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U.S. MACRO POLICIES AND GLOBAL ECONOMIC CHALLENGES

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ABSTRACT

This paper overviews different exit strategies for the U.S. from the debt-overhang, and analyses their implications for emerging markets and global stability. These strategies are discussed in the context of the debates about secular-stagnation versus debt-overhang, the fiscal theory of the price level, the size of fiscal multipliers, prospects for a multipolar currency system, and historical case studies. We conclude that the reallocation of U.S. fiscal efforts towards infrastructure investment aiming at boosting growth, followed by a gradual tax increase, aiming at reaching a modest primary fiscal surplus over time are akin to an upfront investment in greater long-term global stability. Such a trajectory may solidify the viability and credibility of the U.S. dollar as a global anchor, thereby stabilizing Emerging Markets economies and global growth.

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The Global Waves of Debt World Bank 2020 report identified four major debt waves over the past fifty years. The forth wave began in 2010, shortly after the U.S. financial crisis of 2008-2010 mushroomed into the Global Financial Crisis (GFC).[1] The GFC exemplifies the risk associated with leverage bubbles, and research supports the notion that leverage growth acceleration is a leading indicator of growing exposure to devastating financial crises [Rajan (2006), Jorda et al. (2015)]. The irony of the GFC is reflected in its being a crisis seeded by leverage growth, leading ultimately to financial bailouts and a step-increase of the global debt/GDP. A decade after the Global Financial Crisis, the world economy woke up to the hazard of a pandemic crisis, resulting with another step-increase in leverage [Figure 1]. To contain the spread of the virus, many countries shut down their economies by halting the movement of people in the spring of 2020. Consequently, the world economy contracted significantly. The fact that it hit China first induced significant supply chain contagion, intensifying the decline in manufacturing trade and output (Baldwin and Weder di Mauro 2020). To calm financial markets and avoid a possible free fall into a Great Depression, many countries, especially advanced economies (AEs), mobilized policy resources.[2]

IMF's World Economic Outlook, October 2020, credited these large stimulus packages with mitigating the collapsing GDPs of countries during the first quarter of 2020. Growth in the

[1] The Kose et al. (2020) Forward by World Bank Group President, David Malpass, notes "The latest debt surge in emerging and developing economies has been striking: in just eight years, total debt climbed to an all-time high of roughly 170 percent of GDP. That marks a 54-percentage point of GDP increase since 2010—the fastest gain since at least 1970… The study shows that simultaneous buildups in public and private debt have historically been associated with financial crises that resulted in particularly prolonged declines in per capita income and investment. Emerging and developing economies already are more vulnerable on a variety of fronts than they were ahead of the last crisis: 75 percent of them now have budget deficits, their foreign currency denominated corporate debt is significantly higher, and their current account deficits are four times as large as they were in 2007. Under these circumstances, a sudden rise in risk premiums could precipitate a financial crisis, as has happened many times in the past."

[2] *BIS Bulletin (2020, June 20)* reported that COVID's fiscal stimulus reached 4.6% of GDP for the G-20 countries by mid-May. The magnitudes of funding support and credit guarantees are also substantial, 1.7% and 3.4% of GDP, respectively. The size of the fiscal support was much higher in Advanced Economies (AEs) than Emerging Market Economics (EMs). Budgetary measures in AEs reached 8.3% of GDP, while for EMs they represent just 2.0% of GDP. The gap for the funding facilities was narrower: 4% of AEs' GDP versus 1.3% in EMs. The contrast was starkest for credit guarantees: 6.6% of GDP in AEs and only 0.4% in EMs.

advanced economy group during 2020 was projected in October 2020 at –5.8 percent. For many emerging market and developing economies excluding China, prospects continued to remain precarious. "India is projected to contract by 10.3 percent in 2020, before rebounding by 8.8 percent in 2021. …Growth for emerging market and developing economies excluding China is projected at –5.7 percent for 2020."

According to the Manhattan Institute's April 29, 2020 projection, the U.S. alone would run a budget deficit of $4.2 trillion, or 19% of its GDP – the largest share since the deficit peak during WWII. That would push the U.S. national debt held by the public to $41 trillion, or 128% of GDP, by 2030. This level of the national debt would exceed the level that occurred in 1946. With vaccinations for the virus in sight, it is time to ponder an effective economic exit strategy into the post-COVID era. This paper argues that given the size and the pivotal role of the U.S. dollar as the anchor of the global financial system, the road the U.S. will take will have overarching repercussions for the global economy. We illustrate these issues by reviewing two divergent U.S. post-COVID economic strategies, and the secular-stagnation versus debt-overhang debate. One may expect the realized path to be a weighted average of these strategies; the weights are affected by economic, social and political developments and shocks.

Framing our analysis in the context of the past two decades, we note that the 'America First' policy raised questions about the future role of the U.S. $ as the anchor of the global financial system. While some may view the November 2020 U.S. election outcome as a return to the pre-2016 global stance of the U.S., there remains ample uncertainty associated with a possible future return of "America First" populism. Furthermore, the prospects of a divided U.S. governance, where one party controls the House, and the other the Senate increases the risk of a legislative gridlock, intensifying headwinds working against the global dominance of the $.

Section 1 illustrates these issues by reviewing two divergent U.S. post-COVID macroeconomics strategies, and the secular-stagnation versus debt-overhang debate. Section 2 puts these strategies in the context of the on-going debates about the Fiscal Theory of the Price level, deflationary trends, and the challenges facing the Euro Zone. Section 3 links this discussion to the possible rise of new global currencies, and concludes.

1. **U.S. post COVID economic strategies and global stability**

Aizenman and Ito (2020) contrasted two divergent U.S. post COVID macroeconomics policies. The first is just '*kicking the can down the road.*' This strategy entails returning to U.S. policies prior to the pandemic. I.e., reducing COVID-19 transfers and credit lines, no new taxes, accommodating monetary policy, this time with public debt/GDP above 100%, and a much lager FED balance sheet. This choice may bring faster growth as long as r [public debt interest rate] is below g [GDP growth], $r - g < 0$. The term $r - g$ is also known as debt's snowball effect: the exponential growth rate of public debt/GDP if the primary fiscal deficit is zero.[3] Negative snowball effect allows the government to keep running fiscal deficits proportionate to (g – r)Public Debt/GDP, without increasing the public debt/GDP overhang. Yet, it comes with growing risk of hitting a fiscal wall, as would happen if the snowball effect turned out to be positive in the future, ending with a free fall crisis. This crisis will be amplified into a deeper global crisis affecting Emerging Markets (EMEs). Examples for Free Fall Crises include the U.S. disinflation during 1979-1982, which triggered the 1980s EMs lost growth decade. In the same vein, the Euro Zone (EZ) crisis of 2010-2015 was amplified into a lost decade of GIIPS [Greece, Ireland, Italy, Portugal and Spain]. Thereby, possible short-term benefits of "kicking the can down the road" will come with a growing future exposure of the U.S. and the Global economy to crises possibly worse than the 2008-2011 Global Financial Crisis (GFC).

