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s:fi KNOWLEDGE

Swiss Finance Institute Roundups

Navigating the World of Sovereign Debt

Editorial

The landscape of sovereign debt is evolving rapidly, shaped by historical precedents, macroeconomic shifts, and geopolitical developments. As nations grapple with unprecedented debt levels, financial institutions, policymakers, and investors must navigate a complex web of risks, opportunities, and long-term implications. This SFI Roundup features insights from academic and practitioner experts on the complexities of sovereign debt. From the historical foundations of sovereign borrowing to the contemporary challenges of debt sustainability, contributors explore critical themes such as debt restructuring, market liquidity, and the role of sovereign wealth funds. The discussion extends to the impact of inflation, central bank policies, and the increasing role of private creditors in shaping debt negotiations.

We wish you an informative and thought-provoking read.

Prof. François Degeorge
Managing Director

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April 2025 (interviews as of February 2025 and data as of March 2025)

The Origins and Evolution

What historical events have shaped the sovereign debt markets?

Frederik Mellors: History is filled with evidence of sovereigns borrowing from their citizens, dating back to Ancient Greece. The origin of our modern sovereign debt markets, though, can be pinpointed to the first half of the 19th century. After the British Empire defeated Napoleon, London emerged as Europe's leading financial hub, surpassing Amsterdam, Paris, and Saint Petersburg. During this period, the Rothschild dynasty used its extensive European banking network to issue sovereign bonds in various European currencies, ensuring that interest could be claimed and repayment made in several European capitals. This innovative instrument—similar to today's widely used Eurobonds—enabled sovereigns to raise funds internationally while allowing their creditors to be paid in different countries, thus protecting them from the repercussions of another war.

Juerg Adamek: From a more recent perspective, the past 80 years have seen several significant developments, notably in dealing with sovereign debt distress. In 1944, the International Monetary Fund (IMF) was created to encourage global monetary cooperation and to ensure the stability of the international monetary and financial system. Aside from giving policy advice and providing technical assistance, the IMF serves as a lender to member countries experiencing balance-of-payment problems, with its current outstanding loans amounting to about USD 140 billion. Restoring external viability, including debt sustainability, is the foremost goal of IMF programs. As the IMF can only lend to members whose debt is sustainable, debt treatment is necessary when members with unsustainable debt seek an IMF-supported program. In 1956, the Paris Club—an informal group of the main creditor countries—was established. The Paris Club currently has 22 permanent members, including Switzerland, and has reached nearly 500 agreements with over 100 countries, amounting to more than USD 615 billion in debt. The Paris Club operates under six guiding principles—solidarity, consensus, information sharing, case-by-case evaluation, conditionality, and comparability of treatment—that define how debt restructuring is carried out. Similarly, the London Club, an informal private sector group, was formed in 1976 to represent private creditors, notably commercial banks, in addressing issues related to sovereign borrowers. During the 1980s, Brady bonds were created, transforming commercial bank loans of several Latin American countries into standardized securities that could be traded internationally. Brady bonds, which provided guarantees for creditors alongside portfolio diversification benefits, became the foundation for internationally issued sovereign bonds. In the 1990s, we observed a rise in the number and diversity of lenders and borrowers, leading to greater adoption of enhanced contractual provisions, particularly collective action clauses (CACs) to prevent a minority of bondholders from obstructing debt restructuring. The debt crisis in the Eurozone, which peaked between 2010 and 2012, further propelled interest in sovereign debt. The resulting changes included the introduction of CACs for all government bonds newly issued by Eurozone member countries from 2013 on. Finally, in 2020, the Paris Club and G-20 members established a common framework to promote effective debt treatment for distressed low-income countries, with broad participation by creditors, including private lenders.

How does sovereign debt differ from private debt?

Michel Habib: Governments have at their disposal tools that corporations and households lack. First, governments have the power to impose taxes, thereby obtaining resources that can be used to service their debt. Second, they have the (limited) ability to affect inflation, thereby lowering the real value of their outstanding debt. The late Citicorp Chairman Walter Wriston, arguably the most notable banker of the 1970s, famously stated that "countries don't go out of business." Although this is not literally true, as is clear from the long history of sovereign defaults, Wriston's quote highlights the unique nature of sovereign borrowers.

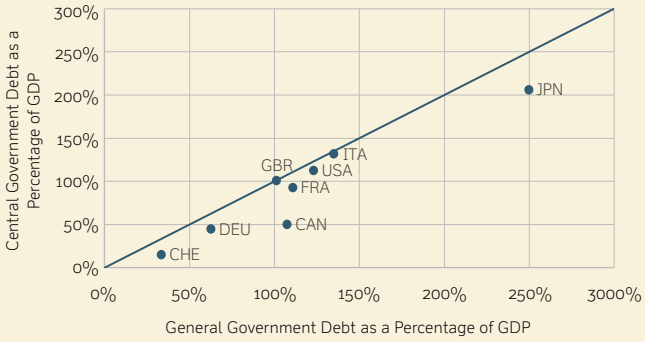
Andreas Müller: Another key difference is that sovereign debt is unsecured, while corporate and household debt are both typically backed by collateral. Furthermore, sovereign debt is often financed on an international level. Enforcing contracts across countries is nearly impossible, since no national court can uphold them. The difficulty in obtaining a court ruling may affect the sovereign's willingness to honor a debt contract by raising taxes or slashing public expenditures. Creditors anticipate the likelihood of such adverse outcomes—where the sovereign fails to meet its initially planned financial obligations—and factor this risk into the interest rates on sovereign debt.

What motivates a sovereign to pursue debt restructuring?

Steven Ongena: Debt restructuring, as a tool, is not inherently negative. While it generally occurs during chaotic and distressing periods, it should be regarded as a "second-best" solution, as it is frequently the only viable path forward. The London Debt Agreement of 1953, which substantially reduced the war reparations that Germany had to pay and extended the repayment timeline, is credited with aiding Germany's rise as an economic powerhouse. Similar initiatives, such as those by the Paris Club and the Brady Plan, are often acknowledged for stabilizing inflation, lowering interest rates, and creating opportunities for public investment.

Andreas Müller: We must distinguish between "preemptive" debt restructuring, which occurs before a payment is missed, and "post-default" restructuring, which takes place afterward. Preemptive restructuring tends to be faster and less painful for the sovereign. In both scenarios, restructuring helps to reduce risk perceptions, interest rates, and the likelihood of being excluded from the financial markets. Furthermore, interventions from major financial agencies often allow the sovereign to implement necessary structural reforms that the political process might resist under normal circumstances.

Central and General Government Debt as a Percentage of GDP



Note: This figure displays the central government debt and general government debt as a percentage of GDP for G7 nations and Switzerland in 2023. Central government debt refers to the total amount of debt liabilities issued by the central government. General government debt refers to the total amount of debt liabilities issued by the general government (including central, state, and local levels).

Source: International Monetary Fund (IMF)

How have trends in global financial markets shaped the sovereign debt market?

Michel Habib: Greater market liquidity and increased market integration have significantly simplified countries' borrowing. While this development has been beneficial in many ways, it has also contributed to today's high levels of debt. As interest rates rise, concern about these high debt levels has grown, prompting many governments to raise taxes and cut spending.

