable than previous challenges. The current challenge to dollar hegemony has three distinguishing factors:

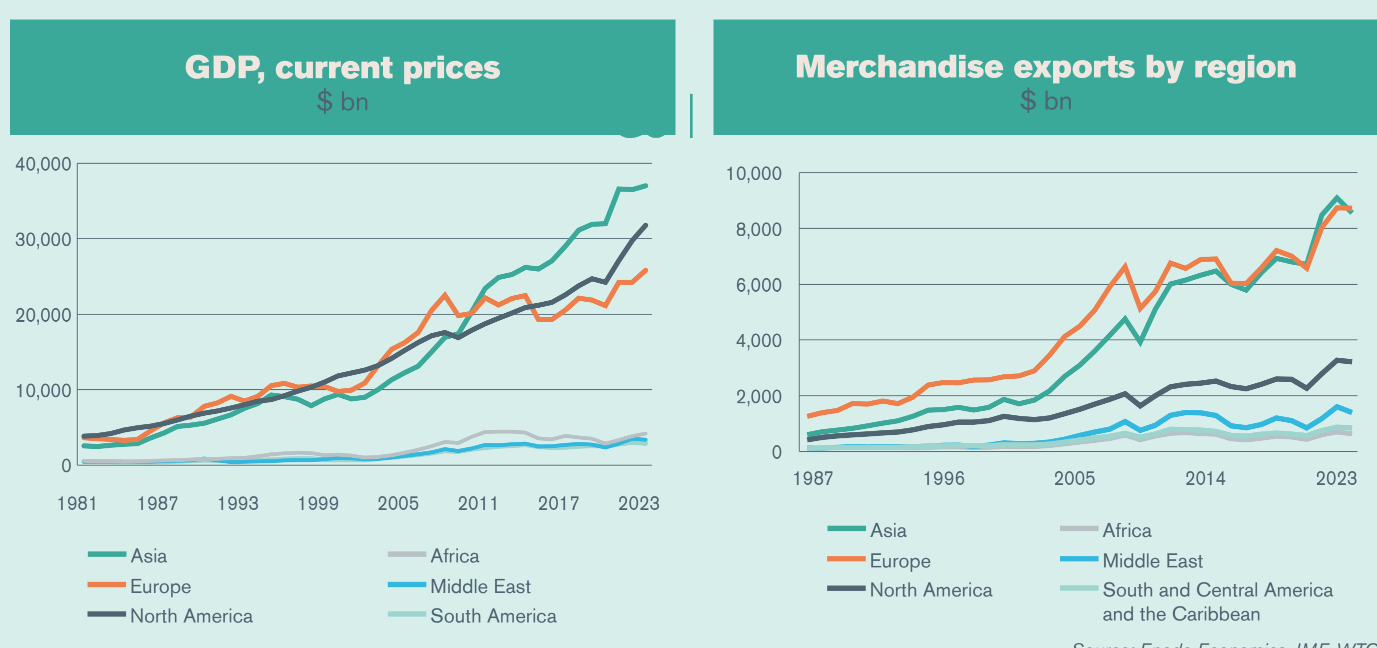
## Convergence of capability, necessity and strategic intent

Unlike in previous periods, today's challenge to dollar dominance comes from countries that not only need to reduce their dollar exposure but also have the economic power to do so. The key distinction lies in both capability and strategic intent. While the euro represented a challenge from within the US-led alliance system, today's primary challenge, led by China, comes from outside this system. China aims to reshape the international order to better align with its strategic interests and to mitigate what it perceives as systemic vulnerabilities in the US-dominated financial system.

This targeted approach is reflected in how China is leveraging its economic influence. As the top trading partner of over 120 countries, China has unprecedented ability to promote alternative payment arrangements in international trade. In 2024, 52% of China's international trade was settled in yuan, demonstrating the practical feasibility of de-dollarization in specific domains while accepting continued dollar dominance in others (see the charts in Chapter 2).

> This pragmatic approach, focused on reducing specific vulnerabilities rather than competing for global currency supremacy, may prove more sustainable than previous challenges to dollar dominance.

It aligns with China's broader vision of reforming the international financial system to better accommodate its rise as a great power, while recognizing that complete displacement of the dollar remains neither feasible nor necessary at this stage.




Source: Enodo Economics, IMF, WTO

## Shifting global economic center of gravity

The broader shift in global economic activity toward Asia has created momentum for de-dollarization that extends beyond countries directly threatened by US sanctions. This momentum is perhaps best exemplified by the evolution of BRICS – originally a Goldman Sachs acronym for Brazil, Russia, India, China, and South Africa – into an influential forum that positions itself as an alternative to the G7, amplifying the voice and interests of the non-Western world.

> Even nations without immediate fears of dollar weaponization are exploring alternatives, driven by pragmatic considerations about their economic futures.

India was initially reluctant to support BRICS-led de-dollarization initiatives, but it has begun promoting the international use of the rupee, driven by concerns about falling behind China's currency internationalization as well as by practical issues with dollar-based oil payments since 2018. [21] The Reserve Bank of India's instruction to smaller Indian banks to prepare for a multi-currency world signals a broader recognition that the international monetary system is in transition.

More tellingly, traditional US allies are also hedging their positions. The UAE's participation in the mBridge digital currency project, along with Thailand and now Saudi Arabia, demonstrates how countries are pragmatically exploring alternatives to dollar-based payment systems while maintaining their security relationships with the US.

Russia's forced de-dollarization has served as both a warning and catalyst for other nations. JP Morgan estimates that 20% of global oil is now traded in non-dollar currencies, primarily the yuan, representing a significant shift in a crucial market. [22]

## Technological innovation and infrastructure development

The potential for viable and more cost-effective technological alternatives to traditional dollar-based payment systems is the third and perhaps most crucial difference from previous challenges to the dollar. China's breakthroughs in digital currency and distributed ledger technology could provide practical solutions to long-standing problems in international payments, as we saw in Chapter 3.

> The BRICS grouping, despite its members' differences, has evolved into a forum for developing alternative financial infrastructure.

While the BRICS may lack the cohesion to develop a comprehensive alternative to dollar-based systems, individual member initiatives are creating components of a potential

alternative financial architecture. These efforts are particularly significant in combination with China's technological innovations in digital payment systems. [23]

## How BRICS Countries Compare in Population and Economy

Population, GDP, and exports as a share of the world for BRICS countries as compared to the US and Europe

| | Population | GDP | Exports |
|---|---|---|---|
| India | 18% | 3% | 3% |
| China | 18% | 17% | 11% |
| Indonesia | 3% | 3% | 1% |
| Brazil | 3% | 2% | 1% |
| Russia | 2% | 2% | 2% |
| Ethiopia | 2% | 0% | 0% |
| Egypt | 1% | 0% | 0% |
| Iran | 1% | 0% | 0% |
| South Africa | 1% | 0% | 0% |
| UAE | 0% | 0% | 1% |
| Saudi Arabia* | 0% | 1% | 1% |
| Europe | 6% | 17% | 31% |
| US | 4% | 26% | 10% |

*As of end-2024 Saudi Arabia had not yet replied formally to its invitation to join.

Note: Data is for 2023

*We recognize the widespread benefits of faster, low cost, more efficient, transparent, safe and inclusive cross-border payment instruments built upon the principle of minimizing trade barriers and non-discriminatory access. We welcome the use of local currencies in financial transactions between BRICS countries and their trading partners,"* [24]

The BRICS Kazan Declaration, October 2024

Conditions now exist for meaningful de-dollarization that were absent in previous post-World War II challenges. However, this doesn't suggest an imminent collapse of dollar dominance. Rather, we are likely to see an accelerating erosion of dollar usage in specific domains, particularly in international trade settlement and cross-border payments.

The process will be neither linear nor uniform. As with Brazil's recent decision to hedge on the BRI, countries will carefully balance reducing dollar vulnerability with maintaining access to existing financial networks. Similarly, Saudi Arabia's careful positioning, explored next in Chapter 5, shows how even those countries actively exploring alternatives remain mindful of their broader strategic relationships.

The development of alternative payment systems and digital currencies provides a technical foundation for de-dollarization that previous challenges lacked. The real test will be whether these systems can achieve network effects sufficient to create viable alternatives to the dollar-based infrastructure. The oil trade will be a crucial bellwether for this transition.

## In conclusion

The current moment is unique, not just because countries are willing and able to challenge the dominance of the dollar, but because their efforts converge with broader structural changes in the global economy and technological breakthroughs in financial infrastructure. While the dollar's position as the dominant global reserve currency may persist, its role in international trade and payments could diminish more rapidly than many anticipate.

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5

# The Gulf's strategic pivot

ASIA SOCIETY POLICY INSTITUTE / Center for China Analysis

## 5.1 Introduction

The Gulf states stand at the intersection of multiple transformative forces reshaping the global economic order. As key energy exporters and financial hubs, their strategic choices will play an outsized role in determining the pace and extent of global de-dollarization. Yet their evolving geopolitical alignments reflect economic and technology imperatives that are reshaping their societies.

The Gulf states are adapting their economic and security frameworks – historically based on hydrocarbon exports, dollar-denominated trade, and security cooperation with the US – in response to evolving global conditions while maintaining key elements of existing relationships. Demographic shifts, the global energy transition, the technology revolution and the emergence of new economic powers are forcing a fundamental rethinking of development strategies. These domestic imperatives coincide with China's quest for energy security and its technological progress, including digital innovation.

> While Gulf states are currently carefully balancing between the US and China, the emerging bifurcation of global technological systems may ultimately force harder choices.

The infrastructure of digital finance and trade – whether US or Chinese-led – creates lasting dependencies that are difficult to unwind. What began as pragmatic engagement with both systems could evolve into technological lock-in that shapes strategic alignment. Gulf states' involvement in initiatives like the mBridge digital currency platform offer immediate practical benefits but also create technological dependencies in an increasingly bifurcated global financial architecture.

The Gulf's evolving position offers crucial insights into how economic imperatives and technological innovation are reshaping traditional security relationships.

> These states may seek to maintain strategic autonomy by engaging with both US and Chinese systems, but the practical reality of technological integration may ultimately require more decisive alignment with one sphere or the other.

This chapter examines how domestic imperatives intersect with changing international dynamics to reshape Gulf states' strategic choices. First, we analyze the structural forces compelling economic transformation, particularly in Saudi Arabia. Second, we explore how Gulf states are recalibrating their relationships with both the US and China. We examine their broader diplomatic repositioning as they build new partnerships while maintaining existing alliances. Finally, we assess their pioneering role in digital currency experiments and what this reveals about the future of regional financial architecture in the Gulf.

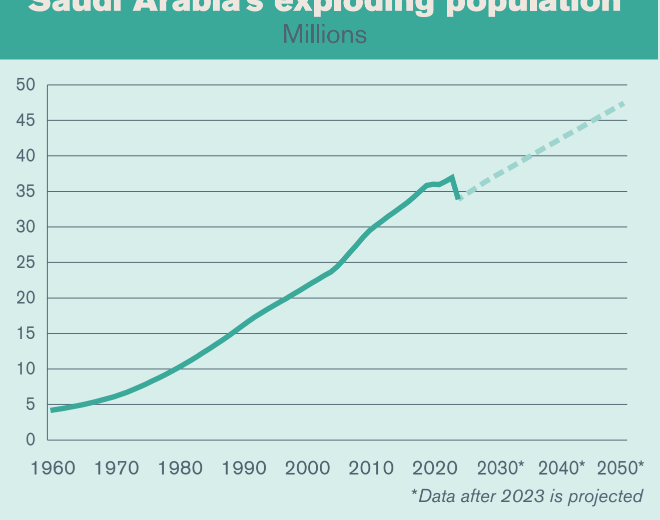
# 5.2 Saudi Arabia and Gulf States' Economic Transformation Imperatives

The Gulf states' pursuit of economic transformation stems from an urgent set of structural challenges. Hydrocarbon wealth has historically provided both economic prosperity and geopolitical influence, but demographic pressures and the global energy transition are forcing a fundamental rethink of development models across the region.

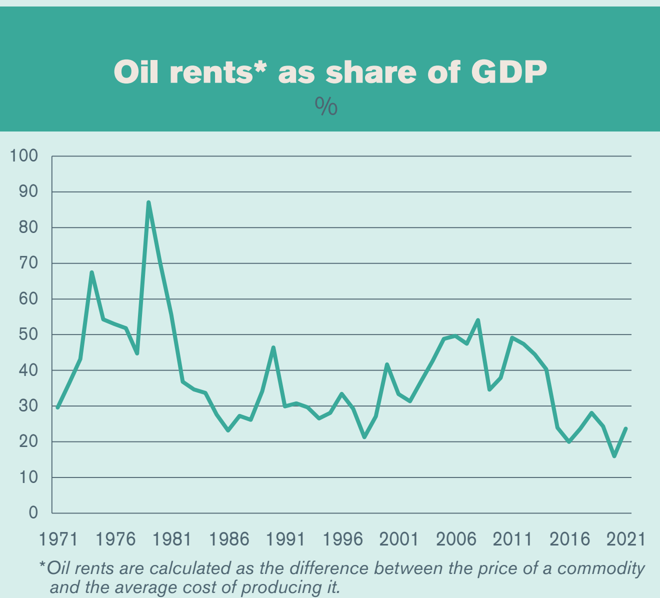
For Saudi Arabia, the region's largest economy, this transformation carries particular urgency. With over 60% of the population under 30, the traditional model of public sector employment and hydrocarbon-funded benefits is increasingly unsustainable. The growing youth population requires more jobs than the public sector can provide, while the global shift toward renewable energy threatens the long-term stability of its hydrocarbon revenues. [1] This challenge coincides with accelerating global shifts away from fossil fuels, leaving a narrow window for transformative change.

> The Gulf states' economic transformation programs share common themes: diversification beyond hydrocarbons, technological innovation, and the development of knowledge-based economies.

## Saudi Demographics and Dependence of the Economy on Oil Exports

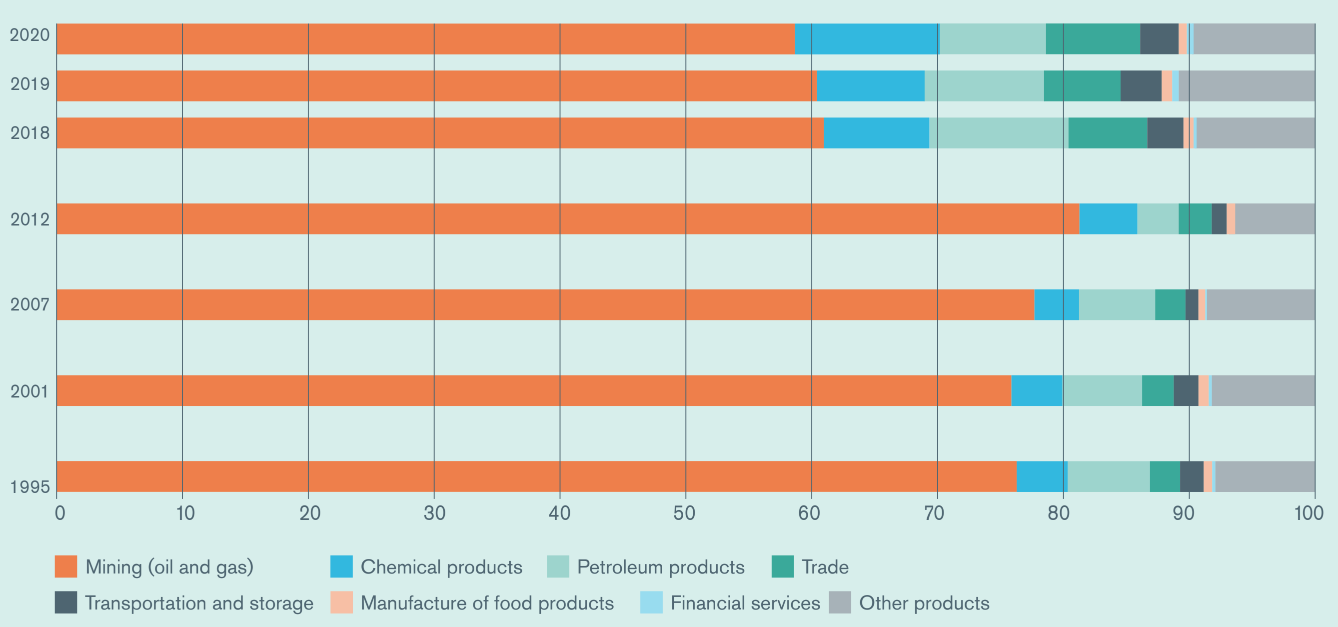


*Data after 2023 is projected



*Oil rents are calculated as the difference between the price of a commodity and the average cost of producing it.

Source: Enodo Economics, World Bank




Saudi Arabia's Vision 2030 represents the most comprehensive of these efforts, targeting fundamental shifts in the Kingdom's economic structure. [2] Parallel initiatives in the UAE – Dubai's Vision 2021 & 2030, Abu Dhabi's Economic Vision 2030, and the national We the UAE 2031 [3] – emphasize the emirates' technological and finance ambitions.

## Ambitious Blueprints

### Saudi Arabia's Vision 2030[1]

*Announced in April 2016*

- Increase the private sector's contribution to GDP from 40% to 65% (2024: 41%)
- Expand non-oil exports' share of GDP from 16% to 50% (August 2024: 29.3%)[2]
- Grow non-oil government revenue to SR1trn (May 2024: SR111.51bn)[3]
- Developing new strategic sectors including renewable energy, technology, and advanced manufacturing

*The Saudi government reported in early-2024 that 87% of Vision 2030 milestones have been completed or are on track.*[4]

### We the UAE 2031[5]

*Announced in January 2023*

- Double GDP to AED3trn (2023: AED1.88trn)
- Raise non-oil exports to AED800bn ($216bn) (2023: AED441bn)
- Aim to be a top 10 country in Human Development Index globally (2022: 17)
- Develop key national sectors including the digital economy, information and communications technology, financial technology and logistical services

Three critical characteristics shape these transformation programs:

- **State-directed strategic planning:** The Gulf's approach to economic transformation mirrors China's state-led development model more than Western market-driven approaches. Saudi Arabia's Public Investment Fund (PIF), for instance, has been reimagined as a strategic development vehicle, tasked with "unlocking new sectors" and "localizing advanced technology." [4] This shared reliance on government-led strategic planning frameworks enables smooth cooperation between Chinese state entities and their Saudi counterparts, as both have similar institutional approaches. The PIF has partnered with Chinese state-owned enterprises in digital infrastructure and renewable energy.

- **Technological hedging and leadership:** The Gulf states employ a strategy of leveraging both Western and Chinese capabilities, selecting partnerships based on the respective strengths of each. While US firms maintain clear leadership in AI and machine learning, cloud infrastructure, semiconductor design, cybersecurity, and advanced software development, Chinese companies are strongly competitive in telecommunications, renewable energy manufacturing, new energy vehicles, digital infrastructure buildout and mobile payment platforms and budding technologies like DLT. While maintaining deep integration with Western financial systems, Gulf states are strategically exploring Chinese financial innovations exemplified by platforms like mBridge.

- **Human capital:** The imperative to develop local talent and create meaningful private sector employment has started to erode the Gulf's traditional focus on the West for higher education. While elites still flock to prestigious Western schools, Chinese institutions provide technical training, expertise in industrial implementation, and a state-led, sector-focused approach that aligns closely with the Gulf states' goal of cultivating a robust middle class of engineers capable of efficiently executing industrial projects.

> China's new heft as an oil consumer combined with its advances in renewable energy, digital finance and other strategic sectors create powerful incentives for deeper cooperation, even if that potentially complicates its relationships with traditional Western partners.

The technological choices Gulf states make today go beyond immediate practical benefits, and may shape their strategic options for decades to come. The specific appeal of Chinese innovation in cross-border payments is just one element in this broader technological diversification, but it carries significant implications for the global financial architecture of the future.

Gulf states have a sophisticated understanding of their needs. They seek to leverage the best capabilities from each partner while maintaining strategic autonomy, rather than making a binary choice between US and Chinese systems. However, this careful balancing act may become increasingly difficult to maintain as technological systems and standards diverge.

# 5.3 The Changing Calculus: US Security Guarantee Under Strain

The Gulf states' pursuit of economic transformation is unfolding against a backdrop of shifting geopolitical realities. Where once they would have confidently pursued renewal within the framework of a US-led military and financial order, they now face a more complex strategic environment.

> US's increasing focus on strategic competition with China and its achievement of energy independence have reshaped its relationships with the Gulf states. Once balanced by strong economic interdependence, these partnerships have become more politically oriented, reflecting a shift toward geopolitical alignment rather than shared economic reliance.

The US security guarantee to the Gulf, anchored by Saudi Arabia's 1975 security-for-oil arrangement, has been a cornerstone of regional stability. [5] However, US's newfound energy independence – thanks to shale gas – has fundamentally altered its strategic calculus. As the perceived "China threat" intensifies, the US has increasingly shifted its military focus and resources toward the Indo-Pacific region to counter China's expanding influence. This pivot has come at the expense of its traditional commitments in the Gulf, signaling a strategic realignment that prioritizes security concerns in the Asia Pacific over maintaining its historical military presence in the Middle East overall. Consequently, Gulf states are reassessing their reliance on US security guarantees in light of this evolving focus.

BOX 5.1

## The Shale Effect

Shale oil *"affords Washington a stronger hand in pursuing and implementing its international security goals"; … reduced imports "do not mean the US can or should disengage from the Middle East or the world."*

US National Security Advisor Tom Donilon, 2013 [1]

More shale oil production would *"strengthen our hand in foreign policy."*

US Secretary of State Mike Pompeo, 2019 [2]

Shale production from the US *"has reshaped energy markets both domestically and around the world."*

International Energy Agency, 2019 [3]

Shale oil and gas *"vaulted the US back to the top of the table in terms of geopolitical significance."*

Former US State Department's Special Envoy and Coordinator for International Energy Affairs (2009-2011) and Assistant Secretary of Energy for International Affairs (1999-2001) David Goldwyn, 2024 [4]

> Gulf capitals increasingly perceive US commitment to the region as wavering, a perception reinforced by a series of actions that have disrupted long-held regional balances.

These include the reduction of US missile defense systems in the Gulf region, the Obama administration's ground-breaking Iran deal (repudiated by the first Trump administration), and the perception that the US' responses to the 2019 attacks on Aramco oil processing facilities and the 2022 Houthi attacks on Abu Dhabi were muted at best. [6] [7] The chaotic US withdrawal from Afghanistan in 2021 further reinforced impressions of declining US military presence.

Gulf states are also wary of the US' increased emphasis on human rights in diplomatic relations. Rhetoric on human rights varies significantly between Democratic and Republican administrations. Nevertheless, it reinforces the Gulf states' perceptions that US's security commitment is becoming increasingly conditional.

> ***In our judgement, Vision 2030… will be a much more successful effort if Saudi Arabia is the most attractive place possible for people around the world to come to. And so I think it's on its own merits and in Saudi Arabia's interests to continue to pursue this modernization, including the expansion of human rights,"***

US Secretary of State said during his June 2023 visit to Riyadh. [8]

BOX 5.2

## Saudi Arabia on US versus Chinese Engagement with Iran

The Obama administration's Joint Comprehensive Plan of Action (JCPOA) with Iran cast a long shadow over Saudi-US relations. Saudi officials have routinely denounced US outreach to Iran as undermining regional security, while accepting China's much deeper engagement with their regional rival.