The amplifications of a higher U.S. debt snowball effect into a sovereign default of EMs follows a similar script: sovereign spreads are determined by markets' expectations, susceptible to 'flight to quality' and multiple equilibria. Affected countries are exposed to self-fulfilling prophecy dynamics associated with elevated sovereign spreads, where high enough sovereign spreads may morph liquidity crises into solvency crises. Left unchecked, these dynamics frequently propagate financial, banking, and currency calamities. The fragility of EMs was illustrated in the 1980s, when the U.S. disinflation triggered a lost growth decade for Latin America, inducing a drop of the annual GDP/Capita growth from 3% in 1970s, to – 1% in 1980s [Zettelmeyer (2006)]. Similarly, the EZ crisis was a wakeup call for the growing exposure of the core EZ countries to the debt overhang of the GIIPS, putting in motion a self-fulfilling solvency

[3] See Escolano (2010), Blanchard (2019) and Sims (2020) for analysis of snowball effects and fiscal policies.

crisis, backstopped by Mario Draghi's "whatever it takes" speech on July 23, 2012 [see De Grauwe and Ji (2013)].

Alternatively, the U.S administration could adopt a two-pronged policy. **First**, reallocation of U.S. fiscal investment towards physical, medical, and social infrastructures, aiming at boosting future growth. **Second**, following the resumption of robust growth, increasing taxes gradually, aiming at reaching a modest primary fiscal surplus over time. This approach is akin to an upfront investment in greater long-term global stability. Such a trajectory will solidify the viability and credibility of the U.S. dollar as a global anchor, thereby stabilizing Emerging Markets economies and global growth.

It may be tempting to presume that the new normal for the future comprises negative snowball effects associated with secular stagnation, as in Summers (2014). Accordingly, a decline in the full-employment equilibrium real interest rate coupled with low inflation could indefinitely prevent the attainment of full employment. This may reflect the confluence of several factors, including slower population growth, slower technological growth, and the drop in the relative prices of capital goods. Lower priced capital goods means that a given level of saving can purchase much more capital than was previously the case. Rising inequality operates to raise the share of income going to those with a lower propensity to spend. A rising desire on the part of central banks and governments to accumulate reserves coupled with conservative investment strategies operates to raise the demand for safe assets driving down safe interest rates. This effect is reinforced by requirements that encourage pension funds and insurance companies to hold their assets in safe bonds as to best match liabilities. The resultant drop in investment demand, and rise in saving induces low, possibly negative real interest rate, and deflationary biases. Ongoing disinflation also means that at any given real interest rate, real after-tax interest rates are higher. The path forward may include policies aiming at reducing real interest rates, and raising the demand by increasing investment and reducing saving. Blanchard (2019) provided a framework studying secular stagnation and debt policies, calling for a sizeable increase in debt financed fiscal policy, where the negative snowball effect associated with secular stagnation allows for running primary deficits without raising the public debt/GDP ratios.

Yet, there are several concerns to keep in mind. First, Wyplosz (2019) points out that negative snowball effects are not the rule; even in the U.S., $r - g < 0$ happened only in 56% of the years (see Gros and Alcidi 2010 for debt snowball effects in Europe). Furthermore, the past performance of the U.S. as the safe anchor of the global financial system does not guarantee maintaining the 'exorbitant privilege' status into the future (Gourinchas et al. 2010, Eichengreen 2011, Chiţu et al. 2014, Carney 2019). The two-pronged U.S. post-COVID exit strategy discussed in Aizenman and Ito (2020) may mitigate the growing discontent with the dominance of the U.S. dollar. Greater attention on the part of the U.S. to scaling down its public debt overhang over time will mitigate the present centrifugal forces working towards multipolar global currencies discussed by Carney (2019).

An additional concern is that the record of predicting future changes of the snowball effects is mixed, at best.[4] Presuming that the new normal is a negative snowball effect may increase the risk of a deeper future crisis over time. Specifically, with the illusive promise of 'free fiscal lunch' associated with negative snowball effects, governments may borrow more today, thereby increasing the exposure to costlier future crises. Similar dynamics occurred during the 1990s and early 2000s when the presumption of an enduring 'Great Moderation' infiltrated policymaking, inducing complacency and rapid increase of leverage ratios (see Rajan 2006, and Rogoff 2015).[5] Fiscal instability associated with unstable snowball effects was analyzed earlier by Barro (1979), Ball and Mankiw (1995), and Bohn (2008). They noted that the U.S. paid down a substantial portion of their debt by exploiting the differential between the interest rate on government debt and the growth rate of the economy. They caution that a government running a

[4] Notably, Summers (2013) Secular Stagnation analysis occurred five years after the Global Crisis, a backward-looking perceptive interpretation of the 'great moderation' and the on-set of demographic transitions, at times when concerns regarding the future of the dollar system were muted.

[5] Mussa (2009) perceptively noted "…what has been most surprising is that we lulled ourselves into what turned out to be a false sense of security in the idea of the "Great Moderation"—that the types of reasonably severe recessions that we had had earlier in the post-war period—and certainly in the pre-war period—were somehow effectively banned, that henceforth we were going to live in an environment in which, through the careful articulation of economic policy, we wouldn't have recessions like the one we're just going through. And accordingly, people saw the environment as much less risky. When you see the environment is much less risky, you're willing to take actions that, in fact, are a lot more risky… People fundamentally underestimated the degree of risk they were undertaking and it came as a very unpleasant surprise."

debt-Ponzi scheme when r < g might be subsequently faced with a sudden interest rate rise, necessitating a sharp and painful fiscal contraction.[6]

The history of the U.S. after WWII provides a vivid example of the success of a two-pronged approach in facilitating the exit from a public debt overhang, stabilizing the global economy, and solidifying the global role of the dollar. The rapid decline in public debt/GDP from 1946 to 1955, exhibited in Figures 2, was accommodated by financial repression inducing lower r, mild inflation (~ 4.2%), higher taxes, and robust GDP growth (Aizenman and Marion 2011, Reinhart and Kirkegaard 2012, Reinhart and Sbrancia 2015, Reinhart et al. 2015). Figure 3 vividly shows the sharp drop of WWII U.S. fiscal revenue mobilization from 50% of GDP in 1944 towards 20% by 1946. This large revenue contraction was followed by an upwards trend, increasing the fiscal revenue/GDP to 35% in the 1970s. Remarkably, the U.S. government was running mostly primary fiscal surpluses during that period (Figure 4). These policies supported solid economic growth, reducing the public debt/GDP from 106% in 1946 to 23% in 1974. This post-WWII success story illustrates the feasibility and gains from a two-pronged fiscal strategy.

In contrast, during 1974-1984, the snowball effect became unsustainably high for many emerging market economies (EMs), triggering a series of financial crises. Aizenman and Ito (2020) investigated whether and to what extent the cost of serving the public debt affected real output growth. The flow cost of serving debt is estimated by the snowball effect times the public debt as a share of GDP. A higher flow cost of serving the debt may lead investors to question debt sustainability, raising the interest rate, reducing the growth rate, and further increasing the snowball effect. This negative feedback may induce costly market corrections, financial instability, and crisis. The emerging markets' lost growth decade during the 1980s, and the euro area sovereign debt crisis affecting mostly the Southern euro area states illustrate these dynamics vividly.

[6] Calvo and Loo-Kung (2010) raised sustainability concerns in the context of the recovery from the Global Crisis. See also Aizenman and Marion (2011), Reinhart and Sbrancia (2015) and Reinhart et al. (2015) for empirical analysis of managing exits from public debt overhangs. Cordella et al. (2010) looked at debt overhang versus debt intolerance, Ghosh et al. (2013) analyzed debt sustainability.