Juerg Adamek: Over the past two decades, the landscape of sovereign debt has changed significantly for developing economies. The rise of emerging economies—particularly China—as bilateral official creditors has greatly reduced the significance of the Paris Club. The increasing role of commercial creditors has also transformed the market. The diversity of instruments has increased, as illustrated by the greater reliance today on bonds instead of loans. The interplay of these factors has made the sovereign debt landscape more complex. Meanwhile, transparency remains an issue. While general information about debt at the central government level is often accessible, it becomes more opaque if you are looking for data on, for example, sovereign loans, subnational debt, or the borrowing of state-owned enterprises. This lack of transparency hinders sound analysis and decision-making by policymakers, government authorities, and international organizations, as well as creditors, and thus increases their risk.

Frederik Mellors: In recent history, the most significant trend has been an increase in the use of balance sheet policies by large central banks such as the Bank of Japan, the European Central Bank, and the US Federal Reserve, which introduced "quantitative easing" following the Great Financial Crisis. This substantial injection of liquidity effectively suppressed sovereign bond interest rates across the yield curve, encouraging governments to borrow for "free" and prompting investors to seek yield in emerging sovereign debt markets. As inflation surged in late 2021 and early 2022, central banks significantly raised their policy rates to rein in inflation, resulting in soaring sovereign bond lending rates. Given the widespread maturity structure of sovereign lending, we saw a number of distressed sovereign issuers seek to quickly restructure their borrowing. With interest rates remaining high, additional challenges are expected as significant maturities draw near, and the rising cost of debt will further affect fiscal sustainability.

The Core Characteristics

What is the difference between sovereign debt and sovereign bonds?

Steven Ongena: Sovereign debt includes both loans and bonds. Loans are typically financed directly by banks and institutional investors, while bonds are issued and traded in financial markets, where various investors can hold them. Sovereign debt is extensive and can be issued at the national, state, or municipal level. A significant portion of this debt may be intragovernmental, with one government branch owing money to another. Finally, the maturity spectrum varies significantly. In the US, Treasury Bills usually have a maturity of one year or less, Treasury Notes have maturities ranging from two to ten years, while Treasury Bonds have maturities exceeding ten years.

Frederik Mellors: The sovereign bond market represents the visible part of the sovereign debt iceberg, while sovereign loans represent the less visible part. Nuances exist between bonds and loans in terms of pricing and liquidity. However, since the borrower remains the same, sovereign debt and sovereign bonds are essentially equivalent. If an issue arises for one lender, the entire market is affected.

What are the main characteristics of a sovereign bond?

Michel Habib: The most noticeable characteristic is that the debtor is a public entity rather than a private one; these have different legal statuses. There are, for example, no bankruptcy procedures for countries, while of course these exist for companies. Tax status may also differ, as interest payments on municipal bonds in the US, for example, are generally tax exempt. Last but not least, there is size: Most advanced economies have far more government bonds outstanding than there are corporate bonds.

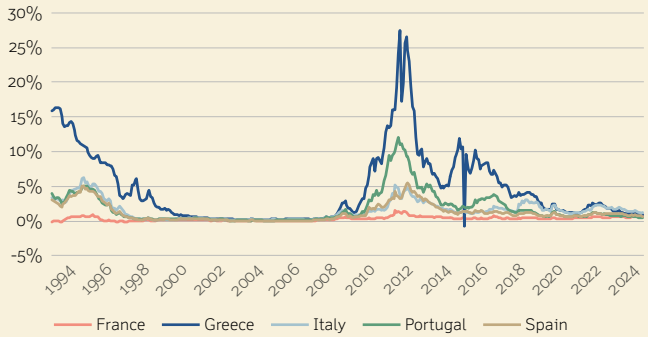
What are the main factors influencing sovereign bond yields?

Frederik Mellors: The short answer involves macroeconomic factors like economic growth, inflation, fiscal health, and creditworthiness. Several other elements can cause fluctuations in sovereign bond yields, including monetary policies, central bank policy rates, global financial conditions, and the country's overall political and social stability. It's also crucial to consider whether the debt was issued in local or foreign currency. When bonds are issued in a foreign currency, which is often the case in emerging economies, currency risks become significant; the country's access to the currency in which it has borrowed becomes a consideration.

Steven Ongena: The yield initially corresponds to the nominal interest rate stated on the bond at issuance. That rate reflects the risks associated with the sovereign, alongside typical rate variations due to factors such as the bond's maturity and coupon schedule. If the nominal interest rate is estimated accurately, the bonds will be fully purchased at the time of issuance. Any significant deviation from the "optimal" nominal interest rate indicates that the sovereign is either paying too high a rate or is failing to secure the intended capital funding. Over time, while the nominal interest rate remains unchanged, the overall yield varies based on fluctuations in the bond's price. These price variations are influenced by market demand, liquidity, and the sovereign's health.

Juerg Adamek: Risk considerations are extensive and complex. Credit risk is obviously an important consideration. An interesting historical anecdote in this regard is that when the euro was introduced, we noted a significant convergence in the bond yields of the relevant countries. However, this convergence disappeared in late 2008, as the yield spreads for Greece, Portugal, and Spain, when compared to Germany, suddenly surged, suggesting that the market had overlooked country-specific risks for almost a decade. This example underscores the complexity involved in assessing risks and setting prices.

10-Year Government Bond Nominal Yields Relative to Germany



Note: This figure displays the 10-year government bond nominal yields relative to Germany for a selection of euro area countries. France, Italy, Portugal, and Spain have been euro area members since January 1999, while Greece has been a member since January 2001.

Source: European Central Bank (ECB)

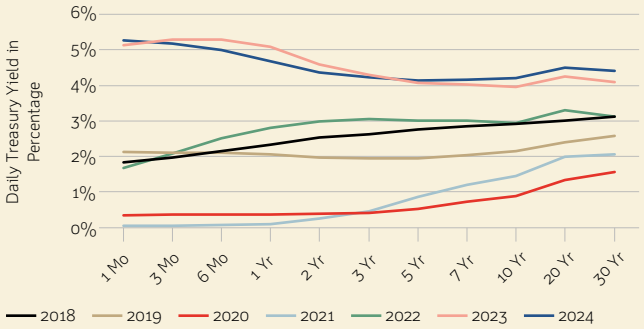
How do central bank policy rates differ from sovereign bond yields?

Michel Habib: Central bank policy rates are short-term rates that can be adjusted multiple times a year and are set directly by the central banks. In contrast, sovereign bond yields extend for far longer periods and are primarily determined by investors. Although the central banks can and do influence sovereign bond yields, they can only do so indirectly, for a limited time, and to a limited extent.

Frederik Mellors: A central bank establishes a target policy rate for the short term. The US Federal Reserve, for example, manages two distinct overnight rates: the interest rate on reserve balances, which represents the upper bound, and the overnight reverse repo agreements rate, which serves as the lower bound. Within this corridor of Fed-set rates, overnight bank lending determines the federal funds rate. The overnight federal funds rate is then projected into the future, based on market expectations surrounding monetary policies. Sovereign bond yields, being long-term rates, are also influenced by macroeconomic considerations. However, additional factors such as fiscal policies, the sovereign's health, supply and demand, and term and liquidity premiums influence where they trade, relative to expectations of overnight rates. The federal funds rate and sovereign bond yields are interconnected and often move together. However, there are instances when they diverge, which is evident today, signaling market concern regarding the fiscal policies in the US.