Saudi Arabia *"stresses the dangers of Iran's regional project, its interference in other countries, its fostering of terrorism… and calls for a decisive stance from the international community against Iran that guarantees a drastic handling of its efforts to obtain weapons of mass destruction and develop its ballistic missiles program,"* said Saudi King Salman bin Abdulaziz Al Saud in November 2020. [1]

The Gulf has seen *"as a result of the aftereffects of the JCPOA that not involving the regional countries results in a build-up of mistrust and neglect of the issues of real concern and of real effect on regional security,"* remarked Saudi Foreign Minister Prince Faisal bin Farhan, Saudi foreign minister, in November 2020. [2]

*"We need to be reassured about US commitment,"* Prince Turki al Faisal, former intelligence chief and ambassador to the US, said in August 2021, following the US' withdrawal of Patriot missiles from Saudi Arabia. [3] In March 2023, after the Saudi-Iran deal to re-establish diplomatic relations, he further noted, *"China was the one that could pull it off because it has good relations with both of us."* [4]

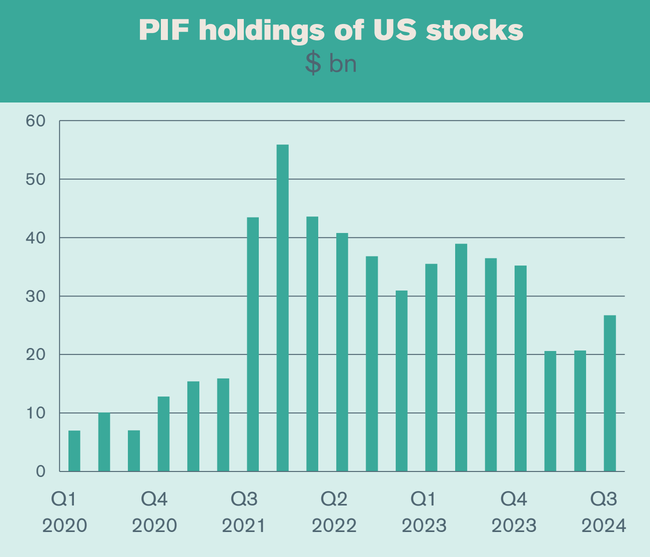
> Rhetoric on human rights varies significantly between Democratic and Republican administrations. Nevertheless, it reinforces Gulf perceptions that US's security commitment is becoming increasingly conditional.

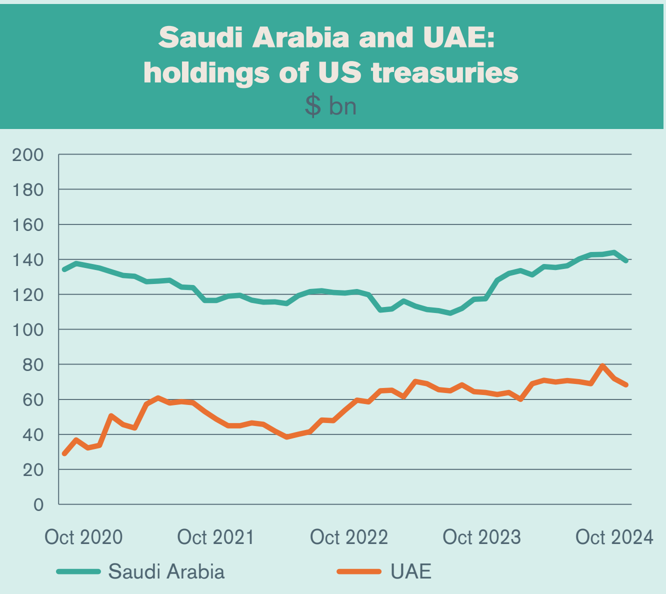
The Ukraine war has further strained US-Saudi ties. Diverging interests in oil production and pricing highlight the growing gaps between the two nations' priorities. And Riyadh has also remained willing to engage with Moscow: it has refused to join international sanctions against the Russian economy and hosted Putin for a state visit in December 2023. [9]

Saudi hedging between Russia and the US has provoked an occasionally furious response from the US, which has tolerated other clear policy difference in their bilateral relations. In response to the Saudi-Russian joint decision to cut oil production in October 2022, Biden pledged that "there will be consequences" for Saudi actions – though few came to public light. [10] The UAE too has emerged as a crucial partner for Russia, with its sovereign wealth funds diversifying into Russian industry and maintaining important ties post-2022. [11]

So far, both sides have carefully managed tensions while maintaining core commitments. The US military presence in the Gulf remains substantial, with approximately 40,000 personnel stationed at key naval and air bases. [12] Gulf states depend heavily on US military equipment and training. Beyond security, deep cultural and economic ties persist, and Gulf states continue to direct most of their foreign investment toward US markets. Saudi Arabia's PIF invested more than $100bn in the US between 2017 and 2023. [13]

## Saudi Arabia's Investment in US Assets




*Source: Enodo Economics, SEC, Argaam*

Recent regional security challenges further highlight the continued strategic relevance of US-Gulf cooperation.

Israel's widening conflict in Gaza and now in Lebanon, the collapse of the Assad regime in Syria, and Iran's increasing belligerence underscores the need for cooperation between Washington and Riyadh and reinforces the strategic importance of the US-Saudi alliance as a regional counterweight. China's growing economic and political influence in the Gulf has compelled the US to reassess its diminished security commitment and reinforce its longstanding alliances in the region. [14]

Moreover, the shale revolution that convinced the US that it didn't need the Saudis is fading. Output is declining due to reduced investment, mounting financial losses, and growing decarbonization pressures. [15] Alternative oil sources like Venezuela or Russia are off the table, due to political as well as fundamental reasons. This has forced Washington to re-engage in the Gulf at a time when Beijing's influence is ascending. [16]

Negotiations over a renewed US-Saudi security deal in 2024 included formal US defence guarantees, more advanced weaponry and information on emerging technologies such as artificial intelligence, in return for Saudi Arabia limiting its arms purchases and investments from Beijing.[17] However, the deal was never sealed. Saudi Arabia reportedly dropped the deal due to an increase in anti-US public sentiment caused by the latter's support for Israel, and will now pursue a smaller military cooperation deal with the new Trump administration. [18]

The new state of affairs conditioned by these changes means that the Gulf must strike a delicate balance between its traditional partners and new opportunities. This balance is best exemplified by Saudi Arabia and the UAE.

While their preference for renewed US security commitments remains clear – both would likely prefer to remain within the US sphere of influence – they are increasingly hedging their bets.

Both are now systematically expanding their ties with China across economic, financial, and diplomatic domains – and even venturing into military cooperation. This calibrated approach reflects both pragmatic necessity and strategic foresight as they navigate an increasingly complicated world.

# 5.4 The Promise: Economic Opportunity with China

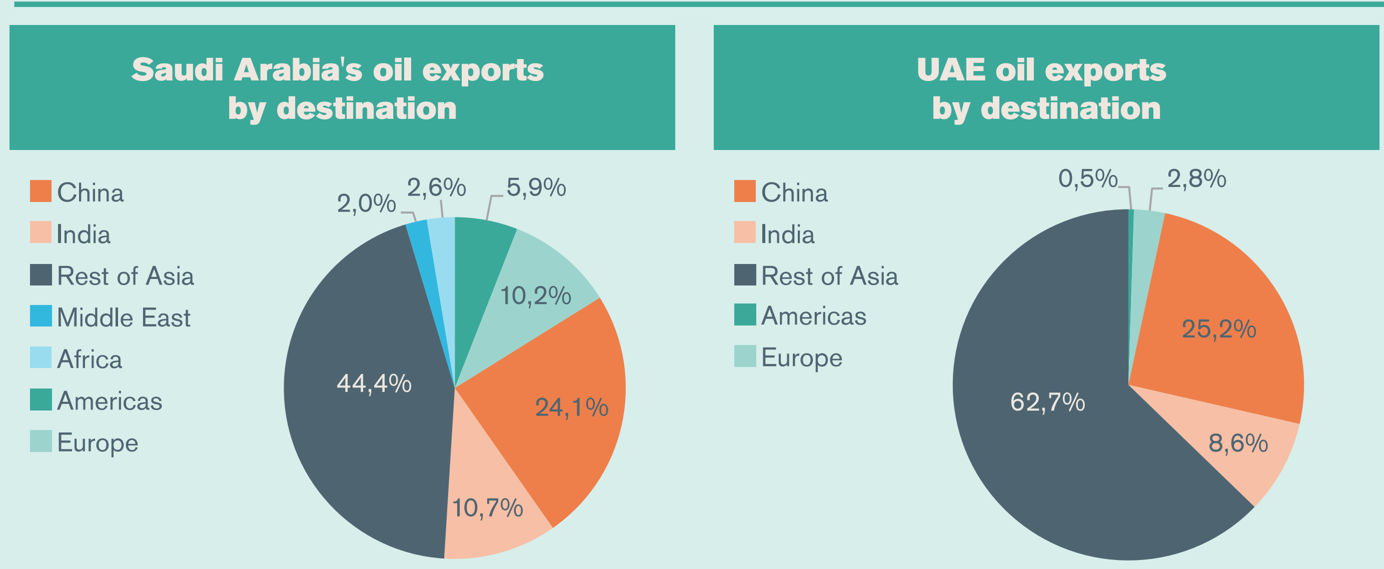
The Gulf states find themselves navigating an increasingly complex strategic calculus. On one side stands their longstanding security relationship with the US – strained but still fundamental to regional stability. On the other side lies the economic reality of China.

China is the primary purchaser of Gulf oil and is a global manufacturing and technology powerhouse. Under Xi Jinping, it has transformed itself from merely a major trading partner into a self-reliant technological superpower.

> China's industrial policy has established leadership in digital technology, renewable energy, and new energy vehicles – areas also prioritized in Saudi Arabia's Vision 2030 and the UAE's development plans for economic diversification.

This growing economic alignment builds upon a decade of careful diplomatic groundwork undertaken by Beijing. As its need for oil grew, Beijing has systematically deepened its political and diplomatic ties with Gulf states, creating the framework for today's expanding economic partnership. This has yielded rapidly expanding cooperation between the two sides, built on deepening integration between Chinese and Gulf enterprises, and growing investment flows from Gulf sovereign wealth funds into Chinese investments.

The ever-present oil industry is, of course, the primary vector of deepening Chinese investment, with Chinese state-owned oil and engineering firms playing a central role



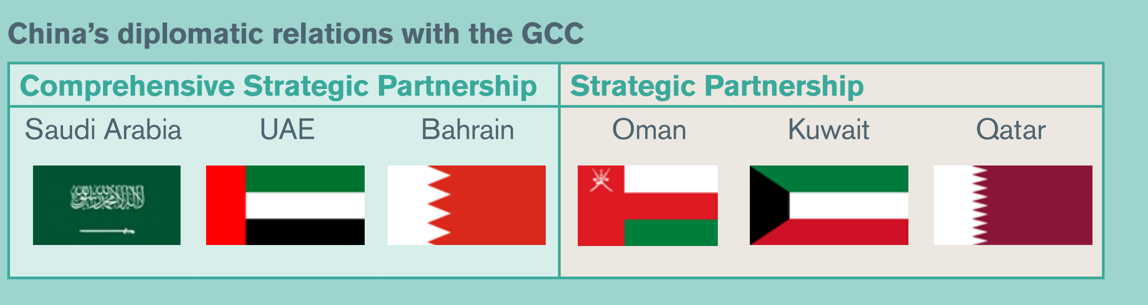

Source: Enodo Economics, CEIC

BOX 5.3

## China's Diplomatic Engagement with the Gulf

China's engagement with the Gulf dates back to the era of post-colonial diplomacy. In more recent times, outreach has evolved from Hu Jintao's 2004 visit to Arab League headquarters in Egypt, to a comprehensive strategic partnership – China's highest standard diplomatic designation – with three individual member countries of the GCC – Saudi Arabia, the UAE, and Bahrain, and a greater differentiation between its outreach with the broader Arab world and the Gulf itself.[1] China has wooed Gulf states without undermining its deep and long-standing ties with Iran, a feat that the US has failed to match.

**China's diplomatic relations with the GCC**



| Comprehensive Strategic Partnership | | | Strategic Partnership | | |
|---|---|---|---|---|---|
| Saudi Arabia | UAE | Bahrain | Oman | Kuwait | Qatar |

China's 2016 Arab Policy Paper identified Arab states as *"important partners in following the peaceful development path"* and outlined five cooperation areas: energy, finance and investment, innovation and technology, aerospace, and cultural exchange.[2] It emphasized shared views on UN reform, and non-interference in *"each other's social system and development path no matter what differences exist in ideology."*[3] In 2013, the Communist Party of China designated the Middle East as a *"neighbor region"*, signaling its elevation to a priority zone for engagement.[4]

State visits between China and the GCC have increased in frequency under Xi Jinping, resulting in a number of MoUs reflecting the Gulf states' desire for economic diversification.[5] The May 2024 China-Arab States Cooperation Forum updated cooperation frameworks, emphasizing innovation, energy beyond crude oil, and international financial infrastructure.[6]

China has worked to integrate Gulf states into its preferred multilateral frameworks, including extending BRICS membership invitations to Saudi Arabia and the UAE. However, only the UAE accepted, with Saudi reluctance a clear example of its overall hedging strategy.[7]

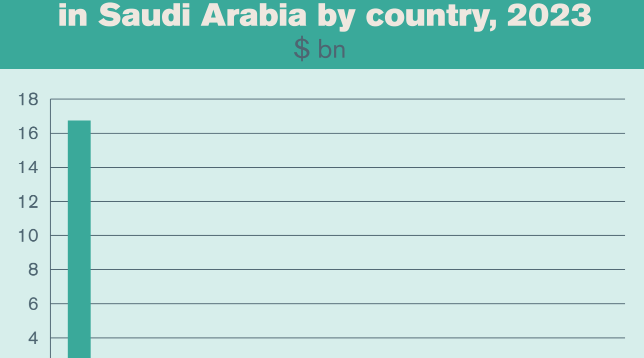
China has also billed itself as a mediator in regional conflicts, including interventions to restore Saudi-Iranian diplomatic communications and an attempt to broker an end to Israeli-Palestinian hostilities in July 2024.[8]

The impact of these changes is easy to overstate. For all of the expanded outreach, China's influence remains second-tier to the US, with the Atlantic Council's Jonathan Fulton noting that *"it is primarily an economic actor in the region"* and *"it does not have the depth of regional specialization that the US or European countries do."*[9]

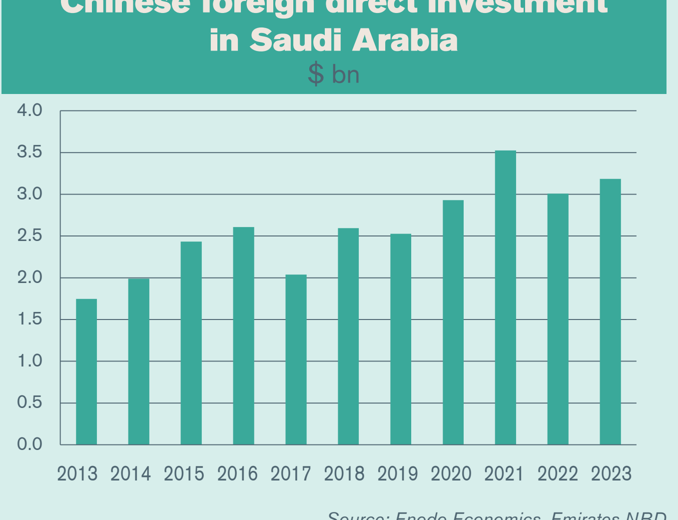
But as the Saudi-based Gulf Research Council observes, Gulf states *"have a growing tendency to involve China in regional affairs"* and view Beijing as *"a significant global player with the potential to contribute significantly to conflict resolution and regional peace."*[10] This diplomatic foundation has created the framework for expanding economic and technological cooperation.

## Foreign Direct Investment in Saudi Arabia

**Greenfield foreign direct investment in Saudi Arabia by country, 2023**
$ bn




**Chinese foreign direct investment in Saudi Arabia**
$ bn




*Source: Enodo Economics, Emirates NBD*

in recent refinery upgrades and expansion. Much of these have been financed by debt issued by Chinese banks, consolidating and tightening China's hold over the region's economic lifeblood.

Still, as they try to diversify away from their economic over-dependence on the oil industry, the Gulf states have found Chinese firms to be ready and willing partners.

### From infrastructure to cloud: China's evolving digital partnership with the Gulf

Sino-Gulf business cooperation is expanding rapidly outside the traditional oil trade. Digital technology leads the way, with China offering competitive capabilities in telecommunications, digital infrastructure, e-commerce, mobile payments, and surveillance systems. The Gulf has become a key destination for Chinese tech companies' international expansion, evidenced by widespread adoption of Chinese telecommunications infrastructure and e-commerce platforms, with the latter now reaching approximately 80% of GCC residents. [19] At the same time, GCC countries – especially Saudi Arabia and the UAE – have tried to reserve space for their own homegrown industries to flourish when it comes to software and fintech.

HUAWEI IN THE GULF

> Huawei's comprehensive involvement – from hardware infrastructure to software solutions – has turned it into the backbone of the Gulf's telecommunications and digital modernization.

The most important example of this is Huawei as a dominant force in the Gulf's 5G rollout. It is now the primary technology partner for major telecommunications operators across the region, with its participation making the Gulf one of the world's earliest and most advanced 5G markets. It has played a pivotal role in developing 5G infrastructure in Saudi Arabia, UAE, Kuwait, Bahrain, Qatar, and Oman, providing end-to-end solutions including radio access networks, core networks, and transport networks.

Beyond network deployment, Huawei has been instrumental in the region's digital transformation initiatives, supporting smart city projects, industrial digitalization, and cloud computing services. In Saudi Arabia, the company even aligned with the

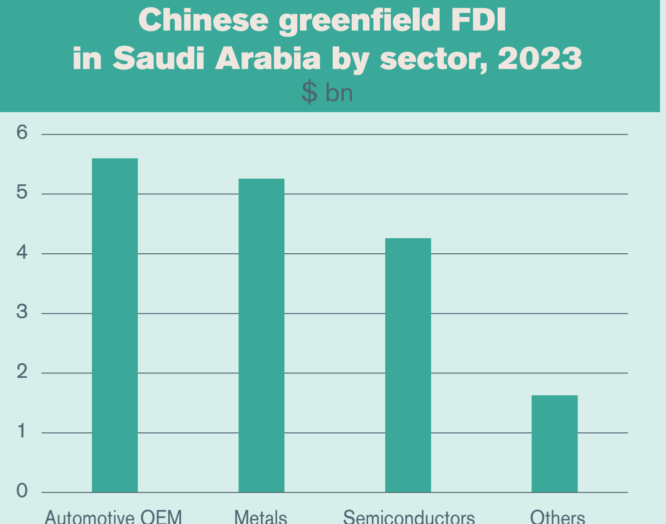
## Huawei in the GCC 5G Data by Country (2024)

| Country | Event |
|---|---|
| Saudi Arabia | **2019:** Saudi carrier Zain partnered with Huawei to launch a 5G network in Saudi Arabia. |
| | **2021:** Huawei-Zain Memorandum of Understanding (MoU) concerning cooperation for the implementation of 5G in the warehouse sector. |
| | **2022:** Huawei-Zain MoU on enhancing digital infrastructure. |
| | **2023:** MoU on promotion of green technology across networks and operations. |
| UAE | **2019:** Saudi state-owned telecommunications provider telecommunications provider Etisalat reaffirmed its commitment to using Huawei equipment in its wireless networks, including for 5G. |
| | **February 2020:** Etisalat and Huawei jointly test fiber optic networking solution.<br>**March 2020:** Etisalat, Du and Huawei sign an agreement to provide 5G edge computing services. |
| | **March 2024:** Huawei and Du sign MoU to promote commercial use of 5G and establish a joint 5G innovation center.<br>**September 2024:** Huawei and Du deploy first indoor 5G advanced network in the Middle East. |
| Qatar | **2019:** Huawei partnered with Vodafone Qatar to launch a 5G network in the country. Qatar now has the fastest mobile network in the world as a result. |
| | **2020:** Launched 5G Wi-Fi Pro to enable non-5G phones to access 5G speeds. |
| | **2023:** Huawei launches 5.5G trials with Vodafone Qatar. Achieved 10Gbps in 2024. |
| Oman, Kuwait & Bahrain | **2019:** Kuwaiti telecommunications operator VIVA announced it had partnered with Huawei to develop the country's first 5G network. As of 2022, nearly half of Kuwait's wireless internet traffic is 5G, according to Huawei. |
| | **2020:** Huawei signed MoU with Oman, agreeing to develop the country's 5G network and artificial intelligence technology. |
| | **2022:** Telecommunications provider stc Bahrain partnered with Huawei to launch a "5.5G" network that is expected to be ten times faster than 5G. |
| | **2024:** MoU between Huawei and Kuwait Communications to build a wireless 5.5G network. |
| | **2024:** Huawei signs MoU with stc Bahrain to develop 5.5G network and implement an FWA 2.0 home broadband strategy. |

## Chinese Investment in Saudi Arabia

### Major Chinese agreements in Saudi Arabia

| Chinese | Saudi | Type |
|---|---|---|
| ONEMT, eWTP | MISA | Online games |
| Huawei | MCIT | Broadband |
| Enovate | Sumou | EVs |
| CGNEI | AEW | Renewable power |
| CSCEC, MCC | MoMRAH | Housing |
| Various | ACWA | Renewable power |
| Power China | ACWA | Renewable power |
| Huawei | Zain | Broadband |
| Sh Ocean Pk | MISA | Theme parks |
| Baosteel | Aramco, PIF | Steel plant |
| H Horizons | MISA | EVs |
| Zhonghuan | AMD Aluwlaa | Iron factory |
| CRRC, Sunda | MISA | Chemicals |
| CGGIE, SCEG | Al-Safwah | Construction |
| CHEC | ROSHN | Housing |
| China Mobile | Mobility | Mobile |
| Ant Intl. | MISA | E-payment |
| CITIC Cons | NHC | Construction |
| CNGMC | ASK | Mining |
| CRRC | JCDC | Stadium |
| CHEC | JCDC | Infrastructure |
| Envision | NGHC | Wind turbines |




*Source: Enodo Economics, Emirates NBD, S&P Global*

religious aspects of the Vision 2030 agenda through the development of digital infrastructure to streamline religious pilgrimages. [20] China's influence in this industry extends beyond the GCC, with 15 countries in the Middle East having imported Chinese smart city technology.[21]

Huawei is, of course, also the primary vehicle for Chinese telecoms sales to Iran, a sector that has run afoul of US sanctions.[22]

### CHINESE SOFTWARE AND FINTECH FIRMS

> While Huawei has established itself as a key partner in the Gulf, Chinese software and fintech companies have bumped up against greater obstacles. They have been kept at arms-length as Saudi Arabia, in particular, tries to develop its own tech sector.