Figure 5 illustrates the post-WWII development of the interest-rate-growth differentials, $r - g$, for our sample, composed of 23 traditional OECD countries and 34 EMs.[7] Figure 5 is a dual scale chart. It shows that the median interest-rate-growth differential, $r - g$, is mostly low and in the negative territory during the 1940s and 1950s. Thereby, the U.S., Japan and Western European countries benefited from low costs of serving their public debt during the post-WWII recovery decades. The snowball differential continues to be in the negative territory through the 1970s. In the early 1980s, the differential rises up rapidly to the positive territory and mostly remains there until 2000. The 75th percentile (dotted blue) line hovers at high levels in the 1980s and 1990s, indicating that the top 25% of countries in the interest-rate-growth differentials faced very high costs of serving their public debt. These countries include mostly Latin American states, experiencing debt crises and hyperinflation spells during the 1980s. In the mid-2000s, the differential drops towards negative figures, but rises up again to the positive territory in the 2010s.

The grey solid line in in Figure 5 is the median growth rate of real GDP (in local currency), measured by the right scale. A casual observation is that there is a negative correlation between real output growth and the interest-rate-growth differential. Our empirical work estimated the impact of a raise in the real GDP cost of serving sovereign debt associated with a rise of the snowball effect, $\Delta(r - g)$Public debt/GDP, on the future output growth.[8] We found that with a lag of two to three years, a rise in the cost of serving the external debt would lead to an output growth slowdown. These effects add up overtime, explaining the lost growth effects of Latin America and other emerging markets during the 1980s. A faster rise in the flow cost of serving external debt has a negative impact on output growth, and this effect is dampened if the country experiences real appreciation or lower depreciation rate.[9] We also found that Asian

[7] For the interest rate, we use the 10-year government bond yields for the countries for which such data are available. The long-term interest rate data is limited in the case of EMs, especially those in Latin America and East Asia. Hence, to maximize the country coverage, we also use the lending rate. We measure potential output growth (g) with the growth rate of potential nominal GDP in U.S. dollars for which we use nominal GDP that is smoothed by applying the HP-filtering method.

[8] The term $\Delta(r - g)$Public debt/GDP is the adverse annual income effect associated with higher snowball shocks, measured as a fraction of the real GDP.

[9] Higher real appreciation or lower depreciation rates reduce the domestic GDP cost of serving hard currency debt.

countries were significantly less exposed to the spike of the snowball effects than LATAM. These regional differentials reflect the lower reliance of most Asian countries on outside funding compared to LATAM countries; the lower dependence of Asian countries on volatile commodity exports; and the possibly greater fiscal and monetary policy space of East Asian countries. These findings suggest that adopting post-COVID policies that reduce the odds of a rapid increase in future snowball effects would reduce future volatility, increasing GDP growth rates.

Figure 6 illustrates these issues by looking at the Net Resource Transfer/GDP to Latin America [LATAM], 1950-1990.[10] The low interest rate in the U.S., following the petro-dollar glut associated with the 1974 sharp increase of oil prices by the OPEC cartel, induced growing external borrowing by LATAM and other emerging markets, resulting in an annual resource transfer of about 2% GDP points in LATAM during 1974-1978. This external funding contributed to a robust GDP/Capita growth of LATAM during the 1970s, at a rate of about 3%. Yet, it came with a growing accumulation of debt overhang, exposing LATAM to the full brunt of Volcker's dis-inflationary policies aiming at curbing the double-digit U.S. inflation during 1979, crushing inflation to below 3% by 1983. This was facilitated by increasing the federal funds rate to about 20% in 1981, resulting in a sharp appreciation of the U.S. $, and a fast moving deep recession, reaching an unemployment rate of 10.5% in 1981. The impact of these steps on LATAM was devastating. The sharp increase in the borrowing interest rate, and LATAM's large real exchange rate depreciation, coupled with the collapse of LATAM's commodity terms of trade induced a perfect storm. The rapid rise of the U.S. snowball effect, $r - g$, during 1979-1982 was amplified into a massive resource transfer from LATAM to its creditors [Figure 6]. The outcome was financial, banking and currency crises, sovereign defaults and political unrest affecting Argentina, Brazil, Chile, and other countries.[11]

[10] A net resource transfer is a current account deficit excluding any net interest payments.

[11] Similar, though milder effects were documented in East Asia. By 1980 the S. Korean economy had entered a period of temporary decline: negative growth was recorded for the first time since 1962, inflation had soared, and the balance-of-payments position had deteriorated significantly (Savada and Shaw (1997)). This is in line with the lower dependence of East Asia on outside funding.

2. U.S. Exit Strategy, Fiscal Theory of the Price Level and Deflationary Trends.

A common concern about exit strategies from the COIVD-19 crisis deals with the poor record of the ECB of reaching the 2% inflation target during the past decade. Similar though milder concerns apply to the U.S. FED. Are we doomed to be stuck at the zero lower boundary trap? Leeper (2020) provides an insightful interpretation for the Euro Zone [EZ] trap in the context of the fiscal policy of the price level. His starting point is that both monetary and fiscal policy issue interest-bearing liabilities deemed as relatively safe assets, in local currency controlled by the government. These liabilities are backed by the ability to tax the private sector, and by possible future budget surpluses. Thereby, the price level P must clear both the money and the bond markets. "In thinking about *P*, a key distinction between policies is who controls the levers, fiscal authority controls the backing that gives liabilities value, monetary authority controls composition of liabilities public holds."

Taking this perspective, the EZ failure to reach the targeted inflation reflects the dissonance between monetary and fiscal policies in the EZ. ECB's monetary policy stance during the 2010s included zero and even negative policy interest rates, and large asset purchases. These policies induced negative bond yields of the core EZ countries from 2014, inducing a global 'yield chasing' by OECD savers. In 2019, a quarter of bonds issued by governments and companies worldwide were trading at negative yields [see Figure 7a and 7b].[12] This deflationary bias was further magnified by tight fiscal policy, aiming at retiring debt as part of fiscal consolidation agenda, with a policy bias towards primary fiscal surpluses. In these circumstances, a desired inflation can be accomplished only as long as the expansionary monetary policy is backed properly by expansionary fiscal policy.

Applying Leeper's interpretation, the two-pronged fiscal adjustment discussed in Section 1 entails in the first stage expansionary fiscal policy, with a properly

[12] Starting in 2014, the ECB cut its interest charged on bank reserves five times below zero, reaching –0.5% by 6/2020 [Bloomberg (August 4, 2020) *Negative Interest rates*]. In January 2015, a large scale Quantitative Easing (QE) program was announced, pushing many interest rates into negative territory. By March 2015, yields were negative on 36% of core Europe's outstanding government bonds.

accommodating monetary expansion, for the duration needed to a reach robust growth, with inflation reaching 2% and above. Once these goals would be reached, the second prong entails starting fiscal adjustment, raising taxes gradually. The goal is converging over time towards primary fiscal surpluses, at a speed that will keep supporting robust growth and mild inflation. The fine-tuning of this two-pronged path benefits by providing a mixed signal -- mild inflation above the missed target of 2% would be tolerated, but runaway inflation will be prevented by the willingness to move faster towards primary fiscal surplus. While some may view this path an impossible mission, U.S. post WWII policies show its feasibility. This view is in line with the FED's formulation of new policy guidelines in August 2020, stating:

