



## Yuan as a reserve currency

July 16, 2010

Likely prospects & possible implications

- Rising US indebtedness combined with China's rising economic and financial prowess have led some analysts to forecast the decline of the dollar and the rise of the yuan as the dominant reserve currency. While the macro-conditions such as economic size and trade openness will soon be in place, China will need to make the yuan convertible, create deep and liquid domestic bond markets and improve the rule of law. However, even then, network externalities, political obstacles and peer competitors do not make it a foregone conclusion that the yuan will emerge as the dominant reserve currency.
- It will take China 15-20 years to put in place the conditions necessary for the yuan to emerge as an important reserve currency and even longer to rival the dollar as the dominant reserve currency. The yuan is set to become one of the major reserve currencies sometime after 2030. By then, three reserve currencies (dollar, euro, yuan) are likely to co-exist, reflecting the underlying tripolar structure of the international economic system.
- The emergence of the yuan as a reserve currency would confer moderate financial and significant non-financial benefits on China. More significantly, the decline of the dollar would impose tangible constraints on US economic and financial flexibility. In addition to rising financing costs and lower seigniorage revenues, a declining dollar would lead to a hardening of the balance-of-payments constraint. This would have wider geo-political repercussions and affect the political standing of the US in the world.

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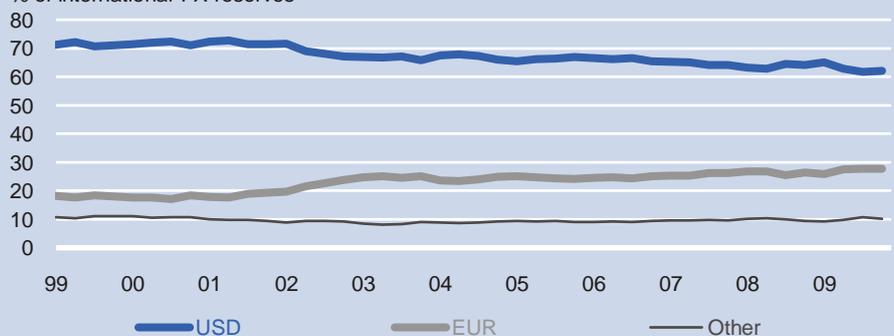
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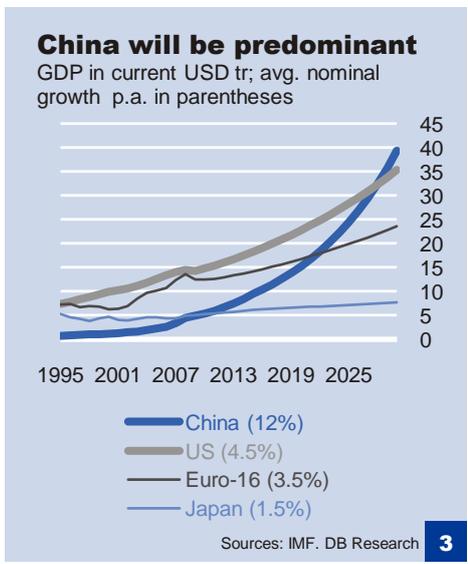
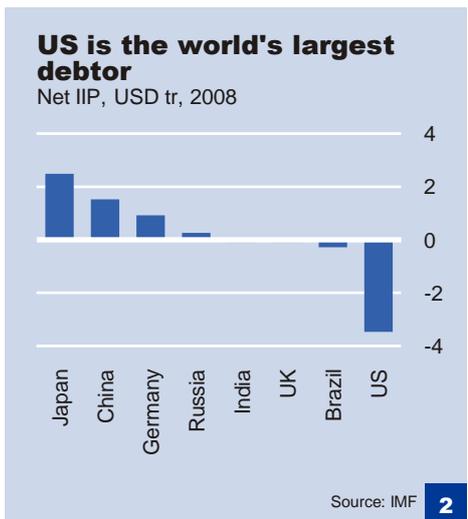
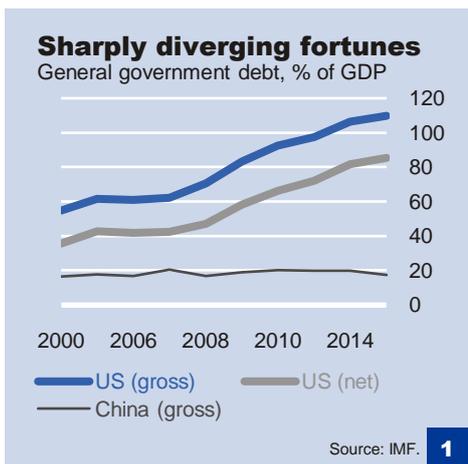
Thomas Mayer