These concerns have also contributed to the failure of China and the GCC to negotiate a free trade deal, with Saudi Arabia reportedly pulling out due to fears that cheap Chinese imports could undermine its own development agenda. [23]

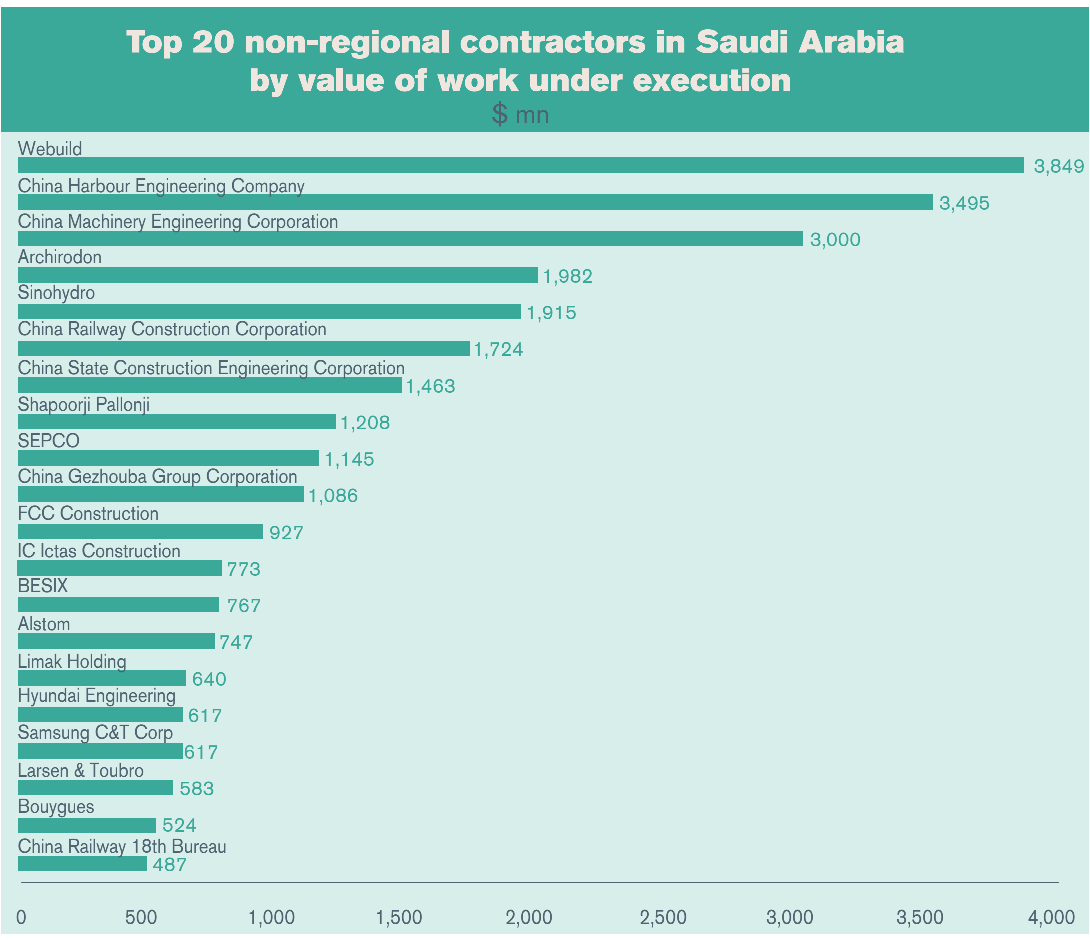
Saudi Arabia has also reportedly attached stringent conditions to joint ventures with Chinese tech companies, requiring local talent development and technical expertise transfer, as seen in agreements with Alibaba's cloud subsidiary and AI firm SenseTime. [24]

*“This suggests China’s ability to drive cooperation to its own benefit may be more limited than it would like”,* argues Mohammad Al-Sudairi, a prominent Arab expert on China and a lecturer at the Centre for Arab & Islamic Studies, Australian National University. [25]

Similarly, Chinese mobile payment companies have yet to conquer this market, and have been forced to adopt approaches that differ significantly from other markets where Chinese payment platforms operate directly. China’s super-app WeChat, ubiquitous within China itself, has faced significant challenges in the Gulf due to regulatory hurdles around data privacy. But digital collaboration has picked up speed since China and the League of Arab States signed a 2021 Initiative on China-Arab Data Security Cooperation, aimed at protecting data and production chains in the digital economy era. [26]

Since then, WeChat’s parent company Tencent has made strategic moves into Saudi Arabia through cloud services. In March 2024, Tencent Cloud partnered with Saudi telecommunications services company Mobily to launch the ‘Go Saudi’ program, aiming to revolutionize the Kingdom’s digital landscape with enterprise cloud platforms and AI services. [27] WeChat Pay has also established a presence in the UAE through partnerships to serve Chinese tourists. [28]

In Saudi Arabia, Tencent’s rival Alibaba is providing technical infrastructure, e-wallet solutions, and digital lending capabilities to help local entities build their own payment platforms, rather than directly offering Alipay to Saudi consumers. This strategic adjustment aligns with Saudi Arabia’s priority of developing its domestic fintech ecosystem while simultaneously preparing to attract 5 million Chinese tourists by 2030. [29]



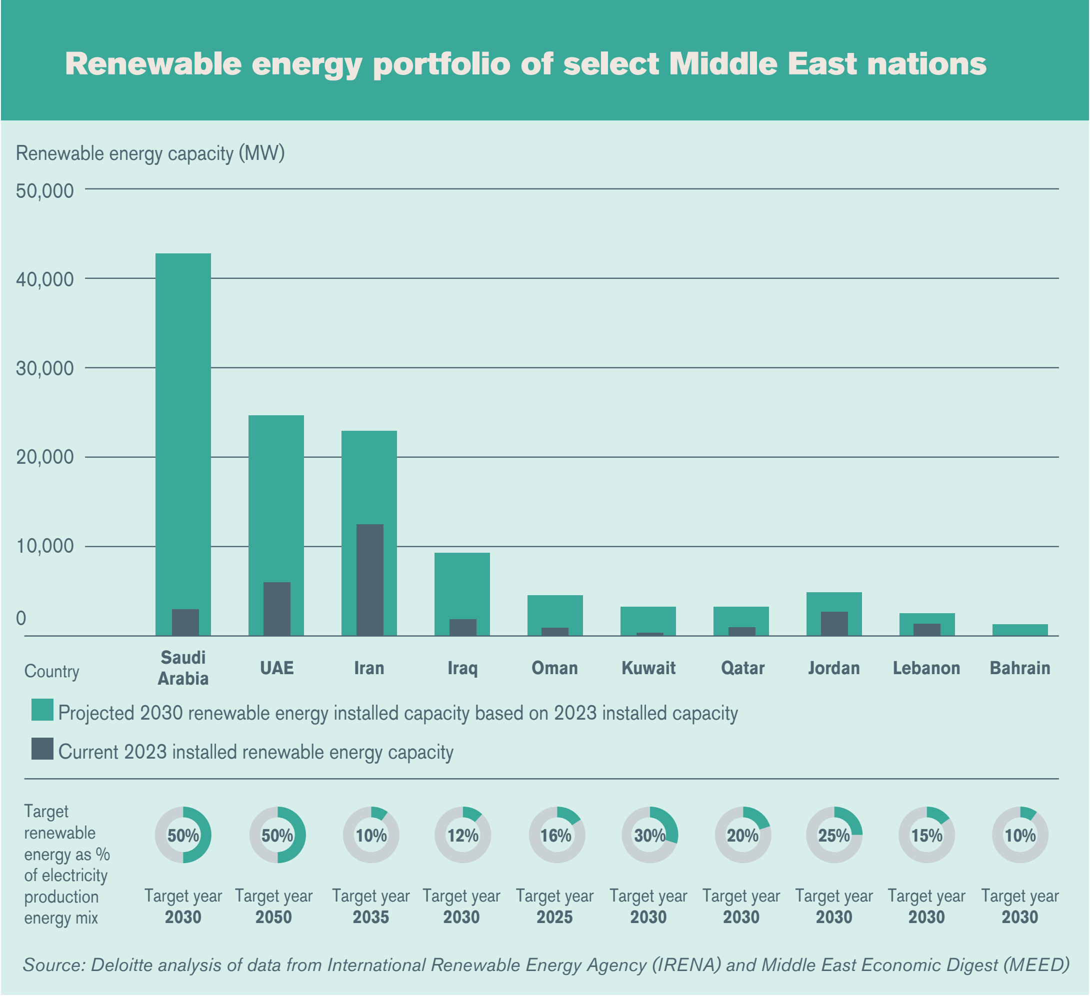
Industries related to de-carbonization are another area for cooperation. China's global dominance in renewable energy manufacturing aligns perfectly with the Gulf states' ambitions to diversify away from using hydrocarbons at home.

Saudi Arabia's target of net-zero emissions by 2060, and the UAE by 2050, has established what the PIF's head of energy and utilities Mohammed Albalaihed called a natural partnership:

> ***Saudi has huge demands for renewables... in all honesty, we don't see better partners in that field than the Chinese companies."***

Meanwhile, the UAE state-owned renewable energy company Masdar is "assessing the market and engaging with potential partners" as "any serious investor who is ignoring China is committing a very strategic mistake." [30]

However, there is more robust competition from US firms in the rapidly growing electronic vehicle (EV) sector. Dubai projects 30% market growth by 2028, while Saudi




*Source: Deloitte analysis of data from International Renewable Energy Agency (IRENA) and Middle East Economic Digest (MEED)*

Arabia aims to manufacture 500,000 EVs annually by 2030.[31] Recent developments include a $5.6bn EV joint venture between Shanghai-based Human Horizons and Saudi Arabia's investment ministry and BYD's partnership with UAE's Al-Futtaim for EV infrastructure development.[32] [33]

## 5.5 Digital Currency Experiments in the Gulf

The Gulf's emergence as a pioneer in digital currencies represents a crucial yet often understated dimension of its strategic repositioning.

> As regional trade patterns evolve, GCC members are actively exploring ways to modernize its payment systems that no longer efficiently serve their current economic relationships.

### Project Aber

Project Aber, a three-month UAE-Saudi pilot that in 2019 used DLT and real money to experiment with a single digital currency, revealed how open the two parties are to fintech solutions to regional inefficiencies. The project directly addressed the "substantial intra-regional trade and movement of citizens and residents," targeting the "inefficiency in the existing correspondent banking-based payment systems that often results in delays and required commercial banks to maintain substantial Nostro accounts (a bank's account held at a foreign bank in that foreign bank's currency)."[34]

Such technology could "provide central banks with the ability to re-imagine both domestic and cross-border payment systems in new ways," the Project Aber report concluded.[35] While mostly geared towards resolving bottlenecks in trade between the highly inter-connected economies, the Project Aber pilot did open the door to developing alternatives to dollar-based systems.

### UAE takes the lead

> Financial digitalization features prominently in both Saudi and UAE vision documents, though with notably different levels of implementation.

The UAE has taken the lead, pursuing a comprehensive approach through its Financial Infrastructure Transformation Programme. This initiative encompasses nine key projects aimed at cementing the UAE's position as "the financial and digital

payment hub and a centre of excellence for innovation and digital transformation." [36] The digital dirham, the UAE's CBDC, stands as the flagship project.

Saudi Arabia, while more cautious in developing its own CBDC, has shown increasing interest in international digital currency systems. This divergent approach reflects broader differences in how the two Gulf powers are approaching financial innovation.

The Gulf's digital currency initiatives have taken on greater significance through participation in the mBridge program, where the UAE was also a founding partner, as discussed in Chapter 3.

## Challenges and future prospects

The momentum behind digital currency development in the Gulf appears likely to continue. Both Saudi Arabia and the UAE have developed significant domestic CBDC expertise and maintain strong incentives to explore mass adoption. [37] The UAE's position as China's premier Gulf business hub particularly motivates continued development of digital currency systems supporting e-CNY-digital dirham trade.[38]

## In conclusion

The Gulf states' economic transformation has evolved far beyond a simple modernization program into a sophisticated strategic repositioning with global implications. China has seized this opportunity, offering technology and economic opportunities that align with the Gulf states' development goals while pursuing its own strategic objectives: securing energy resources, establishing markets for its emerging industries, and building a coalition to resist US financial pressure.

This mutual interest in diversification is creating a self-reinforcing momentum, producing tangible results in increased business, investment and digital payment systems cooperation. While Gulf states continue to value their security relationship with the US, they are systematically building capabilities that could enable more dramatic shifts in the future.

As Chapters 6 and 7 will explore, the specific mechanics of the Petrodollar system and China's Petroyuan ambitions make these developments particularly significant. Ultimately, these shifts have created a complex three-way strategic game among China, the US, and the Gulf states – one where technological innovation and evolving energy markets could reshape global finance more rapidly than many anticipate.

## Endnotes


1 "Saudi population at 32.2 million, 63% of Saudis under 30 years old, census shows", Reuters, May 31, 2023, https://www.reuters.com/world/middle-east/saudi-population-322-mln-median-age-29-years-old-general-authority-statistics-2023-05-31/

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6

# China's challenge to the Petrodollar

ASIA SOCIETY POLICY INSTITUTE / Center for China Analysis

# 6.1 Introduction

Few developments have been as consequential in US economic history as the establishment of the Petrodollar system. This system has been a linchpin of US financial dominance for nearly half a century, recycling the dollars spent on oil imports into US Treasuries and other inbound investments. This keeps the cost of money low for the US and binds the turbulent Gulf region to the economic stability of the US, but it is threatened by developments in oil producers' relationship with an important new partner – China.

> The Petrodollar system, which has underpinned global oil trade for decades, finds itself at a critical juncture.

Today's economic and geopolitical landscape bears little resemblance to the world in which the Petrodollar emerged. First and most importantly, the rise of new economic powers like China and India, as well as changing relationships between the US and key oil producers, have altered the geopolitical landscape. Meanwhile, US energy independence has reduced US reliance on Saudi oil and reshaped its relations with the Gulf.

While there is little in the Chinese academic or policy discourse that refers to a grand plan for creating a Petroyuan system, it is clear that China would prefer to settle as much of its oil trade in yuan as possible, price its oil purchases in yuan, and encourage Petroyuan to flow back into China. This reflects the economic and strategic risks for China posed by the current global trading system, where commodities, especially oil, are predominantly priced and traded in US dollars, as discussed in Chapter 2.

This chapter analyzes both the existing Petrodollar system and China's Petroyuan ambitions. We begin by dissecting the creation, key components, and importance of the Petrodollar system. We then examine China's aspirations for a Petroyuan system, recognizing that some elements of the Petrodollar system are more vulnerable to disruption by China than others. Our analysis highlights areas where China has made the most progress and explores the challenges that remain in establishing a Petroyuan system.

# 6.2 Key Components of the Petrodollar

The Petrodollar system, a cornerstone of US economic power for nearly half a century, emerged from the economic turmoil of the early 1970s.

> What appears to be a unified system actually comprises three distinct but interconnected elements: dollar settlement, dollar pricing, and Petrodollar revenues.

## The birth of the Petrodollar system

The story begins with the collapse of the Bretton Woods system in 1971, which sent tremors through the international monetary order. This upheaval was followed by the 1973 Organization of Petroleum Exporting Countries (OPEC) oil embargo, implemented in response to US support for Israel during the Yom Kippur War. The embargo quadrupled oil prices virtually overnight, precipitating a severe balance of payments crisis for the US while leaving Gulf oil exporters with unprecedented wealth.

Recognizing the threat to US economic stability, President Richard Nixon took decisive action. In 1974, he dispatched US Treasury Secretary William Simon to Saudi Arabia with a crucial mission: neutralize oil as an economic weapon while preserving US global economic hegemony.[1] The resulting agreement, though its exact details remain opaque, transformed the global financial landscape.

In exchange for US military protection and preferential access to Treasury bonds, Saudi Arabia made three pivotal commitments: it would use its influence within the OPEC to ensure oil transactions were conducted exclusively in dollars, invest its oil revenue in US Treasury securities while using interest payments to hire US companies, and maintain oil prices within acceptable limits while preventing future embargoes.[2][3]

BOX 6.1

### The End of Bretton Woods

The Bretton Woods system, established in 1944, aimed to create stability in international finance by pegging the US dollar to gold and other currencies to the dollar. For nearly three decades, it provided a framework for global economic growth and cooperation.

But by the 1960s, the US, the linchpin of the system, found itself in an increasingly untenable position. The very success of Bretton Woods in facilitating global trade led to a growing demand for dollars worldwide. To meet this demand, the US had to run persistent balance of payments deficits, flooding the world with dollars and slowly eroding confidence in the currency it was built upon.

The costs of the Vietnam War and ambitious domestic programs strained the US federal budget, fueling inflation and eroding the value of the dollar in real terms. It became increasingly difficult for the US to maintain its commitment to convert dollars to gold at the fixed rate of $35 per ounce and speculative pressures mounted.

The situation reached a breaking point in August 1971. Faced with a run on US gold reserves and the prospect of emptying Fort Knox, President Nixon made the momentous decision to suspend the dollar's convertibility to gold. This effectively marked the end of the Bretton Woods system.

The demise of the Bretton Woods system ushered in a new era of floating exchange rates and more flexible monetary policies, setting the stage for today's complex and interconnected world economy.

By 1976, this mechanism, combined with the problems of the UK economy at the time, proved remarkably effective – over 90% of international oil transactions were settled in dollars, up from 75% in 1973, while the British pound's share collapsed from 20% to just 6%. [4]

While it continues to dominate international oil transactions, use of the dollar has declined from its peak of over 90% a generation ago.

> JPMorgan estimates that in 2023, 20% of oil trade used currencies other than the US dollar, a significant increase from previous years. [5]

## The three pillars of the system

The first pillar, **dollar pricing**, established the dollar as the standard unit of account for global oil markets. This practice extends beyond immediate transactions to encompass futures contracts, derivatives, and other financial instruments tied to oil prices. The pricing mechanism creates a standardized framework for global oil trade while reinforcing the dollar's role in international commerce.

> This broader financial ecosystem reinforces the dollar's role while creating network effects that make alternative pricing mechanisms difficult to establish.

The second pillar, **dollar settlement**, involves the actual payment and settlement of oil transactions in dollars. The mechanics of dollar settlement extend far beyond simple currency exchanges. When oil changes hands in international markets, it sets in motion an intricate dance of financial transactions that has evolved over decades. At its heart lies the sophisticated network of correspondent banking relationships, all orchestrated through the SWIFT messaging system which serves as the nervous system of global oil trade.

Consider a typical oil transaction: before a tanker departs from port, a complex series of financial arrangements must be executed. Banks on both sides of the transaction coordinate through established correspondent relationships, often relying on multiple financial institutions across different time zones. Letters of credit are issued and confirmed, providing security to both buyer and seller. Trade finance arrangements are structured to ensure that capital flows smoothly and risk is appropriately managed.

This settlement infrastructure has grown increasingly sophisticated over time. What began as straightforward currency transfers has evolved into a comprehensive system capable of handling the multifaceted requirements of modern oil trading. Documentation moves through standardized channels, compliance checks verify the legitimacy of transactions, and risk management mechanisms protect participants against various forms of financial exposure.

The settlement system's true significance lies in how it creates persistent demand for dollars. Even when trading parties have no desire to hold dollars long-term, they must still acquire them to participate in oil markets.

This transactional demand maintains a constant circulation of dollars through the global financial system, reinforcing the currency's international role regardless of whether participants view it as a preferred store of value.

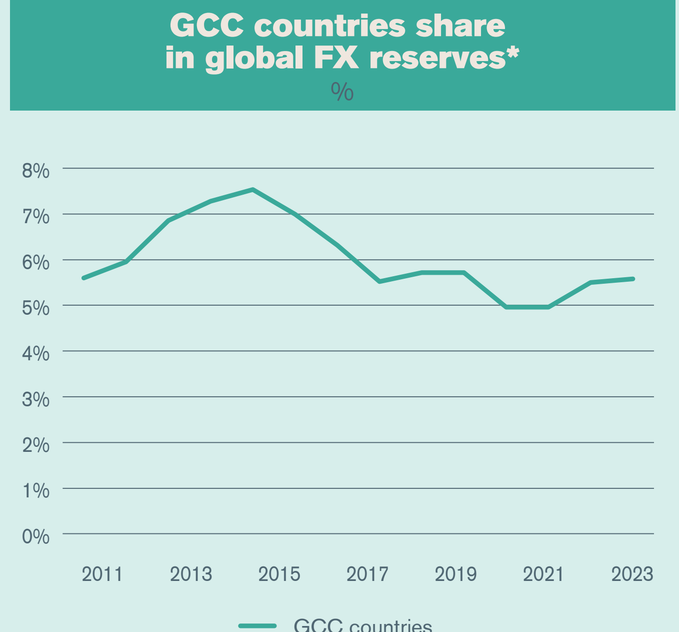
The third pillar, **Petrodollar revenues**, represents the dollar-denominated income flowing to oil-producing nations. When oil prices rise, these countries accumulate substantial dollar reserves, leading to the critical process of Petrodollar recycling. This recycling occurs through two main channels: direct purchases of goods and services in dollars, and investment of surplus dollars into the global financial system.

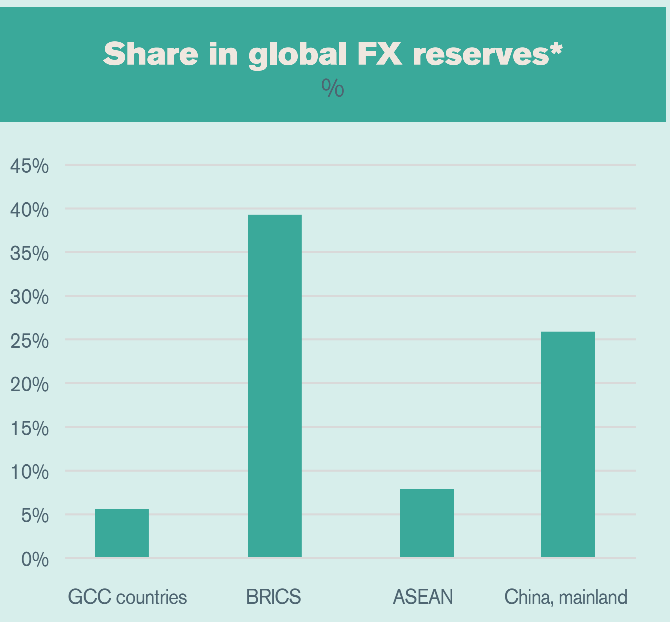
## The recycling mechanism

Petrodollar recycling represents perhaps the most sophisticated aspect of the system. Initially, oil exporters primarily invested their dollar surpluses in US Treasury securities. However, over time, they have diversified into a broader range of dollar-denominated assets across global financial markets, including equities, real estate, and private investments.

This diversification has made the recycling component more complex but also more deeply embedded in the global financial system, creating multiple channels through which Petrodollars flow back into the international economy.

### Gulf Country Importance for Global FX reserves




* Total reserves excluding gold, foreign exchange, US dollar

*Source: Enodo Economics, IMF*

This recycling creates a self-reinforcing cycle: oil importers need dollars to purchase oil, exporters accumulate dollar surpluses, and these surpluses flow back into dollar-denominated assets, maintaining the dollar's value and its attractiveness as a reserve currency.

The Petrodollar recycling mechanism has been particularly significant for global foreign exchange reserves given the substantial holdings of GCC countries. As of 2023, the GCC nations accounted for 5.6% of total world reserves, though this represents a decline from their peak of 7.5% in 2015. Within the GCC, Saudi Arabia maintains a dominant position, holding approximately 60% of the region's reserves, while the combined holdings of Saudi Arabia and the UAE represent about 85% of GCC reserves.

This concentration of reserves among GCC states can be contrasted with the BRICS nations, which collectively account for 39% of global reserves, with China alone representing 26% of the worldwide total. The substantial reserve holdings of oil-exporting Gulf states underscore their continued importance as major institutional investors in the global financial system, even as their share has moderated somewhat in recent years. Their investment decisions and portfolio allocations can have significant implications for international financial markets and the broader dollar-based monetary system.

The durability of these arrangements stems from their mutual benefits: the US gains sustained demand for its currency and securities, while oil exporters receive military protection and access to stable financial markets. This alignment of interests has helped the system weather numerous challenges, from oil price shocks to geopolitical crises.

## 6.3 China's Ambition to Replicate Petrodollar Benefits

China's strategy to increase the yuan's role in international oil trading reflects a focused implementation of its broader economic security objectives. While reducing vulnerability to dollar dominance in energy markets is important, it is not Beijing's sole objective in internationalizing the yuan. The evolution of this strategy over the past decade demonstrates China's willingness to adapt as circumstances change and opportunities arise.

### Early market-building efforts

China's initial efforts focused on creating a domestic energy trading infrastructure. The Shanghai Petroleum and Natural Gas Exchange (SHPGX) began trials in July 2015, before its formal launch in November 2016. The exchange aimed to establish pricing indices that could reduce Chinese dependence on foreign benchmarks, as well as a more transparent domestic spot market. Other regional exchanges followed, with those in Chongqing, Shenzhen, and Zhejiang the most important. [6]

In 2018, China took a more ambitious step by launching a yuan-denominated crude oil futures contract on the Shanghai International Energy Exchange (INE). The contract's design focused on heavier, high-sulfur crude oil commonly imported by Northeast Asian countries – a significant market segment underserved by existing benchmarks.