"Our longer-run goal continues to be an inflation rate of 2 percent. Our statement emphasizes that our actions to achieve both sides of our dual mandate will be most effective if longer-term inflation expectations remain well anchored at 2 percent. However, if inflation runs below 2 percent following economic downturns but never moves above 2 percent even when the economy is strong, then, over time, inflation will average less than 2 percent. Households and businesses will come to expect this result, meaning that inflation expectations would tend to move below our inflation goal and pull realized inflation down. To prevent this outcome and the adverse dynamics that could ensue, our new statement indicates that we will seek to achieve inflation that averages 2 percent over time. Therefore, following periods when inflation has been running below 2 percent, appropriate monetary policy will likely aim to achieve inflation moderately above 2 percent for some time." New Economic Challenges and the Fed's Monetary Policy Review, Chair Jerome Powell, August 27, 2020

The juxtaposition of ECB's and FED's inflationary trends below the target and the COVID-19 recession intensified calls for revising past economic presumptions. The use of 'helicopter money' was proposed to help combat the economic repercussions of the COVID-19 pandemic. While monetarist economists viewed this policy mostly as blasphemy in the past, Yashiv (2020) presented a political economy plan to break the taboo. Specifically, the creation of an emergency authority for central banks and the formation of a COVID-19 policy committee could help establish the policy as a one-off emergency money-financed plan, giving the central bank the authority to act quickly and then revert to the 'no money-printing' norm as the crisis subsides.

In the context of the EZ deflationary trends, De Grauwe and Diessner's (2020) analysis pointed out that there is growing acceptance that some form of monetary finance is needed in light of the severity of the downturn in the euro area. Their analysis indicates that a monetization of the deficits induced by the COVID-19 crisis would eventually increase the price level. After a return to economic normalcy, inflation would rise for a couple of years, and this would be a price worth paying to avoid future sovereign debt crises in the euro area. They also expect that the ECB, as the most independent central bank in the world, would be well equipped to prevent the inflationary upsurge from becoming permanent.

These papers and the modified FED's inflation targeting initiated in 2020 reflect the growing fears about deflationary biases, at times of substantial increase in debt overhang of the private and public sectors. These concerns are also in line with Fisher's 1933 "Debt-deflation Theory of Great Depressions," recommending inflation as a way to mitigate deflationary spirals. Leeper (2020) credits FDR with starting the U.S. recovery from the Great Depression 1933 by his decision to abrogate gold clauses in debts. The new policy induced a 59% devaluation of the dollar value of gold, making it clear that there would be no return to the old gold parity [Edwards (2018) recounts the evolving debates and litigations associated with the U.S. default on the gold clause].

While the inflationary trend induced by devaluing the U.S. $ by FDR policies resumed growth and reduced unemployment, it was not enough to end the Great Depression. At the eve of the Pearl-Harbor attack in December 1941, the U.S. unemployment was around 10%. The ultimate reduction of U.S. unemployment to pre-Great-Depression levels was the outcome of the massive fiscal stimulus associated with the U.S. War effort, started with the resource mobilization during and after 1941 [Vernon (1994), Ohanian (1997)]. This sequence illustrates that a faster exit from depressions benefits from coordinated fiscal and monetary stimuli, and that fiscal multipliers are larger in deeper recessions [Auerbach and Gorodnichenko (2012)]. This result is also in line with Nakamura & Steinsson (2014), finding open economy fiscal multiplier of approximately 1.5, and that the closed economy aggregate multiplier is highly sensitive to how strongly aggregate monetary and tax policy 'leans against the wind.'

Institutional factors in a federal system play a role in determining the ultimate fiscal stimuli, as local states may be constrained in their ability to spend. The U.S. delivered a very small fiscal expenditure stimulus during the Great Recession compared with its peers, despite being the

epicenter of the crisis and enjoying "exorbitant privilege." Contraction of state and local spending in the U.S. substantially negated the expansion by the federal government, leading to negligible net fiscal stimulus by the consolidated government during 2009Q1–2010Q1, reflecting the particular nature of the U.S. fiscal federation [Aizenman and Gurnain (2013)]. Notably, the end of the WWII effort and the return of the GIs to the civilian labor market raised deflationary concerns -- the U.S. long-term Government interest rate dropped from 2.5% in 1945 to 2.1% in 1946 (Toma 1992). Markedly, the implementation of a dynamic fiscal policy properly buffered with monetary policy prevented the return to recessionary times after 1945.

3. U.S. Exit Strategies, Global Currencies, and Concluding Remarks.

The first decade of the 21th Century was dominated by two unprecedented global economic developments. First, China's WTO accession in 2000-2001 accelerated China's export led growth rate, supported by growing current account surpluses [Feng et al. (2017)]. By 2005, China reached annual growth rates of 10%, becoming over time 'The World's Factory,[13] rapidly approaching the GDP size of the U.S. and the EU, PPP adjusted.

The second development was the emergence of the euro as a major new global currency. In 2006, Euro's virtues were promoted by a senior member of the Executive Board of the ECB, Otmar Issing, stating that the Euro matured into a major success story.[14] The celebratory

[13] According to data published by the United Nations Statistics Division, China accounted for almost 30 percent of global manufacturing output in 2018. *The Economist, March 12, 2015, Global Manufacturing,* noted: "By making things and selling them to foreigners, China has transformed itself—and the world economy with it. In 1990 it produced less than 3% of global manufacturing output by value; its share now is nearly a quarter. China produces about 80% of the world's air-conditioners, 70% of its mobile phones and 60% of its shoes. The white heat of China's ascent has forged supply chains that reach deep into South-East Asia. This 'Factory Asia' now makes almost half the world's goods. China has been following in the footsteps of Asian tigers such as South Korea and Taiwan. Many assumed that, in due course, the baton would pass to other parts of the world, enabling them in their turn to manufacture their way to prosperity. But far from being loosened by rising wages, China's grip is tightening. Low-cost work that does leave China goes mainly to South-East Asia, only reinforcing Factory Asia's dominance."

[14] The opening speech of Issing, Helsinki, 24 March 2006, *The euro – a currency without a state* was 'After more than seven years, the euro is firmly established as the currency of over 300 million people. Its internal stability is evidenced by the fact that inflation has been steadily low from the very start, despite a sequence of negative price shocks (in particular a continuous surge in oil prices). As an international currency, the euro is second only to the U.S. dollar.' The closing statement was: 'The EU has always been, and will remain, a unique undertaking for which there are no models that can easily be adopted. It is

assessment of the euro continued well into its tenth-year anniversary [Weber (2008)], but was dampened shortly after by the unfolding Eurozone crisis.

These developments raised the prospect of convergence towards a tri-polar world, dominated by 3 blocks, U.S., Eurozone, and China, each of them producing about 20% of global GDP, PPP adjusted. The World Bank's Global Development Horizons report, Timmer et al. (2011), predicted a convergence towards *Multipolarity-the new global economy*. Accordingly, "At the current juncture, the U.S. dollar remains the most important international currency, despite a slow decline in its role since the late 1990s and abandonment nearly forty years ago of the Bretton Woods system of fixed exchange rates (in which the dollar officially anchored the world's currencies). But the dollar now faces growing competition in the international currency space. Chief within this space is the euro, which has gained ground in recent years as a currency in which goods are invoiced and official reserves are held… In the longer term, the size and dynamism of China's economy and the rapid globalization of its corporations and banks will position the renminbi to take on a more important international role By 2025, the most probable global currency scenario will be a multipolar one centered around the dollar, euro, and renminbi. This scenario is supported by the likelihood that the United States, the euro area, and China will constitute the three major growth poles by that time, providing stimulus to other countries through trade, finance, and technology channels and thereby creating international demand for their currencies. The potential for rising competition among power centers that is inherent in the shift to a more multipolar world makes strengthening policy coordination across economies—developing and developed—critical to reducing the risks of political and economic instability."