### Dollar is dominant reserve currency

% of international FX reserves



Source: IMF



## Rising dragon, falling eagle?

Following the creation of EMU, some observers predicted that the euro would emerge as the world's major reserve currency<sup>1</sup>. More recently, eurozone travails and rapidly rising US indebtedness have re-ignited the debate about alternative reserve currencies (incl. SDRs)<sup>2</sup>. Among the possible medium-term contenders for "top currency" status are the yuan and the euro. Neither the UK nor Switzerland, nor Japan, have or will have the necessary economic and financial size for their currencies to become the world's dominant reserve currency. The eurozone-16 is about the size of the US economy, and China, on current trends, is set to replace the US as the world's largest economy sometime during the 2020s. China is already the world's largest exporter and will soon also be the largest trading nation. Contrary to the US, the world's largest debtor, China is also a large net external creditor, only trailing Japan.

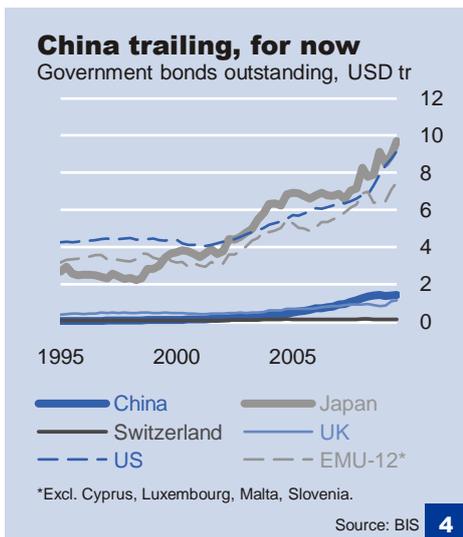
Many observers have therefore drawn parallels between today's situation and the dollar replacing sterling during the inter-war period and post-WWII. British sterling, burdened by the financial legacy of WWI and WWII, was replaced as the world's reserve currency by an economically and financially ascendant dollar. This raises a number of interesting questions. How likely are we to witness another such transition in the coming decades? What are the prospects that the yuan will replace the dollar as the dominant reserve currency? What would be its economic, financial and political implications?

### Pre-conditions for becoming a reserve currency

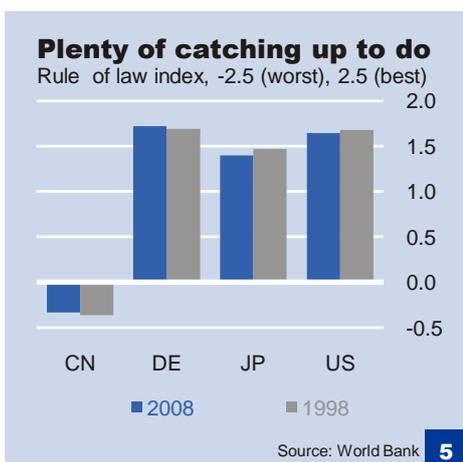
Following Papaioannou and Portes (2008)<sup>3</sup>, several conditions underpin a reserve currency (and its international use): the size of the economy, low inflation and exchange rate stability, deep and efficient capital markets, and political stability and geo-political strength.

First, in terms of economic size, China is likely to overtake the US sometime around 2025 and outstrip it thereafter. Second, as regards low inflation and exchange rate stability, the Chinese yuan at first sight seems to fit the bill already. However, China maintains capital controls and a quasi-pegged exchange rate. So it cannot be said to have passed the test yet. However, there is little reason to believe that China will not be able to maintain low inflation and relative exchange rate stability if it moves towards convertibility in a gradual manner accompanied by the necessary domestic institutional reforms (e.g. central bank independence, inflation targeting). Admittedly, this will require a move towards a market-based banking system and this implies that the government will not only have to implement a host of secondary reforms aimed at ensuring financial sector stability post-convertibility but also have to accept a significant diminution of direct control over the financial system. (It will be interesting to see how this plays out.) Like most other maturing emerging markets, China is likely to move from what might be called a "developmental" approach to managing its exchange rate and capital flows to a floating exchange rate and an open capital account. As China's economy grows in size, it will become

<sup>1</sup> Chinn, M. & J. Frankel (2008). Why the Euro Will Rival the Dollar. International Finance, Vol.11/1.  
<sup>2</sup> Zhou, X. (2009). Reform of the International Monetary System. People's Bank of China. Williamson, J. (2009). Why SDR Could Rival the Dollar. Peterson Institute. Policy Brief 20.  
<sup>3</sup> Papaioannou, E. & R. Portes (2008). Costs and Benefits of Running an International Currency. European Economy. Economic Papers 348.



