The Dollar as a Reserve Currency and the State of Currency Markets

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Introduction

There is growing debate today about the status of the dollar as a reserve currency.

This subject is highly complex, and to discuss it in detail we could easily write a book.

But in this paper we summarize what we think are the most important drivers of the debate, and give you our call on the subject.

We start by describing how the dollar became a reserve currency, and what is the state of currency markets today.

We then give you a view on the potential alternatives to the dollar as a world reserve currency; and finally our call – whether or not there is any likelihood of the dollar losing this status – in, say, the next 5 years.

1)
How did the dollar become the world reserve currency?

There are three main international monetary systems in modern history: (a) the gold standard; (b) Bretton Woods; and (c) floating exchange rates, or the pure fiduciary system.

The gold standard, under which every country could only issue paper money linked to gold reserves, and international commerce was done in gold, ended with the Bretton Woods agreement in 1944, almost at the end of World War II.

Bretton Woods basically made the dollar the world reserve currency, by defining that only the USD had to have a direct link to gold: all other currencies would be linked to the dollar, and international commerce and trade would be done in USD.

This happened because USA entered late in the two world wars: there was a lot less destruction in its territory, and it acted as the guardian of other nations where the major war action was happening. It was a continent-size country that did not have to be reconstructed, with a stable political environment, the strongest military power, large commodity reserves and an already dynamic economy. Europe and Japan were completely destroyed. No country on the planet other than the USA could maintain the gold standard. At the end of the wars, it had about 1/3 of total world gold reserves. The

USA agreed to make the dollar the new reserve currency, and to maintain the dollar convertible to gold.

This 'hybrid' system – which was something between the gold standard and the pure floating exchange rate system that we have today – lasted until 1971, when Nixon closed the window for dollars to be convertible to gold.

2)
The present state of currency markets

What we have today is called the fiduciary monetary system. There is no link between the issue of money and any given commodity. The price of each currency is defined in the financial system by a mix of: (i) demand and supply for that currency; and (ii) interventions by governments and/or Central Banks in FX markets.

By the time Nixon closed the window for dollar convertibility to gold, the USD had already dominated the world currency system, as a result of two main factors:

- Dollar-denominated debt outside the USA was large, both in volume and as a % of total world debt – private and public. After the war the USA was the world 'lender of last resort', and the simple fact that countries and companies had dollar-denominated debt created a natural and strong demand for dollars.

- Trade was all being done in dollar terms – especially, but not only, in the commodity market, where the US created all the bases of futures and options to hedge commodities out of Chicago, and made an agreement with the Saudis to fix the price of oil in dollar terms (giving rise to the term 'petrodollars').

So, even after the end of Bretton Woods in 1971, until the present day, the USD has continued to be the world reserve currency.

For this to change, we believe at least three things have to happen, none of which we expect to occur any time soon:

(a) There has to be an alternative currency, i.e. country, that could take over this status. We discuss three possibilities in this paper (the euro, the Chinese yuan, and the yen).

(b) There has to be a decrease in dollar-denominated debt outside the USA. We will show it has been increasing, and explain why.

(c) There has to be a shift away from the dollar in the commodity and trade markets. This, too, is not happening.

(a) Our first condition for the dollar to be replaced as a reserve currency:

Are there alternatives? What are they?

What could be the alternative currencies to replace the dollar as a reserve currency? We will look at the three we think could have any (even if low) probability of being that currency in the next 5 years.

Alternative 1: The euro

It is tempting to search for economic explanations for the creation of the euro. Why did nations so different from each other, and experiencing different economic cycles, decide to give up their monetary and exchange rate policy to tag along in a project that rejects the principle of an optimum currency area? Economically speaking, monetary unions should prevail when their members satisfy the basic conditions of an optimum currency area. In a nutshell, an optimum currency area could be described as an area in which "one monetary policy fits all member nations" – which was not, and still is not, the case for the Eurozone (EZ). In order to form an optimum currency area all nations should enjoy, de facto and not only by law: free movement of capital, and labor; a high degree of economic integration; common labor legislation; and taxation that is able to avoid what we call asymmetric macroeconomic shocks.

Not only these requirements, but also: that those members should be at an equal stage of their economic business cycle, such that the sole bank, in this case the European Central Bank, would not experience difficulties by implementing one monetary policy for all members.

Some might say that this is the case of the USA. Indeed, if a worker loses his/her job, let's say in New York, it would be much easier for them to look for a new position in California or another US state. Even with no restrictions in terms of labor movement, it is quite difficult to believe that any unemployed Greek worker would easily find a job in Germany or Ireland. Hence, in an optimum currency area, if a state member experiences a macroeconomic shock, let's say a sharp drop in aggregate demand, those idle workers would find a place to work in another state, thus rebalancing the level of economic activity, cleaning the room for the sole Central Bank to decide a sole monetary policy.

But as the EZ clearly does not represent an optimum currency area, why did those nations decide to give up their main macroeconomic tools for offsetting any shock? Anyone deciding to explore the economic rationale behind this will find huge difficulties. The EZ, as a long-term process from the European Community to the European Union, was a political decision.

After the end of the first and the second great wars, a general conviction reined among the European states that they needed to find all and any possible geopolitical frameworks that could inhibit any attempt at a new confrontation. After all, in both wars, the epicenter and the trigger occurred on European soil, involving mainly Germany and France. But how could peace and prosperity be implemented, engendered and guaranteed in Europe? The answer: through a more united Europe, and systems for cooperation between its members. As such, a myriad of agreements and accords were tailored, over a period of more than 50 years, aiming to achieve a new dream that can be summarized by a common expression very widely used in 1945: "*Never again*".

There was a new thinking in Europe, that was expressed – to initial amazement – by Winston Churchill, in his speech at the University of Zurich on September 19, 1946:

> *"I am now going to say something that will astonish you. The first step in the re-creation of the European family must be a partnership between France and Germany. In this way only can France recover the moral and cultural leadership of Europe. There can be no revival of Europe without a* ***spiritually great France and a spiritually great Germany****. The structure of the United States of Europe will be such as to make the material strength of a single State less important. Small nations will count as much as large ones and gain their honor by a contribution to the common cause. The ancient States and principalities of Germany, freely joined together for mutual convenience in a federal system, might take their individual places among the* ***United States of Europe****".*[1]

With the fall of the Berlin wall, and the probable unification of both 'Germanys', it may have been thought that perhaps the newly united nation would no longer need a united Europe – and indeed that the fear of a stronger and united Germany might eventually shake the post-war, fragile, existing equilibrium.

When Chancellor Helmut Kohl (1982 – 1998) presented his ten-point plan for German reunification to the Bundestag – the German parliament – on Nov 28, 1989, without a wide discussion with other members of the European Community, the feeling of tension increased to higher levels.

In a conversation with the minister of foreign affairs from Western Germany, Hans-Dietrich Genscher (1974 – 1992) on Nov 30, 1989, French president François Mitterrand (1981 – 1995) exposed dramatically what other nations feared. In this meeting, Mitterrand had made clear that if Germany did not commit itself strongly enough to the plan of a monetary union, Germany would run the risk of having its reunification plan blocked by its former WW2 enemies.

After two years of intense negotiations at the small city of Maastricht in Holland, a treaty was signed – the Maastricht Treaty – establishing the basic terms of the EZ constitution.

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[1] Winston Churchill speech at the University of Zurich on September 19th 1946: https://www.youtube.com/watch?v=5k5KuXTL8hc&feature=youtu.be

Helmut Kohl was a true enthusiast for the European dream, and he also needed the approval of his friend to move ahead with the reunification.

> "*To his credit, Kohl wanted the monetary union to be complemented by a fiscal and political union, so there could be control of public spending and coordination of economic policy among the states, and more direct political legitimation of the whole enterprise. "Political union is the essential counterpart to economic and monetary union," he told the Bundestag in November 1991".*[2]

Critics at the time questioned how a common currency could work without a common treasury, how a one-size-fits-all interest rate could be right for such a diverse group of economies, and how the Eurozone could cope with economic shocks that varied from region to region. See Ash (2012).[2]

But France did not see it that way. The crucial point for the French was to gain some control over the German currency (DM), without allowing Germany to have any control over France's budget. See Ash (2012, 9):

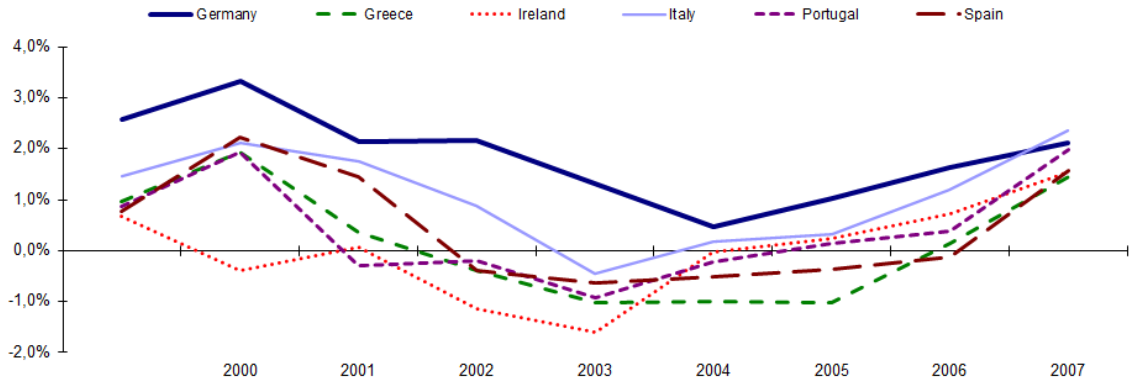
> "*So, the discussion of a fiscal union withered away into a set of 'convergence criteria', which required would-be members of the monetary union to keep public debt under 60 percent of GDP and deficits under three percent."*[2]

When finally, the EZ was established in 1999, there was an enormous consensus amongst the member states and the international community that a mature monetary union had been created in an optimum currency area, and that one monetary policy dictated by the newly established European Central Bank certainly would fit all EZ members.

As we can see in Figure 1, while real interest rates for Germany always remained in positive territory from the year 2000 to 2007, in other member states, during some periods, real interest rates were negative or extremely low. Apart from Greece, Ireland and Spain had the lowest real interest rates in this period. Needless to say, in these countries particularly, real estate bubbles were formed, leading part of the banking system to get exposed to financing those assets and carrying them in their balance sheets as collateral.

[2] Ash, T. (2012, 5): "*The Crisis of Europe. How the Union Came Together and Why It's Falling Apart*". Foreign Affairs. 16/Aug/2012. https://www.foreignaffairs.com/articles/europe/2012-08-16/crisis-europe

Figure 1: Real interest rates



Source: Eurodata. Real interest rates: Nominal minus inflation ex-post (each country).

As one monetary policy did not fit all, countries that experienced negative or very low real interest rates saw an increase in their unit labor cost above their labor productivity. "*According to this reasoning wages have moved in a way that changed real exchange rates dramatically leading to diverging export and import performances in the different member countries.*" Horn and Watt (2017 – 10)[3]

Higher unit labor costs led domestic consumption of those countries to increase beyond their domestic saving, resulting in current account deficits, while Germany mainly presented a current account surplus as a result. See Figures 2 and 3.