What insights can we gain from yield curves?

Frederik Mellors: Yield curves are similar to weather forecasts: They can provide crucial information regarding the future direction an economy might take. The shape of the curve depends on various factors, including the expected direction of future policy rates, which gives insights on growth and inflation, term premium, the additional yield investors demand to hold longer-term fixed rate assets, and technical factors due to supply and demand. An upward-sloping curve—where rates increase for longer maturities—indicates an economy that may have bottomed out, and for which growth is set to increase going forward. In contrast, an inverted curve suggests an economy with a tight monetary policy and potentially slower growth ahead.



Note: This figure displays the daily US Treasury par yield curve rates for a selection of maturities between 2018 and 2024.

Source: US Treasury

What are the differences between maturity and duration?

Michel Habib: Maturity is the time from today until the final cash flow is repaid. Duration refers to the average lifetime of the cash flows that make up the bond; it is used to measure the average period of time during which the bond's cash flows are exposed to changes in interest rates. Relatedly, modified duration measures the sensitivity of bond prices to these changes. In the case of a zero-coupon bond, maturity and duration are identical and both are measured in years. Price fluctuations are common in the bond market, even with "risk-free" bonds. Consider, for example, a Swiss government bond issued in 1999 with a face value of CHF 100 and a coupon of 4%, maturing in 2049. Like most bonds, it was probably issued at par or very close to par, yet it is currently trading at around CHF 180, an 80% increase in price, due to the dramatic decline in interest rates from the turn of the century until recently. Investing in the sovereign bond market can thus expose one to significant price fluctuations, despite the absence of any credit risk in the case of countries such as Switzerland.

What are the main risks that sovereign bondholders face?

Frederik Mellors: Numerous risks exist. The primary one is credit risk, which can be divided into default and spread risk. Default means the borrower fails to pay either a coupon or the full principal. Spread risk refers to fluctuations in the security's market value due to changing perceptions of the risk of default. Interest rate risk can also cause bond prices to fluctuate. Financial repression, when governments limit interest rates and cause lenders to receive returns that are below free-market levels, should be a consideration, as should liquidity, which can impact market prices when uncertainty and funding conditions become constrained. Michael Milken, a prominent junk bond trader from the 1970s and 1980s, famously stated, "Liquidity is an illusion. It's always there when you don't need it, and rarely there when you do." Finally, foreign exchange risks may arise for savers and borrowers dealing in currencies other than their own.

Andreas Müller: Sovereigns are globally creditworthy borrowers. However, inflation poses a risk, regardless of the sovereign. Although the financial markets provide solutions to hedge against inflation, default, and potential currency exchange risks, these insurances come with costs and can be imperfect. Ten-year government bonds issued in local currency currently vary from 0.8% for Switzerland, to 3.7% for Greece, to 4.2% for the US, and up to 14.9% for Brazil, reflecting, among other factors, expectations of inflation. Lenders must comprehend the spectrum of risks involved and calculate how much they are willing to accept. Numerous market participants, especially in publicly traded sovereign bond markets, ensure that there is no such thing as a "free lunch."

The Mechanics

How do financial and political uncertainties affect sovereign bond interest rates?

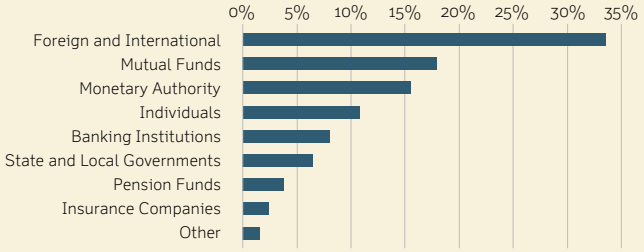
Michel Habib: Financial and political developments will affect the price of a bond, and therefore its yield, to the extent that they affect the probability of repayment or the interest rate used to discount the coupon payments and the principal repayment. This makes bond yields extremely important communication devices. For example, the fact that the yield on Greek bonds is much closer to that of German bonds now than it was a few years ago indicates that investors believe, rightly or wrongly, that Greece has made significant strides toward achieving debt sustainability. Alternatively, it could suggest that Germany is facing turbulent times due to its current political and economic situation.

Andreas Müller: When considering political uncertainties, several factors come into play. First, the political turnover cycle significantly impacts the situation, especially during snap elections when the majority can shift from one party to another. Second, when the government struggles to pass a budget, uncertainty arises regarding whether its expenses will be covered by tax increases or by borrowing, or if a shutdown or default might occur. Finally, research indicates that the political "color" of a sitting government also affects sovereign debt issuance. Ironically, in normal times right-leaning governments tend to accumulate debt more quickly than left-leaning ones.

Who are the main lenders in the sovereign debt market?

Frederik Mellors: Three distinct groups operate within the sovereign debt market: institutional investors who employ buy-and-hold strategies, central banks that enter and exit the market to manage inflation and liquidity through their balance sheets, and sovereign wealth funds with various objectives, ranging from geopolitical considerations to targeted foreign exchange rates, as well as long-term investments. The freezing of USD 300 billion in Russian central bank reserves after Russia invaded Ukraine in 2022 has changed the dynamics for all participants, but particularly for official sector investors. Some have gradually sought to diversify their exposure to US dollars, transferring into assets such as gold or non-US dollar and non-euro holdings to mitigate their exposure to potential sanctions.

Holders of US Treasury Securities



Note: This figure displays the holder structure of US Treasury securities as of Q3 2024.

Source: Securities Industry and Financial Markets Association (SIFMA)

What mechanisms allow sovereign bonds, which are essentially issued without collateral, to function as highly liquid instruments desired by investors?

Michel Habib: Liquidity, the ability to accommodate large trades with small changes in price, depends on both information and size. Junk bonds are less liquid than investment grade bonds, because there is generally more uncertainty about the value of junk bonds; the bonds of small countries are generally less liquid that those of large countries, because a trade of a given size will represent a larger fraction of the outstanding bonds of the small country. The creditworthiness of a country increases liquidity by decreasing uncertainty about the country's ability to service its debt; so does standardization, as with a common currency such as the euro for example, which increases size.

Why do sovereigns choose to issue debt instead of raising taxes or cutting spending to tackle fiscal imbalances?

Frederik Mellors: As every head of government finance knows, increasing taxes or reducing government spending is never easy. Taking on more debt often seems like the easier option until the bond vigilantes respond. Since the start of the year, there has been a significant rise in bond yields, indicating fiscal challenges. Rising yields increase borrowing costs and complicate efforts to reduce deficits and stabilize public debt. It's likely that we will see a combination of spending cuts and tax hikes worldwide. For example, recent figures in the US project that general government interest payments will account for 13.5% of federal US government revenue this year, up from 6.5% in 2020.