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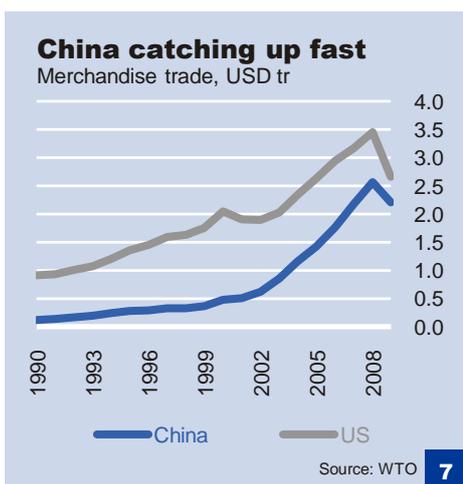
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### Reserve currency functions

	Private use	Official use
<b>Medium of exchange</b>	Vehicle currency	Intervention currency
<b>Unit of account</b>	Quotation currency	Anchor currency
<b>Store of value</b>	Investment, debt	FX reserve currency

Source: Portes & Papaioannou

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less dependent on export-led growth and the US market, making a switch towards a flexible exchange rate regime increasingly attractive in terms of policy flexibility.

Third, deep and efficient capital markets and full convertibility are even more important than exchange rate stability. This is where China lags the most. The yuan is not convertible and the authorities maintain tight capital controls. The domestic bond market is relatively small and illiquid and foreigners' access is, of course, highly restricted. A reserve currency also requires sophisticated foreign exchange and derivatives markets. Beijing has on several occasions affirmed its commitment to gradually move towards yuan convertibility and is seeking to develop domestic bond, derivatives and foreign exchange markets. Last but not least, while China enjoys political stability, it continues to lag as regards the "rule of law". As long as it continues to compare poorly with the US and the eurozone, foreigners may remain reluctant to invest in on-shore yuan assets. It is noteworthy that, according to the World Bank, China has made next to no progress on this score over the past decade or so.

In all these areas, China has a long way to go. How quickly Beijing will manage to put in place the necessary conditions for the yuan to emerge as a major reserve currency depends mainly on political decisions taken in Beijing. A gradualist approach is no doubt going to prevail, especially as regards convertibility. It will probably take around 15-20 years for Beijing to put in place the conditions necessary for the yuan to emerge as a reserve currency. Not surprisingly, the yuan's private and official use is currently very limited. The yuan plays next to no role as an international store of value (e.g. FX reserves), nor as unit of account (e.g. neither HK nor Macao peg their currencies to the yuan). Only recently have the authorities started to allow yuan assets such as deposits to be held off-shore (e.g. HK) and for the yuan to be used in trade settlement, albeit in a pilot project.

If Beijing manages to meet the prerequisites, the yuan will become a reserve currency. China's economic size and its share in international trade will grow, increasing the incentives of its trading partners, especially of small open economies, to "manage" their currencies vis-à-vis the currency of their dominant trading partner (as they do in other parts of the world). As trade with China becomes more important relative to other countries (read: US, EU), countries will have an incentive to hold at least parts of their reserves in yuan-denominated assets – provided the yuan meets the above conditions. From there, it will only be a small step towards the yuan's greater private use as a store of value, transaction vehicle and unit of account.

This does not mean, however, that the yuan will necessarily become the world's dominant currency. Prerequisites are, by definition, necessary but not sufficient conditions, for even if China makes the yuan fully convertible, creates deep and liquid domestic bond markets, maintains a strong financial position etc., it will still need to overcome "network externalities" (that is, an economic agent is more likely to use a currency if everybody else uses it), "politics" and the existence of "peer competitors" (dollar, euro).