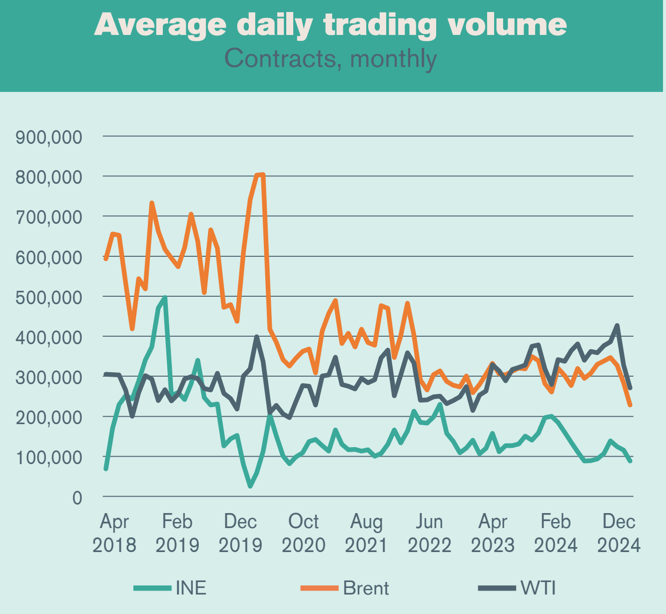
However, these early market-building efforts achieved limited success in increasing international usage of the yuan. Even Chinese oil majors largely avoided these exchanges and contracts, finding little additional benefit given their already substantial pricing influence in regional and global oil markets. This experience prompted Beijing to recalibrate its approach. [7]

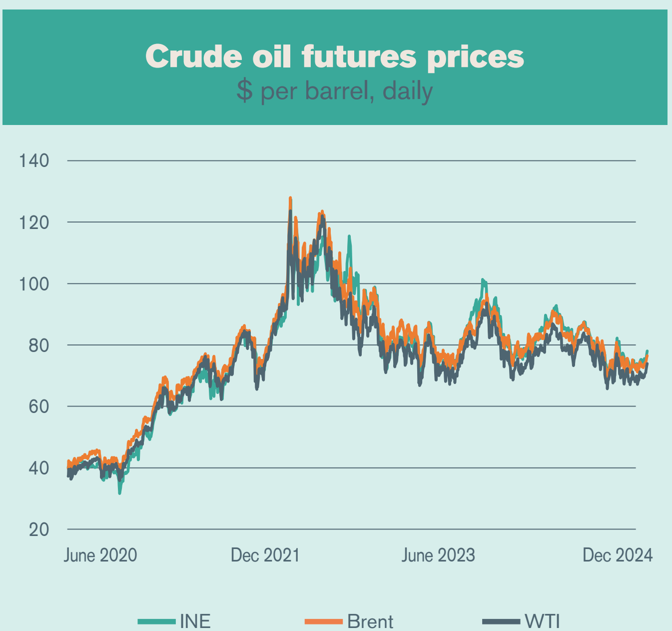
## From yuan settlement to financial integration

Recent years have seen China shift toward emphasizing broader financial integration with oil producers as a prerequisite to yuan-denominated oil settlement. This strategy became explicit at the China-GCC Summit in December 2022, where President Xi Jinping outlined a three-to-five-year plan for increasing usage of the yuan in oil and gas trade. His proposal combined traditional trade settlement through the SHPGX with innovative elements like local currency swaps and digital currency cooperation.

> ***"Over the next three to five years... by fully utilizing the SHPGX, China aims to conduct RMB settlement in the oil and gas trade... local currency swap cooperation will be carried out, digital currency cooperation will be deepened, and the multilateral mBridge project will be promoted."*** [8]

## Average Daily Trading Volume by Month




*Note: Converted from USD/CNY daily rate; 1 contract=1,000 barrels of oil; INE crude oil futures contract is a physical-settlement contract priced and traded in yuan*

*Source: Enodo Economics, Wind*

As if on cue, in March 2023 the first international LNG transaction settled in the Chinese currency was completed between CNOOC and France's TotalEnergies, with 65,000 tons of LNG imported from the United Arab Emirates exchanging hands on the SHPGX exchange. [9] This was followed by other yuan-settled LNG deals, including another CNOOC gas transaction with the Singapore arm of France's ENGIE in October of that year. [10]

Also in October 2023, CNPC completed its first cross-border crude oil settlement using the digital yuan, purchasing 1 million barrels of crude oil. [11]

These transactions demonstrate concrete progress toward China's goals of settling energy trades in yuan. At the same time, the fact that they merited news articles and press releases showed that the practice is still relatively uncommon.

> The use of digital yuan for oil and gas settlement highlights China's ability to leverage technological innovation in pursuing its objectives.

By 2024, at the China-Arab States Summit, this strategy had shifted from yuan settlement as an independent goal. Instead, Xi focused on expanding the framework for investment and finance cooperation, encouraging Arab banks to join China's CIPS payment system and participate in its CBDC initiatives. [12] This subtle shift indicates Beijing's adoption of a more patient, systematic approach.

## China's strategic patience

Whether China ultimately aims to entirely replace the Petrodollar system with the Petroyuan remains unclear. While some Chinese institutions have argued for such an outcome – Industrial and Commercial Bank of China (ICBC) stated in 2017 that the "end of the single Petrodollar system is inevitable" – Beijing's official stance remains more measured.

De-dollarization is ***"a complex and lengthy process"*** involving currency systems, financial market development, and international acceptance, Zhao Hongtu, Director of the Energy Security Research Centre at the China Institute of Contemporary International Relations, has said. [13]

> The strategy appears to emphasize optionality rather than exclusivity, focusing on making yuan payment an available alternative rather than a mandatory requirement.

This approach aligns with China's broader vision of a more diverse international monetary system. Rather than seeking to replace the dollar's hegemony with the yuan, Beijing envisions a multipolar financial world where several major currencies play significant roles in international trade and finance.

*Initiatives like the mBridge project could eliminate the need for dollar intermediation in the China-Arab oil trade,"*

Bank of China's Chief Researcher, Zong Liang, has said. [14]

China's circumstances differ significantly from those the US faced fifty years ago. While the US built the Petrodollar system from a position of unrivaled military and economic strength, China must navigate a more complex, multipolar financial landscape where the US dollar is already well-established – and where use of its own currency is shackled by currency controls and other barriers. Its strategy therefore emphasizes economic incentives and technological innovation over military guarantees.

> The careful but firm nature of China's strategy suggests a long-term perspective that prioritizes sustainable progress over dramatic yet potentially destabilizing change.

# 6.4 Disrupting the Petrodollar

The Petrodollar system's vulnerability to Chinese disruption varies significantly across its components. Some elements are more susceptible to change than others, particularly as China leverages its position as the world's largest oil importer and its innovations in payment systems.

## Settlement system vulnerabilities

The dollar settlement mechanism shows particular vulnerability to disruption, thanks to technological innovation. China's development of alternative payment infrastructure – through its CIPS system and digital yuan capabilities via the mBridge platform – offers oil producers not only viable but potentially superior alternatives to dollar-based settlement channels.

Di Gang, deputy director of the PBoC's Digital Currency Research Institute said in November 2023 while discussing the use of digital currencies for cross border transactions between China and Hong Kong,

*In the early stage, through on-site research in enterprises, we found that many enterprises have problems such as single cross-border payment channels, high costs, and low efficiency in international trade. They expressed their desire to participate in the Hong Kong bilateral pilot and use digital RMB to reduce the cross-border payment costs of enterprises. Therefore, under the framework of bilateral cooperation, we can study the cross-border payment application of digital RMB in the trade of bulk commodities such as oil and gas and service trade."* [15]

CNPC's digital yuan settlement for crude oil and CNOOC's yuan-settled LNG purchases show that alternative settlement mechanisms can work effectively, particularly for trades involving Chinese buyers. With China being the world's largest oil importer, that creates significant opportunities for expanded use of the yuan.

The integration of the e-CNY with existing trading platforms like the SHPGX in Shanghai creates an ecosystem that could gradually erode the dollar's monopoly on oil settlement.

> As these systems mature and trading partners gain confidence in them, the network effects underpinning the payment infrastructure supporting dollar settlement could diminish.

The advancement of these payment innovations comes as sanctions have already driven significant segments of global oil trade away from dollar settlement. Russia's effective exclusion from much of the dollar-based financial system after its invasion of Ukraine in 2022 has accelerated the development of alternative payment channels. By late 2023, less than 10% of Russian oil exports were being settled in dollars or euros. [16] Similarly, Iran has conducted extensive oil trades with China using yuan-based settlements to avoid sanctions. [17]

India's evolving approach to oil trade settlement illustrates how sanctions-driven changes are reshaping payment systems beyond the directly sanctioned countries. As one of the world's largest oil importers, India has leveraged the post-2022 environment to diversify its payment mechanisms. The Reserve Bank of India's move to enable rupee-based trade settlement has led to landmark transactions with major oil producers, including India's first rupee-denominated payments to the UAE's ADNOC. [18]

More significantly, India has become the largest purchaser of Russian seaborne oil, primarily settling trades in dirhams through Dubai-based traders to avoid sanctions-related complications. [19] While Russian exporters have expressed a preference for yuan settlement over rupees, ongoing discussions between Indian and Russian central banks about expanding local currency trade suggest further evolution in payment mechanisms. [20] India's experience demonstrates how major oil importers can successfully establish alternative settlement channels while balancing relationships with both sanctioned and non-sanctioned trading partners.

## Trade finance infrastructure vulnerabilities

Blockchain technology holds significant potential to streamline the cumbersome and costly processes involved in international trade, but much of that potential remains largely theoretical. Efforts to digitalize letters of credit and bills of lading using blockchain have been attempted numerous times over the past decade by commercial consortia such as Contour, Marco Polo, and we.trade. Despite significant investment and institutional support, these initiatives failed to achieve widespread adoption, and some have folded completely. [21]

China's systematic effort to build out an alternative infrastructure based on blockchain technology could finally realize that potential. [22]

China's approach differs in its ability to mandate adoption across its vast domestic market through state directives, rapidly achieving the scale that previous initiatives struggled to attain. The BRI naturally provides expansion pathways into emerging markets, creating scale outside its borders as well. Its initiatives combine trade finance digitalization with other strategic priorities including digital currency development, giving them institutional momentum that purely commercial ventures have not achieved.

The combination of state backing, scale, and technological capability gives China unique advantages in overcoming barriers that defeated previous attempts at trade finance innovation.

The institutional architecture supporting this transformation runs deep. At the government level, the PBoC has taken the lead by establishing the Trade Finance Blockchain Platform, which runs on the same Dashing protocol as mBridge. [23] The platform has expanded to process over Rmb191bn in cross-border settlements, connecting 48 participating banks. [24] Major state banks have launched their own complementary platforms – China Construction Bank's BCTrade2.0 processed Rmb360bn in transactions, while Bank of China and CITIC's blockchain platform handled Rmb20bn of trades in its first year. [25] [26]

China has made breakthrough progress in digitalizing core trade documentation. COSCO Shipping Group's pilot blockchain-based bill of lading platform, in partnership with Bank of China, addresses one of international trade's most persistent friction points. [27] Bills of lading are critical documents in international trade, representing ownership of the goods in transit. They are a foundational document for trade finance. The new architecture offers significant advantages: processing times reduced from 5-10 days to 24 hours, lower transaction costs, enhanced operational security, and integration with both the digital yuan and CIPS.

Digitalizing bills of lading alone could save $6.5bn in direct costs and enable $40bn in global trade, according to McKinsey. [28]

However, without international acceptance, even China's blockchain-based bill of lading and trade finance platforms have also struggled to grow beyond its borders. China's authorities require trading data to be stored in local data centers, making it hard to attract foreign users. Meanwhile, five international bodies – BIMCO, DCSA, FIATA, ICC and SWIFT [29] set up the FIT alliance in 2022 to accelerate the global adoption of electronic bills of ladling. If successful, their efforts could inject new vigour into the Western-led attempt to digitize shipping and trade finance. [30]

## Recycling mechanism vulnerabilities

New channels to deploy revenues from oil producers into the Chinese economy and financial markets could disrupt the Petrodollar's recycling mechanism, which has contributed so much to US prosperity.

Growing industrial and technological cooperation between China and the Gulf states creates natural outlets for yuan-denominated oil revenues. Already, Gulf states are directing oil revenues towards enormous contracts with Chinese firms building mega-projects in the Gulf. A future wherein those deals are denominated in yuan, not dollars, is easy to imagine.

Through initiatives like Vision 2030, Gulf states are increasingly partnering with Chinese firms in non-traditional sectors like renewable energy, housing and digital infrastructure. For instance, the partnerships of Saudi power generator and the world's largest private water desalination company ACWA with multiple Chinese renewable energy firms provide a direct channel whereby revenues earned in yuan could pay for equipment manufactured in China. [31]

Beijing is encouraging Chinese firms to build production capacity in the Gulf as well as the BRI more generally in order to make the goods that will ultimately be exported to China and paid for in yuan. [32] The hope is that the process of building industrial capacity overseas will not just result in the sale of products to China in yuan, but that it will also spur demand for yuan services and assets as part of the management of firms' treasury operations.

### China-Gulf Petroyuan Recycling

- **The Gulf country receives yuan as payment for oil/gas or borrows from China in yuan.**
- **The Gulf country uses the funds to buy plant and machinery from Chinese suppliers.**
- **The newly constructed industrial facility sells its product to Chinese buyers, who pay for it in yuan.**
- **If funds are borrowed, the Gulf country uses its yuan-denominated revenue stream to repay its yuan-denominated loans.**

*“In the past two years, the PBoC has...cooperated with relevant ministries... to find ways to use yuan to facilitate the large-scale transfer of industrial capacity overseas,”*

Zhou Chengjun, director of the Institute of Finance at the PBoC, wrote in May 2021.[33]

*“Large-scale industrial transfers involve yuan being deposited in foreign countries... It is used to import and transfer machinery, equipment, production lines, and services from China. It results in a basket of services being provided by Chinese financial institutions, such as the sales of yuan-denominated stocks, bonds and other financial assets to foreigners.”*

What Zhou is describing is a “closed loop” of yuan demand. The process creates a recycling mechanism for the use of Petroyuan as well as a “closed loop” of non-oil trade like this:

Meanwhile, China’s gradual opening of its financial markets offers Gulf investors attractive diversification opportunities. The introduction of programs like the Qualified Foreign Institutional Investor (QFII) scheme and Stock and Bond Connect has made China’s debt and equity markets more accessible. Gulf sovereign wealth funds have shown growing interest in increasing their allocation to Chinese markets, as we will discuss in the next chapter.

> While increasing geopolitical friction constrains Western investment into China, Gulf investors are willing to increase exposure to Chinese assets.

The establishment of yuan clearing arrangements and expansion of currency swap lines further facilitates both trade and investment flows.

## 6.5 The Resilient Petrodollar

Of the three components of the Petrodollar system – settlement, recycling, and pricing – the pricing mechanism remains the least threatened by Chinese initiatives. It is also the least important from China’s geopolitical perspective.

> Beijing’s primary goal is to insulate its energy trade from potential dollar-system disruption; whether oil continues to be priced in dollars is of secondary importance.

The economic benefits of setting oil prices, while meaningful, are less strategically vital for Beijing than achieving two key objectives: establishing independent settlement mechanisms and fostering deep economic interdependence with oil producers that would make any future alignment against Chinese interests politically and economically costly, especially for Gulf states.

BOX 6.2

## How is Oil Traded and Priced?

Oil pricing fundamentally follows supply and demand principles, though with several unique complexities. The market features over 100 different types of crude oil, varying in quality based on their sulfur content ("sweetness") and weight. US oil tends to be sweeter and lighter, requiring less refinement, while Saudi oil is typically heavier and sourer, affecting its price accordingly.

The capital-intensive nature of oil projects necessitates securing long-term customers before production begins. To manage price volatility risk, a system of futures contracts emerged, alongside trading companies that profit from price differentials. Some traders, like Trafigura, have expanded into logistics and storage operations beyond pure trading. [1]

The current pricing system evolved through several historical phases. Post-World War 2, major oil companies initially controlled pricing with little transparency. In the 1950s, this system began to erode as state-owned refineries and independent oil prospectors entered the market. OPEC's emergence reflected producing countries' growing desire for control over their resources, though it took years before they could fully exercise this power. [2]

OPEC assumed primary pricing responsibility in 1973, with Saudi Arabia's Arab Light grade serving as the benchmark. However, geopolitical disruptions, particularly the Iranian revolution, forced changes in the system. Spot markets emerged, growing from 5% of oil sales in January 1979 to around 25% by November of the same year. [3] The discovery of North Sea oil and other fields outside the Middle East further transformed the market.

By the mid-1980s, the current pricing system was basically in place, [4] and has evolved to center on three key benchmarks:

- **Brent Crude:** Representing sweet, light oil primarily from the North Sea, Brent is the most influential benchmark, setting prices for over 70% of globally exported oil. [5] It trades on the International Commodities Exchange (ICE) in two main forms: Dated Brent for immediate delivery, and Brent Futures for future delivery.
- **Dubai/Oman:** The primary reference for Middle Eastern crude sold to Asia. Due to declining Dubai production, it now represents a broader basket of oils.
- **West Texas Intermediate (WTI):** The main North US benchmark, based on light, sweet crude delivered in Cushing, Oklahoma. Its global influence has increased with the US shale oil revolution.

Other oil types are priced relative to these benchmarks based on geography and quality. For example, Saudi Aramco uses Dubai/Oman as its reference, adjusting prices with premiums or discounts based on quality differences. [6]

Futures contracts play a crucial role in this system, allowing producers and buyers to agree on prices for future deliveries. These contracts generate market prices months into the future and require a reliable currency with consistent exchange rates. The dollar serves this function due to its deep global trading pools (eurodollars), narrow exchange spreads, and extensive trade financing availability.

The complex interplay between physical oil trades, futures markets, and benchmark pricing creates a sophisticated system that balances the needs of producers, consumers, and traders while providing transparency and risk management tools for all participants.

This section examines which characteristics of the current Petrodollar system are most resistant to change.

## Pricing system resilience

> The dollar-based oil pricing system demonstrates particular resilience against disruption, even as settlement and recycling mechanisms show vulnerability.

This durability stems from several structural advantages:

First, the depth and liquidity of established dollar-denominated oil benchmarks like Brent and WTI remain unmatched. These markets provide sophisticated price discovery mechanisms that incorporate global supply and demand factors. Despite initiatives like the Shanghai International Energy Exchange's yuan-denominated crude contract, most global oil trade continues to reference these traditional benchmarks.

Second, the ecosystem of derivatives and risk management tools built around dollar-based oil pricing creates powerful network effects, reinforcing its central role in global markets. These tools, such as futures and options contracts, allow market participants to hedge large positions and effectively manage price risks associated with oil price fluctuations. The deep liquidity and trust in these well-established markets provide critical support for the continued dominance of dollar-based pricing in the global oil trade.

Third, the transparency and regulatory framework surrounding major oil benchmarks creates confidence in price discovery that new alternatives struggle to replicate. The extensive market surveillance and long history of regulatory oversight provides a level of trust that remains difficult to displace.

## Legal and institutional resilience

Beyond pricing mechanisms, the broader legal and institutional framework supporting dollar-based oil trade shows remarkable durability. This resilience stems not just from US power but from the complex network of institutions, practices, and relationships that have evolved around the Petrodollar system.

> The legal infrastructure supporting dollar-based oil trade is particularly robust, built on decades of legal precedent and institutional reliability.

This includes extensive case law that has shaped a predictable framework, standardized contracts widely accepted across jurisdictions, and established dispute resolution mechanisms such as arbitration processes recognized internationally.

These elements provide market participants with a high level of certainty and confidence, ensuring that agreements are enforceable and disputes can be resolved efficiently. In comparison, alternative systems, such as those promoted by China, lack similar legal maturity and global trust. The predictability and enforceability of dollar-based contracts remain key advantages that China's state-backed initiatives are unlikely to replicate in the near term.

This institutional strength extends to the broader financial system. Established procedures for handling defaults, managing counterparty risk, and resolving disputes provide market participants with confidence that their interests will be protected. While China can mandate adoption of alternative systems within its sphere of influence, creating comparable institutional frameworks for truly international transactions requires significant time and trust-building.

## Network effects and global market integration

The dollar system's most enduring strength lies in its deep integration with global markets beyond oil trade. The widespread use of dollars in non-oil commodity markets, the current dominance of dollar-based trade finance, and the deep liquidity of dollar financial markets create self-reinforcing advantages that are difficult to displace. [34]

> These network effects help explain why even countries actively seeking to reduce dollar dependence by paying in their own currencies often continue using dollar pricing as a reference point.

The cost and complexity of completely decoupling from the dollar-based financial system outweigh the benefits, leading most countries to pursue partial rather than complete alternatives.

In other words, any transition away from dollar dominance in oil markets will be gradual and partial rather than sudden and complete.

## In conclusion

The Petrodollar system's resilience stems not from any single component but from the intricate web of relationships, institutions, and market practices that have evolved around it over five decades. Rather than attempting to replicate or replace the entire system, Beijing has focused on the elements most crucial to its strategic interests: settlement mechanisms and recycling channels.

China's progress in the digitalization of cross-border payments and trade finance and its growing economic entanglement with Gulf states suggest that parts of the Petrodollar system are more vulnerable to disruption than previously assumed. However, the system's pricing mechanism and underlying legal infrastructure show remarkable durability.

> The transformation of global oil markets will be gradual rather than sudden, with different aspects of the system evolving at different speeds.

The future, therefore, is likely to be characterized by the coexistence of dollar and non-dollar systems rather than the wholesale replacement of one by the other. While China may succeed in creating alternative channels for oil trade settlement and recycling within its sphere of influence, the core institutional framework of the Petrodollar system – particularly its pricing mechanisms and legal infrastructure – will persist as a global reference point for the foreseeable future.

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# 7

# The Saudi Petrodollar calculus

ASIA SOCIETY POLICY INSTITUTE / Center for China Analysis

## 7.1 Introduction

Saudi Arabia occupies a pivotal position at the intersection of the Petrodollar system and emerging alternatives. As the world's largest oil exporter and a cornerstone of the global oil market, its choices about currency arrangements carry outsized implications. With China now its largest trading partner and the US remaining its primary security guarantor, the Kingdom faces complex decisions about the future of its monetary and financial arrangements.

> Despite speculation about an imminent shift away from the dollar, the reality is more nuanced. The Petrodollar system remains firmly entrenched in terms of oil pricing, but changes are underway in how oil trade is settled and how resulting revenues are recycled.

In some ways, similar dynamics to those that led to the Petrodollar phenomenon are re-emerging, with Saudi Arabia exploring yuan-denominated investments as its economic ties with China deepen and it seeks to diversify its foreign exchange reserves. However, unlike in the past, Saudi security considerations are not fully aligned with its economic calculations.

For Saudi Arabia, this has led to careful strategic adjustments. While maintaining its crucial security relationship with the US, it is pursuing economic modernization and diversification through expanded relationships with multiple partners, including both Western nations and China. This balancing act has accelerated under Crown Prince Mohammed bin Salman (MBS)'s Vision 2030, which requires massive foreign investment and technology transfer to succeed (as discussed in Chapter 5).

The emergence of central bank digital currencies (CBDCs) adds another dimension to Saudi considerations. The Kingdom's decision to join China's mBridge CBDC project in June 2024 signals its interest in exploring digital alternatives for cross-border settlements. This technological evolution could potentially accelerate changes in payment patterns without requiring immediate shifts in the pricing architecture for oil.