Andreas Müller: The global aging population is also having an impact, as the combination of a rising proportion of older individuals and increasing healthcare costs naturally calls for more public health services. The fact that the older generation is more disciplined in voting than the younger generation increases the chances of "kicking the can down the road." Expenses financed by debt spread the financial burden across decades—something the elderly are more likely to support, compared to the younger generation.

Is deficit finance—the act of borrowing to finance government deficit—free when interest rates are lower than growth rates?

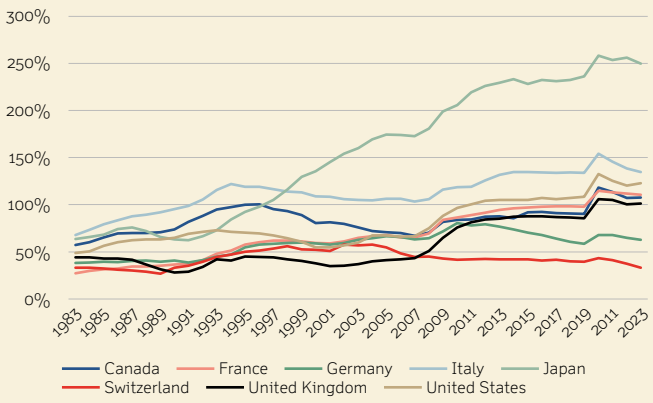
Michel Habib: No! Few good things are free. The valid argument is that when interest rates are lower than growth rates, the debt-to-GDP ratio decreases over time in the absence of large primary deficits. Growth is not entirely exogenous, however, and ultimately will occur only if the proceeds from borrowing are invested in positive net present value projects.

Is there an ideal level of sovereign debt?

Andreas Müller: I don't see a one-size-fits-all number here. The diversity among countries regarding government debt-to-GDP is significant, as is the range of mandates that governments have. Some sovereigns provide security, build roads, and offer basic education, while others deliver advanced education, health services, and manage their pension systems. The focus should be on the long-term trend of the debt-to-GDP ratio, rather than on trying to determine an optimal figure. Over the past 20 years some countries, such as Germany, have maintained a steady ratio. Others, like Canada, France, Japan, and the US, have seen increases of between 50% and 100%, while the UK witnessed an even higher increase. The Great Financial Crisis, the Pandemic Recession, and the European Energy Crisis have driven this debt accumulation. For countries with elevated debt-to-GDP ratios, keeping or rebuilding some fiscal space to prepare for the next potential economic crisis is important. Data suggests that, for Europe, 60% lies in the "riskless" zone, where increased borrowing does not lead to hikes in interest rates.

Michel Habib: Whether an ideal level of sovereign debt exists is a common research question. The IMF has addressed it, as have many academics. Interestingly, there is not a clear answer, as it depends on a country's growth rate and on the volatility of that rate. When Gordon Brown was Chancellor of the Exchequer in the UK, he pledged the Labour government to follow the "Golden Rule": Current spending would be funded by taxation, and borrowing would be used only for investment. Brown aimed for a net debt-to-GDP ratio below 40%, a target he achieved, on average, during his tenure at the UK Treasury from 1997 to 2007. The 2008 crisis and the need to bail out numerous British financial institutions, however, resulted in a large increase in the UK's debt-to-GDP ratio.

General Government Debt as a Percentage of GDP



Note: This figure displays the evolution of general government debt as a percentage of GDP for G7 nations and Switzerland from 1983 to 2023. General government debt refers to the total amount of debt liabilities issued by the general government (including central, state, and local levels).

Source: International Monetary Fund (IMF)

How valid is the assumption that sovereign debt is "risk-free"?

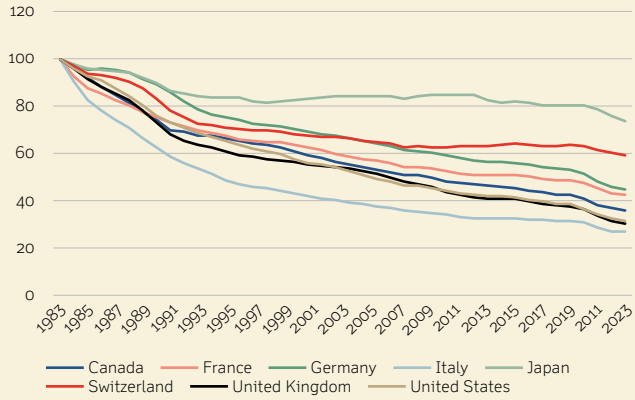
Frederik Mellors: It depends on how you define "risk-free," but I don't believe a standalone risk-free asset exists. Inflation, for instance, erodes the real value of nominal repayments at maturity. While hedging is possible for various risks, such as default or inflation, these solutions come at a price. For a long time, the US T-Bond was viewed as the global risk-free asset due to the backing of the US government, the US economy, and the US dollar. However, data shows that consumer prices have increased by 35% in the US over the past decade: A 10-year Treasury bond purchased at a nominal value of USD 100 in early 2015 is now worth less than USD 75 in real terms. This represents a significant loss. As Milton Friedman stated, "Inflation is taxation without legislation."

What are the various forms of government default?

Juerg Adamek: Definitions and perceptions of what constitutes a default vary across legal frameworks, credit rating agencies, and the market. What is important to note, though, is that debt restructuring can be undertaken either post-default or preemptively. If a restructuring proves unavoidable, timely action typically helps lessen the negative impact.

Michel Habib: One form of *de facto,* but not *de jure,* default is higher than expected inflation: Lenders are repaid, but in currency that has a lower value than the lenders expected when they lent to the government. In the absence of financial repression, however, lending rates will eventually adjust to account for higher inflation. Hyperinflation is an extreme instance of default, in that it destroys the value of that most basic of government liabilities, its currency. If unexpected, hyperinflation can resorb much of a government's debt problem—at huge cost to the holders of government debt. For example, the German hyperinflation of the early nineteen-twenties made possible the repayment of much of Germany's World War I debt, with currency that was worth a minute fraction of what it had been when the debt was issued.

The Real Value of Money Over Time



Note: This figure displays the inflation-adjusted value of an asset with a nominal value of 100 in 1983 over time. Inflation is measured using consumer prices.

Source: Bank for International Settlements (BIS)

What challenges and opportunities emerge from government debt restructuring?

Juerg Adamek: There are many challenges, as debt restructuring represents a significant coordination and collective action problem, often unfolding under uncertainty. It starts with obtaining a clear understanding of the debt situation. This evolves into an organizational challenge, where the sovereign and the various bilateral public and private debt holders must agree on terms and conditions. Multilateral organizations like the IMF or the World Bank do not participate in debt restructuring negotiations between the debtor and its creditors; however, their advice, programs, and lending operations typically have a significant impact on the outcomes of these restructurings. Once the terms and conditions of a restructuring are established, the focus shifts to implementation, which can present further challenges. All of this typically occurs within a very delicate political and financial landscape populated by numerous public and private actors, making debt restructuring a complex endeavor. Sovereigns frequently hesitate, presumably for fear of negative implications on market access. Creditors often hesitate as well, presumably to avoid incurring unnecessary losses. Debt restructuring thus often unfolds in a "too little, too late" scenario.