Politics will matter greatly. States do not typically finance (accumulate claims on) countries that are, or may be, their geopolitical competitors – if they can help it, that is, or if there is any credible alternative. Countries that do not have close political

**Potential benefits & drawbacks of reserve currency status**

Advantages	Disadvantages
Seigniorage	Overvalued currency
Liquidity discount	Greater international political pressure
More efficient capital markets	Dealing with "overhang" during decline
Improved terms-of-trade	
Lower transaction costs	
More competitive financial industry	

Source: DB Research **8**

relations with Beijing are therefore less likely to keep the bulk of their foreign assets in yuan (e.g. India, Japan). Naturally, the more dependent a country is on trade with China, the more constrained its choice will be.

**Consequences: Potential benefits ...**

What economic, financial and political consequences would a rising yuan and a declining dollar have? First, a reserve currency country (RCCs) derives seigniorage. To the extent that foreigners hold a reserve currency, the reserve currency country acquires foreign goods or financial assets by "printing" money. In the 1960s, economists used to call this "exorbitant privilege". By holding currency, foreigners effectively extend an interest-free loan to the RCC. Second, RCCs benefit from a "liquidity discount". To the extent that foreigners are more likely to hold RCC liabilities, interest rates are lower than would otherwise be the case. Estimates as to the "seigniorage" and "liquidity discount" benefits vary, but they are frequently estimated to be worth around USD 500 bn and an annual 100 bp in the case of the US.<sup>4</sup>

Furthermore, the RCC enjoys an "exorbitant privilege" not just because it can finance its deficit by issuing its own currency or debt denominated in its own currency. As the world's banker, it can also borrow "short" at low rates and lend "long" at higher yields, earning the spread, while as the world's "venture capitalist"<sup>5</sup>, it can sell liquid, domestic-currency-denominated high-grade domestic debt to finance (foreign-currency-denominated) illiquid, high-return assets.<sup>6</sup> This may help make a net foreign debtor position sustainable in the long term.

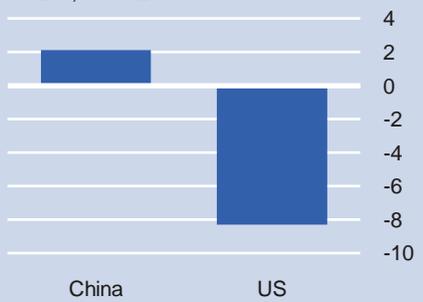
Third, by increasing the number of investors, RCC financial markets may also be deeper and more efficient than they would otherwise be, thus potentially benefitting the international competitiveness of the financial industry. Fourth, to the extent that a reserve currency is in greater use, an RCC may also benefit from improved terms-of-trade. Increasing use of the reserve currency in international trade tends to raise the value in terms of the quantity of goods that can be purchased for every unit of the currency. Last but not least, domestic companies may benefit from lower transaction costs and lower exchange rate uncertainty (though this is empirically contested).

**... and potential drawbacks**

RCCs incur not just benefits, but also costs. First, the reserve currency will tend to be overvalued, hurting competitiveness and potentially economic growth, due to larger demand than otherwise for its financial assets. Second, RCC economic and especially monetary and exchange rate policies matter greatly to other countries, potentially opening the RCC to international scrutiny and pressure. In this context, some have argued that the country is then compelled to take greater account of international public opinion and other countries' views<sup>7</sup>. This is somewhat debatable, at least in the sense that whenever push came to shove in the past Washington seemed in the end to have privileged its own interests over those of