Saudi Arabia's approach remains measured and pragmatic. Rather than dramatic shifts, it is pursuing incremental changes that preserve its strategic flexibility while adapting to evolving global financial architectures. This careful calibration reflects both the continuing importance of dollar-based markets and its deepening economic integration with Asia.

> Saudi statements repeatedly decry global "polarization" and position Saudi Arabia as a figurative and literal middle ground between the East and West. [1]

For the Kingdom, any reconsideration of the Petrodollar system must balance multiple factors: its need for security guarantees, ambitious economic diversification plans, growing trade relationships with Asia, and the imperatives of technological

modernization. Understanding how Saudi leaders evaluate these tradeoffs is crucial for anticipating potential changes in global currency arrangements.

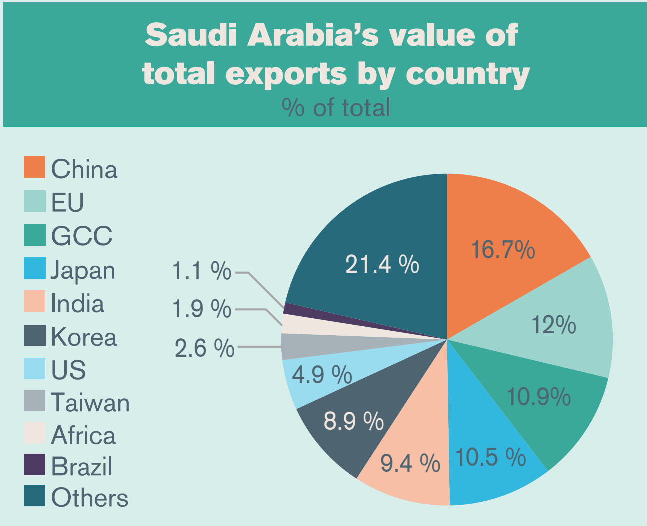
This chapter examines how Saudi Arabia approaches these complex choices. It analyzes the economic logic behind potential currency decisions, explores strategic and security considerations, evaluates the impact of technological change, and considers how domestic priorities shape the Kingdom's approach to international monetary arrangements. While other Gulf states face similar considerations, Saudi Arabia's decisions will be particularly consequential given its central role in global oil markets and the international monetary system.

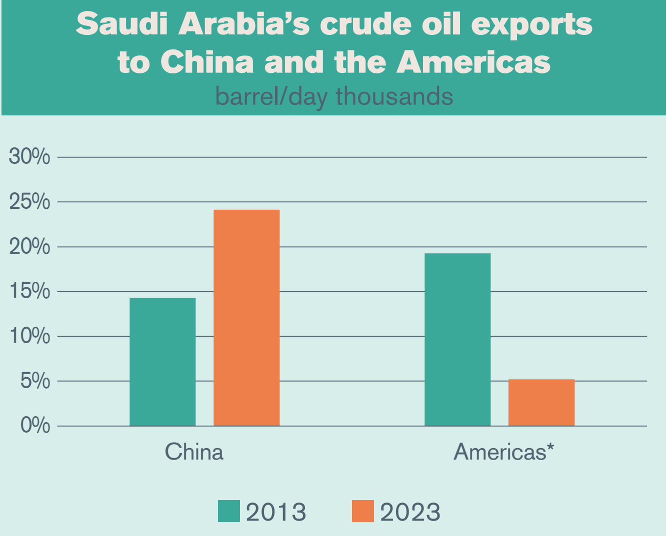
## 7.2 The Economic Logic

### Trade patterns

The economic dynamics behind Saudi Arabia's need and desire to use the dollar in its trade and investment have evolved significantly in recent years. China is now Saudi Arabia's largest trading partner, accounting for nearly a quarter of the volume of Saudi Arabia's crude oil exports in 2023. OPEC data shows major importers in the USs – the US, Canada, Mexico and Chile – account for just 5% of Saudi exports, down from 19% ten years ago.

#### Saudi Arabia's Export Profile



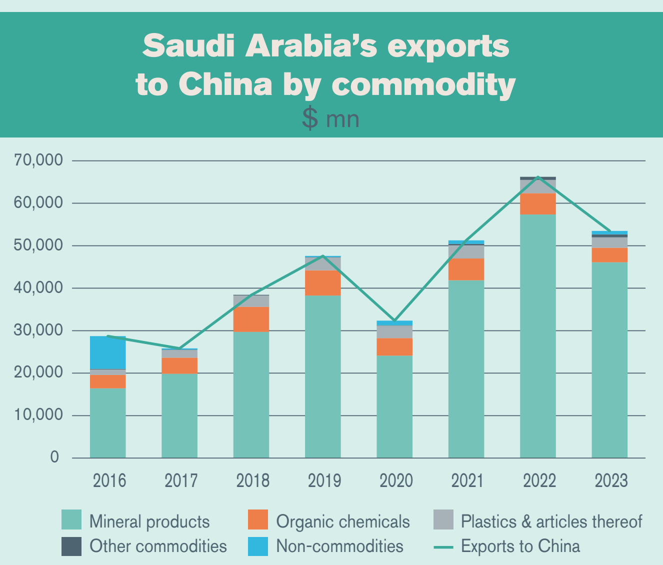

*Source: Enodo Economics, CEIC*

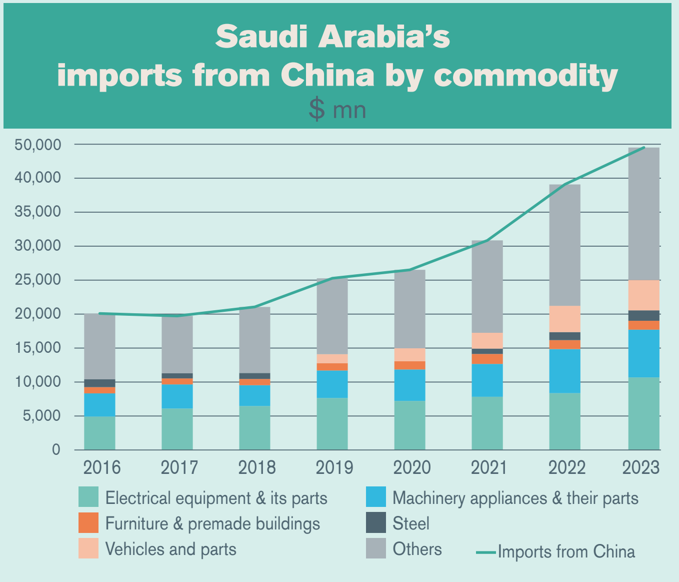
Nonetheless, Saudi Arabia's once-substantial trade surplus with China has declined markedly, averaging 1.6% of GDP between 2015 and 2023, down from 8.2% during 2000–2014, and dropping further to just 0.7% in 2023. This reduces one of the traditional obstacles to yuan settlement by limiting the risk of accumulating excess yuan reserves that the Saudis can't use. [2]

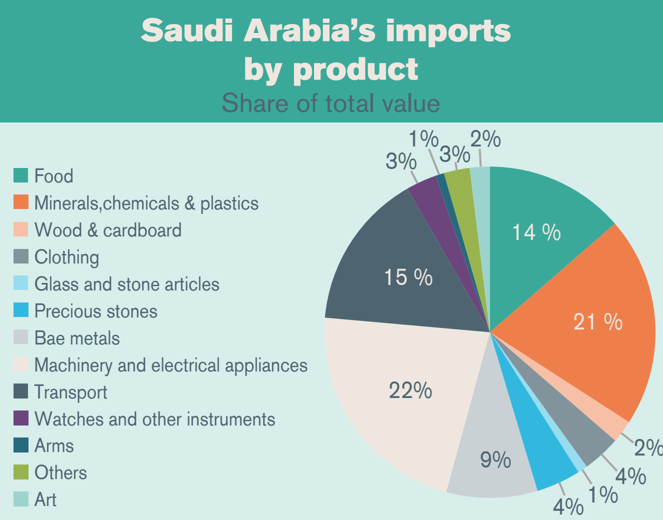
> This more balanced trade reflects the growing role of Chinese goods and services in the Saudi economy.

China – the manufacturing hub of the world and the largest global exporter of machinery, electronics and consumer goods – can now provide Saudi Arabia with a trade avenue to recycle its oil revenues, in addition to becoming a more attractive and sophisticated investment destination.

## Saudi Arabia's Trade with China




*Source: Enodo Economics, CEIC*

Still, Saudi Arabia is not putting all its eggs in the China basket. Japan and South Korea – staunch US allies in Asia – together make up more than a fifth of Saudi's oil exports. Including the US and EU takes this proportion to 38%.

> This diversified export profile limits China's economic leverage over Saudi Arabia through oil trade alone.

BOX 7.1

## China and GCC Free Trade Agreement Negotiations

China and the GCC first entered negotiations over a free trade agreement in 2004.[1] Early attempts failed due to Beijing's concern that an agreement could undermine its own chemicals industry.[2]

Xi's 2016 visit to Riyadh revived talks of an FTA agreement, in line with the nascent expansion of China-GCC beyond traditional hydrocarbons to encompass a much broader range of manufactured goods, services, infrastructure and investment. But Qatar's rupture with its fellow GCC states put negotiations on hold until 2020.[3]

Since then, senior Chinese officials have repeatedly pushed for progress on the agreement. In January 2024, Chinese Ambassador to Saudi Arabia Chen Weiqing stated that, following ten rounds of technical negotiations and meetings, around 90% of the terms had been completed.[4]

Yet by May of the same year, talks had reportedly stalled due to Saudi reservations. Riyadh remains concerned that exempting Chinese products from import duties would undermine its own domestic manufacturing ambitions.[5] With non-oil revenue a crucial part of Vision 2030, it appears unlikely that such concerns will go away soon.

Nevertheless, China's trade of manufactured goods with the GCC will continue to expand even without a free trade deal. In Saudi Arabia, the KSA-Sino Logistics Special Economic Zone – located within the King Salman International Airport grounds – is expected to attract more than 3,000 wholesalers and retailers, and around 200 light industrial manufacturers from China and the Asia-Pacific.[6]

## Investment patterns

> China and Hong Kong are critical to Gulf economic diversification plans. This serves both sides' strategic needs – Gulf funds seek exposure to crucial technology supply chains and growth markets, while China wants to diversify its investor base away from traditional Western and Asian sources.

Chinese firms have increased their direct investment in Saudi Arabia (see Chapter 5), undertaking many of Saudi's largest oil sector upgrades in recent years. Yuan-denominated payments for these projects provide a natural channel for utilizing yuan holdings from trade settlement.

Vision 2030's massive infrastructure and development needs align well with Chinese construction and technology capabilities, heralding more Chinese involvement in the Saudi economy – and still more uses for the yuan.

In its overall economic transition, Riyadh sees Beijing as a key, "trustworthy" partner over the long term. [3] As Saudi Finance Minister Mohammed al-Jadaan puts it,

> ***China has a long-term vision, [Saudi Arabia has] a long-term vision, and the world needs long-term plans."*** [4]

Foreign ministry press releases repeatedly describe Saudi Arabia and China as ***"the two friendly countries,"*** [5] [6] while MBS in his speech at the historical December 2022 China-Gulf Cooperation Council summit made it clear Saudi Arabia aims to ***"raise the level of strategic partnership"*** with China to ***"maximize [both countries'] gains."*** [7] What China and Saudi Arabia have to offer one another is a ***"harmonization"*** (muwā'amah) between the Arab world's natural resources and ***"human potential,"*** and China's ***"pioneering technologies."*** [8]

Saudi Arabia enjoys expanding opportunities to deploy its yuan holdings within China. In financial markets, Chinese government bonds and equities offer important portfolio diversification. Their inclusion in major global indices has improved their accessibility and liquidity and Beijing continues to professionalize its capital markets. Meanwhile, Beijing's policy focus on developing advanced technologies offers Saudi Arabia exposure to crucial technology supply chains and growth markets.

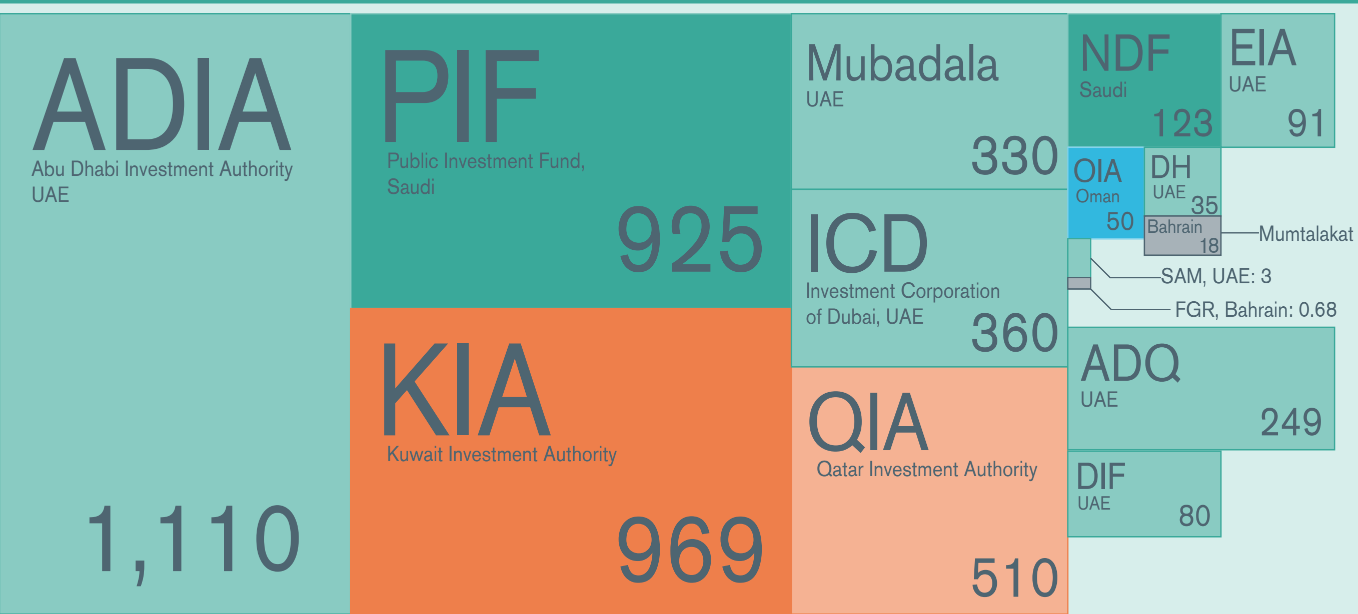
In contrast to the US' push for "de-risking" from Chinese investments, Saudi Arabian officials view diversifying foreign currency reserves into the yuan as a form of protective interdependence.[9]

Interest in Chinese markets among Gulf sovereign wealth funds has grown in response. Saudi Arabia's PIF and similar funds, such as the Abu Dhabi Investment Authority (ADIA) and the Kuwait Investment Authority (KIA), collectively control nearly $4trn in assets. The amount they can commit to Chinese markets is potentially huge.

Between 2021 and 2024, Gulf entities, including the PIF, sought greater access to Chinese equities, signaling growing comfort with direct market access.

Over the past decade, the UAE, Kuwait, and Qatar were the biggest Gulf sovereign investors in Chinese equities, enjoying greater access to the stock market via Beijing's QFII certification. Early investment was limited but diverse, from pharmaceuticals to software to entertainment. Over the years, Gulf sovereign funds have sought to increase their QFII quota by establishing offices in China. As of 2024, 14 funds had QFII certification, a jump from just 3 in 2021.

## Gulf Sovereign Wealth Funds and Their Presence in China




### Gulf sovereign wealth funds and other state institutions with China's qualified foreign institutional investor certification

| Approval time | Name | Country |
|---|---|---|
| Dec-08 | ADIA | UAE |
| Dec-11 | KIA | Kuwait |
| Sep-12 | Qatar Holding LLC (part of QIA) | Qatar |
| Jun-21 | Al Mehwar Commercial Investment LLC | UAE |
| Aug-21 | GOSI | Saudi |
| Aug-21 | KIO | Kuwait |
| Nov-21 | PIF | Saudi |
| Aug-22 | Alpha Onyx Limited | UAE |
| Oct-22 | Focus Vision DMCC | UAE |
| Apr-24 | Abs Commodity Trading Company DMCC | UAE |
| May-24 | QNB | Qatar |
| Jun-24 | OIA | Oman |
| Jul-24 | Jabal Asset Management LLC | Oman |
| Sep-24 | Levmet Trading DMCC | UAE |

ADIA: Abu Dhabi Investment Authority
PIF: Public Investment Fund
KIA: Kuwait Investment Authority
KIO: Kuwait Investment Office KIO - London subsidiary of KIA
QIA: Qatar Investment Authority
ICD: Investment Corporation of Dubai
GOSI: General Organization For Social Insurance
ADQ: Abu Dhabi Developmental Holding Company
NDF: National Development Fund
EIA: Emirates Investment Authority
OIA: Oman Investment Authority
DH: Dubai Holding
SAM: Sharjah Asset Management
FGR: Future Generations Reserve
DIF: Dubai Investment Fund
QNB: Qatar National Bank

*Source: CSRC , Global SWF*

BOX 7.2

## Gulf Sovereign Wealth Funds in China

| Sovereign Wealth Fund | Country | Office in Hong Kong/China |
|---|---|---|
| PIF | Saudi Arabia | • Opened Hong Kong office in 2022.[1]<br>• In December 2023, Yicai Global reported that the PIF plans to open a mainland Chinese office.[2]<br>• In September 2024, the Chinese ambassador to Saudi Arabia stated the PIF is considering Beijing, Shanghai and Shenzhen for its local office.[3] |
| Mubadala | UAE (Abu Dhabi) | • Opened a Beijing office in September 2023.[4]<br>• Reuters reported that the team is about 10 people and "focuses on direct investments and fund investments in the country."<br>• Its "China portfolio includes JD Industrials, Hasten Biopharmaceutic and… Shein." |
| AIDA | UAE (Abu Dhabi) | • Opened a Hong Kong office in 2016. Initially had a three-person team in the territory.[5]<br>• Hired former finance head of JD.Com Hugo Hu to oversee Chinese private equity investments in June 2024.[6] |
| DIF | UAE (Dubai) | • Has the most offices worldwide of any GCC sovereign wealth fund, including in Hong Kong and Shanghai.[7]<br>• Both were listed as among the fund's "biggest offices" on its website in 2023. |
| ICD | UAE (Dubai) | • Has investments in China, but no office could be identified.[8] |
| KIA | Kuwait | • Opened a representative office in Beijing in 2009.[9]<br>• Appears to be a fairly active investor via the QFII mechanism. A May 2024 Shanghai Stock Exchange article states it "appeared in the top 10 list of shareholders in 30 A-share companies, with a total market value of Rmb4.5bn".[10] |
| QIA | Qatar | • No office in Hong Kong or China.<br>• In November 2023 the head of its Asia-Pacific department stated the Chinese "retail, healthcare and tech' sectors are under consideration for investment."[11] |

Two Saudi Arabian wealth funds – the PIF and General Organization for Social Insurance – acquired their QFII certificate in 2021. The PIF opened an office in Hong Kong in 2022, and announced plans to open an office in China in 2023.

Chinese authorities are actively encouraging this trend. The Shenzhen municipal government established a $1bn Middle East-China cooperation fund with the PIF in January 2023, [10] and the HKMA also signed $1bn fund to explore investment in manufacturing, renewables, fintech and healthcare in 2024. [11]

Other local governments including Guangzhou and Chengdu are pursuing similar initiatives. In 2023, the PIF acquired a $265mn stake in Chinese e-sports company VSPO [12] and in 2024, made a $2bn strategic investment in Lenovo convertible bonds. [13] It signed six memorandums of understanding worth a total of $50bn with leading Chinese financial institutions in 2024. [14]

***The data show that GCC member states...are keen on harnessing the vast potential of the Chinese market,"***

Mai Alfarhan and Mohammed Alsudairi, [15] wrote in a 2024 study [16] of Gulf soverign wealth funds in China.

China could receive as much as $1-2trn in investments from the top Gulf sovereign wealth funds by 2030 – equivalent to half of their current assets under management, according to projections at the 10th Arab-China Business Conference, held in Riyadh in June 2023. [17]

Sovereign investor inflows to China surged 21% to $10.3bn in 2024, up from $8.5bn in 2023, according to Global SWF's tracker of 750 state-owned investors. [18] Gulf sovereign wealth funds, led by Saudi Arabia's PIF, Abu Dhabi's Mubadala and ADIA, and Qatar's QIA, accounted for the lion's share of these investments, or 62% of inflows. [19] Notable deals in 2024 included UAE funds joining Chinese firms in a landmark $8.3bn co-investment, buying a 60% stake in the shopping mall subsidiary of Chinese property giant Dalian Wanda.

Hong Kong and Saudi Arabia's market regulators are advancing plans for cross-border financial cooperation. Two exchange traded funds (ETFs) linked to stocks traded in Hong Kong have debuted on the Saudi Stock Exchange to underpin the ties. The Hong Kong's Securities and Futures Commission (SFC) and Saudi's Capital Market Authority will formalize an agreement to promote cross-border listings and trading of a wide range of financial products of the two markets, that also includes regular meetings and staff exchanges, according to SFC CEO Julia Leung at a Riyadh briefing in 2024. [20]

> Even as Gulf investors increase their participation in Chinese markets, they are concerned about China's capital controls and require special guarantees.

As Yasir Al-Rumayyan, governor of the PIF, noted in an interview in 2022,

***When we invest in any country, the first thing we ask is, do you have capital controls?... We have taken exceptions for the capital controls from specific countries through negotiations... We cannot invest this way, I can't be in an investment I can't exit."*** [21]

We were not able to identify exactly what these negotiations and guarantees are, but it is clear that China's capital controls are an issue that the Saudis have found some way of dealing with.

China can also be pragmatic as evidenced in its $2bn issuance of dollar sovereign bonds in 2024, the first dollar bond issuance since 2021. [22] China is willing to transact in dollars with Saudi Arabia in a self-contained offshore manner insulated from US regulators while supporting diversification and the development of the Saudi financial market, one of the main pillars of Vision 2030.

Saudi Arabian investors are carefully monitoring how China's financial market reforms progress and remain generally concerned about property rights protection and contract enforcement in China. The Chinese government's interventionist tendencies in markets and companies, including the potential for sudden regulatory changes, create additional uncertainty.

> Both sides seem to be willing to find pragmatic ways of strengthening their relationship so a gradual increase in the use of yuan is likely.

## Financial system stability concerns

Saudi Arabia has for decades benefited from the stability offered by pegging its currency, the riyal, to the dollar. [23] Accepting payment in a less stable, less convertible currency like the yuan would not only risk instability in itself, but could also undermine the dollar, weakening Saudi Arabia's own currency and imperilling its huge dollar assets. In a 2016 paper, SAMA argued,

> ***"The dollar peg has served Saudi Arabia well, and is likely to do so until Saudi Arabia becomes a meaningfully diversified economy."*** [24]

As Saudi Arabia's Vision 2030 specifically envisions a diversified economy, the continued usefulness of the dollar peg could in the future come under new consideration.

> Historically, Saudi's dollar peg has impeded trade and investment in other currencies but technological innovation, particularly the mBridge CBDC platform, could overcome that.

By enabling instantaneous payment-versus-payment settlement between participating banks, mBridge reduces the foreign exchange risk and associated costs that complicate non-dollar settlements. This could make yuan settlement more attractive, even while maintaining the dollar peg as a cornerstone of Saudi monetary policy for now.

Overall, Saudi Arabia's economic calculations suggest a preference for careful calibration rather than dramatic shifts in its currency arrangements. While exploring opportunities for yuan settlement and investment, the Kingdom remains mindful of maintaining stability in its financial system and supporting its broader economic transformation goals.