Frederik Mellors: When considering opportunities, it is crucial to reflect on history, which is full of examples where debt restructuring provided borrowers with a fresh start and offered opportunities for lenders. Although distressed bonds often trade at a discount, optimism increases during the restructuring process leading to a rise in bond prices. However, there are also cases of uncontrolled defaults and of countries being locked out of the international financial market for long periods. Over the past 20 years, the geopolitical landscape has experienced significant changes, with the Chinese government greatly increasing their lending activity directly, rather than going through multilateral organizations, to countries in Africa, Asia, and Latin America in order to build influence. In an increasingly polarized world, the importance of macroeconomic factors has decreased, while the significance of geopolitical factors has grown. This new balance also creates opportunities for smaller emerging economies, which can play off various creditor groups in order to extract more favorable borrowing terms. The recent Sri Lankan debt restructuring is a case in point where the IMF was involved, along with private sector creditors from China and India.

What are the wider economic and social implications of a sovereign default?

Juerg Adamek: Issues at the sovereign debt level typically spill over into the domestic banking sector and ultimately impact the whole economy. More broadly, defaults often coincide with negative economic or political developments in the affected country. IMF programs help countries restore macroeconomic stability and growth, as shown by Ireland, for example, which implemented an IMF program from 2010 to 2013. For IMF programs to be effective, there needs to be strong ownership and commitment by the authorities, and ideally broad public support, for the necessary policy adjustments and reforms. Tackling vulnerabilities, ensuring sound macroeconomic policies, and improving policy frameworks, institutions, and fundamentals are essential for achieving a robust recovery, strengthening resilience, and durably improving economic prospects. Financial support alone is typically not sufficient.

The Landscape of Today

With global sovereign debt-to-GDP ratios reaching record highs, what are the potential economic risks?

Steven Ongena: The research literature on this question is contentious, due to limitations in data points and variability in storylines. Nevertheless, the financial markets generally do not respond favorably to high levels or increases in the debt-to-GDP ratio. This limits a government's ability to withstand additional external shocks through further funding. Any rise in nominal interest rates increases the cost of new debt, as well as that of the existing debt to be rolled over under the current market conditions. Considering these factors, governments operating with high levels of debt or deficits indeed restrict themselves from fulfilling their mandates. Interestingly, the idea of the maximum level for such a ratio is a moving target for both academics and practitioners. The primary focus is the US, which maintains a historically high debt-to-GDP ratio and is the largest bond issuer in the world. I believe the US government will struggle to secure significant additional financing to deal with a large "unexpected" shock under current market conditions. In this context, the traditional argument about a government's ability to increase financial resources through taxation faces limitations. Taxation cannot be limitless. Moreover, evidence indicates that considerable profit is shifted by firms from high-tax countries like France and the US to tax havens such as Bermuda, the BVI, the Cayman Islands, the UAE, and Ireland. Results suggest that annual global corporate profit shifting exceeds the trillion US dollar mark, undermining the taxation abilities of sovereign nations by hundreds of billions of US dollars. High-wealth individuals are also shifting their wealth in a similar manner.

Juerg Adamek: A noticeable issue is the "crowding out" of government spending, resulting from the cost of servicing debt. With a high and rising debt-to-GDP ratio and an elevated cost of debt, many countries need to allocate ever more resources to servicing their debt, instead of spending those resources on infrastructure, education, health, climate, or defense, for example. Furthermore, there is the issue of the "sovereign-bank nexus." In many countries, commercial banks have substantial exposure to sovereign debt; any decrease in the value of this debt thus affects these banks. Financial instability, in turn, can have implications for government finances, directly and above all indirectly, through repercussions on the real economy. On the eve of the sovereign debt crisis in the Eurozone, the Greek economy represented only 2% of the European Union's economy. Still, when Greece faced sovereign debt distress in 2010, it sent shockwaves across the European banking sector and economy. Envisioning the repercussions of a similar episode of debt distress in a much larger economy would be difficult. Globally, debt has reached levels not seen since the end of World War II. To stabilize and reduce debt over time, fiscal consolidation is as essential as it is challenging, given pressing government spending needs. Strict prioritization, as well as enhancing the efficiency of government spending to get "more bang for the buck," will thus be key. In addition, robust economic growth would help ensure debt sustainability. Determined efforts to enhance strong and sustainable growth, including structural reforms, should therefore be pursued, especially considering the relatively modest current expectations for global economic growth.

Michel Habib: Research by economists Carmen Reinhart and Kenneth Rogoff suggests that debt-to-GDP ratios of 90% and above are associated with lower growth rates. Although not everyone agrees with this analysis and its conclusions, it is clear that having to dedicate significant resources to debt service decreases the amounts the government has available for meeting other needs, such education or investment.

What alternative metrics can effectively evaluate a country's fiscal health, aside from debt-to-GDP ratios?

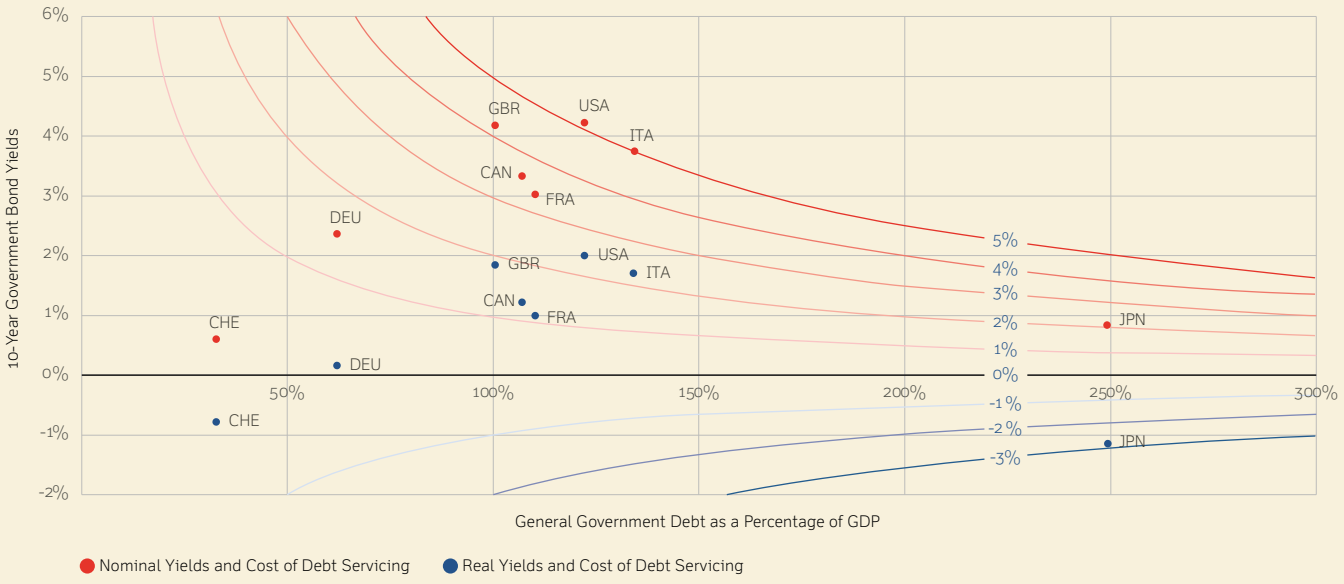
Andreas Müller: One alternative metric is the interest spread over the risk-free rate. Market mechanisms indicate that as the debt-to-GDP ratio rises, less revenue is generated with each subsequent increase in debt, due to rising interest rates. Nevertheless, identifying a "perfect" single metric to assess a country's sovereign health continues to be a challenge. What concerns me is the persistent upward trend we have witnessed in many countries over the past 20 years. It's important to remember that the Maastricht Treaty of 1993 aimed to establish a firm upper limit for the debt-to-GDP ratio at 60%—a requirement that only half of the 27 EU members currently meet, with only Luxembourg and the Netherlands among the original six European countries achieving this target. This upward debt trend suggests that many nations will struggle to confront the next challenge, and the financial market has begun debating the likelihood of full repayment. The appropriate response would be for debt levels to decrease during favorable economic periods, a goal that few countries actively strive to achieve.