Forward xii, *Justin Yifu Lin, Senior Vice President and Chief Economist, The World Bank.*

Taking stock of these predictions, by 2020 the dollar remained a pivotal anchor of the global financial system. A version of Lin's prediction '*the United States, the euro area, and China will constitute the three major growth poles by that time, providing stimulus to other countries through trade, finance, and technology channels and thereby creating international demand for their currencies*' materialized, but without the desirable policy coordination among the three. Instead, we may be living at times where the U.S., Euro Zone and China compete with each other for greater dominance of their corresponding currency and financial system within

important to allow an evolutionary process, which is open to further steps of integration, yet safeguards what is already in place and working well, and which assigns competencies to nation states or even regions as appropriate. In fact, we have been in the midst of such a process for quite some time, and Monetary Union is and will remain one of its major success stories.'

their geographic and geo-political periphery. Instead of cooperation, the past decades generated growing discontent that may hasten the de-anchoring of the U.S. dollar. Specifically, the emergence of China as a major supplier of credit bundled with outward FDI and exports of infrastructure construction and capital services to EMs and developing economies, 'America First' policy, and the willingness of the Eurozone to 'keep doing what it takes' to prevent the imploding of the EZ – all pose a growing challenge to the U.S. dollar. In this context, the U.S. exit strategies from COVID-19 with a growing debt overhang, as well as the EZ and Chinese policy choices will determine the durability of the U.S. dollar dominance.

The limited cooperation between the U.S., the Euro Zone and China is not a surprise, as global cooperation is limited, and predicted gains in practice are hard to negotiate. Frankel (2015) attributed shrinking global cooperation to countries disagreeing on the potential gains from coordination, "particularly because side payments in a global context are challenging to implement. These issues are likely to arise in situations where economic conditions differ across countries, creating differences in desirable fiscal or monetary policies among countries. In these instances, the scope for successful policy coordination may be limited." Aizenman (2016) noted that in normal times, cooperation is associated with welfare gains akin to Harberger's second-order magnitude triangle, and as such, the odds of cooperation are low. In circumstances in which bad tail events may induce an imminent collapse of the international financial system, the perceived losses have a first-order magnitude of terminating the total Marshalian surplus. This imminent threat may promote international cooperation, as was illustrated by the FED's unprecedented supply of elastic swap lines to the ECB during the Global Financial Crisis. Similarly, the concerns regarding the economic cost of ignoring Europe WWII distraction induced the victors of WWII to negotiate the Bretton Woods agreement in 1944.

Jeanne (2012) concluded that an ideal global currency should have a proper combination of the following virtues: Liquid and safe; supplied in sufficient quantity; and delivering an 'appropriate return.' The depth and liquidity of the global bond market in a specific currency is a necessary condition for a vibrant global currency. Supplying the global currency entails also the provision of a global public good, granting the suppliers the benefit of the 'exorbitant privilege' [Eichengreen (2011)]. At times of global peril, the public good is manifested by the willingness to provide global insurance at a 'reasonable cost.' Applying Jeanne's framework, during the

global financial crisis the U.S. provided important global insurance services: Bailing out Fannie Mae, Freddie Mac, and AIG in ways that shielded China and the Euro block, and providing Swap lines to 4 EMs and OECD countries [Gourinchas et al. (2010)].

Yet, the record of the U.S. performance in providing the global public services associated with the global position of the U.S. dollar by 2020 is mixed. The "America First" policy induced BRICS to reduce their dependence overtime the on U.S. dollar, diversifying towards higher Gold reserves and other assets. Investable EMs also reduced their balance sheet exposure to the U.S. dollar, a process facilitated by a rapid increase of external borrowing in terms of their local currencies. This trend was magnified by the OECD countries' quantitative easing (QE) policies slashing their interest rates towards zero and below, propagating 'yield chasing' by their households financial institutions, compressing risk premia, and increasing the attractiveness of EMs' local currency debts. Cavalier attitude to U.S. public debt management, the prospect of the U.S. divided governance between two parties at times of disappearing middle ground, and the possible future return of "America First" policies may debase the U.S. status as a stable safe haven providing global public services.[15] Notably, China became in the past decade a major supplier of Yuan swap lines and debt funding to Emerging Markets and Developing countries. This is part of complex Chinese bundling arrangements, supplying finance and liquidity to outward FDI, and to the export of infrastructure construction services and capital goods to previously underserved countries [Aizenman et al. (2018), Horn et al. (2019)].

Figure 8 plots the Real Effective Exchange Rates for the U.S. [Blue], China [Red] and the EZ [dotted green] during 1994-2020, where higher values indicate more appreciated real exchange rate. During that period, the Yuan was the currency that exhibited a clear real appreciation trend, while the U.S. and EZ real exchange rates fluctuated but were mostly trendless. Remarkably, the correlation between the U.S. and Chinese real exchange rates was positive and high, 0.74 before 2008, and 0.7 after 2008. In contrast, the correlation between the

[15] Trump's cavalier attitude to the U.S. dollar global position echoes President Nixon's Treasury Secretary, John Connally, stating in 1971 that the "*dollar is our currency, but your problem.*" (Bloomberg, *September 6, 2018).* The massive increase in U.S. public debt/GDP and the uncertainty regarding future administrations' policies may magnify the tail risk associated with the U.S. dollar global dominance.

U.S. and the EZ exchange rates was negative, and sizable, – 0.8 before 2008, and – 0.5 after. These trends are consistent with viable gains in deeper global portfolio diversification, and in line with the rise in the demand for equities and bonds of investable EMs.[16]

Yet, the prospects of rapid increase in the global share of the euro and the yuan are challenged by their limited supply. ECB's aggressive QE policies in the past decade reduced the supply of sovereign euro denominated bonds. The absence of deep euro sovereign bonds backed-stopped by the EU or the ECB limits the threat poised by the euro to the dollar's dominance. The slow convergence towards a Yuan convertibility, and the limited though rising foreign participation in China's Stock and Bond Markets restrain the viability of the Yuan as a global currency.[17] Thereby, unlike Lin's (2011) conjecture of converging by 2025 to a genuine tri-polar global currency world, it would take probably decades for the global share of the U.S. dollar to decline below half. Instead, we probably will witness the U.S., the Euro Zone and China competing with each other for a greater dominance of their corresponding currency and financial system within their geographic and geo-political periphery.

Some may view this as a second best outcome [Campanella (2014)]. Yet, it may come with greater global uncertainty associated with a resultant limited supply of 'public goods' services induced by growing competition among the three global blocks. This concern is in line with Kindleberger's (1981, 1986)'s hegemonic stability hypothesis, and his interpretation of the inter-wars financial instability. Krugman (1984) illustrated that the economies of scale associated with global currencies imply possible multiple equilibria of global vehicle currencies,

[16] By the end of 2020, Vanguard, the largest provider of mutual funds, recommended in 2020 to U.S. portfolio investors (accessed November 2020): "To get the full diversification benefits, we recommend that you consider investing about 40% of your stock allocation in international stocks and about 30% of your bond allocation in international bonds."