BOX 7.3

## The Saudi Currency Peg – Past, Present and Future

Saudi Arabia's dollar peg has been a cornerstone of its monetary policy since 1986, providing stability but also creating constraints. The peg shields the economy from energy market volatility and allows reserve accumulation during prosperous times. However, it means Saudi Arabia's monetary policy must follow the US Federal Reserve's lead, even when business cycles diverge.

The peg has weathered several significant challenges, including:

- Low oil prices in the 1990s
- The 2008 financial crisis
- The 2014 oil price crash
- The Covid pandemic

During these stress periods, Saudi Arabia has chosen to defend the peg through fiscal adjustment and debt issuance rather than devaluation. However, the peg creates challenges for economic diversification. During the 2014-2019 period, for example, the Saudi riyal appreciated by 16.7% in trade-weighted terms, hurting non-oil export competitiveness.

Alternative approaches exist - Norway, another oil-rich nation, employs inflation targeting with a floating exchange rate, allowing its currency to adjust to oil market conditions. Gulf states like Saudi Arabia should peg their currencies to a mix of major world currencies (like the dollar and euro) and oil prices, instead of just the US dollar as they do now, Harvard economist Jeffrey Frankel says. *

Currently, Saudi Arabia's currency value is fixed to the US dollar – when the dollar goes up or down, their currency follows exactly. This is stable but rigid. The new proposal would allow their currency value to reflect major currencies and global oil prices – their main export. This offers more flexibility while keeping reasonable stability.

Keeping the current dollar peg means investors know exactly what they're getting, but gives Saudi Arabia less control over its own monetary policy. Changing it would mean more economic freedom but might make investors less certain. Given Saudi Arabia's size in global markets, this change could also reduce the US dollar's global influence.

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## 7.3 Strategic and Security Considerations

Saudi decision-making extends well beyond simple economic calculations. As the world's largest oil exporter and a cornerstone of the Petrodollar system, Saudi Arabia's currency decisions hold significant global implications.

> While a dramatic departure from the dollar is unlikely, even gradual steps toward yuan settlement and investment carry substantial strategic consequences, potentially reshaping key economic and geopolitical dynamics.

Saudi Arabia must weigh the Chinese aspirations for increased use of its currency against Saudi's crucial security relationship with the US. The US security umbrella remains fundamental to regional stability. [25] No other power, including China, has shown the willingness or capability to replace this security role.

> This creates powerful incentives to maintain dollar dominance in oil pricing while exploring more limited yuan settlement for non-oil trade and selective oil transactions.

Above all, economic officials emphasize stability and predictability.

***"The global situation,"*** al-Jadaan notes, ***"is in turmoil. We must be careful before we make decisions."*** [26]

When it comes to oil pricing, Energy Minister Abd al-Aziz bin Salman argues,

***"It is not in [Saudi] interests to have short-term, medium-term or even long-term fluctuations."*** [27]

Saudi Arabia is open to discussing oil trade settlements in currencies other than the dollar, Saudi Minister of Finance, Mohammed Al-Jadaan, told Bloomberg TV in an interview in Davos in January 2023.

***"There are no issues with discussing how we settle our trade arrangements, whether it is in the US dollar, whether it is the euro, whether it is the Saudi riyal."*** [28]

> However, in private discussions, Gulf officials express concern that accepting yuan-denominated payments could create pressure to accept other currencies as well from major oil importers, potentially fragmenting their payment systems and complicating their financial operations.[29]

BOX 7.4

## Gulf Participation in China's Multilateral Initiatives

| Chinese initiatives | Gulf participation |
|---|---|
| BRICS | UAE<br>Saudi Arabia has not yet confirmed whether it will accept its invitation |
| BRI | Saudi Arabia, UAE, Qatar, Kuwait, Bahrain, Oman |
| AIIB | Bahrain, Saudi Arabia, UAE, Oman, Qatar |
| Shanghai Cooperation Organisation | *Dialogue Partners:* Saudi Arabia, Bahrain, UAE, Qatar, Kuwait |
| GDI | Saudi, UAE, Qatar, Bahrain, Oman, Kuwait |
| GSI | Kuwait, Saudi, UAE |
| GCI | UAE, Kuwait, Bahrain |

### Global Development Initiative (GDI), 2021

The GDI aims to accelerate the UN's Sustainable Development Goals through "balanced, coordinated and inclusive growth." It would deploy foreign debt suspension and development aid "to help developing countries, particularly vulnerable ones facing exceptional difficulties." The GDI emphasizes that development does not equate with Westernization — in contrast with the US homage to the values of free speech and democracy.

Two years on, Vice President Han Zheng announced that more than 70 countries had joined the Group of Friends of the GDI at the UN. A special fund of $10bn would be used to implement the initiative, he said, with 200 projects in the pipeline involving poverty reduction, food security, and green development.

### Global Security Initiative (GSI), 2022

This common security initiative embellishes China's Five Principles of Peaceful Coexistence with the concept of indivisible security, under which no state can achieve security at the expense of another.

The GSI framework is short on operational detail. It has received "support and appreciation" from more than 100 countries and organizations, and it has been written into many cooperation documents, an assistant minister of foreign affairs told the Xiangshan Forum in October 2023.

### Global Civilization Initiative (GCI), 2023

Stressing the importance of respecting the diversity of world civilizations, Xi Jinping said that countries must appreciate different civilizations' values and refrain from imposing their own and stoking ideological confrontation. China frames the GCI as an urgent response to troubled times and a salve for the "clash of civilizations," which it blames on trouble-making Western politicians.

The weakest of the three global initiatives, the GCI attempts to change the global consensus built on Western norms and promote Beijing's stance in key areas such as human rights.[1]

Saudi Arabia's approach to currency decisions reflects its broader strategy of testing new partnerships while avoiding disruption to existing relationships. Under MBS, the Kingdom has positioned itself as an influential middle power rather than aligning exclusively with either the US or China by moving beyond traditional oil cooperation to strategic partnerships in energy, infrastructure, finance and technology.

In the words of Foreign Minister Faisal bin Farhan, Saudi foreign policy ***"always works to support our economic goals and the Kingdom's development goals."*** [30] In reference to OPEC+'s October 2022 production cuts, he dismisses the notion that Riyadh is playing global politics.

> ***The Kingdom of Saudi Arabia has a clear position that economic decisions are not politicized. …Economics is economics and it doesn't interfere with politics."*** [31]

The evolution in yuan settlement and investment exemplifies this careful balancing act. While exploring new financial arrangements with China, Saudi Arabia has been cautious about formal commitments to initiatives that might antagonize Washington. This hedging strategy is particularly evident in how Saudi Arabia approaches new multilateral initiatives. The Kingdom offers measured support for Chinese frameworks while avoiding full endorsement of arrangements that might trigger US concerns.

In technology cooperation, Saudi Arabia maintains parallel tracks – deepening ties with Chinese firms in some areas while trying to respect US red lines in sensitive sectors like semiconductors and AI. Yet, it often sails too close to the wind. Saudi Arabia's Prosperity7, a venture capital arm of Aramco, was the only non-Chinese investor in Zhipu AI's $400mn funding round, which valued the Chinese AI startup at $3bn.

> Zhipu AI aims to become China's answer to OpenAI, and the Saudi investment demonstrates the Kingdom's willingness to support an ecosystem that could guard against US dominance in AI.

> ***The Saudis don't want Silicon Valley dominating this industry,"*** one person close to Prosperity7 told the Financial Times. [32]

The emergence of central bank digital currencies adds another strategic dimension to Saudi Arabia's currency positioning. Saudi and UAE participation in China's mBridge CBDC project demonstrates a calculated approach to expanding options while avoiding immediate strategic realignment. This is evident in Saudi Arabia's measured response to BRICS initiatives – while engaging with mBridge, the Kingdom has maintained a cautious stance toward full BRICS membership, particularly regarding proposals for a BRICS currency.

> The mBridge platform seemed to offer an elegant solution – enabling more efficient cross-border payments while preserving existing pricing frameworks and strategic

relationships. However, recent developments have complicated the situation.

The BIS withdrawal from the mBridge project, following the BRICS summit in Kazan, Russia, in October 2024, highlighted the geopolitical pressures at play. The summit's explicit endorsement of local currency settlements and "non-discriminatory access" to payment systems signaled BRICS' intention to create an alternative financial infrastructure. [33]

These ambitions for mBridge came on the heels of a March 2024 announcement of plans for a BRICS blockchain-based payment platform, positioned as an alternative to SWIFT. [34]

As detailed by Kremlin aide Yury Ushakov, this "BRICS Bridge" would connect member states' financial systems through payment gateways utilizing CBDCs. The initiative explicitly aims to create an "independent BRICS payment system" based on blockchain technology that would be "free of politics" – a clear challenge to the dollar-dominated SWIFT system. [35]

What initially appeared to be neutral technological ground for expanding payment options has become another arena where strategic choices between competing financial architectures may be unavoidable.

Even seemingly neutral technical initiatives like mBridge cannot be fully insulated from broader geopolitical tensions. The BIS' withdrawal indicates that Saudi Arabia's strategy of maintaining optionality through digital currency initiatives may face increasing constraints.

Saudi Arabia faces complex considerations. While digital currency initiatives offer potential efficiency gains, they are increasingly entangled with competing visions for the future of global payments infrastructure. The Kingdom must navigate these waters carefully, as even technical cooperation on payment systems carry broader strategic implications in an increasingly fragmented global financial landscape.

## 7.4 Domestic Political Factors

Saudi domestic politics, particularly the consolidation of power under MBS, plays a crucial role in shaping currency and investment decisions.

MBS has staked his legitimacy on Vision 2030's success in modernizing and diversifying the Saudi economy. Chinese technology and investment capabilities are vital to achieving these development goals.

Vision 2030 will require massive foreign investment and technology transfer. China's combination of capital, construction capability, and technological expertise makes it an essential partner for many key projects. Saudi policymakers therefore need to maintain multiple channels for financial and economic engagement with China, including selective yuan settlement and investment.

> Both Saudi crown prince MBS and UAE President Mohamed bin Zayed Al Nahyan (MBZ) exercize personal ownership of the US and the China relationships.

Any strategic decision to de-dollarize would have to be taken by these men alone. Any advice they receive would have a high technical component, but ultimately it would be a political decision. Personal advisers and professionals with proven loyalty such as Yassir Al Rumayyan, governor of the PIF, or in the UAE Sultan Al Jaber, the CEO of ADNOC feature prominently in strategic decisions, but they would not be able to weigh in on the political consequences.

MBS has shown pragmatism in balancing competing interests, carefully avoiding significantly damaging Saudi-US ties despite occasional tensions. This suggests that the expansion of yuan settlement and investment will remain calibrated to avoid triggering major US concerns.

> Both Saudi Arabia and the UAE are likely to prioritize US security guarantees over any major transition towards the yuan, especially while regional warfare and tensions with Iran remain high.

## In conclusion

Saudi Arabia's approach to potential changes in the Petrodollar system reflects a careful balancing of economic pragmatism, strategic imperatives, and domestic priorities. While the Kingdom actively explores opportunities with China it maintains a measured approach that prioritizes stability and optionality over dramatic shifts.

The economic logic for greater engagement with China is compelling - from trade patterns to investment opportunities in strategic sectors. However, Saudi Arabia's calculations extend beyond pure economics to encompass crucial security considerations and domestic development goals under Vision 2030. The emergence of new technologies, particularly CBDCs, offers potential pathways for incremental evolution without forcing immediate strategic choices.

Saudi decision-making remains firmly anchored in pragmatism, with MBS carefully calibrating relationships with both China and the US. While change is underway in how oil trade is settled and revenues recycled, it will likely proceed gradually and strategically rather than through sudden shifts that could destabilize existing arrangements.

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# 8 Evolution scenarios and catalysts for change

# 8.1 Introduction

The future of the Petrodollar system and the potential emergence of a Petroyuan will be shaped by the complex three-way relationship between Saudi Arabia, China, and the US.

> As digital innovation transforms payment systems and geopolitical tensions reshape trade patterns, understanding potential evolution scenarios becomes crucial for anticipating changes in the international monetary system.

The interplay between technological innovation and strategic realignment creates multiple potential pathways forward. Some changes may unfold gradually through careful calibration of relationships and interests, while others might emerge suddenly in response to external shocks or technological breakthroughs. By examining these possibilities systematically, we can better understand the forces that will shape the future of international finance.

# 8.2 Three Paths Forward

Our analysis suggests three distinct scenarios for how the transformation of the Petrodollar system might unfold over the next five years – the longest period over which any reasonable forecasting can be made – each with different implications for global finance and international relations. Beyond this timeframe, technological change and geopolitical shifts become too unpredictable to make meaningful projections.

BASELINE SCENARIO

### Managed evolution

**The most likely pathway is one of careful, managed evolution where Saudi Arabia gradually expands yuan settlement and investment while maintaining the core architecture of the Petrodollar system.**

**In this scenario:**

- Oil pricing remains predominantly in dollars, maintaining the foundation of the Petrodollar system
- Yuan settlement expands first in non-oil trade and selectively in oil trade, facilitated by platforms like mBridge

- Saudi investment in Chinese assets grows steadily but remains a minority portion of overall foreign holdings
- The US security relationship continues largely unchanged despite occasional tensions
- Digital yuan development proceeds gradually and complements rather than challenges dollar dominance

This scenario aligns with Saudi Arabia's demonstrated preference for incremental change and the careful balancing of relationships.

**Key markers include:**

- Growing use of mBridge for trade settlement
- Expanded Saudi investment in Chinese bonds and equities
- Increased yuan-denominated construction and services contracts
- Selective yuan oil settlement with Chinese state firms
- Continued large Saudi holdings of US Treasuries

ACCELERATION SCENARIO

## Rapid shift east

**A more dramatic acceleration of change could occur if several factors align to push Saudi Arabia toward deeper financial integration with China. This scenario envisions a decisive strategic pivot rather than careful calibration, driven by a combination of push and pull factors.**

**Potential drivers include:**

- Sharp deterioration in US-Saudi relations
- Accelerated decline in US influence in the Gulf and across the Middle East
- Major breakthroughs in Chinese technological or financial market development
- Rapid adoption of digital yuan infrastructure
- Acceleration of BRICS-led de-dollarization initiatives

The key distinction from managed evolution lies in the pace and scope of transformation. Rather than gradual adjustment, this scenario would see the rapid adoption of yuan settlement for oil exports, a major reallocation of Saudi foreign reserves toward Chinese assets, and deep integration with Chinese digital currency systems. While maintaining some relationship with the dollar system, Saudi Arabia would significantly reduce its reliance on US financial infrastructure and security guarantees.

This scenario faces significant obstacles, particularly the challenge of replacing US security capabilities and the risk of precipitating serious US countermeasures. Ultimately, the strategic decision for such a dramatic shift lies in the hands of Crown Prince Mohammed bin Salman (MBS). As the architect of Vision 2030 and the Kingdom's primary decision-maker, his personal assessment of risks and opportunities would be decisive.

Given his demonstrated preference for the careful balancing of relationships and pragmatic advancement of Saudi interests, a sudden strategic pivot seems unlikely. While MBS has shown a willingness to assert Saudi autonomy and leverage relationships with both the East and West, he has consistently avoided irreversible strategic choices that would fundamentally alter Saudi Arabia's position in the global order.

> This makes the acceleration scenario, in our assessment, the least likely of the three potential pathways forward.

DISRUPTION SCENARIO

## External shock

**The third scenario envisions change driven by external shocks rather than Saudi strategic choices. Instead of carefully planned evolution or deliberate acceleration, Saudi Arabia would be forced to make rapid adjustments to an altered global environment.**

**Potential triggers include:**

- A major US-China conflict, particularly over Taiwan, could trigger financial system fragmentation and severe disruption to global trade and payment networks
- Aggressive US financial sanctions against China might force the rapid development of alternative payment channels
- A severe financial or economic crisis in either China or the US could change the economic and financial status quo dramatically
- A major oil market disruption from severe supply shocks due to a conflict in the Middle East, cyberattacks on critical infrastructure, or the collapse of OPEC+ cooperation
- Transformative technological innovation, either from China independently or through Saudi-China collaboration, that could create compelling advantages
- Significant political upheavals or regime changes in the US, China, or Saudi Arabia that fundamentally alter geopolitical alignments, strategic partnerships, or economic policies

Under this scenario, Saudi Arabia would be forced to make rapid adjustments to an altered global environment rather than following a carefully planned evolution.

> While such external shocks might have seemed least likely in the past, the current intensity of US-China strategic competition and the broader upheaval in the global order make this our second-most likely scenario.

The growing fragmentation of the international system, combined with increasing geopolitical tensions, creates conditions where sudden disruptions to established patterns have become more probable than at any time since the end of the Cold War.

In a more positive sense, technological disruption could make such a shift more feasible than in the past by reducing practical barriers to adopting alternative payment systems. Beyond payment technologies, major technological breakthroughs in China across sectors like semiconductors, artificial intelligence, renewable energy, and digital infrastructure could incentivize Saudi Arabia to align more closely with China's sphere of influence.

Moreover, growing technological collaboration between Saudi Arabia and China could create self-reinforcing momentum for closer alignment. As the two countries work together on initiatives ranging from digital currency platforms to artificial intelligence research, they may achieve breakthroughs that could deepen their interdependence. Success in joint technology ventures could accelerate Saudi Arabia's broader strategic pivot toward China's sphere of influence, creating knowledge sharing and innovation pathways that complement financial integration.

## 8.3 Forces Shaping the Future

> The interaction between previously analyzed forces will determine which scenario dominates the next five years. The timing and sequence of developments matter as much as their individual impact.

Early breakthroughs in digital currency platforms like mBridge could accelerate other changes by demonstrating the viability of alternative payment systems. Success here might encourage broader experimentation with yuan settlement, particularly if it coincides with periods of heightened US-China tension that motivate risk reduction through payment system diversification.

The sequence of Chinese financial market opening also matters critically. If China successfully launches key reforms addressing, in particular, concerns by Saudi Arabia and other countries about its closed capital account before any major crisis, it could

potentially have created tested alternatives that Saudia Arabia could adopt rapidly if needed. However, if crisis precedes reform, the lack of viable alternatives could force Saudi Arabia to maintain dollar dominance despite other pressures for change.

Security dynamics could either accelerate or brake financial evolution. A perceived weakening of US security commitments might drive faster adoption of Chinese systems as Saudi Arabia hedges its strategic position. Conversely, heightened regional threats could reinforce the value of US security guarantees, slowing financial diversification despite economic incentives for change.

Technology cooperation between Saudi Arabia and China could create self-reinforcing cycles that accelerate broader strategic alignment. Early successes in joint ventures or shared technological breakthroughs might build trust and deepen interdependence in ways that make financial integration more natural and less risky from a Saudi perspective.

The oil market's evolution is another important variable. Sudden shifts in global demand patterns or the emergence of new trading hubs could force the rapid adaptation of different payment systems. However, the complexity of existing dollar-based infrastructure creates significant inertia – changes in settlement and revenue recycling patterns are likely to precede rather than follow shifts in pricing mechanisms.

These interactions suggest managed evolution as the most likely near-term scenario. However, the growing number of potential shock triggers, combined with accelerating technological change, makes more dramatic transitions increasingly possible as the forecast period progresses.

## 8.4 Looking Forward

> Over the next five years, the evolution of the Petrodollar system will likely follow a path of managed change rather than dramatic transformation.

While Saudi Arabia shows increasing willingness to experiment with alternative payment systems and expand financial cooperation with China, it continues to value the stability and security benefits of existing arrangements. The Kingdom's careful balancing act, personally directed by MBS, suggests that radical shifts are unlikely barring external shocks.

However, intensifying US-China strategic competition creates conditions where such shocks become increasingly possible. The growing frequency of financial sanctions, accelerating technological change, and increasing global monetary fragmentation all raise the probability of sudden disruptions to established patterns. This makes preparedness for rapid adaptation as important as planning for gradual evolution.

> Technology emerges as a crucial wild card in this equation.

Breakthroughs in digital payment systems, particularly through platforms like mBridge, and the overall digitalization of trade could enable faster change than traditional policy measures. Moreover, broader technological collaboration between Saudi Arabia and China might create momentum for deeper strategic alignment that extends beyond purely financial considerations.

The key to anticipating change lies in monitoring the interaction between forces rather than focusing on individual variables. Early success in digital currency experiments could accelerate broader financial integration. Progress in Chinese financial reforms might enable the faster adoption of alternatives if geopolitical crises emerge. Technological cooperation could build trust that facilitates deeper strategic alignment.

## In conclusion

Looking ahead, the most likely path remains one of careful evolution rather than dramatic transformation. However, the range of plausible outcomes has widened considerably. The growing possibility of external shocks, combined with accelerating technological change, means that Saudi Arabia must maintain capability for rapid adaptation while pursuing gradual change as its preferred strategy.

# 9 US strategic choices

# 9.1 Introduction

Recent developments in the Petrodollar system present US policymakers with important strategic choices. While dollar pricing of oil remains resilient, changes in settlement mechanisms and the recycling of oil revenues signal the early stages of a more complex transformation in the international monetary architecture.

As our analysis has shown, this evolution unfolds through multiple channels: China's strategic push for yuan-based trade settlement options, the Gulf states' economic and financial diversification, and advancements in payment technologies. These shifts indicate a transition toward a more diverse international monetary landscape rather than a sudden end to dollar dominance.

> The yuan is gradually gaining traction in oil trade settlement with certain partners, digital payment systems are creating new possibilities for cross-border transactions, and oil-exporting nations are diversifying their reserve holdings and recycling patterns.

These changes in the Petrodollar system require US policymakers to evaluate both immediate and long-term strategic responses. The system has provided the US with significant advantages: enabling persistent trade deficits, lowering borrowing costs through recycled oil revenues, generating seigniorage benefits – referring to the profit a government makes from printing money, since the cost of producing currency is usually much less than its face value – and creating powerful tools of economic statecraft. However, these benefits have come with certain costs, including the impact of a strong dollar on domestic manufacturing and constraints on Middle East policy flexibility.

US policymakers must evaluate which elements of the current system are most crucial to maintain and where adaptation could better serve US interests. Should the US actively defend the existing architecture of oil-dollar linkages, or should it pragmatically accept and shape emerging alternatives? Should the US strategically reinforce those aspects of the current system that naturally attract international participation while letting others evolve? Should the US develop its own distinctive approach to technology innovation or seek to match the digital payment initiatives being pursued by strategic competitors?

> These questions highlight broader choices about preserving crucial elements of the current system, identifying areas where controlled adaptation serves US interests, and determining how to modernize dollar-based frameworks to maintain US leadership in global finance.

This chapter examines the Petrodollar system's legacy – both its contributions to US power and its hidden costs. It contextualizes the changes in oil trade settlement

and Petrodollar recycling documented in previous chapters within broader shifts in the international role of the dollar and evaluates the strategic implications of these parallel developments in energy markets and international finance. Finally, it outlines policy options for managing this transition while preserving core US advantages in an evolving global financial system.

## 9.2 The Petrodollar's Legacy

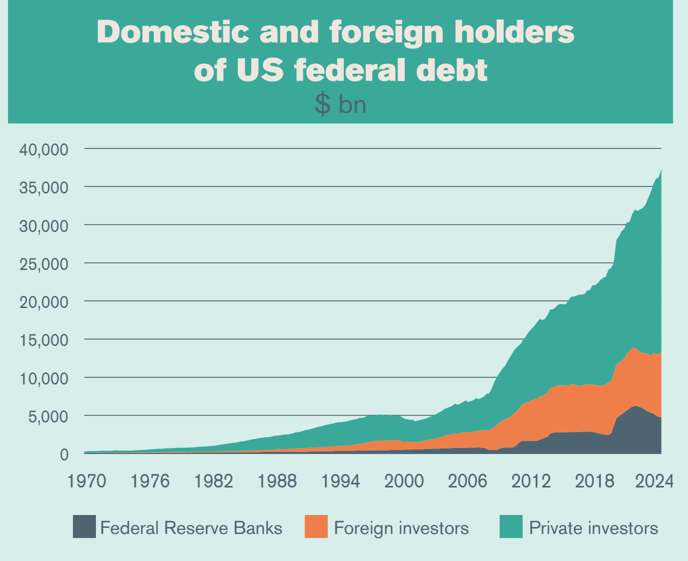
The influence of the Petrodollar system extends far beyond the mechanics of oil trade settlement, creating both significant advantages and certain constraints for US interests.