Juerg Adamek: While the ratio of gross debt-to-GDP is arguably the most prominent and commonly used metric, many other indicators can be employed to assess a sovereign's debt situation. These include the cost of debt service, the resilience and depth of the domestic banking and financial sectors, the reliance on external financing, the exposure to revenue from international trade, and the average debt maturity. The level of gross public debt that a sovereign can carry in a sustainable manner thus differs considerably across economies. For instance, Japan has a gross debt-to-GDP ratio exceeding 250% and does not face imminent debt distress. One mitigating factor is that its net debt is significantly lower—around 150% of GDP—due to the substantial financial assets the Japanese government possesses. In contrast, Chad's gross debt-to-GDP ratio was slightly above 50% when the country got into debt distress in late 2020. Currency mismatches resulting from borrowing in a foreign currency is another relevant source of risk for many sovereigns, especially for emerging and developing economies, exposing them to swings in exchange rates and capital flows. Research indicates that over the last two decades emerging economies have increasingly been able to borrow in their domestic currency. However, further analysis shows that where local currency-denominated bonds are held to a significant extent by foreign investors, with currency mismatches hence migrating to these investors' balance sheets, vulnerability to capital flow and exchange rate swings remains. To truly overcome this issue, domestic borrowing would need to be primarily funded through domestic savings.

How efficient is trading within the sovereign bond market?

Steven Ongena: Over the past 15 years, the primary market has become more organized, while the secondary market has become highly liquid, transparent, and efficient due to the introduction of electronic bond trading platforms. Blockchain technology and decentralized finance are expected to further enhance the market through instant settlement. Every gain in efficiency makes a substantial difference. Last year, the total value of outstanding marketable US Treasury securities

Government Bond Yields, General Government Debt, and the Cost of General Government Debt Servicing



Note: This figure displays the general government debt as a percentage of GDP for 2023, and the nominal yields (red) and the extrapolated real yields (blue) on 10-year government bonds for G7 nations and Switzerland for 2024. The convex isocost curves depict the cost of servicing debt relative to GDP based on the assumption that the cost of servicing general government debt equals current sovereign bond yields. General government debt refers to the total amount of debt liabilities issued by the general government (including central, state, and local levels).

Source: International Monetary Fund (IMF), Investing.com, Organisation for Economic Co-operation and Development (OECD), and Swiss National Bank (SNB)

surpassed USD 28 trillion; a one basis point difference amounts to nearly USD 3 billion.

What factors do sovereign credit ratings evaluate, and how reliable are they?

Steven Ongena: Credit ratings are significant for several reasons. On the one hand, lower ratings lead to higher nominal interest rates for sovereign entities. On the other hand, based on these ratings, institutional investors encounter internal portfolio constraints regarding their allocations. Thus, it is always advantageous for sovereigns to secure the best possible ratings to guarantee low rates and strong demand. Data supports the notion that credit ratings shape market perceptions, indicating that they are viewed as important sources of information. Nevertheless, there have been and will continue to be specific cases where such ratings fall short.

Frederik Mellors: Credit ratings offer valuable insights. They consider both domestic and external macroeconomic factors, fiscal flexibility, existing debt, the government's capacity to negotiate tax increases or spending cuts, and its ability to collect taxes. While no measure is perfect, and we cannot rely solely on these ratings, they still hold significance. Interestingly, the market tends to consider alternative indicators, such as geopolitical shifts, alongside more qualitative factors like the quality of government institutions and judicial systems, and it does so proactively. We must also remember that the market reflects the perspectives of millions of investors—not just the opinion of a single firm—making it important to pay attention to differing viewpoints.

Government Credit Ratings and Government Bond Yields

S&P Credit Rating	Country	10-Year Government Bond Nominal Yields	Inflation Forecast	Extrapolated 10-Year Government Bond Real Yields
AAA	Canada	3.33%	2.10%	1.20%
AAA	Germany	2.35%	2.20%	0.15%
AAA	Switzerland	0.59%	1.40%	-0.80%
AA+	United States	4.22%	2.20%	1.98%
AA	United Kingdom	4.17%	2.30%	1.83%
AA-	France	3.00%	2.00%	0.98%
A+	Japan	0.82%	2.00%	-1.16%
BBB	Italy	3.71%	2.00%	1.68%

Note: This figure displays the S&P Global sovereign foreign currency long-term ratings for G7 countries and Switzerland in 2024, the 10-year government bond nominal yields for 2024, the annual inflation forecasts for 2025, and the extrapolated 10-year government bond real yields.

Source: Investing.com, Organisation for Economic Co-operation and Development (OECD), S&P Global, and Swiss National Bank (SNB)

To what extent do government austerity measures influence sovereign borrowing costs?