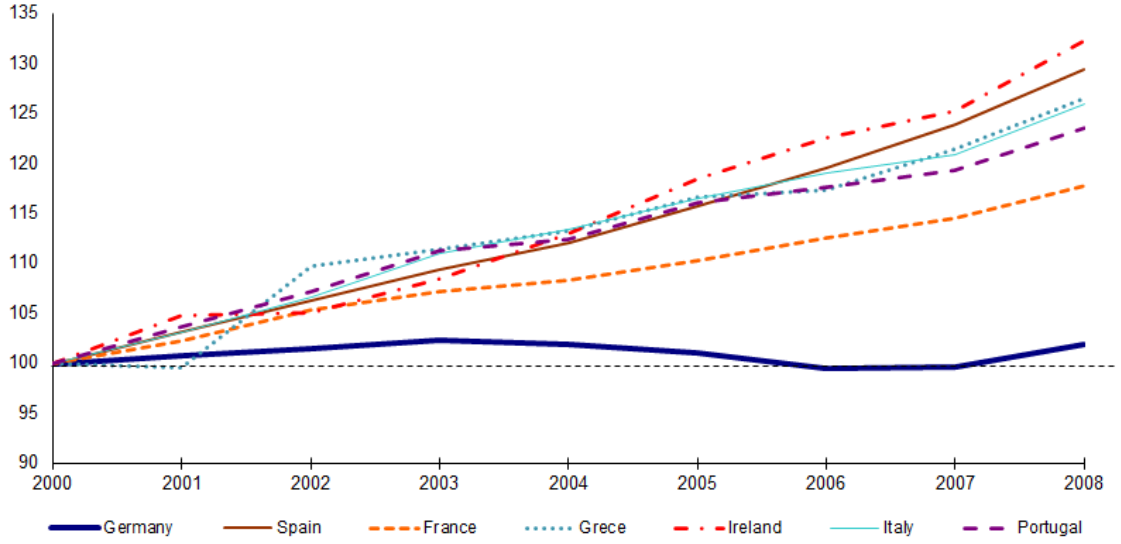
Obviously, it would be a huge mistake, and almost outrageous, to neglect the reform led by German Chancellor Gerhard Schröder introduced in 2003, that helped Germany to reduce unemployment and jumpstart its economy. Billed as the largest single social reform ever seen in post-war Germany, and dubbed "Agenda 2010", it not only cut entitlements, but also allowed German companies to hire, fire and take on part-time workers more easily by weakening the then-stricter labor laws. See DW (2017)[4] and DW (2014).[5]

3 Horn, G., and Watt, A., (2017): "Wages and Nominal and Real Unit Labour Cost Differentials in EMU". European Commission. Discussion Paper 059/July 2017 https://ec.europa.eu/info/sites/info/files/dp059_en.pdf

4 DW (2017): "German issues in a nutshell: 'Agenda 2010". Author: Rebecca Staudenmaier. June 6th 2017. https://www.dw.com/en/german-issues-in-a-nutshell-agenda-2010/a-38789461

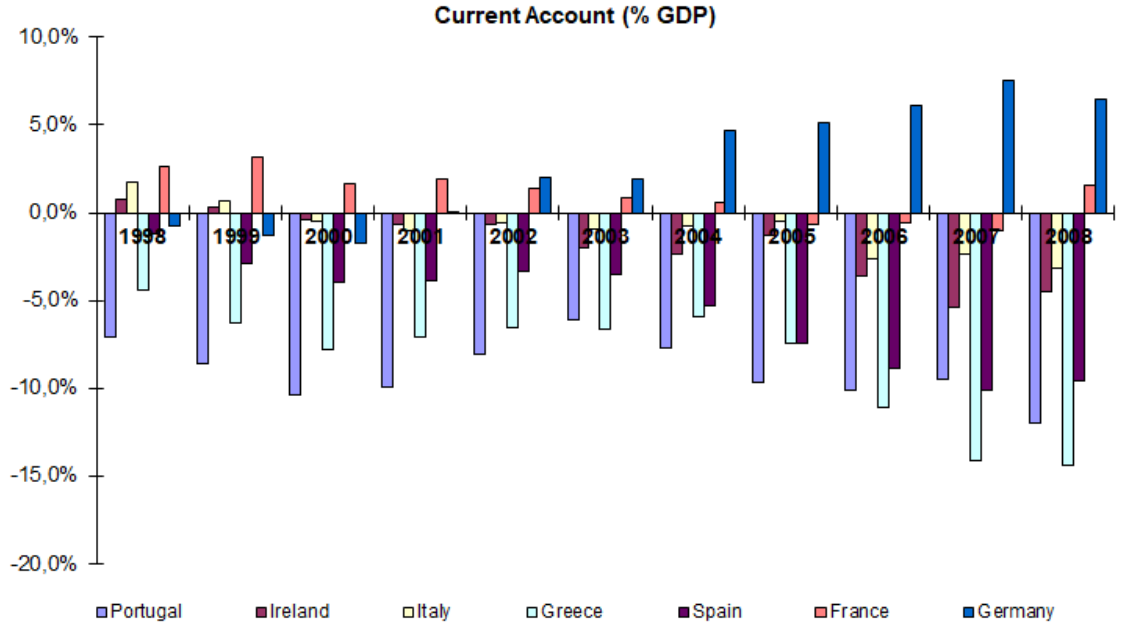
5 DW (2014): "German Agenda 2010 reforms 'mythical' status questioned". Author: Conor Dillon. March 2nd 2014. https://www.dw.com/en/german-agenda-2010-reforms-mythical-status-questioned/a-17406193

Figure 2: Unit labor cost



Source: Eurodata.
PS: Unit labor costs are often seen as a broad measure of (international) price competitiveness. They are defined as the average cost of labor per unit of output produced. They can be expressed as the ratio of total labor compensation per hour worked to output per hour worked (labor productivity). This indicator is measured in percentage changes and indices.

Figure 3: Current account deficits (–) and surpluses (+) (% GDP)

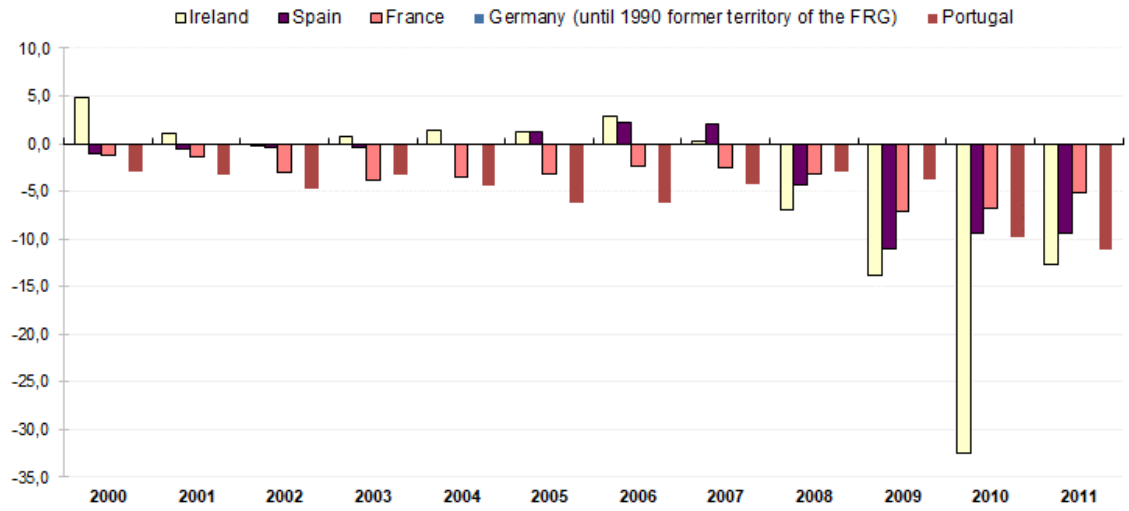


Source: Eurodata.

It is true, however, that after the EZ crisis, members such as, Ireland, Italy, Spain and Portugal managed to increase their unit labor costs. While Germany maintained it, to gain external competitiveness.

Much has been said of the fiscal profligacy of some countries – that mainly Italy and Spain should be the culprits of the 2010 EZ crisis – but as Figure 4 shows, the worst budget deficits presented in 2002 and 2003 were those of France and Germany, the main defenders of fiscal prudence, especially after the approval of the Stability and Growth Pact in 1997.

Figure 4: Budget deficits (% GDP)



Source: Eurodata

With all these imbalances in the EZ countries, the initial shocks that started in the US subprime mortgage market spilled over into the whole of the EZ. Again, some may attribute the fragility of the EZ to profligacy of some countries, but as Figure 4 shows, the budget deficits of some countries began to balloon only after the crisis hit the EZ and governments, had to step in to avoid further contraction in local economic activity.

Conclusion – the euro

As we initially observed, if someone were to try to find a reasonable economic explanation for the European Monetary Union, they would not be able to. This is and was a political dream, to make the continent united, but as Helmut Kohl and Robert Mundell said, a country cannot enter into a monetary union without losing its fiscal sovereignty.

Hence our main call here is as follows:

– How could a currency used by 19 different countries that do not together comprise an optimum currency area, highly fragmented politically, and without fiscal federalism, challenge the US dollar as the main reserve currency?

– From our perspective, this looks quite impossible.

Alternative 2: The Chinese yuan

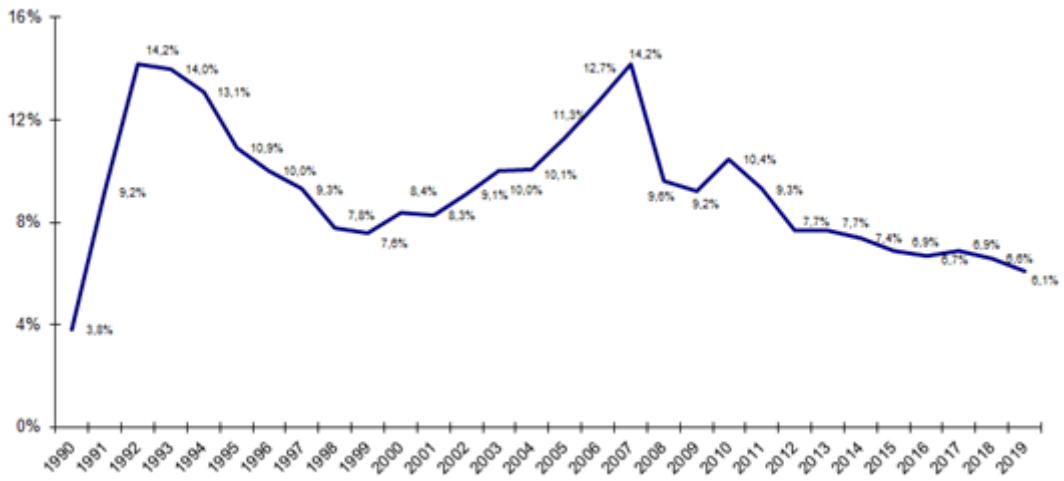
At first sight it might appear anomalous not to believe that the Chinese yuan (CNY) could replace the US dollar as a reserve currency in the near future.

One has to acknowledge the extraordinary economic growth posted by China since the early 1990s. Depending on the methodology applied, some might say that China has overtaken the US in terms of GDP in PPP terms, and it certainly has overtaken Japan as the world's second largest economy.

From 1990 to 2019, China's GDP grew by 9.3% p.a. on average, as Figure 5 shows.

Notably, the country has achieved a soft-landing economic growth process, apart from the effects triggered by the Covid-19 pandemic. All in all, this soft landing is the result of a rebalancing process initiated by President Hu Jintao and continued by the current president, Xi Jinping, in order to make China a more consumption-oriented economy, rather than an investment-oriented one.

Figure 5: China's GDP growth, % p.a.



Source: CEIC data.