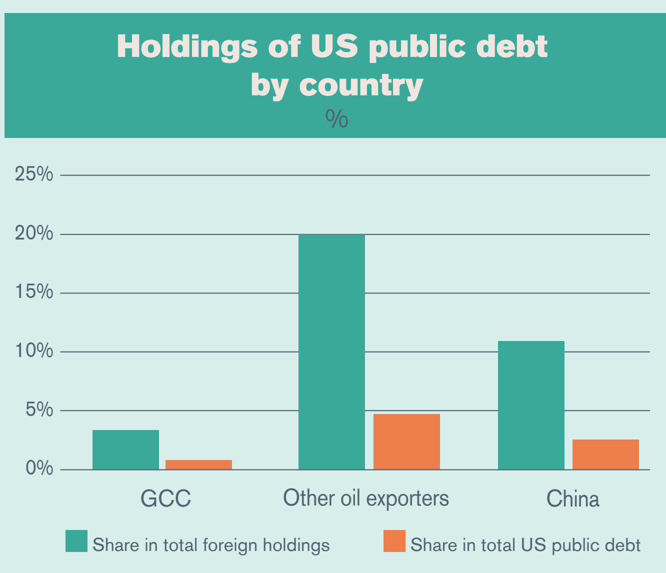
### Benefits to US power and influence

The system's primary benefits have been financial and strategic. On the financial side, the recycling of oil revenues into US Treasury securities and other dollar assets has helped finance persistent US trade deficits while keeping borrowing costs lower than they would otherwise have been. Foreign investors hold approximately a quarter of all marketable Treasury securities, with oil exporters historically playing a prominent role.

> This "recycling" effect has enabled the US to sustain twin deficits – both fiscal and current account – at lower cost, fueling domestic consumption and economic growth.

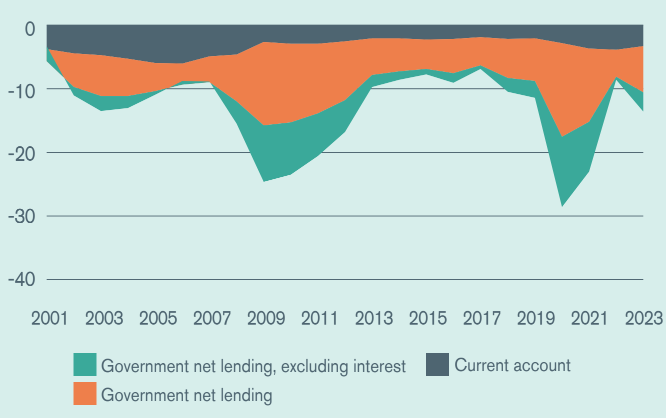
### US Debt, Lending and Interest Rates

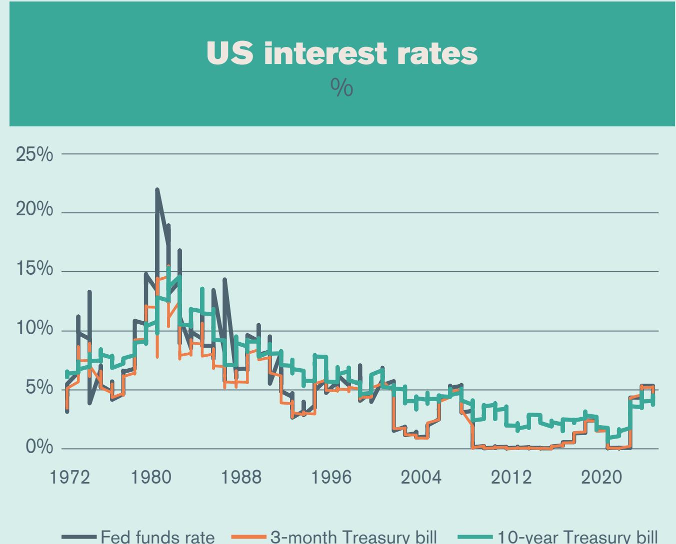



*Source: Enodo Economics, CEIC*

**US current account and government net lending**
% of GDP



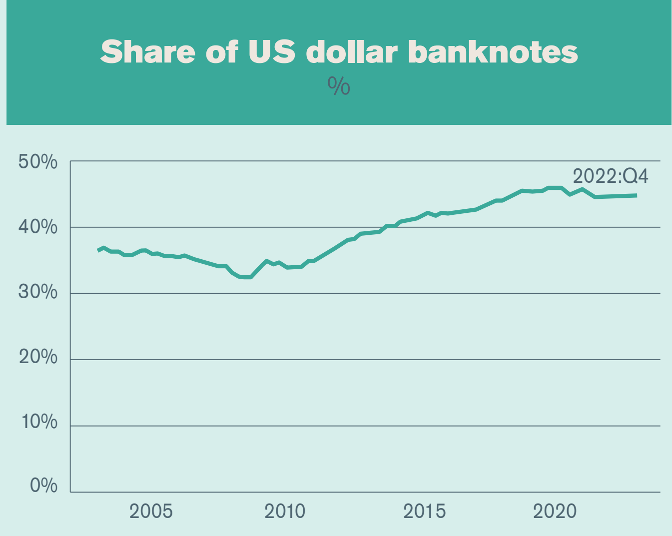

*Source: Enodo Economics, CEIC*

The system has also generated seigniorage benefits through the widespread use of dollar banknotes holdings abroad. Approximately two-thirds of all dollars in circulation are held abroad, demonstrating the currency's sustained appeal as a safe asset and providing an interest-free loan to the US government. [1]

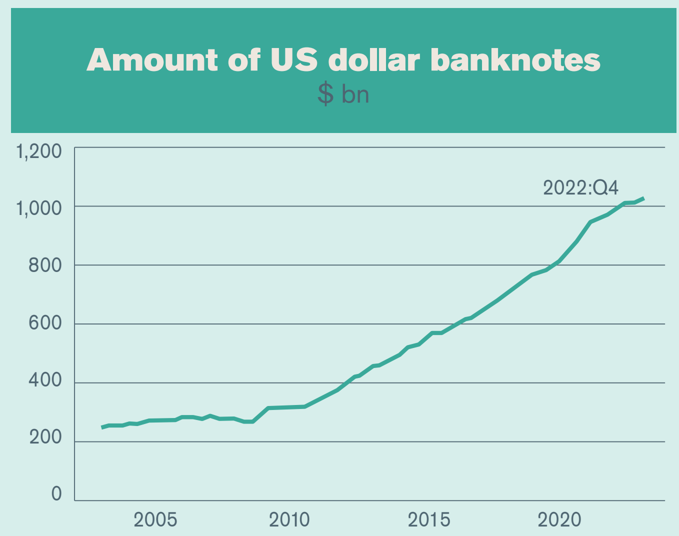
For US corporations engaged in the oil trade, the Petrodollar eliminates foreign exchange risk, conferring a significant competitive advantage in global markets. This benefit extends beyond the energy sector, bolstering US' overall economic position. [2]

## Foreign Holdings of US Dollar Banknotes

**Share of US dollar banknotes**
%




**Amount of US dollar banknotes**
$ bn




Note: The exact amount of US dollar banknotes held by foreigners is not known, and this is most likely a conservative estimate; see Judson (2017). Data are quarterly and extend from 2002:Q4 through 2022:Q4

*Source: Financial Accounts of the US, Table L.204; Factors Affecting Reserve Balances (H 4.1), Table1; Board staff calculations*

Strategically, the Petrodollar system has enhanced US influence.

Oil importers' need to accumulate dollar reserves reinforces the dollar's status as the world's primary reserve currency. The dominance of dollar-based oil trading gives US authorities significant leverage through their control of dollar-clearing systems and ability to impose financial sanctions.

## Hidden costs and constraints

However, the system also imposes certain costs on the US economy. The sustained demand for dollars to facilitate oil trade has strengthened the currency, making US exports more expensive and less competitive globally. This poses particular challenges for trade-sensitive sectors – industries that rely heavily on exports, such as manufacturing, where global competitiveness directly affects domestic employment. As a result, the strong dollar can lead to reduced demand for US-made goods abroad, impacting jobs in these critical industries. [3]

The unique advantage the US gets from issuing the global reserve currency thus comes with domestic economic trade-offs.

The system also creates policy constraints, particularly in US relations with Gulf oil exporters. The fear of losing investment by oil producers – particularly investment in Treasury securities – constrains US strategic choices in the Middle East.

Furthermore, while achieving currency dominance brings significant benefits to a country at first, recent research suggests that maintaining such dominance is less advantageous than commonly assumed. In fact, the US position as a net foreign debtor is a requirement of maintaining dollar dominance rather than purely a benefit. [4]

Past a certain point, currency dominance has diminishing returns. But there remain severe downsides to losing that dominance. US interest in maintaining currency dominance therefore becomes a question of avoiding the cost of the loss of the dollar's status. The key benefits appear to lie more in avoiding the transition costs of moving away from dollar dominance than in the ongoing advantages of maintaining it.

## Net impact assessment

On balance, the Petrodollar system has provided significant net benefits to the US over the past five decades. It has helped finance US deficits at a manageable cost, enhanced US strategic leverage, and reinforced broader dollar dominance

in international finance. However, these benefits come with domestic economic trade-offs and certain constraints on policy flexibility that should be weighed when considering future strategic choices.

> Importantly, policymakers should realize that they do not face a binary, take-it-or-leave-it choice between retaining all aspects of current arrangements or accepting their complete dissolution. There are other potential paths forward.

The key strategic challenge lies in determining which elements remain crucial to US interests. Controlled adaptation might serve US objectives better in a changing global environment.

## 9.3 The Dollar's Evolving Role

The dollar's international role is evolving. While the dollar maintains its dominance across key metrics, the international monetary system is changing in subtle but important ways.

### Trade invoicing

Outside Europe, the dollar remains overwhelmingly dominant in global trade invoicing. Over the period 1999–2019, the dollar accounted for 96% of trade invoicing in the USs, 74% in the Asia Pacific region, and 79% in the rest of the world. The only exception was Europe, where the euro commanded 66% of invoicing.  This extensive use in trade invoicing reinforces the dollar's broader international role and creates strong network effects that resist change.

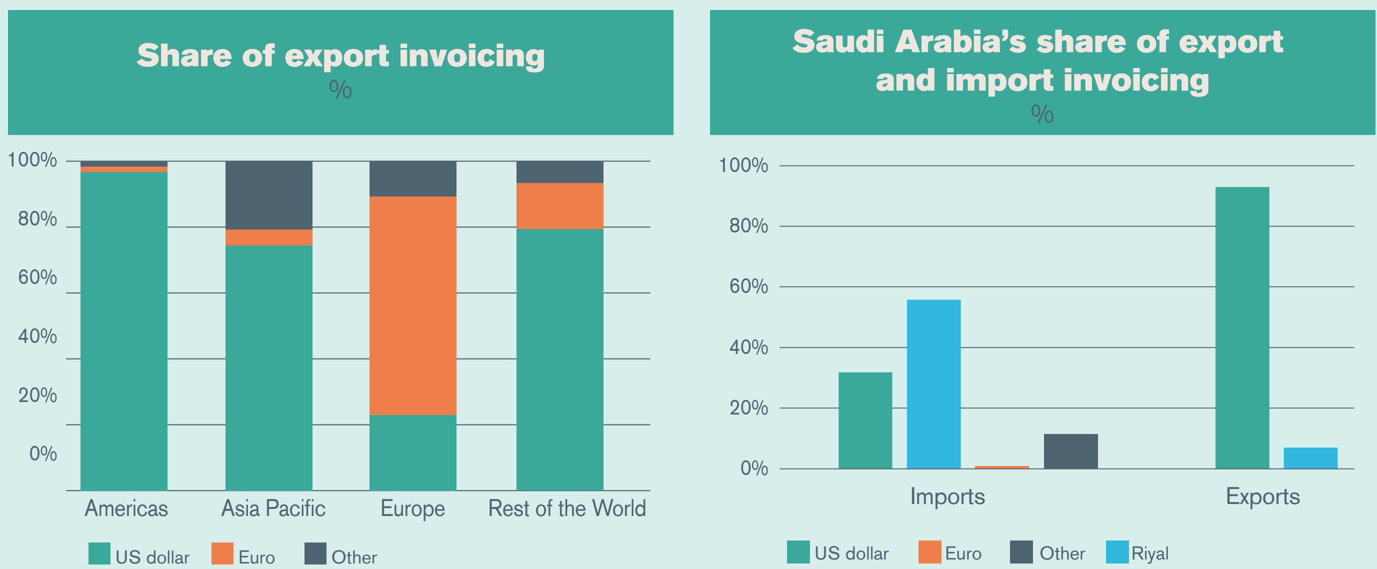
Recent research highlights the concept of "strategic complementarity" in currency choices: countries are more likely to invoice in a currency already used extensively by their major trading partners, as aligning their practices reduces costs and risks in cross-border transactions. [5]

> This network effect explains the persistence of dollar dominance while highlighting its potential future fragility.

If Brazil, Russia, India and China collectively stopped using dollars for excess invoicing – meaning trade between non-US parties – it would reduce overall dollar usage in international trade by 42%, according to the above-mentioned London School of Economics study. [6]

Companies also demonstrate "natural hedging" behavior, matching the currency denomination of their imports and exports to manage currency risk. Countries with dollar swap lines from the Federal Reserve tend to invoice more in dollars, for instance.

## Export Invoicing by Currency




Note: Average annual currency composition of export invoicing, where data are available. Data extend from 1999 through 2019. Regions are those defined my the IMF. Legend entries appear in graph order from top to bottom. The value of Europe includes within-euro area trade.

*Source: Enodo Economics, IMF Direction of Trade; Central Bank of the Republic of China; Boz et al. (2020); Board staff calculations*

China's increased role in all aspects of global trade would tend, over time, to weaken the preference by third-country companies to invoice in dollars.

> Still, that can be countered by facilitating the use of dollars and making it cheaper – especially among emerging economies that are set to power future economic growth.

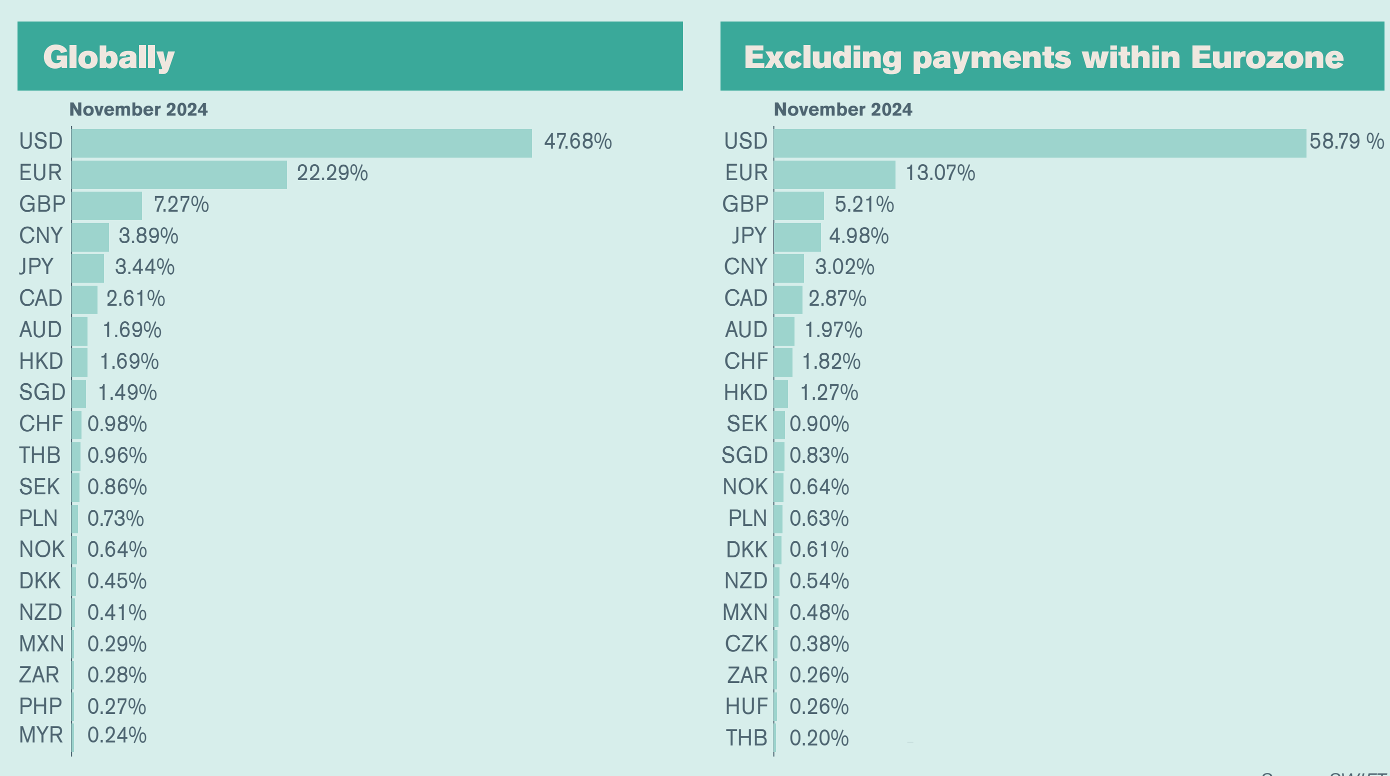
### Trade settlement and payment innovation

While trade invoicing patterns show continued dollar dominance, payment and settlement trends reveal a more nuanced picture. According to SWIFT data, the dollar remains the most used currency for international payments despite some fluctuation in its share.[7] However, this data is set to capture fewer global payment flows due to changes in how China's CIPS records yuan settlement.

For now, the majority of CIPS transactions use SWIFT messaging, but CIPS has an inbuilt proprietary messaging system. Notably, HSBC Hong Kong became a direct CIPS participant in October 2024, bolstering China's payment infrastructure as the world's largest trade finance player.[8] As CIPS messaging usage grows, traditional SWIFT metrics will understate the use of the yuan in international settlements.

> Meanwhile, SWIFT is also adapting to meet new challenges, demonstrating that existing dollar-based payment systems may be more adaptable.

## Dollar's Share As a Global Payment Currency




*Source: SWIFT*

As of 2024, 90% of cross-border payments sent over the SWIFT network reached destination banks within an hour, well ahead of G20 targets.[9] Moreover, SWIFT's development of CBDC-interlinking solutions, tested with 38 global institutions, including central and commercial banks, demonstrates how traditional payment infrastructure can adapt to incorporate digital currencies while maintaining interoperability.[10] However, our discussions with industry experts suggest that SWIFT is slow to innovate.

Moreover, many market-driven monetary innovations are reinforcing, not diminishing, the entrenched role of the dollar. For instance, decentralized innovations like stablecoins (cryptocurrency linked to a reference asset) are predominantly anchored to the dollar – reinforcing rather than undermining dollar dominance in digital payments.[11]

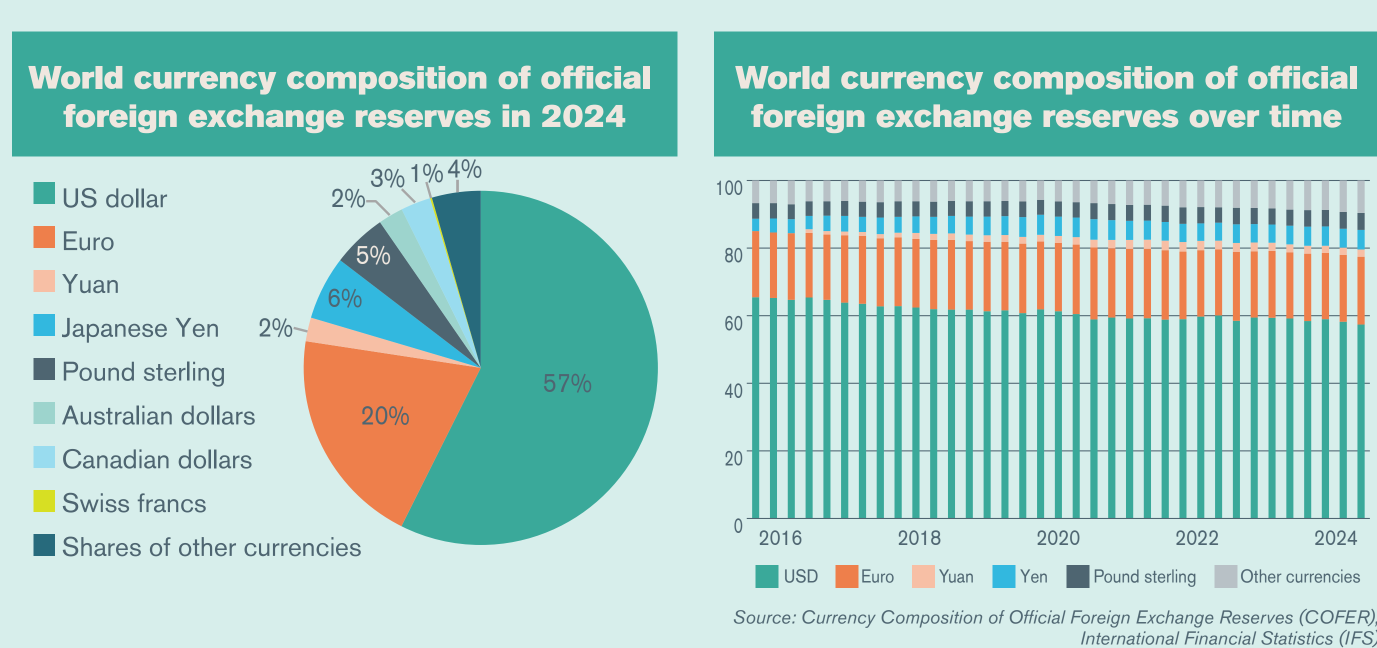
That contrasts with centralized solutions, including China's digital yuan (e-CNY) and mBridge, that represent state-directed efforts to create controlled, non-dollar alternatives that can be used in cross-border payments.

> These parallel developments in payment innovation reflect broader tensions between market-driven and state-directed approaches to monetary evolution.

## Reserve holdings and recycling patterns

While the dollar remains the dominant reserve currency, accounting for about 57% of disclosed global official foreign exchange reserves in 2024, its share has declined noticeably from around 70% in 1999. The difference has not been picked up by other major currencies like the euro (20%), Japanese yen (6%), or British pound (5%). Instead, central banks have diversified into what researchers call "nontraditional reserve currencies," including the Australian, Canadian and Singapore dollars, Korean won, and Swedish krona.[12] The Chinese renminbi, despite its growing international role, still only accounts for about 2% of global reserves, and its share has decreased from a peak of around 3% in 2022.

### World Currency Composition




*Source: Currency Composition of Official Foreign Exchange Reserves (COFER), International Financial Statistics (IFS)*

This "stealth erosion" of dollar dominance in reserves is driven by portfolio management considerations, rather than a fundamental challenge to dollar dominance. Central bank reserve managers are focused on generating returns through diversification, particularly in an environment of low interest rates. Technological advances have also made it cheaper and easier to transact in a broader range of currencies.