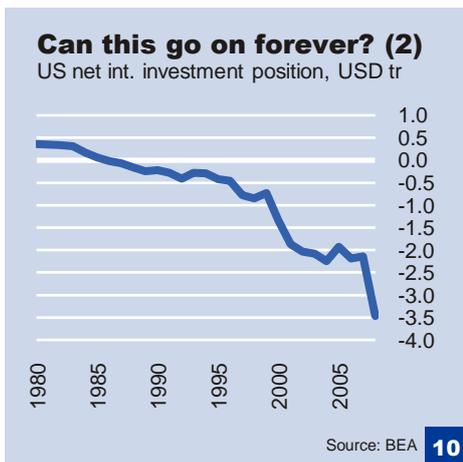
**Can this go on forever? (1)**

Cumulative current account deficit, USD tr, 1980-2010



Source: IMF **9**

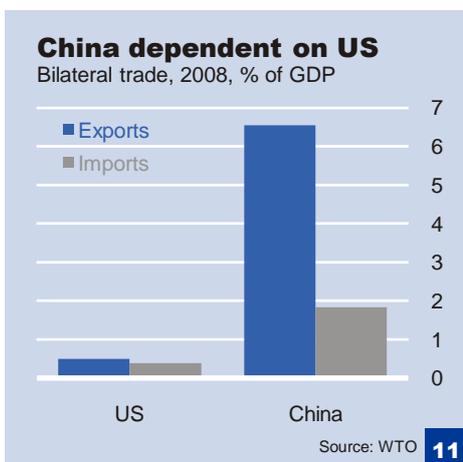
<sup>4</sup> See Buiter, W. (2006). Dark Matter or Cold Fusion? Warnock, F. & Warnock, V. (2006). International Capital and US Interest rates. NBER Working Paper 12560.  
<sup>5</sup> Gourinchas, P-O & H. Rey (2005). From World Banker to World Venture Capitalist. NBER Working Paper 11563.  
<sup>6</sup> Hausmann, R. & F. Sturzenegger (2006). Global Imbalances or Bad Accounting? CID Working Paper 124.  
<sup>7</sup> Cooper, R. (2009). The Future of the Dollar. Peterson Institute. Policy Brief 21.



others (e.g. Nixon shock, Reaganomics, John Connally’s “dollar is our currency, but your problem”).

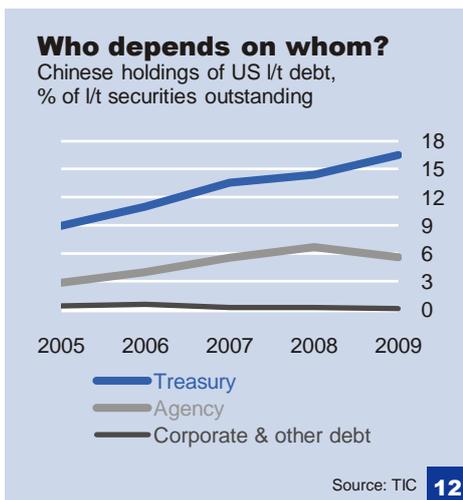
While the US certainly managed to delay and deflect pressure for international adjustment and even get other countries to adjust (e.g. Plaza, Louvre accords), this was only in part due to its reserve currency status, and principally due to the size of the US economy and its importance as an export market for other countries – which arguably were more concerned about their competitiveness, growth and domestic monetary stability than about the potential financial losses on their dollar holdings – and the existence of close security ties in the case of Germany and Japan post-WWII.

Perhaps more of a concern is a possible “fall from grace”, that is, the potentially painful economic and financial adjustment that takes place when a reserve currency declines. Under fixed exchange rates, economic policy will be heavily constrained, as the country has to absorb the “monetary overhang”. The risk of a run on the currency may also become considerable (e.g. post-war sterling devaluations). Under flexible exchange rates, however, this is likely to be somewhat less of a problem. Similarly, an RCC runs the risk of greater instability of demand for money. This perceived risk made the German and Japanese authorities reluctant to push for a greater international role for their currencies in the 1980s.



### Implications: Sino-US balance-of-power

The rise of the yuan as a reserve currency would confer benefits on China. It would boost seigniorage revenue, and might enable China to finance its debt more cheaply (though, compared with the present situation, a lot would depend on how the opening of the capital account affects Chinese interest rates). It might have only a limited effect on Beijing’s ability to resist international pressure for economic adjustment, which is already quite considerable. Beijing’s ability to deflect international pressure will be largely a function of economic size and financial prowess. The larger its economy and the less dependent it becomes on foreign trade, the less vulnerable it becomes to protectionist threats. On the other hand, increased foreign yuan reserve holdings may constrain the policy flexibility of other countries – similar to the way in which China’s dollar holdings and dependence on the US market are constraining it today. Moreover, China would benefit from more efficient financial markets, even though efficient capital markets are also a pre-condition for reserve currency status, and Chinese corporates and banks are likely to become internationally more competitive for the reasons discussed above. Admittedly, the benefits are somewhat difficult to quantify, even if they are real.



What does it mean for the US? In addition to foregoing, or at least benefitting less from, the privileges that come with issuing the dominant reserve currency on account of peer competition, the US might have to “mop up” excess dollar liquidity in the (unlikely) event that official reserve holders actively sell down dollar reserves as compared to refraining from increasing their dollar holdings. Even under floating exchange rate regimes, this may lead to sustained monetary weakness and/or constrain macroeconomic policy flexibility. More importantly, the US may increasingly have to resort to issuing non-dollar-denominated debt in order to finance its deficits (e.g. Carter bonds) and a more binding balance-of-payments constraint would limit the US capacity to run large external deficits. The US would then have to raise taxes or curtail expenditure instead

of relying on free and/or low-cost foreign funding. US economic policy flexibility would diminish tangibly.