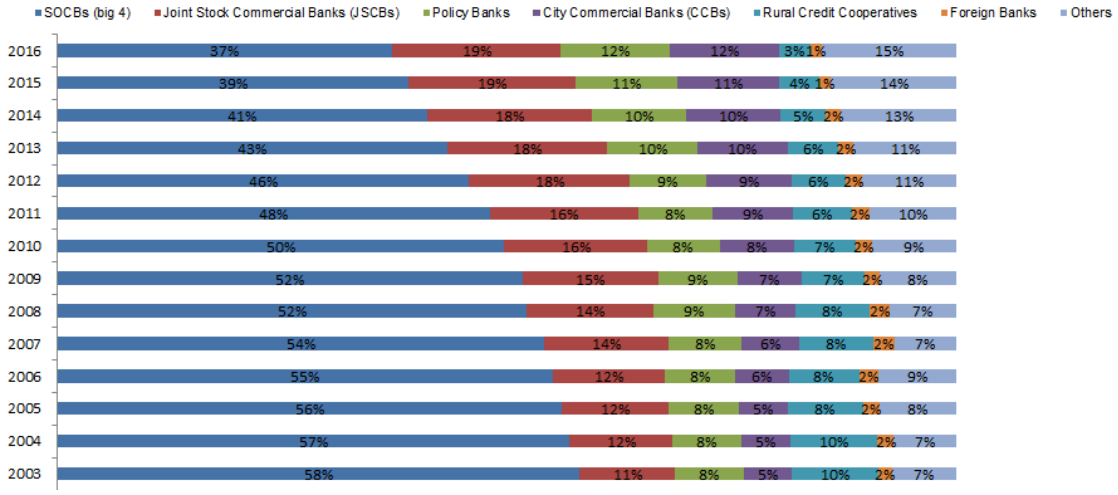
This slow trend towards a "new normal" in terms of economic growth has been a byproduct of a well-established public policy led by the Chinese Communist Party (CCP), as from the point when it became crystal clear that further boost in investment could only lead to further banking debt, and higher non-performing loans (NPLs).

Since the creation of the big four Chinese banks from 1979 to 1983 – Bank of China (BoC), China Construction Bank (CCB), Industrial and Commercial Bank of China (ICBC) and Agriculture Bank of China (ABC) – the Chinese government has made heavy use of what we call a crony-capitalism approach by using those commercial banks as a parafiscal arm to guarantee enough economic growth to ease eventual social

tension during high unemployment periods, as well as to guarantee the legitimacy of the CCP.

Until at least 2016, the "big 4" state-owned commercial bank (SOCBs) continued to dominate the domestic banking market, with a 37% chunk of the country's banking system – which represented total assets of US$33.9tn in 2016. Foreign banks, since 2003, continue to enjoy a market share not greater than 2%.

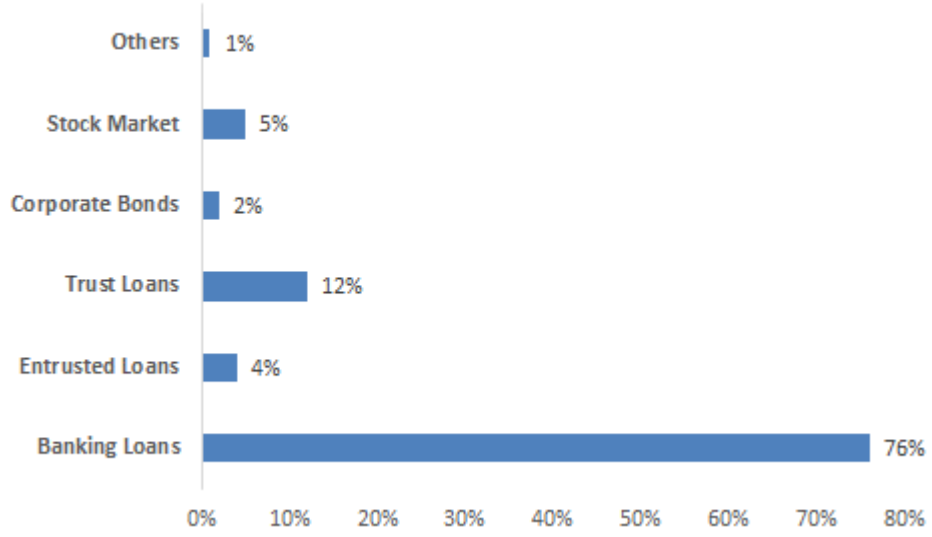
Figure 6: China's banking system (% total assets)



Source: China YearBook – China Statistical Yearbooks Database 2018.

In terms of financing domestic investments, the banking system is still the main provider of funding, followed by trust loans, and the stock market – which provided only 5% of the total capital raised in 2017.

Figure 7: Funding raised by Chinese non-financial corporates (2017) – RMB 19tn (US$ 2.8tn).



Source: Handbook of China's Financial System. Ch.1. – Sun Guofeng.

Many have said that both China's exchange markets (Shanghai and Shenzhen), established in 1990 and 1991 respectively, are good indicators for the economic situation of the country. As the theory of finance goes, a stock market should at least reflect, almost faithfully, the economic situation of a country, given that prices of stocks are determined according to the forecast of companies' cash flows or earnings, which are broadly linked to performance of the economy. If the forecast for the economy fails to please the investor, he/she may find other alternatives for investments, such as government and corporate bonds, foreign stock markets, ETFs, currencies, etc. In the case of China some assumptions fail to comply with these considerations:

1. Prices in the stock market in China are highly distorted. The government, through some linked institutions such as Central Huijin Investment Co., sometimes intervenes in the stock market to ease high volatility, which in some cases could cause heavy losses for local investors, leading to undesirable social tensions.

2. Despite the reforms during the Xi Jinping era, trading on inside information is still common in the stock market, as is also unreliable accounting, in financial statements provided by some listed companies.

3. Local residents are not allowed to invest abroad – other than a small quota, depending on approval by the State Administration of Foreign Exchange (SAFE) – to diversify their portfolio. Hence investing in a market where the government imposes financial repression seems the only way to achieve some gains above local interest rates.

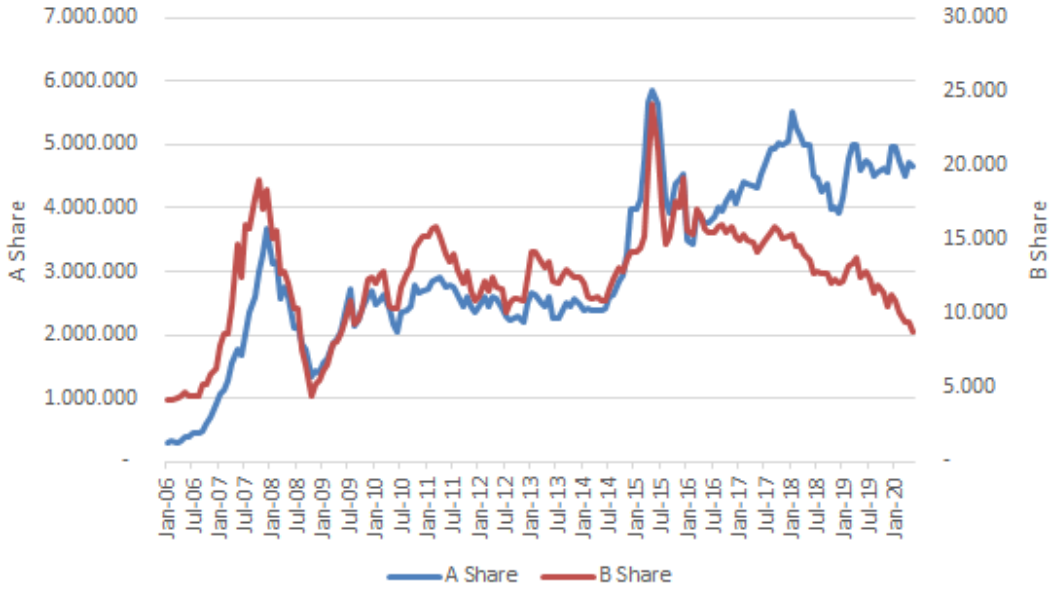
4. Until recently (May 7, 2020), institutional foreign investors were not free to invest in China. If they wished to, they needed to get approval from SAFE and from the China Securities Regulatory Commission (CSRC), and also a Qualified Foreign Institutional Investor Quota (limited to a global total of US$80bn for all investors) to be able, for example, to park their money in 'A' shares (RMB-denominated market).

   There is a market for foreigners to invest in the stock market, via 'B' shares (which are US-dollar-denominated), but the liquidity is very small. See Figure 8.

   The movement to liberalize Renminbi Qualified Foreign Institutional Investor (RQFII) quotas was an important effort to internationalize the Chinese yuan, but we know that China's bureaucracy allows it to manage the speed of opening up, to maintain a degree of control over the financial systems, to promote stability and avoid high volatilities.

5. Chinese domestic investors are also looking for new opportunities for outbound investing, but to do so, they need to apply for a quota as a Qualified Domestic Institutional Investor (QDII)

Figure 8: Shanghai Stock Exchange – market cap (US$mm) – A and B shares



Source: CEIC data.

On the other hand, the Chinese government has taken some steps to turn the CNY into an international convertible currency. For example:

1. Since 2008, China has agreed US$500bn in currency swaps with nearly 30 countries, including Argentina, Canada and Pakistan. There is also a much-

publicized trade settlement agreement that allows public and private sector companies to use the yuan or currencies of other countries to transact trade, but its range is very limited.

2. In November 2015, when the CNY became the fifth currency to join the IMF's special drawing rights (SDR), an artificial reserve currency, this was important symbolic recognition, but says little about the currency's future role. See Kroeber (2016, 147).[6]

We understand that China wishes to make the CNY convertible, to challenge the US dollar in the near future, but for us this outcome seems very unlikely, for the following reasons:

(a) The CCP certainly will continue to use its SOCBs as a fire brigade in the event of any macroeconomic shock that could somehow jeopardize the country's economic growth and trigger social tensions, putting the dictatorship regime at risk.

(b) Hence, even if it were to happen that borrowed money, let's say from some local provinces through local government financial vehicles (LGFV), is invested in doubtful projects with lower returns, just to guarantee the economic growth target stipulated by the federal government, so that banks' NPLs mushroom again, it is very likely the government, to avoid any bankruptcy of large banks, will continue to use financial repression – translating into lower interest rates. It is true that the People's Bank of China (PBoC) no longer determines a ceiling on deposit rates, but window guidance *continues to be the basic norm used by regulators and accepted by banks*.

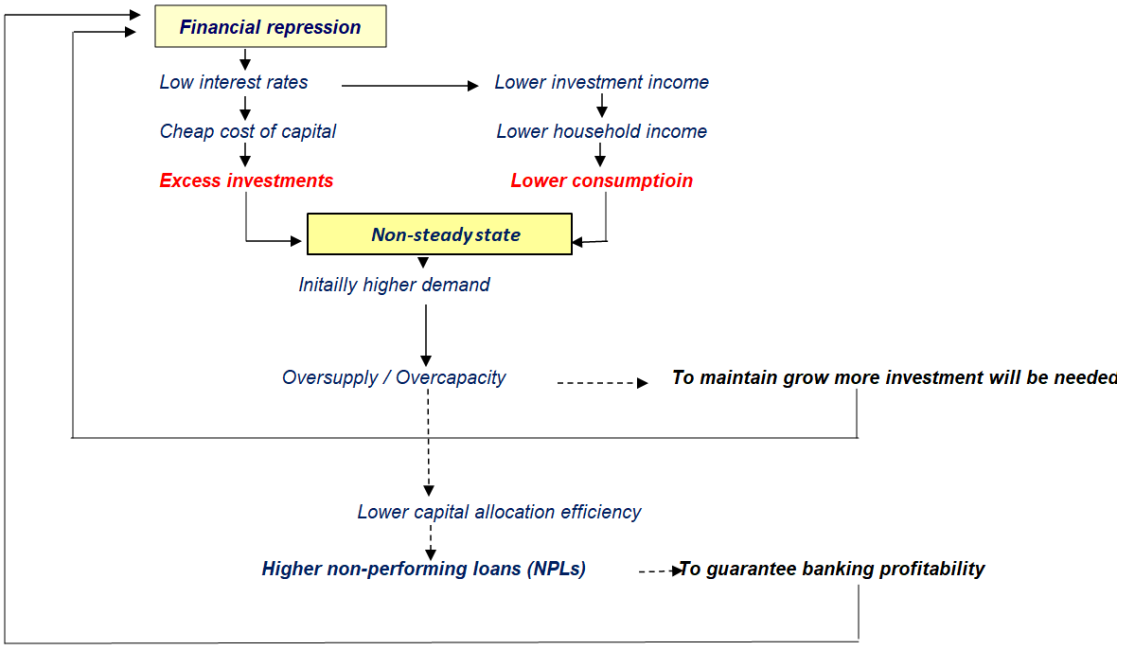
(c) Financial repression in China is commonly used to allow banks to enjoy fat profits between lending and deposit rates, to clean up existing and forthcoming NPLs due to malinvestments financed by those banks.