> Despite the desire for diversification, the dollar still represents the preferred currency for countries seeking safety and liquidity in their reserve holdings.[13]

Recent geopolitical events, such as sanctions on Russia, have prompted talk that global reserves will diversify away from the dollar. However, the evidence so far

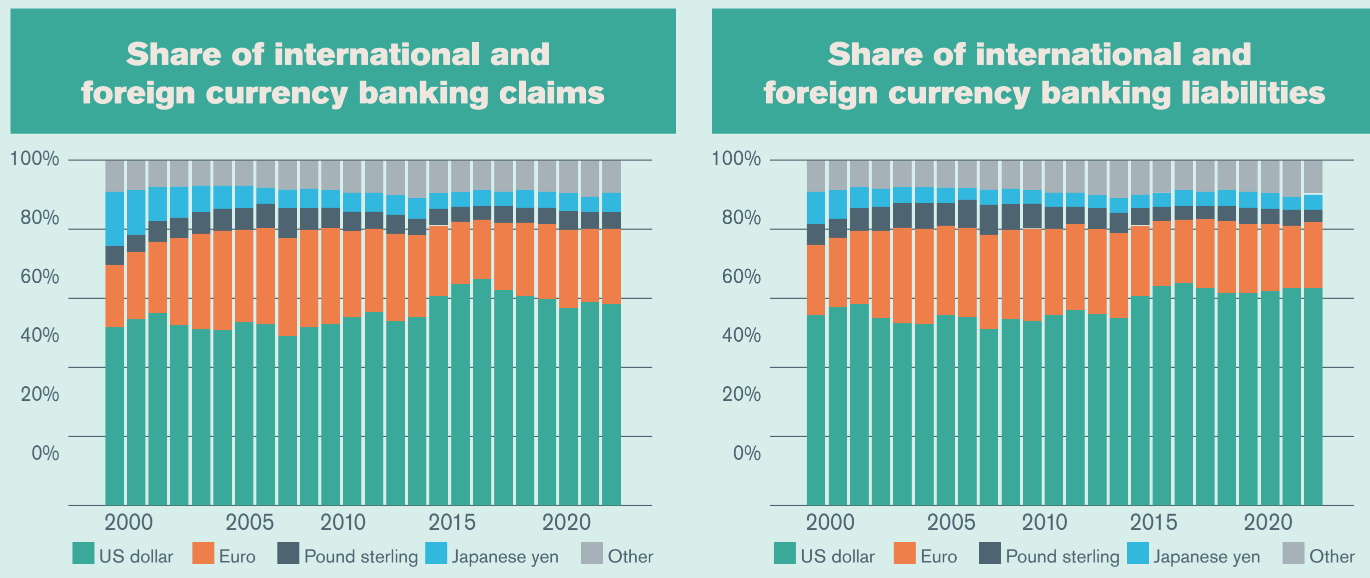
suggests limited impact on aggregate reserve composition. About three-quarters of foreign government holdings of safe US assets are already held by countries with some military tie to the US, and the other prominent reserve currencies (euro, yen, and pound) are all issued by close US allies and participants in Russian sanctions. This limits the practical alternatives for geopolitical diversification.

## Financial market infrastructure

The depth and liquidity of US financial markets continue to underpin dollar dominance in the international financial system. The US Treasury market, the world's deepest and most liquid, serves as the backbone of dollar-based finance.

The dollar's centrality in global banking is equally striking. About 60% of international and foreign currency claims (primarily loans) and liabilities (primarily deposits) are denominated in dollars. This share has remained relatively stable since 2000 and is well above that of the euro (about 20%). The dollar also dominates foreign exchange markets, being involved in 88% of all currency trades, demonstrating the market's continued reliance on dollar liquidity for international transactions.

### Shares of International and Foreign Banking Claims & Liabilities




Note: Share of banking claims and liabilities across national borders or denominated in a foreign currency. Banking claims and liabilities are defined as loans and deposits only, including repurchase agreements. Excludes claims on and liabilities to related banking offices and central banks. Also excludes intra-euro area cross-border claims and liabilities. At current exchange rates. Data are annual and extend from 1992 through 2022. Legend entries appear in graph order from top to bottom.

*Source: BIS locational banking statistics; Board staff calculations*

US authorities have taken steps to reinforce this infrastructure, particularly during periods of market stress. The Federal Reserve's central bank swap lines and the Foreign and International Monetary Authorities (FIMA) Repo Facility have enhanced dollar funding market stability.[14] These backstops have strengthened rather than weakened the dollar's international role by providing confidence in continued access to dollar liquidity, even during crisis periods.

However, maintaining this infrastructure advantage requires continued attention to market functioning, especially in the Global South. Recent episodes of Treasury market stress and declining liquidity, such as the Global Financial Crisis, show that market structures must adapt to maintain the depth and resilience that underpin dollar dominance.

# 9.4 Strategic Implications for US Policy

The evolving international monetary landscape reflects a deeper structural shift: the end of the post–Cold War globalized system and the emergence of competing spheres of influence. US faces an ideological and technological competition with China that is fundamentally reshaping global finance and trade.

In other words, the era of the US as the sole superpower is over, and competing spheres of influence are coalescing.

> Adapting to this reality requires moving beyond simply defending dollar dominance.  A more nuanced strategy could help maintain US financial leadership in a fragmented world.

## Strategic realignment

The key strategic imperative is to preserve and strengthen US' core financial relationships, particularly with traditional allies in Europe, Latin America, and the Gulf, while competing effectively for influence among non-aligned nations in the Global South. This reflects a recognition that the era of universal dollar dominance supported by unfettered globalization is giving way to a more fragmented international system.

A new and stable equilibrium, balanced between US-led and China-led spheres of roughly equal size and capabilities, could someday emerge. During the transition, the competition over currently non-aligned nations will sharpen.

> The US' goal should be to maintain and strengthen relationships with traditional allies while offering attractive partnerships to countries that might otherwise drift into China's orbit.

This strategic realignment requires a more nuanced approach than in the past. Rather than attempting to enforce dollar usage through threats of tariffs or other punitive measures, such as Donald Trump's statement that countries that move away from the dollar will face 100% tariffs,[15] which could accelerate fragmentation, the US should focus on reinforcing the advantages that make dollar-based systems attractive to partners.

> Excessive use of financial coercion can accelerate the development of alternative arrangements, potentially undermining rather than reinforcing US influence. Sanctions, in other words, are a tool that should be used sparingly.

## Reinforcing core strengths

> To maintain its sphere of influence, US should double down on the aspects of dollar leadership that allies and partners most value.

Potential competitors cannot easily replicate the depth and liquidity of US financial markets. This stems from what former Brazilian central bank governor Alexandre Tombini, now Chief Representative for the USs at the BIS, identifies as "a confluence of factors" – the size of Treasury issuance, free convertibility, a diverse investor base, and strong market infrastructure.[16]

> Even as China develops alternative payment systems and opens up its financial market, it will struggle to match the US in these fundamental strengths.

The Federal Reserve's demonstrated commitment to maintaining market functioning through tools like swap lines and the FIMA repo facility has enhanced rather than diminished dollar dominance by providing confidence in continued access to dollar liquidity during stress periods. This role as a reliable provider of global dollar funding remains crucial for maintaining voluntary participation in a dollar-based system.

More broadly, the innovative capacity of the US economy, reflected in its dynamic technology sector and consistently strong equity market returns, represents a fundamental advantage that reinforces dollar dominance. This capacity for innovation and value creation makes US markets attractive to global investors and strengthens the US' overall economic leadership. The challenge now is to apply this innovative capacity to areas of the financial system that have fallen behind, especially regarding cross-border payments and settlement systems.

## Adaptation imperatives

Rather than resisting change or trying to maintain every aspect of the current system, the US should focus on modernizing dollar-based infrastructure in ways that enhance its fundamental advantages.

> Most urgently, the US needs to modernize its cross-border payment infrastructure to match the efficiency of emerging alternatives.

While existing systems have improved, the emergence of new payment technologies and settlement mechanisms requires strategic responses to maintain US competitive advantages.

While China pursues a state-directed approach through e-CNY and the mBridge platform, the US can leverage its market-driven innovation strengths. For example, SWIFT's initiative to enable interoperability between traditional payment systems and CBDCs shows how existing infrastructure can adapt to new technologies while preserving the network benefits of current systems.

The evolution of oil trade settlement patterns is another area where adaptation may serve US interests better than resistance. As long as dollar pricing of oil remains prevalent, the development of alternative settlement mechanisms need not threaten core US interests if managed properly. Supporting the modernization of dollar-based settlement systems while maintaining the deep liquidity and strong institutions that make the dollar attractive for oil trade may prove more effective than attempting to prevent any evolution in settlement practices.

## Putting the house in order

Maintaining dollar dominance requires strengthening US' domestic economic foundations. Sound macroeconomic policies are essential for sustaining international confidence, with particular focus on fiscal sustainability and the broader framework for managing economic shocks.

> The US faces significant fiscal challenges, including rising government debt and persistent deficits, which, if unaddressed, could erode confidence in dollar-based systems.

Careful debt management is critical to preserving the Treasury market's status as the world's preferred safe asset. Strong fiscal institutions and credible plans for medium-term sustainability are equally vital to safeguarding this advantage.

Beyond fiscal policy, the US must uphold strong, independent monetary institutions, effective financial regulations, and predictable policy frameworks. The ability to manage economic shocks while maintaining price and financial stability is crucial for reinforcing the dollar's appeal to international partners. This underscores the deep connection between sound domestic economic management and effective international monetary leadership.

# 9.5 Policy Recommendations

### Digital innovation in cross-border finance

The US should accelerate the modernization of cross-border payment and settlement systems through:

- Supporting research and development of CBDCs and other digital payment technologies while maintaining the advantages of existing dollar-based systems
- Leading international collaboration on standards for digital trade finance and shipping documentation
- Developing blockchain-based solutions that enhance current market infrastructure
- Creating trusted neutral platforms for international settlement, potentially through multilateral institutions or partnerships with neutral third countries
- Leveraging US' institutional strengths while recognizing the need for international governance frameworks that inspire broad confidence

> This modernization is essential not just for maintaining US financial leadership but for ensuring the dollar-based system remains the most efficient and attractive option for global trade and finance.

### Strengthen strategic partnership with Gulf states

The US should support Gulf states' economic transformation initiatives while maintaining strong security partnerships by:

- Supporting technology transfer and investment in key sectors like artificial intelligence, renewable energy, and digital infrastructure

- Facilitating US technology companies' participation in Gulf mega-projects and smart city developments
- Encouraging joint research and development in areas like digital finance, cybersecurity, and climate technology
- Helping develop local technology ecosystems through educational partnerships and talent development
- Maintaining strong security cooperation while expanding into new areas of technological and economic partnership

> This modernized partnership would help ensure Gulf states see their long-term interests aligned with the US-led economic sphere even as oil's relative importance declines. The focus should be on positioning the US as the preferred partner for the Gulf's ambitious transformation plans by leveraging its technological leadership.

### Engage constructively with China

The US should adopt a balanced approach to China, recognizing the dual realities of competition and the need for cooperation, by:

- Establishing clear protocols for financial market interaction between US-led and China-led spheres
- Developing frameworks for managing parallel payment systems while maintaining necessary connectivity
- Creating mechanisms to resolve trade and financial disputes that respect the autonomy of both spheres
- Coordinating on global challenges like climate finance and development funding where mutual interests align
- Working with allies to develop consistent approaches to technology transfer and supply chain resilience that balance security with economic efficiency
- Supporting standardization efforts in areas like digital payments where interoperability serves shared interests

> This approach should aim to avoid dangerous instability while facilitating the transition to a more fragmented yet stable international system.

## Rethink global financial architecture

The US should lead efforts to reform international financial institutions to address the realities of a bifurcated world by:

- Assessing the continued relevance of Bretton Woods institutions in a global system divided into competing spheres
- Developing crisis response frameworks that align with current geopolitical dynamics
- Expanding and maintaining the Federal Reserve's swap line network with key partners
- Enhancing crisis response mechanisms to address liquidity challenges in emerging markets
- Establishing mechanisms for cooperation between US-led and China-led development initiatives while preserving distinct spheres
- Creating flexible and responsive crisis management tools that do not depend on universal participation
- Supporting regional financial arrangements that align with US interests while maintaining necessary coordination

> The current global financial architecture, built for a unified, dollar-centric world, must be reimagined for an era where competing economic spheres coexist, each with its own approach to development and financial stability.

## Leadership in rebuilding market-based trade

The US should take the initiative in constructing a new rules-based trading system that aligns with current geopolitical realities. Rather than continuing the piecemeal approach to trade restrictions or solely focusing on denying China access to critical technologies, this requires:

- Creating an alternative to the WTO dispute resolution mechanism that is more efficient and responsive
- Developing clear rules and standards for trade that protect intellectual property and ensure fair competition
- Including provisions for emerging areas like digital trade and data flows

- Establishing mechanisms for collective response to economic coercion
- Building flexibility into agreements to accommodate different development levels among participating nations

> This new framework should be open to all nations willing to commit to its rules and standards, while providing meaningful benefits that make participation attractive compared to alternative systems.

## In conclusion

The evolving international monetary system presents the US with strategic challenges in preserving the advantages of dollar leadership while adapting to a more fragmented global economy.

Success will require maintaining the core strengths that make the dollar-based system attractive, modernizing outdated payment and institutional frameworks, and fostering stable coexistence with alternative systems.

Most importantly, it requires recognizing that dollar leadership in the future will likely look different than in the past – less universal but potentially more sustainable within a US-led economic sphere that should emphasize shared values and mutual benefits rather than dominance through coercion. By pursuing these recommendations with strategic patience and confidence in the system's underlying strengths, the US can adapt to new realities while preserving the core advantages of dollar leadership.

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# 10 Conclusion

## 10.1 The Bottom Line

The international monetary system stands at a pivotal moment of transformation. The Petrodollar system, which has underpinned global oil trade and reinforced dollar dominance for nearly half a century, faces unprecedented challenges from technological innovation, shifting trade patterns, and China's strategic push to reduce dollar dependency.

> While the system's complete replacement appears unlikely in the near future, significant changes in how oil trade is settled and revenues are recycled have already taken place.

### The three forces of change

Our analysis reveals three interconnected forces driving evolution in the Petrodollar system. First, China's emergence as the world's largest oil importer has created pressure for alternative payment arrangements. Beijing's strategic imperative to reduce its vulnerability to dollar-based sanctions has accelerated the development of new financial infrastructure, particularly in digital payments and cross-border settlements.

Second, the Gulf states, especially Saudi Arabia, are pursuing ambitious economic diversification plans that require massive investment in technology and infrastructure. China's capabilities in these areas, combined with its growing importance as a trading partner, create compelling reasons for deeper financial cooperation beyond traditional dollar-based arrangements. The Gulf's pioneering role in digital currency experiments through initiatives like mBridge signals openness to new financial architectures.

Third, technological innovation, particularly in digital currencies and DLT, is making alternative payment systems not just possible but potentially more efficient than traditional dollar-based infrastructure.

> China's leadership in these areas, demonstrated through the digital yuan and mBridge platform, could accelerate changes in global payment patterns more rapidly than traditional policy measures might suggest.

### Scenarios and strategic choices

Looking ahead five years, three distinct scenarios emerge for how this transformation might unfold.

> The most likely path is one of managed evolution, where Saudi Arabia gradually expands yuan settlement and

investment while maintaining the core architecture of the Petrodollar system. This aligns with demonstrated Saudi preference for carefully balancing relationships and pragmatic advancement of interests.

However, the intensification of US-China strategic competition creates conditions where external shocks become increasingly possible. Such disruptions – whether from geopolitical conflicts, technological breakthroughs, or market upheaval – could force more rapid changes than Saudi leaders might prefer. The possibility of sudden disruption to established patterns represents our second-most likely scenario.

A third scenario envisions deliberate acceleration toward deeper integration with Chinese systems. While this remains least likely given Saudi Arabia's careful strategic positioning, technological breakthroughs or shifts in security dynamics could make such changes more feasible than in the past.

## The technology factor

Technological innovation emerges as perhaps the most potent force for change in the international monetary system. China's advances in digital payment systems, particularly through platforms like mBridge, demonstrate how technology could enable shifts in settlement patterns without requiring immediate changes in pricing mechanisms or reserve holdings.

More broadly, collaboration between China and Gulf states on technology development could create self-reinforcing cycles that accelerate strategic alignment. As these countries work together on initiatives ranging from digital currencies to artificial intelligence, they may achieve breakthroughs that deepen their interdependence. Success in joint ventures could build trust and create knowledge-sharing pathways that complement financial integration.

The Gulf states' embrace of digital innovation, exemplified by their pioneering role in CBDC experiments, suggests openness to new financial architectures. Their participation in initiatives like mBridge indicates a willingness to explore alternatives to traditional dollar-based systems, while maintaining existing relationships.

## Strategic implications

For China, success in reducing dollar dependency will likely be measured in incremental gains rather than dramatic shifts. Beijing's strategy focuses on creating

viable alternatives for specific functions, particularly in trade settlement and cross-border payments, rather than attempting to fully replicate or replace the dollar's international role.

The Gulf states, particularly Saudi Arabia, face complex choices in balancing their traditional security relationship with the US against deepening economic ties with China. Their approach suggests a preference for maintaining strategic flexibility while gradually building capabilities that could enable more significant changes in the future.

For the US, the challenge lies in adapting to these changes while preserving the core advantages of dollar leadership. This requires modernizing dollar-based infrastructure, particularly in cross-border payments, while maintaining the deep markets and strong institutions that make the dollar attractive for international use.

## The path forward

The international monetary system appears to be moving toward a more fragmented structure, with distinct but interconnected spheres of financial influence. While the dollar will remain the most-used global currency, its role may evolve toward being the focus of a US-led financial sphere of influence if the global system bifurcates, or first among equals, if there is wider fragmentation, rather than the sole pillar of international finance.

Four factors will likely shape this evolution:

1. The pace of technological innovation in payment systems and its adoption across different regions
2. China's ability to develop credible alternatives while maintaining economic stability
3. The success of US efforts to modernize dollar-based infrastructure while preserving key advantages
4. Saudi Arabia's strategic choices in balancing economic transformation needs against security considerations, particularly given Crown Prince Mohammed bin Salman's demonstrated preference for careful calibration of relationships rather than dramatic shifts

This fourth factor is especially important because Saudi Arabia's position at the intersection of global oil trade and geopolitical competition means its decisions could accelerate or brake broader changes in the international monetary system. The Kingdom's choices about adopting new payment technologies, diversifying its financial relationships, and managing its strategic partnerships will significantly influence the pace and scope of any transition.

> The first consequential changes may come in settlement mechanisms and recycling patterns rather than pricing conventions.

Alternative payment channels enabled by digital innovation could gain significant adoption, and oil revenues could increasingly flow into Chinese markets and projects, while oil pricing remains predominantly dollar-based. Traditional Petrodollar recycling into US assets may diminish even as the dollar maintains its role in price discovery and benchmarking. This would create a more complex and nuanced international monetary landscape rather than the wholesale replacement of existing systems.

## Policy implications for the US

The analysis suggests several critical priorities for US policymakers:

### Digital Innovation in Cross-Border Finance

- Support the research and development of CBDCs while maintaining the advantages of existing dollar-based systems
- Lead international collaboration on standards for digital trade finance
- Develop blockchain-based solutions that enhance current market infrastructure
- Create trusted neutral platforms for international settlement
- Leverage the US' institutional strengths while recognizing the need for international governance frameworks

### Strengthen Strategic Partnerships with Gulf States

- Support Gulf states' economic transformation initiatives while maintaining strong security partnerships
- Facilitate US technology companies' participation in Gulf mega-projects
- Encourage joint research and development in critical areas
- Help develop local technology ecosystems through educational partnerships
- Maintain strong security cooperation while expanding into new areas of technological partnership

### Rethink Global Financial Architecture

- Lead efforts to reform international financial institutions to address the realities of a fragmented world
- Develop crisis response frameworks that align with current geopolitical dynamics
- Expand and maintain US Federal Reserve's swap line network with key partners
- Support regional financial arrangements that align with US interests
- Create flexible crisis management tools that do not depend on universal participation

## Looking forward

The transformation of global finance will likely proceed through careful evolution rather than sudden disruption. However, the range of plausible outcomes has widened considerably. The growing possibility of external shocks, combined with accelerating technological change, means that the US must prepare for various scenarios while pursuing adaptation as the preferred strategy.

Success in navigating this transition requires careful attention to the interaction of four critical factors: technological innovation in payment systems, China's ability between develop credible alternatives, the US' success in modernizing its financial infrastructure, and Saudi Arabia's strategic choices. Early success in digital currency experiments could accelerate broader financial integration. Saudi decisions about adopting these systems could influence other oil producers. Progress in Chinese market reforms might enable faster adoption of alternatives if geopolitical crises emerge.

The most immediate changes are likely to appear in payment settlement mechanisms and recycling patterns. While oil pricing may remain predominantly dollar-based, reflecting the depth and efficiency of US financial markets, the channels through which oil revenues flow could diversify significantly. Traditional recycling of Petrodollars into US Treasuries may diminish as Saudi Arabia and other Gulf states direct more capital toward Chinese markets and joint development projects.

The key to preserving US financial leadership through this evolution lies in maintaining the fundamental advantages that make dollar-based systems attractive while developing new capabilities to compete with emerging alternatives. This requires modernizing payment infrastructure, strengthening relationships with key partners like Saudi Arabia, and ensuring US markets remain the world's deepest and most reliable. Success will depend on preserving what works in current systems while adapting to the realities of a more complex and technology-driven financial future.

## Abbreviations

| | |
|---|---|
| **ADIA** | Abu Dhabi Investment Authority |
| **ADNOC** | Abu Dhabi National Oil Company |
| **BIS** | Bank of International Settlements |
| **BRI** | Belt and Road Initiative |
| **BRICS** | Originally an acronym for Brazil, Russia, India, China, and South Africa, now includes additional member countries: Egypt, Ethiopia, Iran, United Arab Emirates, Indonesia |
| **CBDC** | Central Bank Digital Currency |
| **CBUAE** | Central Bank of the UAE |
| **CFETS** | China Foreign Exchange Trade System |
| **CIBM** | China Interbank Bond Market |
| **CIPS** | Cross-Border Interbank Payment System |
| **CNOOC** | China National Offshore Oil Corporation |
| **CNPC** | China National Petroleum Corporation |
| **DLT** | Distributed Ledger Technology |
| **ETF** | Exchange Traded Funds |
| **e-CNY** | Digital Yuan |
| **EV** | Electric Vehicle |
| **FIMA** | Foreign and International Monetary Authorities |
| **GCC** | Gulf Cooperation Council |
| **HKMA** | Hong Kong Monetary Authority |
| **ICBC** | Industrial and Commercial Bank of China |
| **ICE** | International Commodities Exchange |
| **IEEPA** | International Emergency Economic Powers Act |
| **INE** | Shanghai International Energy Exchange |
| **JCPOA** | Joint Comprehensive Plan of Action |
| **KIA** | Kuwait Investment Authority |
| **KYC** | Know Your Customer |
| **LNG** | Liquified Natural Gas |
| **mBridge** | Multiple Central Bank Digital Currency Bridge |
| **MBS** | Saudi Crown Prince Mohammed bin Salman |
| **MBZ** | UAE President Mohamed bin Zayed Al Nahyan |
| **MoU** | Memorandum of Understanding |
| **MVP** | Minimum Viable Product |
| **OPEC** | Organization of Petroleum Exporting Countries |
| **QCB** | Qatar Central Bank |
| **QFII** | Qualified Foreign Institutional Investor |
| **PBCDCI** | Digital Currency Institute of the People's Bank of China |
| **PBOC** | People's Bank of China |
| **PIF** | Public Investment Fund |
| **PvP** | Payment-Versus-Payment |
| **SAMA** | Saudi Central Bank |
| **SDNs** | Specially Designated Nationals |
| **SFC** | Hong Kong Securities and Futures Commission |
| **SHPGX** | Shanghai Petroleum and Natural Gas Exchange |
| **Sinopec** | China Petroleum and Chemical Corporation |
| **TWEA** | Trading with the Enemy Act |
| **UAE** | United Arab Emirates |
| **WTI** | West Texas Intermediate |

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