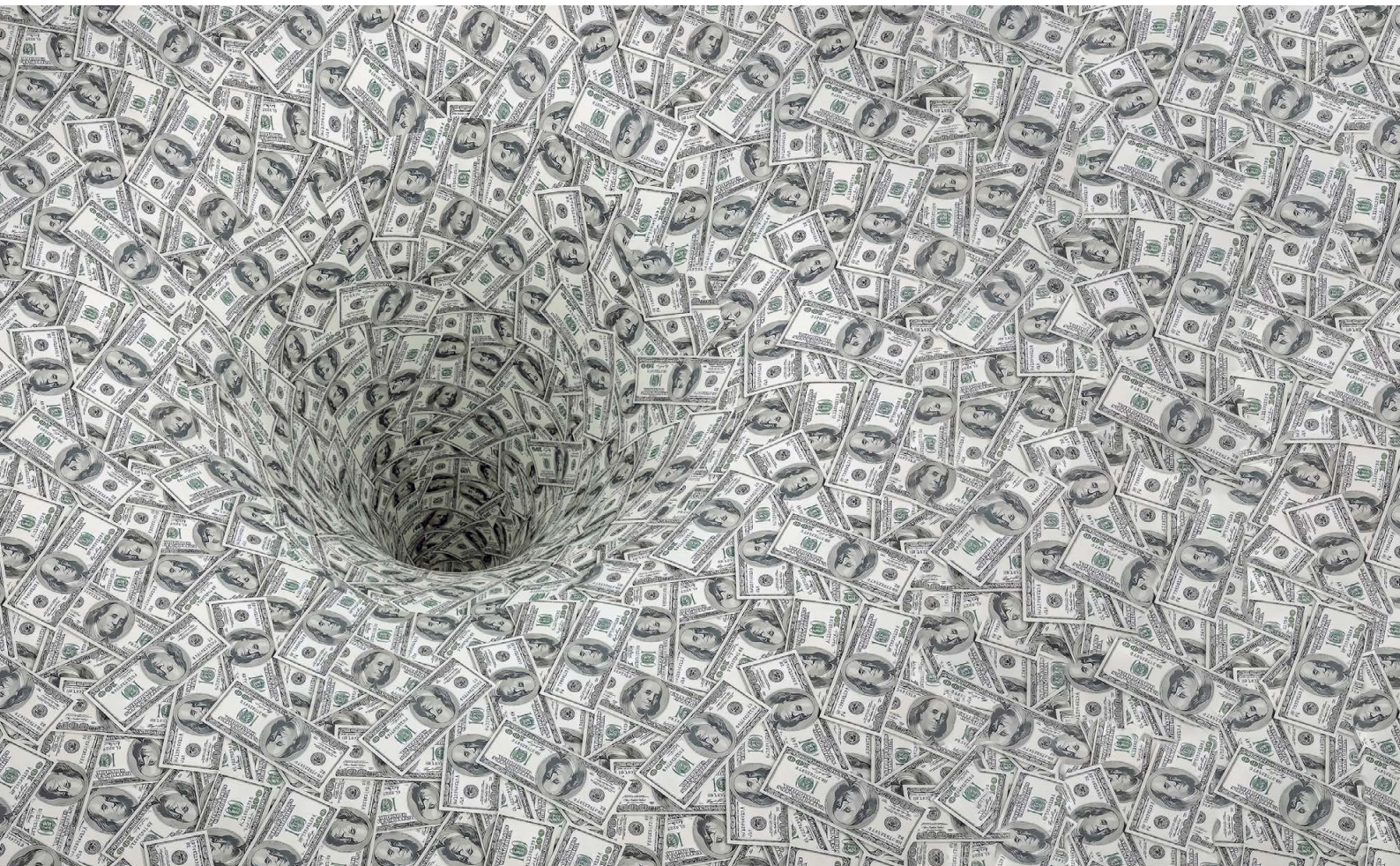
Juerg Adamek: This is an empirical question that is difficult to answer, given the complexity and endogeneity involved. It is not even straightforward to estimate the effect of austerity on output: While the immediate effect of fiscal consolidation is bound to be contractionary, the eventual total effect on output depends on many factors. For policymakers, what seems critical is to have credibility. On the one hand, a credible consolidation strategy—a plan that is ambitious, yet realistic—should be laid out. On the other hand, policymakers should credibly commit to following through with that strategy and to sustaining it over the medium to long term. Fiscal rules, such as the Swiss "debt brake," can be helpful here. To facilitate fiscal consolidation in a growth-friendly manner, improving the quality of fiscal policy is also important. This can be achieved, for example, by enhancing the efficiency of public spending or by focusing expenditure rationalization on categories with relatively small growth effects. While the quantitative effect of austerity measures is hard to estimate precisely, it is difficult to imagine how markets could fail to differentiate between credible efforts to ensure debt sustainability and the absence of any such efforts.

Should sovereign debt issued in domestic currency be considered safer than debt issued in foreign currency?

Andreas Müller: Issuing sovereign debt in a foreign currency adds complexity and risk to the deal. Sovereigns often have no choice but to do so, however, to obtain sufficient financing. Interestingly, the risks associated with sovereign debt can burden both the lender and the borrower. While these deals reduce currency exposure for the lender, they increase the likelihood that the borrower will default due to depreciation of the local currency. For instance, the Argentinian peso has lost nearly 90% of its value against the US dollar over the past five years, making the repayment of an Argentinian sovereign bond issued five years ago in US dollars nearly 10 times more expensive for the Argentinian government today. While currency exposure solutions do exist, they are rarely feasible on the scale of sovereign bond issuance.

Might governments strategically time their defaults?

Steven Ongena: While governments generally have the upper hand—since they typically lack bankruptcy courts and the chances of asset seizure are minimal—there is relatively little evidence of strategic defaulting. Default, in any form, is very costly. An exciting development concerning the seizing of assets is underway, as the US Supreme Court recently opened the door for creditors to seize over USD 300 million held in Argentinian overseas accounts. While this change is groundbreaking, the amount remains small compared to the overall sums at stake. Ultimately, the market delivers the hardest blow, as it can punish any efforts at strategic default by excluding the sovereign or by raising its borrowing costs on new issuances.



The Future

In countries where central banks hold substantial amounts of domestic sovereign debt, what are the benefits, costs, and long-term risks?

Michel Habib: This increasingly important issue highlights the complexity of the relationship between central banks and governments: Central banks are independent, they are owned by their governments, and they hold large amounts of their governments' liabilities. Excessive government debt on a central bank's balance sheet may reduce the bank's solvency and decrease the value of its liabilities, such as currency and commercial bank reserves; such a development would have very adverse consequences for the country's financial system.

How can sovereigns effectively balance their borrowing needs when their central banks are seeking to control inflation by increasing policy rates?

Steven Ongena: Inflation has many facets and trade-offs. On the one hand, it leads to negative economic effects by decreasing purchasing power, reducing real returns, and diminishing the value of savings. On the other hand, it can offer economic benefits, like promoting consumption over savings, potentially lowering unemployment, decreasing the real cost of existing financial borrowing, and reducing the actual value of current debt. These advantages and disadvantages of managing inflation make it vulnerable to political pressure. It's important to remember that central banks, while independent, are ultimately political creations, often owned and governed by the state, and surely operating within a political context. Central banks are positioned precariously when it comes to implementing effective measures against inflation without unintentionally supporting government debt issuance. Central bank independence cannot be taken for granted in today's political climate.

During Greece's debt crisis, contagion spread within the sovereign debt markets in the Eurozone. How reliable are the solutions that were implemented then to prevent a repeat of such risks?

Frederik Mellors: The Eurozone sovereign debt crisis, which peaked between 2010 and 2012, is arguably the most significant crisis in history. The haircuts imposed on Greek bonds were substantial and unprecedented for a developed economy. To prevent Greece from exiting the Eurozone, the Troika—the European Central Bank, the European Commission, and the IMF—had to intervene and restructure the economy by overseeing the banking system, implementing reforms, and providing loans. During this process, the authorities retroactively introduced a collective action clause for bonds issued under Greek law; until then, such bonds required unanimous consent from their holders to proceed with any restructuring. This amendment enabled a supermajority of bondholders to impose restructuring terms on all bondholders, including those who disagreed with the vote. In some cases, the haircuts exceeded 50%. While this was clearly a valid and necessary adjustment, it illustrates that, during a crisis, sovereign entities and supranational authorities can change the rules. Investors should keep this in mind when purchasing securities.

What role do sovereign wealth funds play in the sovereign debt market?