(d) If the Chinese government continues with its endeavor to open its capital account completely for free movement of capital, it will run the risk of experiencing capital flight, if another country begins to offer higher returns that compensate the risks incurred (referred to as the interest rate parity condition). In that case, China could end up with the same situation that Thailand, Malaysia and Indonesia faced in 1997 (the 'Asian crisis'): a huge capital flight that depleted its international reserves, leading those countries to give up their currency defense. In a nutshell, it might experience a currency crisis.

(e) And if the capital account is completely open, and local corporates begin to take loans in US dollars, unhedged, then any massive currency depreciation led by a speculative attack could evolve into a corporate crisis and an economic crisis, with adverse impact on China's economic growth. As we note above,

[6] Koreber, A. (2016): "China's Economy. What Everyone Needs to Know". Oxford University Press.

much lower economic growth and high unemployment are perfect ingredients for social tension. If this were to happen in an undemocratic country such as China, certainly Beijing will act promptly in some undesirable manner to control the unrest. The following diagrams show why financial repression is still needed to keep the profitability of the Chinese banks under control and avoid a banking crisis.



In any case, there are still some analysts who may say the level of China's international reserves of more than US$3tn is more than enough to clean up its banks:

What international reserves can and cannot do

In their paper, Allen, F., et al (2009, 25) argue that: "*While the total amount of NPLs is around US$160bn at the end of 2007, the foreign exchange itself should be more than enough to remove all the existing NPLs off the books of all the banks of China*." While theoretically this is true, this statement is very misleading, since international reserves cannot be used to do whatever the government wants. International reserves (IR) are simply the asset side of a monetary authority's balance sheet. If international reserves decrease to recapitalize a bank or clean up a bank's NPLs, this creates a hole in the monetary authority's balance sheet. A new equilibrium will be achieved solely through an increase in domestic credit by the central bank, or by buying Chinese Treasury Bonds or Bills. Hence, the PBoC cannot give away the international reserves without causing an increase in its net indebtedness. The only way the government can recapitalize banks is by borrowing or by raising direct (or hidden) taxes.

Eventually the PBoC might decide not to sterilize its lower international reserves, which would lead to a lower monetary base level, and higher interest rates. Indeed, if that occurs, if the capital account is freely open, money will inflow, and the CNY will appreciate to fulfill the interest rate parity condition. On the other hand, since the Chinese government has said loudly that its currency is no longer pegged to the US dollar, any massive appreciation of the Chinese currency is certainly not the interest of Chinese government policy.

Monetary policy in China

In general, central bankers or monetary authorities around the world usually agree on the benefits of using market-based monetary policy instruments. But this is not the case of China, nor even of its central bank – the PBoC, since decisions on rates and monetary policy are formally taken by the State Council Monetary Policy Commission.

If we compare the state-of-art in monetary policy in developed economies with the case of China, we have the following differences:

	State-of- art	China
Final policy target	Inflation, unemployment	Economic growth, inflation, : **Mandate PBoC:** To keep the value of currency in order to promote economic growth.
Intermediate target	**Price based** *Short term interest rates*	**Quantity based** Bank credit and M2
Policy environment	Independent and transparent	Administrative controls and "*Window guidance*"

On an overview, the main instruments of monetary policy and rates that China uses to control the monetary are highly confusing, and indeed not really correlated to each other – since it is a "free market" – although some instruments might be similar:

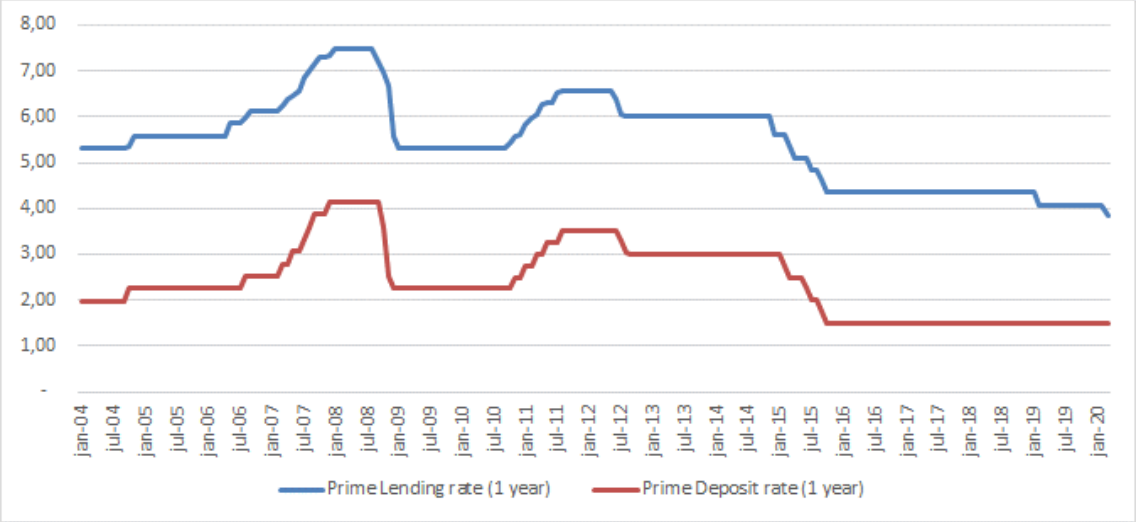
Main instruments of China's monetary policy:

- **Standing Facilities (PBoC)**: Discount Window and Excess reserves, remunerated at a below-market rate.
- **Open Market Operations (OMOs)**: Introduced in 1993. Buy and sell PBoC bills and government bonds.

- **Reserve requirements (RRs)**: Currently at 9.4%. Peaked at 21.5% from June to December 2011.
- **Interest rate controls**: Applied to lending and deposit rates. Floor and ceiling were freed from government control in 2013 and 2015, respectively – though when window guidance is deemed necessary by the monetary authority it is fully respected.
- **Administrative measures:** These include Window Guidance, for credit growth, and sectorial allocations.

Lending and deposit rates: Although the PBoC removed its official ceiling and floor for rates for lending and deposits, window guidance is currently very widely used if the monetary authority wishes to expand or contract the volume of new loans. Although both rates were freed to be determined by any commercial bank, the PBoC highly recommends increasing the net margins of commercial banks – to avoid competition, and/or to offset existing and/or future expected NPLs.

Figure 9: China – 1-year lending and deposit rates (% p.a.)



Source: CEIC data.

Other rates used by the PBoC to manage the money supply and market liquidity:

Central Bank Rates

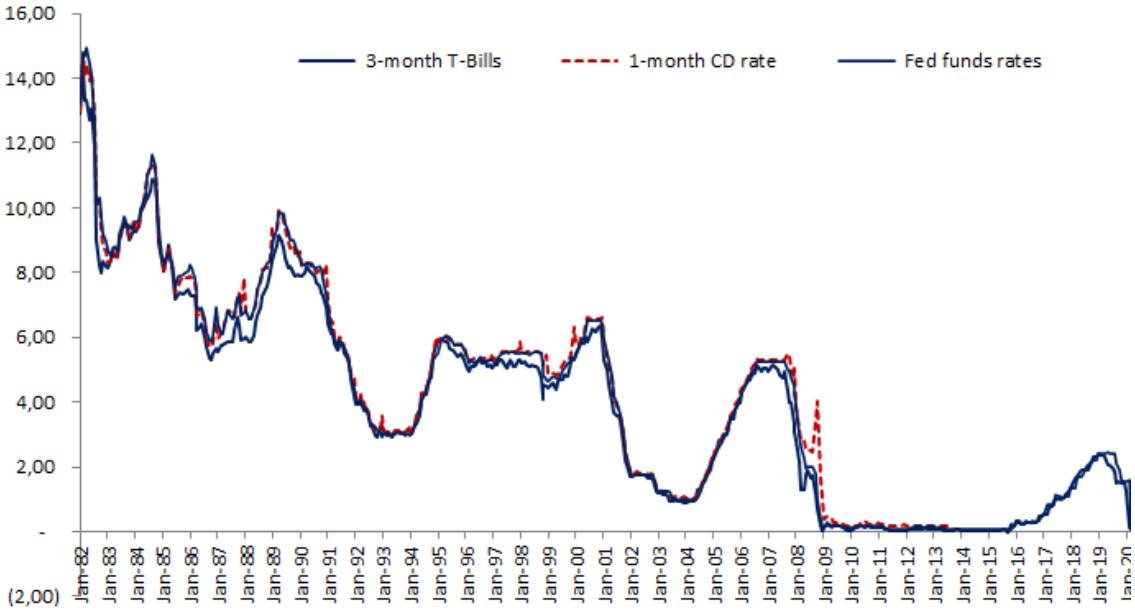
a. Rediscount rate
b. Required and Excess reserve rates
c. PBoC Bills rate

Money market and bond yields

a. CHIBOR (China Interbank offered rate) – Repo transactions
b. SHIBOR (Shanghai Interbank offered rate) – Repo transactions

But the main question we pose is: Is there any policy rate that could be used as an anchor for money market rates? In an average developed economy, the policy lending or discount rate usually serves as an 'anchor' for money market rates (e.g. interbank, repo, etc.). Take for example the behavior of money markets in the US:

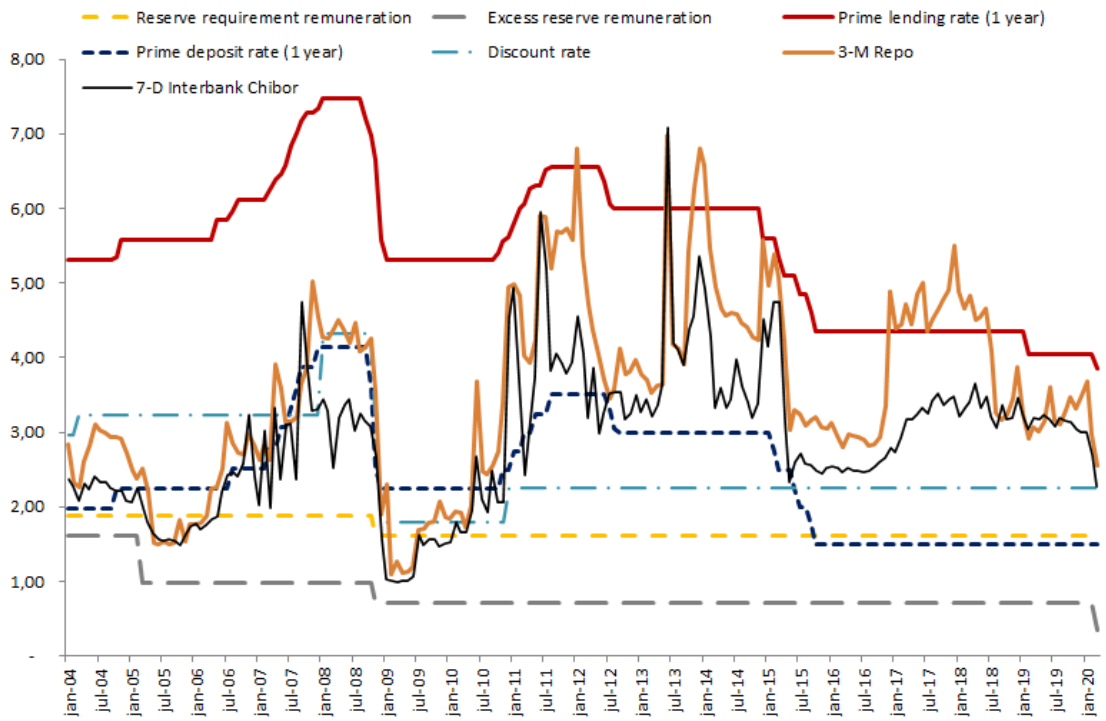
Figure 10: Money market and policy rates – USA



Source: CEIC data.

