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**Enough Potential Repudiation: Economic and Legal Aspects of
Sovereign Debt in the Pandemic Era**

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Abstract*

This paper surveys recent economic and legal literature on sovereign debt in light of the COVID-19 shock. Most of the core theoretical contributions we review across the two disciplines hinge on immunity, and the sovereign borrower's consequent inability to commit to repay foreign creditors, as the distinguishing attribute of sovereignty. We highlight a persistent gap between sovereign debt theories grounded in immunity and empirical evidence that low- and middle-income country governments borrow far more than theory would predict. On the other hand, advanced economy governments, generally viewed as outside the scope of this literature before the euro area debt crisis, have shown themselves to be far more commitment-challenged than previously supposed. We conclude that the traditional split between a literature concerned with developing economy sovereigns that repudiate, and one concerned with advanced economies that don't, is no longer appropriate (if it ever was). We argue that shifting some attention away from immunity to a different attribute of sovereignty—authority, or the ability to make rules for domestic markets and negotiate market access terms with other sovereigns—could help bridge the gap between the two literatures, and between theory and experience.

JEL Codes: F30; F34; G15, K12

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1 Introduction

The year 2020 saw a record number of sovereign debt defaults—six. Two more countries defaulted in 2021. Eight defaults pack a lot of human misery, but eight looks small next to the dozens predicted at the start of the COVID-19 pandemic, when the U.S. Treasury market seized up and more than US\$80 billion fled the emerging markets, seemingly overnight. Talk of debt crises on a scale not seen since the 1980s was everywhere in March and April. It subsided as the year wore on and countries kept paying. By the end of 2020, countries across the national income spectrum had run up unprecedented levels of new debt at home and abroad (IMF 2021a, 2021b). Default fears gave way to oversubscribed “frontier market” bond offerings.

Debt performance after the COVID shock is the latest in a string of puzzles that animate our review of the sovereign debt literature at the intersection of law and economics. Its roots are in the debt crisis that began in 1982 and abated with the revival of emerging market bond markets in the 1990s. Its central preoccupation is external debt enforcement against sovereign governments. In this literature, sovereign immunity is the defining attribute of sovereignty; it limits foreign creditors’ ability to enforce debt contracts, and makes sovereign borrowers uniquely incapable of credible commitment. It should severely limit their ability to borrow and, more broadly, to contract. Nearly all contemporary writing in the field starts with the commitment problem—potential repudiation, after Eaton & Gersovitz (1981)—and must grapple with the gap between this foundational premise of sovereign debt theory and experience. Four decades’ worth of caveats notwithstanding, governments in low and middle income countries still borrow far more than theory would predict.

Public debt in advanced economies is another source of potential discomfort for sovereign debt theories. Wealthy governments have all the immunities of their counterparts in emerging and developing economies, but manage to borrow on a massive scale from residents and non-residents alike with practically covenant-free domestic law contracts. Their debt is not traditionally part of the sovereign debt literature. It inhabits another theoretical universe, where default and the associated enforcement problems were hardly mentioned before the euro area debt crisis of 2010-2015. The advanced economy debt literature mostly focuses on the conduct of fiscal policy and financial stability; it investigates complex political economy tradeoffs, not contract repudiation. The prospect of a Greek default came as a shock to the theory and policy foundations of this approach.

Creditor composition supplies the the usual justification for this split in theories of public debt: developing and emerging economy governments are assumed to borrow primarily from non-residents (hence, the temptation to expropriate), while advanced economy governments borrow from residents. Even if this assumption were accurate in the 1980s and 1990s, it no longer holds at this writing, when some large emerging markets borrow far more at home than abroad and advanced economies count foreign central banks and sovereign wealth funds among their largest creditors. It is commonplace for foreign investors to buy bonds issued domestically by emerging market countries, and often difficult for issuing governments to know whether external or domestic creditors hold a given instrument.