Steven Ongena: Sovereign wealth funds generally maintain a well-diversified portfolio of international sovereign bonds, each employing a unique strategy. For instance, the Norwegian Wealth Fund recently revealed holdings of USD 167 billion in US government bonds, making this its largest investment, accounting for 9% of the total fund. These entities naturally have a substantial political dimension. However, the largest holders of government bonds are typically central banks. The US Federal Reserve holds nearly 20% of all US Treasuries, while more than 40% of the assets of the *Banque de France* are tied to financing the French public sector.

How influential are private creditors in sovereign debt negotiations and in the resolution of disputes?

Michel Habib: Private investors can wield considerable influence. This is particularly true of "vulture" funds—such as the hedge funds that bought deeply discounted defaulted Latin American debt—whose insistence on full repayment when other creditors are willing to accept a haircut may jeopardize successful debt restructuring. Rising debt levels, increasing interest rates, and the possibility of a global recession may provide fertile ground for future vulture fund activity.

What are the driving forces behind recent efforts by some nations to reduce dependence on the US dollar, and how successful have they been?

Frederik Mellors: Countries and governments sanctioned by the US—such as Cuba, Iran, North Korea, Syria, Venezuela, and more recently, Russia—must find ways to bypass the US dollar in order to engage in international trade and secure foreign sovereign financing. However, other nations, like China, are becoming increasingly cautious about holding reserves in US dollars or euros, particularly after the Russian central bank's foreign reserves were frozen in early 2022. While the US benefits from the dominance of its currency, there are no superior alternatives readily available. The euro remains an incomplete fiscal project, and the Chinese government ultimately controls the renminbi. Striving to diversify away from the US dollar may be a commendable goal, but for many years to come, the US dollar will continue to maintain its position at the top.

Steven Ongena: The US has indeed used its dollar as a tool of foreign policy. Understandably, other countries do not want to be vulnerable to US pressure, whether justified or not. Over time, the US dollar will likely lose its central role, similar to the Spanish *Real de a Ocho* and the British Pound Sterling. The ongoing debt ceiling issues in the US create global uncertainty and ignite discussions about "sounder solutions." While nothing is entirely risk-free in absolute terms, on a relative scale the sovereign bonds and currencies of Australia, Canada, Denmark, Germany, Liechtenstein, Luxembourg, the Netherlands, Norway, Singapore, Sweden, and Switzerland appear to be safer than US Treasuries, and their currencies seem to be better managed than the US dollar. However, even among this group of countries, nuances do arise. And let's face the reality: Even Germany, the largest economy in this group, has a GDP that is six times smaller than that of the US. Currently, there is no clear alternative to the US dollar, and I don't expect any changes anytime soon.

Have previous sovereign debt bailouts increased the risk of moral hazard?

Michel Habib: To some extent at least, yes. Bailouts decrease the cost of default. The expectation of a bailout, therefore, can increase the attractiveness of default. The effect generally appears to be small, though. Default remains costly and tends to be resisted by the governments of borrowing countries. Even in the absence of moral hazard, debt cancellation—the ideal bailout from the borrower's perspective, at least—facilitates new borrowing, sometimes resulting in a return to the pre-bailout situation. For example, many of the countries that benefited from the Heavily Indebted Poor Countries (HIPC) initiative and the Multilateral Debt Relief Initiative (MDRI), which facilitated over USD 100 billion in debt cancellation for more than 30 low-income countries between 1996 and 2014, are once again deeply in debt.

Andreas Müller: When support from the IMF arrives, a sovereign nation is already in a dire situation, and no other investors are willing to intervene. IMF assistance typically comes with necessary conditions and reforms. Historical data demonstrates that such structural adjustments are not only essential but also advantageous over the long run. Data on disbursements and repayments for all IMF members over the past 40 years does not indicate an increase in the IMF offering countries a blank check. While there may be a case for moral hazard, I do not believe the IMF has started such a trend. The IMF is also not the only entity to support governments facing challenges in issuing debt. For instance, the European Central Bank faces growing criticism for supporting selected countries in the Eurozone when their bond spreads widen.

What are the essential factors for successful debt restructuring?

Juerg Adamek: The list is extensive. For the restructuring itself, it is important to have as a basis solid and transparent data and a thorough and prudent debt sustainability analysis. Clarity about the extent and nature of a debt challenge is a precondition for taking the right course of action. In addition, close coordination between the debtor and its creditors and among the creditors is important to overcome the collective action problem and to reach agreement on an effective solution. Moreover, debt restructuring must often be accompanied by a policy and reform program, such as an IMF program. Such a program helps the debtor country become more resilient and durably improve its macroeconomic situation. This, in turn, improves the country's capacity to repay its creditors in the future, thus making the country once again attractive to investors. A strong commitment toward the necessary policy adjustments and reforms—and the capacity to implement them—is, therefore, another important element of a successful restructuring.

What are the major challenges that policymakers will encounter in tomorrow's evolving sovereign debt market?

Steven Ongena: We need to consider the bigger picture here. Global government debt figures are on an unsustainable path. Sovereigns face many roles and challenges, and politics—whether in a fully democratic system or a harsh authoritarian regime—always plays a role. A weak sovereign lacks the backing of strong fiscal discipline, and limited financial capacity offers a poor solution to the next problem. This was evident in the recent past, when countries and regions more affected by the Global Financial Crisis were less equipped to respond to the initial COVID outbreak and experienced higher death rates. History will repeat itself and, at some point, we will reach a new breaking point.

Finally, what advice would you give concerning the sovereign debt market's increasing risks?

Frederik Mellors: One global trend in recent years is that the debt-to-GDP ratio tends to increase during adverse outcomes, but when positive outcomes occur, the ratio does not decrease. Governments and politicians have become increasingly proactive in managing economic cycles. In 2024, the US economy, for example, showed a real economic growth rate of 3% and an unemployment rate of 4%. Yet these full output and full employment figures come with a deficit-to-GDP ratio of over 6%—a figure typically seen at the deepest point of a recession. Given today's fragile budgetary environment, the next crisis may be particularly painful due to sovereigns' limited ability to respond to the financial market's reactions. Unfortunately, the burden of responsibility during the next downturn may fall on central banks, who could be required to monetize government borrowings. Balancing this demand and maintaining their price stability objectives may become all too difficult.

Steven Ongena: The rise in sovereign debt levels is a significant concern—particularly that of the US, due to its size and global influence. Any uncertainties in G7 economies will impact the global sovereign debt market, the broader financial sector, and ultimately the world economy. It is challenging to predict future events, but we must acknowledge that governments will likely not be able to maintain the same levels of service in judicial institutions, education, or healthcare that we are currently accustomed to. This is especially true when taking into account the future costs related to the aging population, climate change, and defense.

Michel Habib: Those governments considering extensive recourse to debt financing might do well to remember the Prophetess's words in Virgil's *Aeneid*:
"The gates of hell are open night and day;
Smooth the descent, and easy is the way:
But to return, and view the cheerful skies,
In this the task and mighty labor lies."[1)]

1) Virgil. (1997). The *Aeneid* (J. Dryden, Trans.). Penguin Classics. (Original work circa 19 B.C.)

Swiss Finance Institute

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