On the other hand, the relation between the policy rates and market rates in China is almost non-existent.

Figure 11: Money market and policy rates – China



Source: CEIC data.

But which interest rates really matter in China? Or which one should an investor look at to interpret or analyze the money supply conditions and the credit appetite of commercial banks?

a. Lending and deposit rates: Although they are assumed to be "free" from intervention, both rates are a good hint about the risk appetite of China's commercial banks, and the government's willingness to expand or contract new bank loans.

b. Money Market (CHIBOR and SHIBOR): These rates are determined by market conditions rather than the central bank. Since the PBoC targets monetary aggregates, short-term money markets are the only interest rates that reflect changes in the supply of liquidity in the system.

Conclusion – the yuan

To summarize the points that lead us to believe the CNY will not challenge the US dollar in the near future:

1. Despite China's reforms of exchange rate policy, the CNY is still highly controlled by the PBoC (it does not float freely). This might lead to a need to sterilize inflow and outflow of money flowing in open market operations (OMOs), to maintain the money supply as the monetary authority wishes.
2. Some economic figures are not reliable, and it is easy to counter-argue official numbers. Take for example Figure 12 (below), which shows China's GDP growth and its electricity consumption. As China is an energy-intensive country, we would expect a much higher correlation between these data series, but we see a discrepancy in the years 2015 to 2017. In this period China's reported annual economic growth was 6.83%, but electricity consumption rose by an average of only 1.7%:

Figure 12: China – GDP growth and electricity consumption, % YoY

3. We have no doubt that Chinese banks will continue to be used as a fiscal arm of the CCP to legitimize their government.
4. There is a high level of government interference, with lack of transparency, when monetary policy instruments and rates are applied.
5. Banks' NPLs will continue to rise, or in any case, given the manipulated exchange rate policy, if China were to free its capital account, any financial repression to guarantee the profitability of those Chinese banks would lead to a massive capital outflow.
6. If the capital account indeed were freely opened for inbound and outbound portfolio investments, companies and banks that are unhedged after a massive

currency depreciation could trigger a corporate crisis, leading to an economic crisis, with an upsurge in social tensions.

7. China has learned from the Asian crisis that, when using crony capitalism (as it is), any massive capital outflow, or sudden dent, could put the legitimacy of its government in jeopardy.

Alternative 3: The Japanese yen

"*Be careful! One day, those almond eyes will buy the entire US!*"

No, this statement was not only made during the 2000s, referring to the Chinese, but during the 1980s, when Japan seemed about to take off and leave the US behind. Things did not end up quite as the phrase-maker expected.

Let's take some steps back in time. During the 1980s, given the perceived safe-harbor status the US enjoyed under the Ronald Reagan administration, the US dollar appreciated significantly against all major currencies, on inflow of capital into the US, and many industrial segments began to complain not only because their competitiveness abroad had weakened, but also because exports from Japan were eating into US industrial strength. There were frequent calls from the US Congress for protectionist measures to contain Japan's exports, while anti-Japan sentiment mushroomed in the US. See Mikuni, Akio and Murphy (2002, 145-146)[7].

The increasing current account surplus that Japan experienced during the 1980s, and the appreciation of the US dollar, helped to lead to the *Plaza Accord*[8]. Responding to political pressure from the US government, under the Ronald Reagan administration, Japan and three other developed countries (West Germany, UK and France) decided to block the current appreciation of the US dollar and the depreciation of the French franc, the British pound, the Japanese yen (JPY) and the deutschemark by intervening in a coordinated way in the currency market, in September 1985. The success of those coordinated interventions in the FX market by the G5 members caused the JPY to appreciate by 70% against the US dollar, from JPY 260/USD in February of 1985, to JPY 152/USD in January of 1987.

How did Japan respond to the JPY appreciation?

Aiming to offset the contractionary economic effects of the appreciation of the JPY, the Bank of Japan (BoJ) embarked on an expansionary monetary policy, translated into much lower interest rates. From 1986 to 1987, the BoJ decreased its basic rates from 5% to 2.5%.

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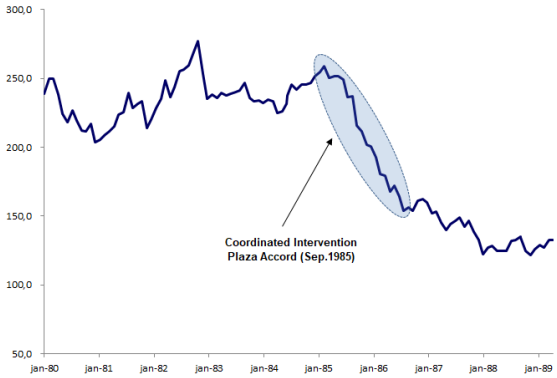
[7] Mikuni, Akio and Murphy, R. Taggart (2002): "*Japan's Policy Trap: Dollar, Deflation and the Crisis of Japanese Finance*" – Ed. The Brookings Institution.

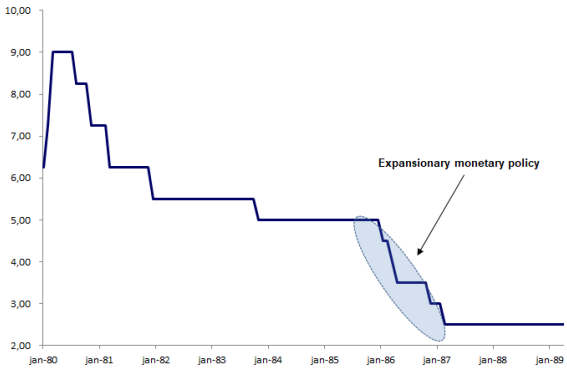
[8] (The name is because the agreement was negotiated in the Plaza Hotel in New York.)

Figure 13: US dollar and yen, 1980s

(1) JPY / USD: Jan. 1980 – Apr. 1989



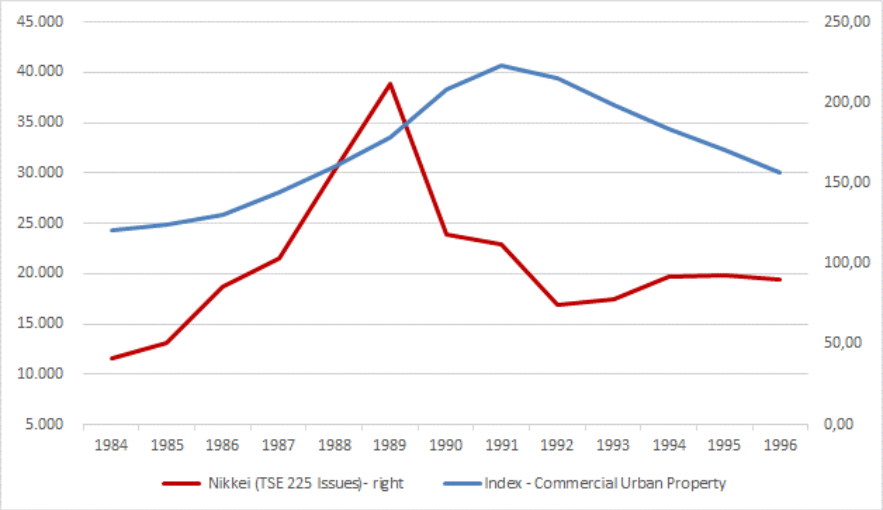
(2) Japan: Basic (1 year) domestic interest rate, 1980–89



Source: Bank of Japan (BoJ).

With lower interest rates and more liquidity, the excess of liquidity created by the BoJ led investors to park their money in risky assets such as stocks and real estate lending – causing the valuations of both these asset classes to increase substantially. From 1985 to 1989, the Nikkei 225 rose from 13,113 points to 39,000 points – a gain of almost 200%. Real estate assets rose by 75%.

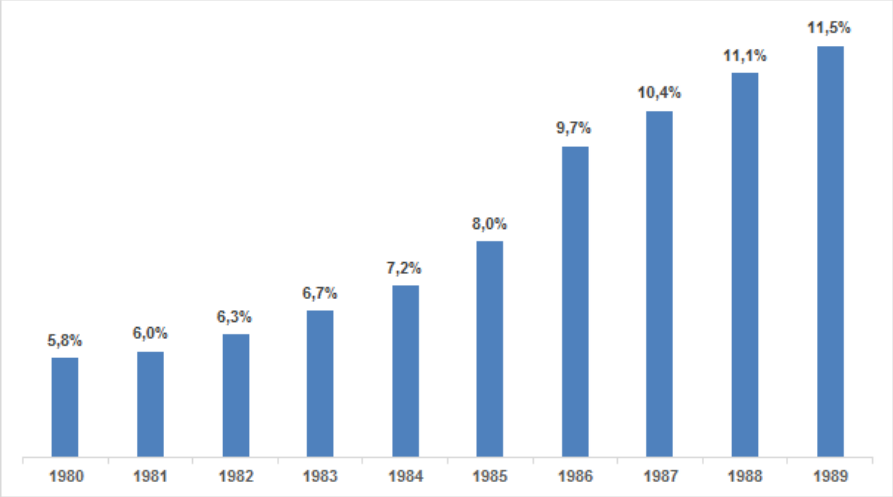
Figure 13: Nikkei 225 and Japan property price index



Source: Bank of Japan (BoJ), Japanese Ministry of Finance.

From 1986 onwards the Japanese banks lent aggressively to real estate companies, accepting the asset being financed as collateral (non-recourse). From 1984 to 1989, the banks' exposure to real estate assets increased, from 7.2% of banks' total lending, to 11.5%.

Figure 14: Japanese banks – exposure to real estate (% of bank's lending)



Source: Bank of Japan (BoJ).

Becoming aware that an asset bubble had been built up, the BoJ publicly recognized this when it began to increase the basic rate – from 3.25% in May 1989 to 6% in August 1990. That movement was interpreted by economic agents as indicating that an asset bubble had been formed, and that there was a need to address the excess of liquidity previously created by the monetary authority and the expansion of bank lending.

When the bubble burst, the Nikkei index tumbled by almost 60%, from 1989 to 1993, while real estate prices collapsed by 30%. With the drop in real estate prices, the real estate collateral held by banks collapsed, leading the country to a banking crisis. From 1992 to 1994, Japan's average economic growth was below 1% p.a., jeopardizing the profitability of local corporations with excess of capacity retro-feeding the negative impact on banks' profitability.