If the yuan emerges as a reserve currency potentially rivalling the dollar, China will become more powerful and the US less powerful in international economic and financial affairs, especially given divergent net international financial positions and China's greater economic size. However, the factor that will do most to alter the balance-of-power will be China's declining dependence on the US market, or conversely the United States' relatively increasing dependence on the Chinese market.

The emergence of the yuan as a major reserve currency will reflect the underlying shift in economic and financial power, even if it does, independently, provide tangible benefits to China. China's diminished dependence on the US as an export market coupled with exchange rate flexibility will enhance China's position vis-à-vis the US. Simultaneously and significantly, the US will face greater constraints in terms of financing its balance-of-payments deficit. This will be compounded by China's declining relative dependence on the US market, allowing for greater exchange rate flexibility and greater flexibility as to whether and under what conditions to continue to extend credit to the US. Beijing may thus gain a degree of control over how hard or how soft the US balance-of-payments constraint will be, potentially influencing US economic and financial flexibility. This is likely to have ramifications for Washington's political position in the world – something which the Obama administration's National Security Strategy in fact acknowledges.

### Towards a multiple reserve currency system

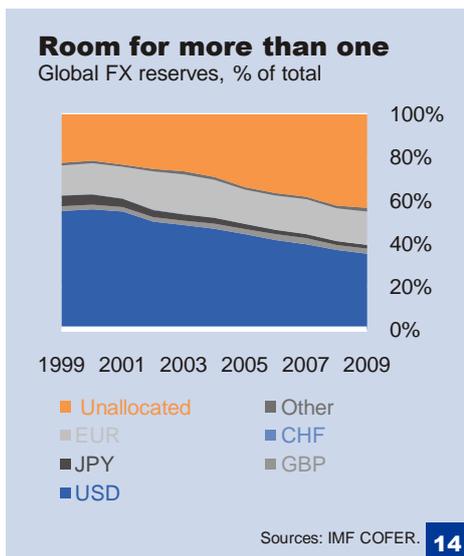
It will take China 15-20 years to put in place the conditions necessary for the yuan to emerge as an international reserve currency and longer to become a potential rival of the dollar (and the euro). This is naturally an educated guess only, based on the projection of China's future economic size, foreign trade and financial market size. Ultimately, the rise of the yuan is a question of how quickly Beijing is willing to push forward with financial markets reform and yuan convertibility. Prerequisites are, by definition, necessary but not sufficient conditions, for even if China makes the yuan fully convertible, creates deep and liquid domestic bond markets, maintains a strong financial position and gains foreign investor confidence through legal-institutional reform, it will still need to overcome "network externalities" currently favouring the dollar and the euro, the relative attractiveness of its "peer competitors" and "politics". A lot will depend on the global political situation twenty years from now.

#### What the world may look like in 2030

	US		Eurozone-16		China	
	2009	2030f	2009	2030f	2009	2030f
Population (m)	309	<b>369</b>	321	<b>289</b>	1,337	<b>1,462</b>
GDP (USD tr)	14.3	<b>35.3</b>	12.5	<b>23.6</b>	4.9	<b>39.4</b>
Trade*(USD tr)	2.7	<b>6.6</b>	3.1**	<b>4.7**</b>	2.2	<b>17.7</b>
Gov bond market (USD tr)	9.2	<b>28.3</b>	8.0	<b>18.9</b>	1.4	<b>19.7</b>
Rule of law***	1.7	-	1.7	-	-0.3	-

\* Merchandise trade only . \*\*Extra-EU-27. \*\*\*Germany as proxy

Sources: UN, EU, IMF, WB, DB Research



The following appears to be the most probable scenario: the yuan is set to become a major reserve currency, but it is not a foregone conclusion that it will emerge as the dominant reserve currency 20, 30 or even 40 years from now. For, despite heated theoretical debate, it is possible for two or maybe three major reserve currencies to co-exist<sup>8</sup>. How stable such a system is would depend – as it always does – on the underlying economic, financial and political dynamics. The reserve currency structure (and the extent of a currency’s public and private international use, more generally) is likely to reflect the wider economic bi- or tripolar structure of the international economic system.

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<sup>8</sup> Eichengreen, B. (2005). Sterling's Past, Dollar's Future: Historical Perspectives on Reserve Currency Competition. NBER Working Paper 11336