[17] Cerutti and Obstfeld (2018) noted "Foreign participation in China's stock and bond markets has risen, although it remains relatively low compared with international peers. Helped by landmark reforms in Chinese financial markets (such as the Shanghai–Hong Kong and Shenzhen–Hong Kong Stock Connect Programs), as well as by the inclusion of Chinese equities in the MSCI index, foreign participation in the Chinese stock market increased slightly in recent years. Foreign equity holdings are about 2.4 percent of total Chinese equity market capitalization. Foreign participation in Chinese bond markets is similarly small, at only about 1.6 percent of the total value of bonds outstanding, with that share remaining stable in recent years."

concluding that the choice of a vehicle currency reflects both history and hysteresis.[18] These observations are consistent with a persistence of the dollar dominance despite the sharp decline in the global GDP share of the U.S. Yet, it also suggests that adverse shocks and policy blunders may hasten dislodging dollar's dominance. Such blunders may induce China to move faster towards greater convertibility, and the EZ to adopt a version of Eurozone bonds, possibly along Delpla and von Weizsäcker's (2011) blue euro bond suggestion.[19] This transition may involve greater global instability, in line with Krugman's (1984) reflection that "The moral, then, seems to be that it is not a collapsed but a collapsing role of the dollar that we should worry about."

While we focused on two possible divergent U.S. macroeconomics policies in the post-COVID era, there should be many variations of fiscal and monetary policies, depending upon how the U.S. Treasury department and the Fed react 'independently.' For example: (1) No tax increase with a continuous quantitative easing (QE) and zero federal funds rate targeting. (2) A rapid tax increase with a rather rapid tapering off, transitioning out of QE policies to a more normal monetary policy. (3) A gradual tax increase with a smooth tapering off. (4) A gradual tax increase with a rapid tapering off. In the context of our discussion, deeper and longer QE is akin to financial repression and accommodative monetary policy [Reinhart and Sbrancia (2015)]. Other things being equal, higher and longer QE policies would deliver lower snowball effects, allowing for larger fiscal stimuli for a given primary deficit.

There are several notable challenges associated with higher and longer QE. First, it requires a deeper coordination between the Treasury and the FED, running the risk of trimming the FED's independence, a strategy that may be challenged by divided future governance in the U.S. Second,

[18] Rey (2011) shows the possibility of multiple equilibria in the internationalization of currencies as determined by network externalities and the pattern of international trade. See Frankel (2011) for an insightful overview of Historical Precedents for Internationalization of the RMB.

[19] According to the Blue bond proposal, sovereign debt in euro area countries is to be split into two parts. The first part, the senior tranche of up to 60% of GDP, would be pooled among participating countries and jointly and sovereignly guaranteed. The second part, the junior tranche, would keep debt in excess of 60% of GDP a purely national responsibility. This would imply the transformation of the Sovereign Bonds of EZ members valued by 60% of the EZ GDP into a mutualized Eurobond, backstopped by EZ wide taxes, analogous to Hamilton's creation of the U.S. Treasury bond market. See also Capolongo et al. (2020), proposing a deeper internationalization of the Euro by making ECB liabilities tradable following the issuance of its own certificates of deposit.

higher and longer QE would increase the search for yields, inducing higher private sector debt-to-GDP-ratio. This in turn would magnify moral hazard concerns regarding deeper bailouts in a future financial crisis, increasing the tail risk of global financial crisis [Rajan (2006)]. Finally, it may induce deeper income and wealth inequalities associated with subsidizing private leverage by providing a subsidized Central Bank "financial put option." This public sector put option is effective at stabilizing asset prices locally by boosting bank leverage. However, as ever-increasing leverage cannot be sustained indefinitely, future negative shocks may cause prices to fall drastically and volatility to surge. Thus, the FED's financial put option reduces volatility in the short run at the potential expense of greater instability in the long-run. It also implies a larger step-increase of public debt/GDP triggered by a future financial crisis, when larger private losses would be socialized [Drechsler et al. (2018), Alvaredo et al. (2018)]. These dynamics may contribute to greater political polarization, increasing the odds of a future return of the 'America First' populism, and to greater global concerns regarding the future viability of the dollar as a safe global anchor. All these factors increase the benefit of the two pronged exit strategy outlined in our paper, where the goal of reaching future primary fiscal surplus may reducing global tail risks.

Looking forward, the U.S. fiscal policy described above, coupled with a properly accommodating monetary policy may deliver a trajectory that 'rhymes' with U.S. and Global Post WWII adjustments. Reallocation of fiscal spending from fighting COVID's medical and economic challenges towards physical, medical, and social infrastructures may provide a welcome boost to future growth. With a lag, following the resumption of a robust growth, increasing taxes and reaching a primary surplus may stabilize the U.S. and the global economy by reducing the concerns regarding the U.S. debt-overhang. Such a trajectory may solidify the viability and credibility of the U.S. dollar as a global anchor, thereby stabilizing emerging market economies and global growth.

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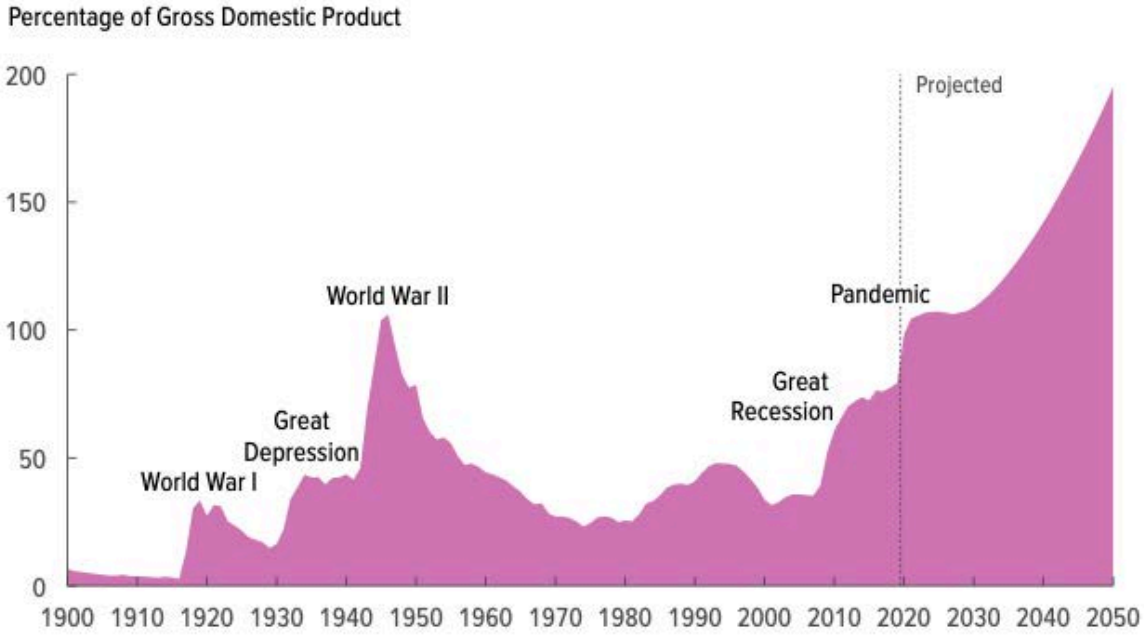
Figure 1 Global Debt-to-GDP Ratio

Source: BofA Global Research, BIS. Sample of 46 economies. Non-financial sector only.