As expressed by Shiratsuka (2003, 45):[9]

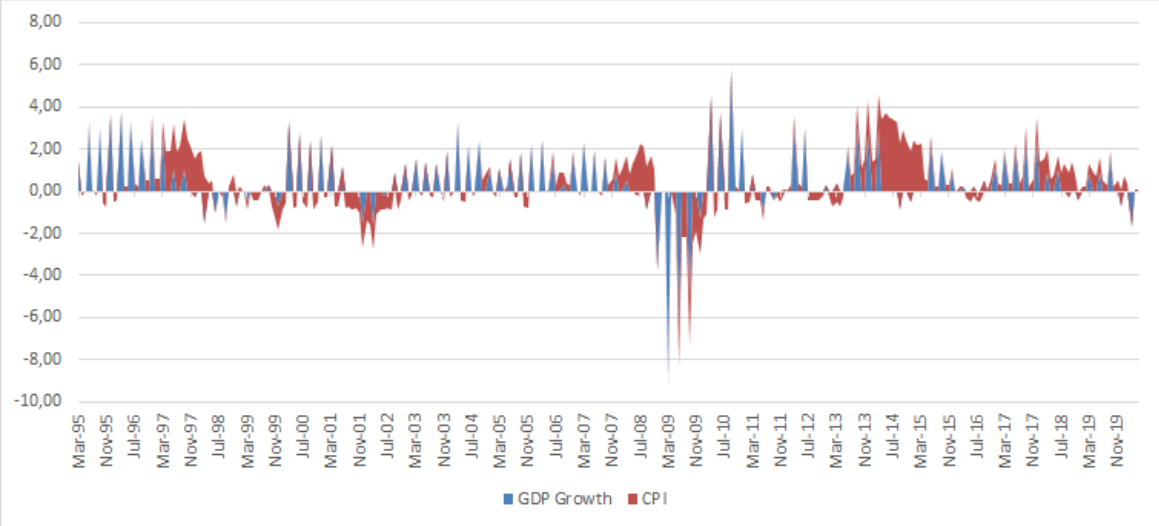
> *– When an asset price bubble bursts, it tends to influence the real economy in two ways: (i) lower domestic consumption, given the wealth effect, and (ii) lower gross capital formation (investments), given the drop in asset prices used as collateral by lenders. When the prices of assets rise, the short-term impact indeed is favorable, but the long-term impacts fail to be appropriately measured and assessed.*

When the market collapsed and the wealth effect impacted household income and economic agents' expectations, consumption shrank, and lenders became more exposed to lower value collaterals. Corporations postponed or called off their investments, given the uncertainty that reined in the entire economy. When this sort of scenario is created, corporations tend to clean up their balance sheets through a deleveraging process, instead of taking new credits. As a result the entire economy experiences what we call a

[9] Shiratsuka, S. (2003): "*The asset bubble in japan in the 1980s: Lessons for financial and macroeconomic stability*" – IMF BIS conference (oct.2003); http://www.bis.org/publ/bppdf/bispap21e.pdf

balance sheet recession. This description fits what Japan experienced after the 1989 bubble burst. Corporations start to spawn their inventories by reducing prices (deflation), leading households also to postpone consumption in the anticipation that future prices will be lower. This pernicious effect tends to end up in a recession-deflation scenario – which Japan has experienced since 1990, although not every year since then.

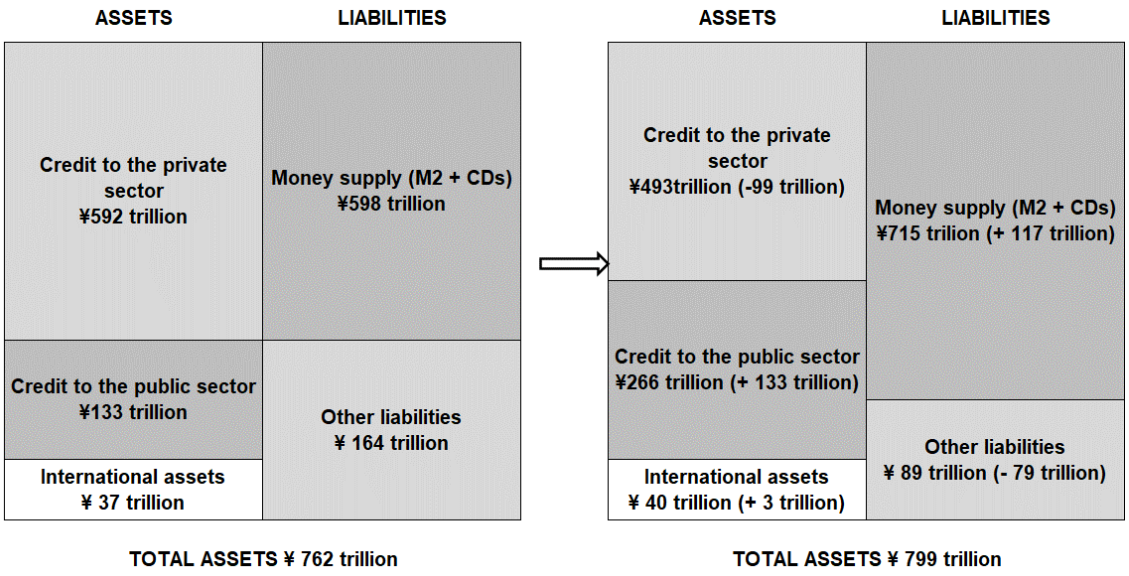
Figure 15: Japan – Quarterly YoY GDP growth (%), and monthly CPI (YoY)



Source: CEIC Data.

As the next table shows, Japan managed to somehow replace the decline of new loans to the private sector by credit to the government. Had the government not intervened as it did, money supply would have decreased and Japan's economic situation would have been much worse. From July 1998 to 2006, Japanese banks' balance sheets showed a clear shrinking of credit to the private sector, of JPY 99tn. On the other hand, credit to the public sector (expansionary fiscal policy) more than offset that decline – increasing from JPY 133tn to JPY 266tn.

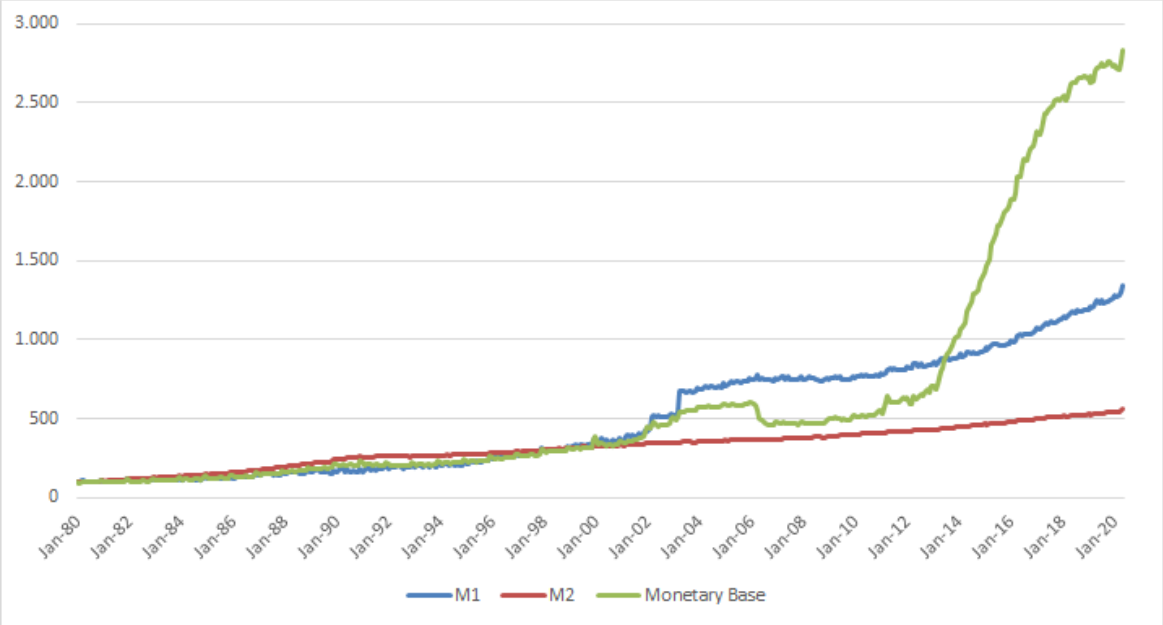
Figure 16: Japanese banks – balance sheets



Source: Bank of Japan, Monetary Survey; and Koo (2008, 91).

Conventional monetary theory says that, in normal situations, monetary aggregates should move in high correlation with changes in the monetary base. As Figure 17 shows, the monetary base clearly detached from the pattern of M1 and M2 starting in the year 2000, when the level of M2 was lower than M1. From 2000 onwards, mainly after 2012, the BoJ embarked on a very aggressive quantitative easing (QE) program aiming to offer a high level of liquidity to the real economic sector, but it seems that part of this money has not been used to lend to the private sector.

Figure 17: Japan's monetary aggregates (base: 1980 = 100)



Source: BoJ.
M1 = Currency + deposits; M2 = M1 + savings + time deposits.

The intercalated periods of recession and deflation have led the Japanese economy to lag behind most of other developed economies, despite the great efforts of the BoJ in providing a vast amount of liquidity. This phenomenon of low interest rates, QEs, deflation and recession has already been named '*Japanification*', and the center of the explanation for this is the falling marginal utility of monetary stimulus. 'Japanification' may be spreading throughout the world. It's a term that many countries fear specially after the outbreak of Covid-19.

Our conclusion – the yen

- Given the history of Japan's economic performance since the bursting of the 1989 bubble, and the country's current financial and geopolitical position, it seems extremely unlikely that the Japanese yen could challenge the supremacy of the US dollar as a reserve currency.

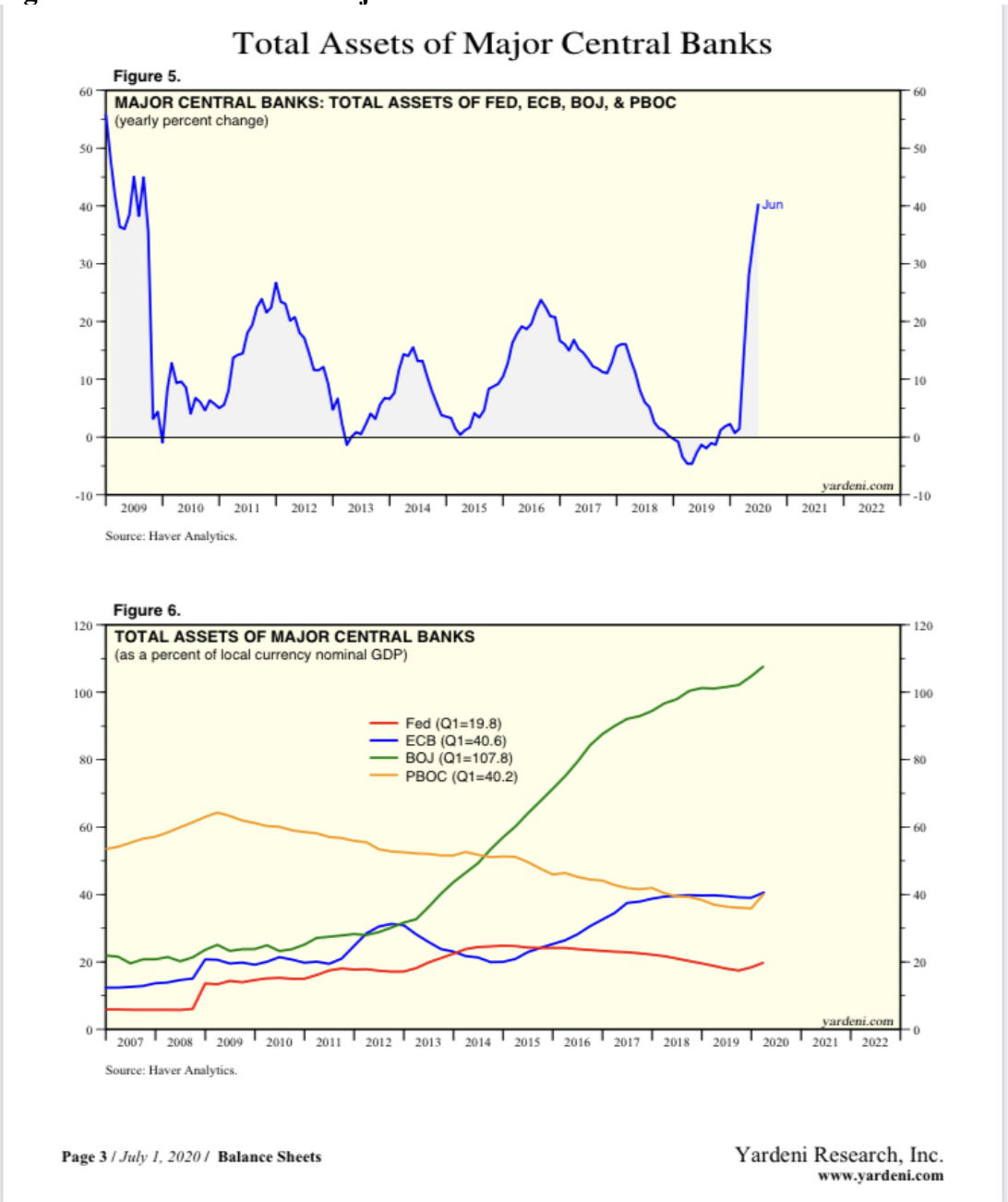
One final comment – on alternatives to the dollar:

To finalize this chapter on what are the alternatives to the dollar, we show below the size of the balance sheets of major central banks, as % of their GDP – to make it crystal

clear to readers that all CBs are currently in the "monetary experiment" of large-scale quantitative easing, and monetary-base printing.

If it were only the Fed, the dollar might have a larger risk of losing its reserve currency status, but it is not. It is a global "experiment".

Figure 18: Total assets of major central banks



(b) Our second condition for the dollar to be replaced as a reserve currency:

Less dollar-denominated debt outside the USA

We now look at the second of our three most important conditions for replacement of the dollar as a reserve currency: a lower level of dollar-denominated debt outside the USA. What is happening on this front?

One of the most important characteristics of a reserve currency is to be the benchmark for debt issued outside that currency's country. As we described in the introduction to this paper, the USD continued to be the reserve currency of the planet after Nixon closed the window for its convertibility to gold, largely because there was a lot of dollar-denominated debt outside the USA.

In a fiduciary monetary system the value of each currency changes according to (i) the mix of demand and supply for the currency, and (ii) any intervention by central banks. And the fact that outside the USA there is more debt denominated in dollars than issued in other currencies is a very important driver of the demand for dollars. Non-US borrowers that have dollar debt will need dollars to pay that debt; or at least will need to hedge their currency exposure in the futures and options markets.

A recent BIS paper (https://www.bis.org/publ/cgfs65.pdf) presents the main data on international currency flows and funding. Figure 19 below shows a picture of the importance of the dollar in various forms of international settlement, at the end of 2019. As you can see, the dollar is still, by far, the main currency of the planet.

Figure 19: The dollar's dominance in international transactions

[1] Data refer to 2019. [2] Data refer to 2019. [3] US dollar-denominated cross-border loans by banks to counterparties in all countries; data refer to Q4 2019 (excluding interoffice claims but including interbank claims on account of loans and deposits); loans comprise non-negotiable debt instruments that are lent by creditors directly to a debtor or represented by evidence of a deposit. [4] US dollar denominated international debt securities by all issuers; data refer to Q4 2019; these securities are issued outside the local market of the country where the borrower resides, and capture issues conventionally known as eurobonds and foreign bonds and exclude negotiable loans; instruments such as bonds, medium-term notes and money market instruments are included. [5] Data refer to 2019. [6] Data refer to Q4 2019. [7] As estimated in Gopinath (2015). [8] Data refer to February 2020.

Sources: Gopinath (2015); Federal Reserve; IMF; CPB World Trade Monitor; Bloomberg; SWIFT; BIS Triennial Central Bank Survey of Foreign Exchange and Over-the-counter (OTC) Derivatives Markets; BIS locational banking statistics (LBS).

The next chart, below shows the cross-border order of importance of different currencies, in different measures from 2001 to 2019. As you can see, the dollar is not only the most-used currency in cross-border terms, but its relative prevalence has been increasing. Currency markets are still demanding more dollars than any other currency, and the recent trend indicates that this will not change any time soon.

Figure 20: The dollar vs. other currencies in cross-border transactions

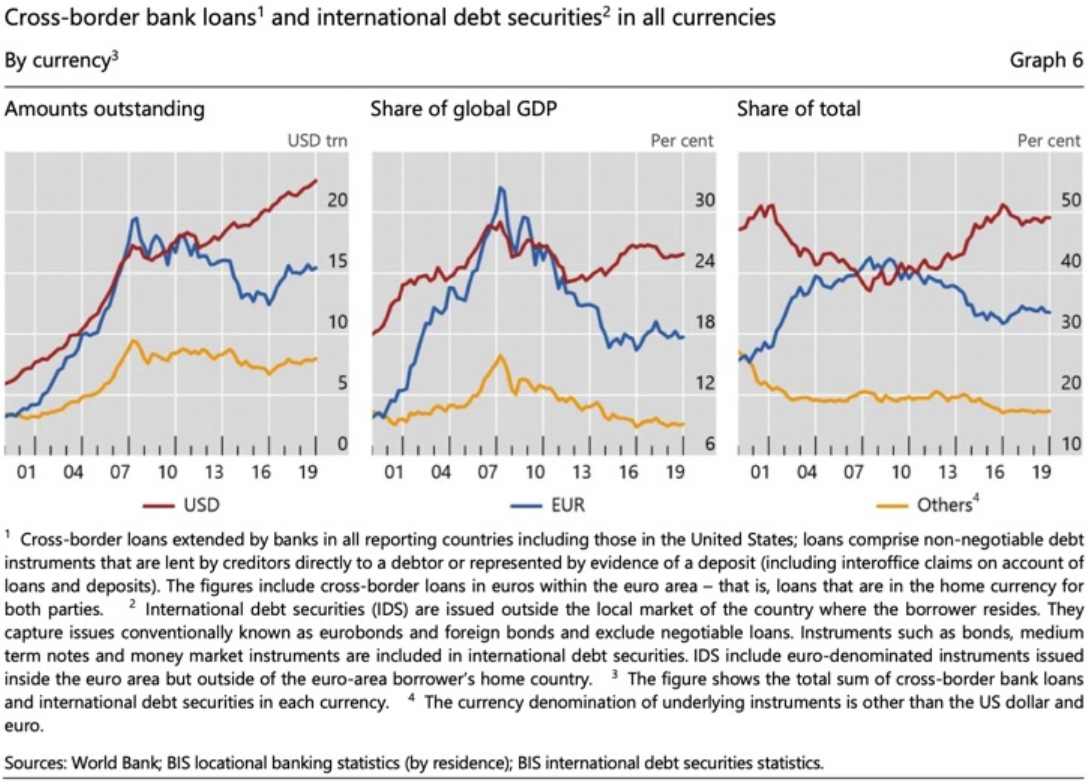
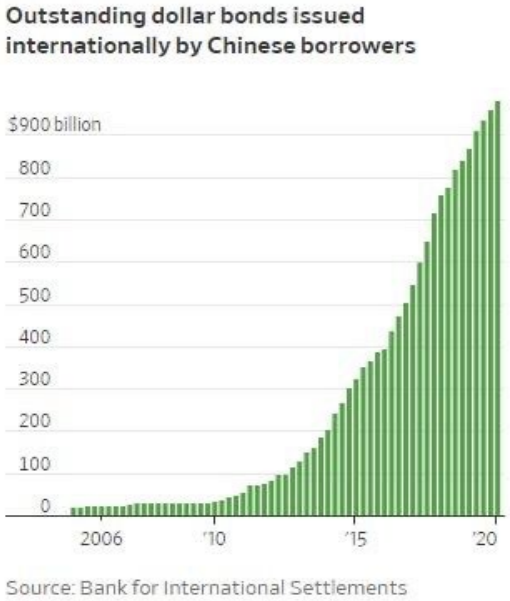


Figure 21 shows USD-denominated bonds issued by *Chinese* borrowers from 2005 to 1Q 2020.

We use China here as an example of the significant role of USD-denominated debt issuance in the emerging market spectrum.

As you can see, there is a clear trend of increasing dollar-denominated debt in China. This tendency is also present in the entire emerging market environment.

Figure 21

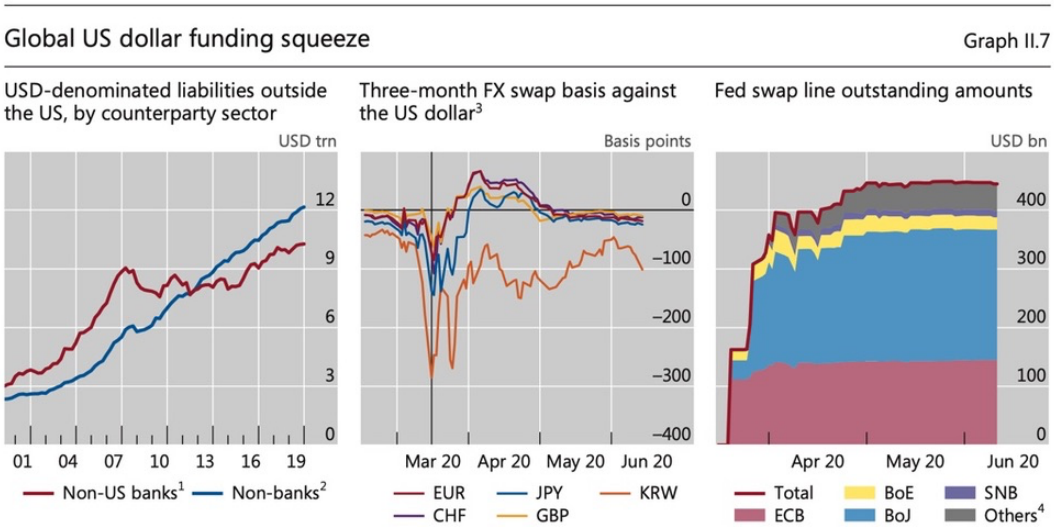


2020 has presented a very challenging scenario for the global financial system, and the trend is for dollar-denominated debt to increase all over the planet. As markets lost liquidity, and risky assets were sold off, in February and March, we saw an explosion of

the demand for dollars in international settlement markets, which took the DXY to levels above 102. As risky markets rebounded strongly since April, the DXY has been trading down and as we write it trades around 96. This strength of the DXY is another indication that the dollar still has its reserve currency status untouched, and also reinforces the dynamics of dollar-denominated debt described in this paper. DXY has been clearly a risk off/risk on play. When risky assets sell off, DXY goes up, and when risky assets get a bid DXY goes down. This happens exactly because of the dynamics of dollar-denominated debt and the status of the dollar as a reserve currency. Risk-on movements make the implicit probability of debt default go down, and therefore make the future demand for dollars go down, because the dollar is the benchmark currency of the largest slice of global debt.

These charts show a little of the dollar funding squeeze that happened in March:

Figure 22



The vertical line in the centre panel indicates 15 March 2020 (the announcement of the enhancement of swap lines between the Federal Reserve and five central banks).

[1] Non-US banks' US dollar-denominated liabilities excluding those booked by offices located in the United States. Excludes inter-office positions but includes liabilities to other (unaffiliated) banks. Positions reported by banks located in China and Russia start to be included as of Q4 2015. [2] Sum across US dollar-denominated international debt securities, cross-border bank loans and local bank loans to non-banks located outside the US; this residency-based classification may include US non-banks outside the US. For details, see BIS, *BIS global liquidity indicators: methodology*, April 2019, Section 3.1. [3] Defined as the spread between three-month US dollar Libor and three-month FX swap-implied US dollar rates. [4] Please refer to the table in Box II.B for a list of central banks with swap lines at the Fed.

Sources: Federal Reserve Bank of New York; Bloomberg; BIS global liquidity indicators; BIS locational banking statistics (by nationality); BIS calculations.

Our summary of this section:

- From the point of view of debt dynamics, there is no sign in the global financial system that the dollar will lose its reserve currency status.

On the contrary: All the signs show the dollar not only keeping that status, but continuing to increase in importance, globally.

(c) Our third condition for the dollar to be replaced as a reserve currency:

A shift away from the USD in the commodity and trade markets

Finally we look at the commodity and trade markets.

For the dollar to lose its reserve currency status, it would be a very significant factor if there were a trend for commodities to be priced and widely traded in other currencies. But we see that this is not the case.

Our comments on this topic are not exhaustive: we concentrate on the oil market because of its importance and size.