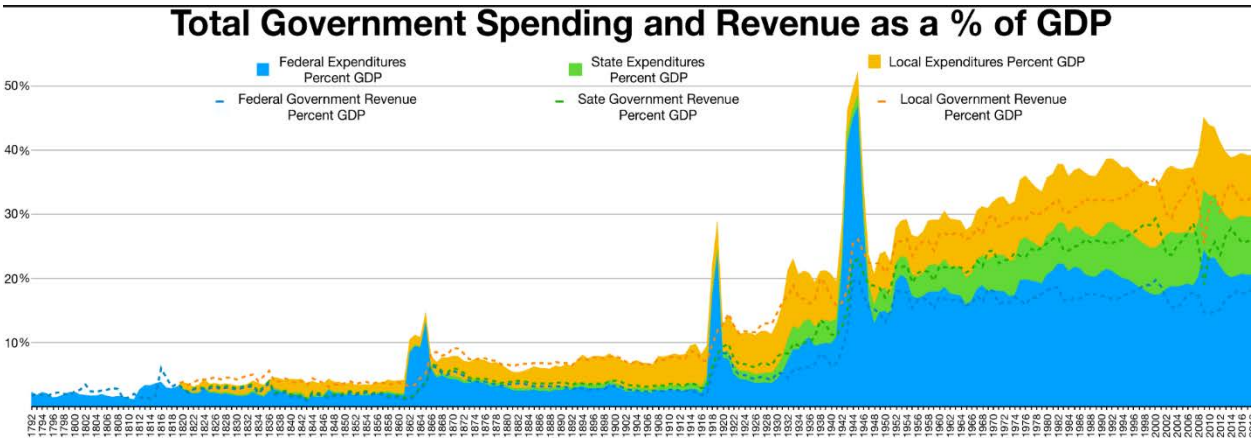
https://finanz.dk/global-debt-is-exploding-at-a-shocking-rate/

Figure 2 U.S. national debt projection, September 2020



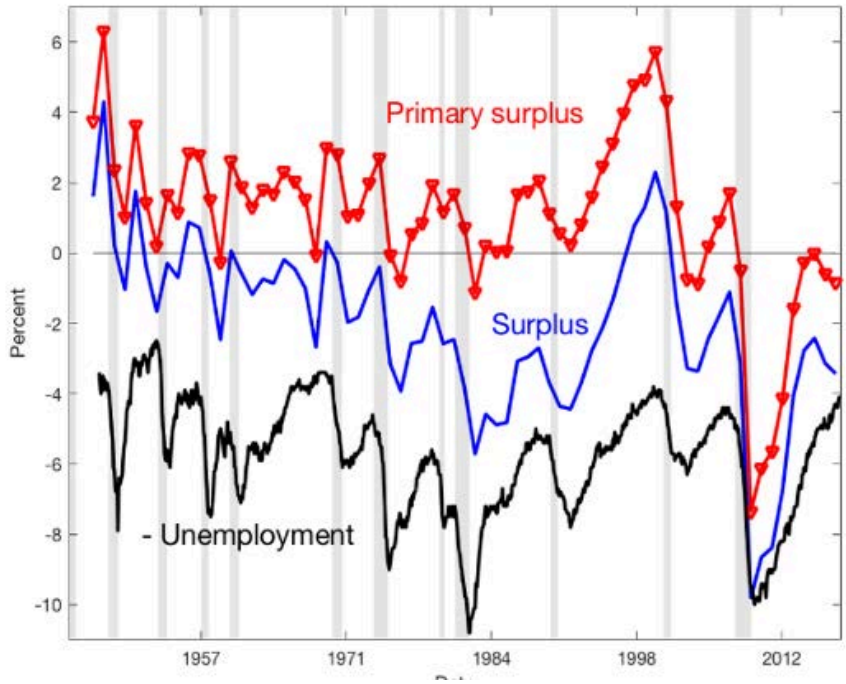
Source: Congressional Budget Office report, September 2020

Figure 3 Total government spending and revenues as a % of GDP



Source: https://www.usgovernmentrevenue.com/revenue_chart_1960_2018USp_18s1li011lcn_F1fF0sF0l; https://www.usgovernmentrevenue.com/revenue_chart_1792_2018USp_18s1li011lcn_F1fF0sF0l; https://en.wikipedia.org/wiki/Government_spending_in_the_United_States#/media/File:Government_Revenue_and_spending_GDP.png

Figure 4 U.S. fiscal surpluses/GDP after WWII



Source: Cochrane (2020)

Figure 5 The interest-rate-growth differential (percentage points). Source: Aizenman and Ito (2020)

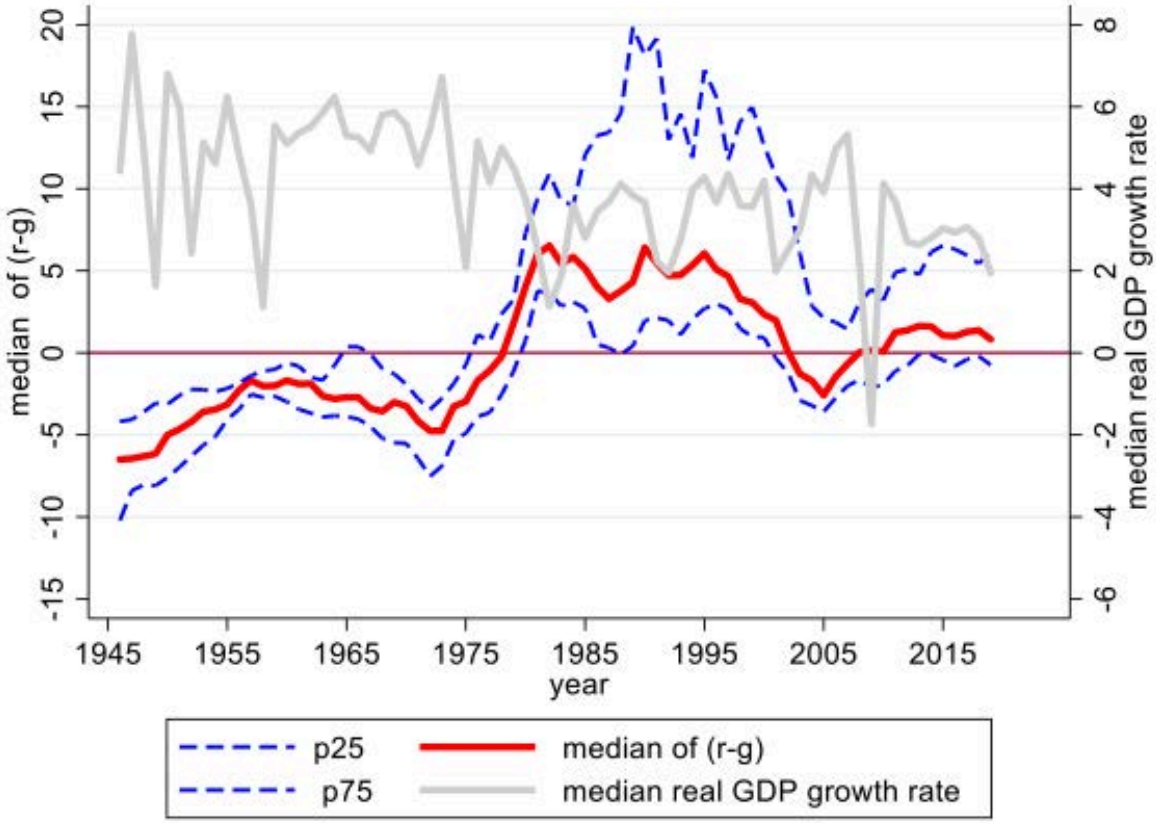
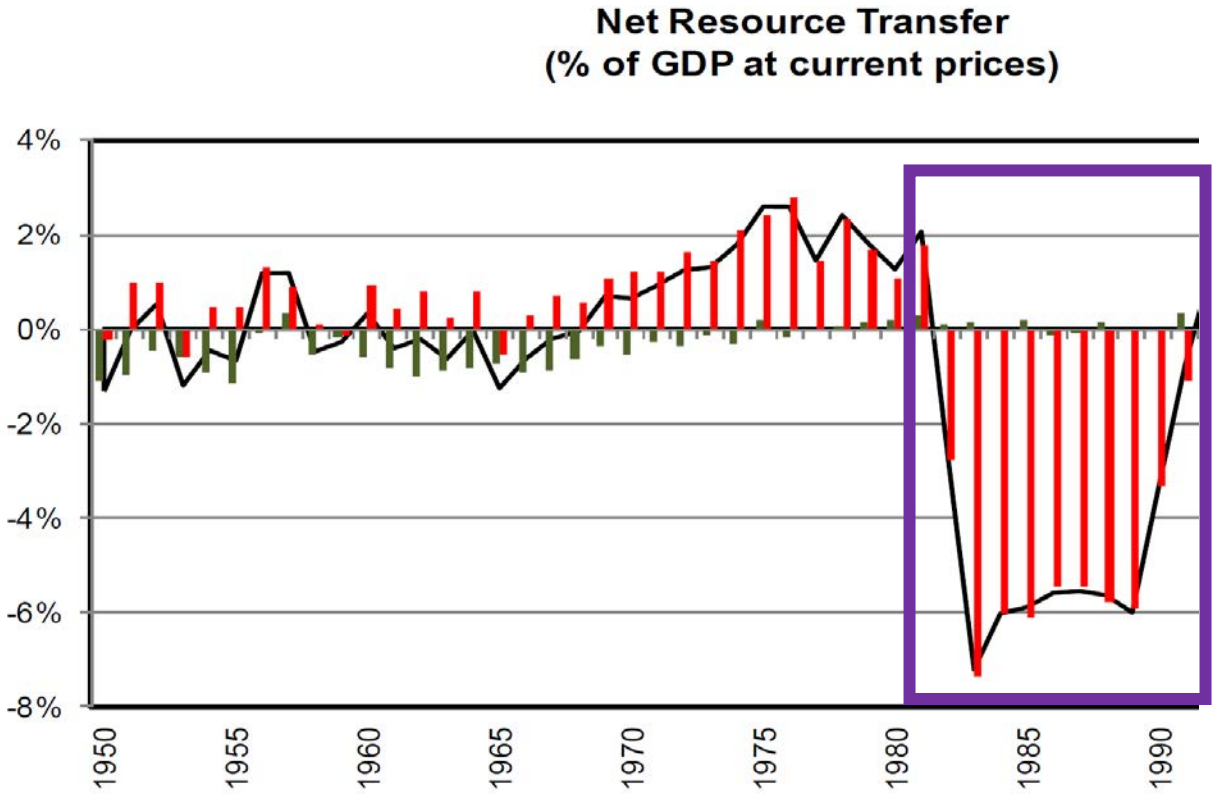


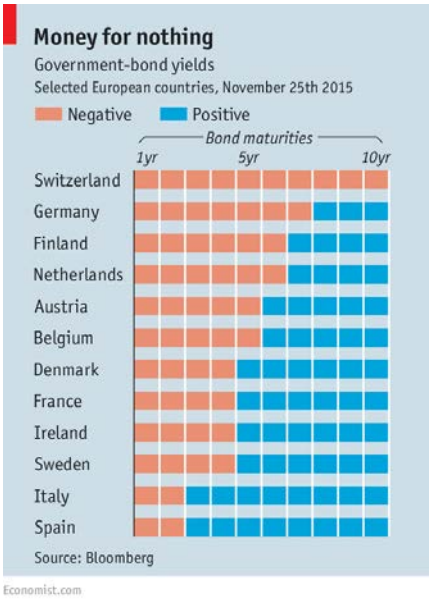
Figure 6



Net resource transfer is a current account deficit excluding any net interest payments.
Source Ocampo, J.A., 2014. The Latin American debt crisis in historical perspective. In *Life After Debt* (pp. 87-115). Palgrave

Figure 7a

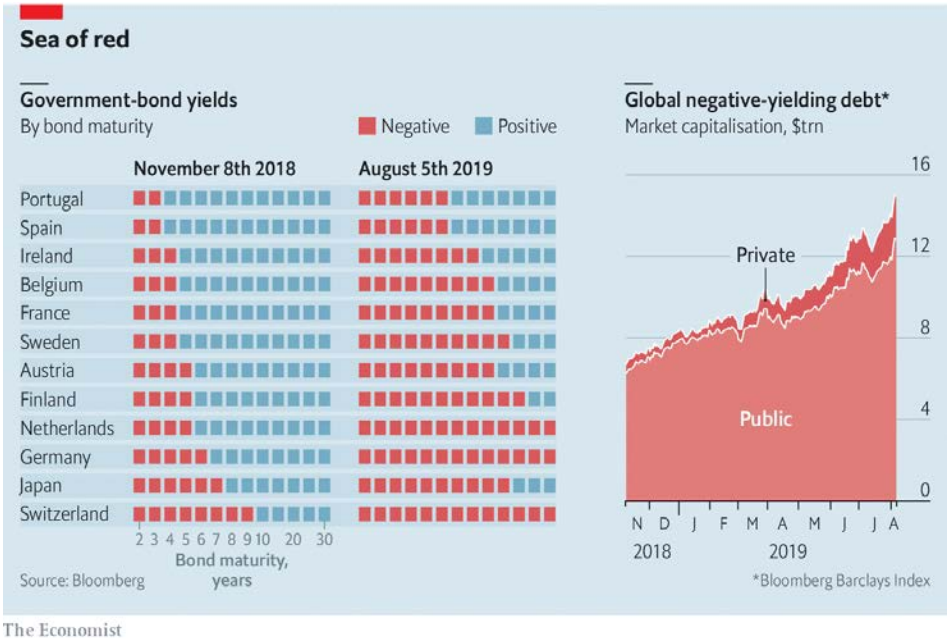
European Sovereign Bond yields, November 2015



Source: [The Economist (November 28, 2015)]

Figure 7b

In 2019, a quarter of bonds issued by governments and companies worldwide were trading at negative yields



Source: [The Economist (August 8, 2019)]

Figure 8 Real Effective Exchange Rates for the U.S. [Blue], China [Red], EZ [dotted green]