The petrodollar system

Oil is one of the main reasons why the US dollar is the world's dominant reserve currency. Our society is still addicted to oil: it is by far the most important commodity, and seen as the lifeblood that runs through our global economic system. The fact that oil can only be bought and settled in USD leads to significant demand from non-oil-producing countries.

The history of the petrodollar system goes back to the history of the gold standard and the 1944 Bretton Woods conference that established the USD as the world's dominant reserve currency in the aftermath of WW2.

There were three main factors in the dollar's emergence as the predominant currency for most global oil transactions:

(i) strengthening of ties between Saudi Arabia and the US, as the KSA was becoming the heavyweight oil producing and exporting nation;

(ii) the dollar being established, in the global framework of the Bretton Woods agreement, as the leading method of payment in almost every level and sector of the global economy; and

(iii) the fact that the vast majority of the oil exporting countries recycled their significant revenues in dollars in the US financial system.

Another reason for the Gulf monarchies of OPEC tending to align geopolitically with Washington was their growing rivalry with Iran.

Oil exporting countries recycle petrodollars through investments made by their Sovereign Wealth Funds. The world's five largest are:

- Norway Government Pension Fund
- UAE Abu Dhabi Investment Authority
- Kuwait Investment Authority

- Saudi Arabia SAMA
- Qatar Investment Authority

Two other factors contribute to the importance of the dollar in terms of share of total transactions:

(i) The largest oil trading hubs operating today are located in New York (NYSE) and London (ICE).

(ii) The main reference benchmark prices are West Texas Intermediate (WTI) and Brent: together they make up an important share of the transactions against which other oil transactions are priced.

Finally, recycling of dollars and investments by the largest oil producers in the Gulf has always taken place mainly in the US financial system, through Treasury bonds, stocks and other financial instruments, enhancing the preponderance and the strength of the dollar as the preferred 'petrocurrency'.

The oil embargoes of the 1970s; and the subsequent Latin American debt crisis

Latin America has had its share of this recycling story, which unfortunately ended in tears. In the late 1960s and early 1970s most of the countries in the region were experiencing fast growth (for Brazil, it was time of the 'economic miracle'), making them an ideal destination for those petrodollars. But since most of these countries were at the time big oil importers, the big surge in oil prices following the embargoes of 1973 and 1979 led initially to big current account deficits.

But the real problem started when Fed chairman Paul Volker raised interest rates to double digits. Starting with Mexico in 1982, all the major Latin American economies (with the notable exception of Colombia) have defaulted on their foreign debt, mostly denominated in US dollars.

The region then experienced the so-called 'lost decade', which actually lasted more than 10 years. For Brazil, the crisis led to hyperinflation that was only tackled by the Real Plan in 1994. In Mexico's case (partially due to the mistakes made during the banking sector privatizations in 1992-93), it was not until the early 2000s that the banking sector was recapitalized and ready to support the economy.

The oil geopolitics behind Middle East conflicts

One does not need to believe in conspiracy theories to conclude that oil is the main reason behind the geopolitical conflicts in the Middle East. For the US, as a superpower after WW2, it was a priority not only to guarantee a reliable supply of oil, but most importantly, make sure it was priced and settled in USD.

The first of these geopolitical events took place in Iran in 1951, when the parliament led by Prime Minister Mossadegh nationalized oil exploration, leading to the seizing of the

Anglo-Iranian Oil Company. In 1953, Mossadegh was overthrown by a military coup supported by the UK and the US. To a certain extent, the Islamic Revolution of 1979 and the current US-Iran tensions can be traced back to 1951.

Although the region is extremely complex and there are other issues involved (such as the consequences of the 1916 Sykes-Picot agreement (which divided the region into British and French 'spheres of influence' planned to take effect after WW1), oil was an ingredient for both Gulf Wars, and also tensions in Libya.

The Sino-Russo-Iranian alliance

Added to this initial global context, in recent years there have been continuing additions to the geopolitical scenario, with important implications for the oil sector and the future of the petrodollar.

The last decade has seen China's rapid growth, along with its ambitions to become a global superpower; and the re-emergence of Russia as a major player in the in the oil industry. Both have tried to establish mechanisms to diminish the supremacy of the dollar as the main currency in oil transactions, and also tried to foster other hubs for oil trading.
These moves, though, by what we might call the Moscow-Beijing-Tehran axis, have not yet gained enough weight to displace, or even challenge, the use of the US dollar as the main petrocurrency. They also aim to reduce their countries' vulnerability to the mechanism of sanctions, wielded constantly by the US administration, specifically against Russia, Iran, and Venezuela, at the same time as the ongoing trade and technology standoffs with China.

The proposals have been quite varied, and have included: a basket of currencies for oil trading including the euro, the ruble and the yuan; bilateral agreements to sell and purchase oil between countries such as China and Russia in yuan and rubles, and between Iran and India to trade oil in rupees; and attempts to launch officially-backed crypto-currencies, as in the case of Venezuela (the *petros*), Iran and Russia.

There are today approximately 50 alternative energy trading hubs, mostly sponsored by Moscow and Beijing. The most important are Shanghai and Singapore.

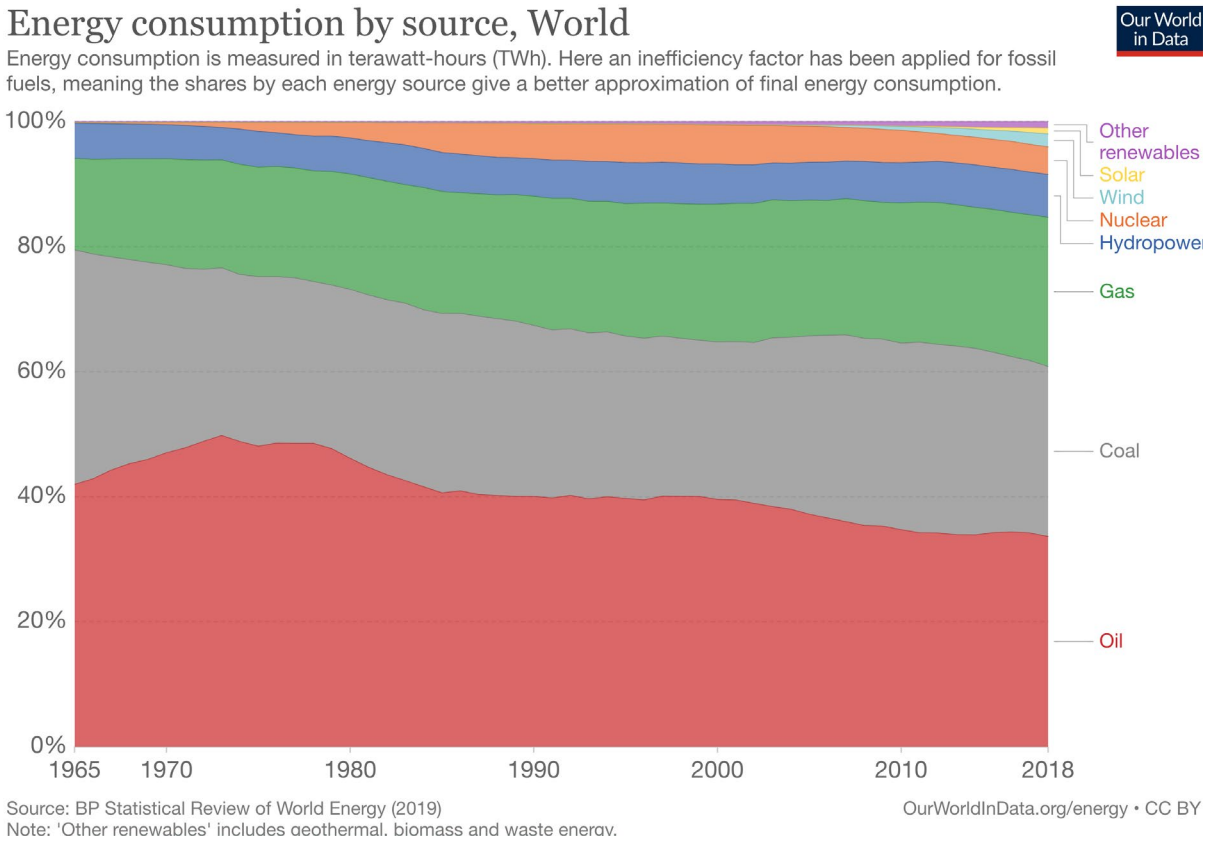
Our perception is that for the Sino-Russian attempt to displace the USD, and thus dodge sanctions and the overreach of the US legal system, it will need to have the support of the Saudis. Whether the KSA will abandon its military alliance with Washington is a big question.

The rise of renewable energy

As is Lenin said, "there are decades when nothing happens and there are weeks when decades happen". The Covid-19 crisis has not only accelerated adoption of digital technologies, and changed business models across the world, but may also have led to the inflexion point in the adoption of ESG (Environment, Social and Governance) investing principles. Coupled with the climate crisis and the need to reduce emissions, these developments will certainly lead to significant growth in renewable sources of energy.

Given where we are today in terms of adoption of oil and gas in the global energy matrix, in our assessment this reduction would have to be very fast to change the status quo within the next 10 years.

Figure 23: Energy consumption – the global view



Even having said all this, in our view displacement of the dollar by another unique petrocurrency still looks highly unlikely for the short and medium term.

Final remark on commodities: Gold reserves

One important final remark in this chapter about trade and commodities:

Much has been said about the gold reserves of various countries. The USA today still has, by far, the largest gold reserves on the planet.
The table below shows the slice of gold that the principal countries have in their reserves. The USA still holds around 1/3, or a little more, of the total of gold existing in the world.

Figure 24 – World holdings of gold

Central Banks Ranked By Largest Gold Holdings
as of September 2019

	Tonnes	Percent of Total Reserves
United States	8,134	76
Germany	3,367	72
Italy	2,452	67
France	2,436	61
Russia	2,219	20
China	1,937	3
Switzerland	1,040	6
Japan	765	3
India	618	7
Netherlands	613	68

Source: World Gold Council, U.S. Global Investors

Conclusions of this paper

We have described the main reasons that lead us to believe that the US dollar will not lose its reserve currency status any time soon.
We have gone deeply into what we assess to be the three major conditions for that to happen – investigating: (i) what currency might be an alternative; (ii) the recent trend in dollar-denominated debt outside the USA; and (iii) how the dollar is positioned in the commodity and trade markets.
We find that:

- None of these three main conditions for the dollar to lose its reserve currency status is present today; and
- there are indications that the trend is for the dollar to continue to dominate the international currency markets.

So our overall conclusion seems very clear:
The dollar stands firm! And we expect it to continue to be the world's reference currency for a considerable time ahead.

This does not mean that DXY, or the measure of the dollar against other currencies will only go up or will not fluctuate. As we described, in the short term, DXY has gone up in risk-off movements in markets, and down in moments of risk-on.
We think this will continue to prevail, and we add one more call:

The USA, through dollar swap markets and because of the size of dollar debt outside the US, has the upper hand on DXY. This is clear when you look at the size of dollar swaps for other CBs that the Fed has deployed in March during the dollar squeeze. From the perspective of the US, DXY seems to be well positioned between 95 and 98. A weak DXY could bring inflation to the US and would not be good for Europe, Japan and China. On the other hand, a very strong DXY could be a problem for US corporate earnings.

Our call is that the US Treasury and the Fed are happy with DXY in a range from 94 to 99 today. Below 93/94 they will start thinking about reducing dollar swap lines; and above 99/100 and especially above 102 they will probably expand dollar swaps above the current level by around USD400bn (see the BIS chart in the chapter of this paper on dollar-denominated debt).

All this only strengthens our conclusion:
The dollar stands firm! And we expect it to continue to be the world's reserve currency for a considerable time ahead.
We add one final comment:

As Charles Gave said at a presentation we attended in Milan in 2019: "If you get the dollar and oil right, most of the work is done."

In quite simplistic terms, we may continue to see the world divided into two asset classes: the USD and everything else!

Daniel Passos Miraglia

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