The poor fit between sovereign debt theories and empirical evidence to date led us to revisit and expand links between research on developing and advanced economies. Like Mitchener & Trebesch (2021), we find it hard to justify modeling advanced and developing economy debt in fundamentally different ways. We build on their paper, and on earlier surveys by Panizza et al. (2009), Das et al. (2012), Tomz & Wright (2013), Oosterlinck (2013) and Aguiar & Amador (2014, 2021) to propose a more coherent story of sovereign debt.

We shift away from the prevailing focus on limited commitment in contracting, and to a different attribute of sovereignty: governments' authority to make and enforce the rules for their debt markets, and their ability to negotiate access to and governance of international financial markets with other governments. Canonical sovereign debt models treat sovereigns as defective versions of corporate debtors, not as repositories of authority to charter corporations, license and regulate banks and investment funds, and, together, shape international financial architecture. Authority in the sovereign debt context can present as failure to commit—but also as unique capacity to mobilize liquidity and avoid default.

A sovereignty-as-authority perspective does not require separate theories for advanced and developing country debt. The two groups of debtors no longer occupy different theoretical universes, but rather different points along a spectrum. A middle-income sovereign with a large domestic debt market, swap lines with a major central bank, and access to foreign debt markets on favorable regulatory terms may be less prone to outright default than an advanced economy sovereign that has joined a financial and monetary union without an adequate safety net, and far less than any sovereign at odds with its counterparts that regulate major international payment networks. The immunity story is well-suited to arm's length contract analysis, where the parties are better off together, but the debtor cannot commit. The task is to design contracts around the debtor's flaw. In the authority story, power projection—political, economic, military,

or a combination, actual or potential—plays a key role. The analytical frame works with horizontal and hierarchical debtor-creditor relationships, which may be contractual, regulatory, or a mix.

The remainder of this review proceeds as follows: Part 2 is an overview of existing economic and legal theories of sovereign debt. In Part 3, we survey the relevant empirical research and offer new evidence of debt composition and crisis management. We conclude with implications and prospects for a more holistic approach.

2 Theory: Fragmented and Uncommitted

This Part starts with a short survey of canonical sovereign debt theories, premised on the borrower’s immunity and consequent inability to commit, that have shaped analysis of developing economy debt. We then point to a different strand of public debt models, most of which assume that debt is risk-free and enforcement is not a problem. These models typically address political distortions that lead to over-borrowing in advanced economies. Several recent papers bridge between the two sets of models; we consider them next. Lastly, we review the relevant legal literature, roughly split among three categories: contracts and bankruptcy, public international law, and financial regulation. This theory survey forms the background for our discussion of empirical evidence in Part 3, which leads us to conclude that the dichotomy between developing and advanced economy models is no longer useful.

2.1 Limited enforcement models

The theory of sovereign debt under limited enforcement builds on a seminal paper by Eaton & Gersovitz (1981). We follow Uribe & Schmitt-Grohé (2017) and Aguiar & Amador (2014, 2021), but do not present any of the formal models discussed by these authors. Unless otherwise specified, the results described here are based on models in which income is an exogenous stochastic endowment, borrowing and repayment decisions are made by a benevolent social planner maximizing the utility of a large number of identical households, lenders are risk neutral, and defaults wipes out all existing debt (100% haircut).

Eaton & Gersovitz (1981) address the phenomenon of “poor countries borrowing in international capital markets” (then mostly commercial banks). They stipulate that private creditors cannot penalize sovereign debtors directly for non-payment. They attribute this to the absence of bankruptcy-style judicial asset distribution, but the model assumes a stylized version of absolute immunity—no creditor rights whatsoever.

Sovereigns will repay only if they perceive non-payment as the costlier alternative, but creditors have few ways to influence the cost-benefit analysis except when debtors value future market access and creditors can effectively exclude defaulters from future borrowing.

This argument led to an emphasis on reputation in the international capital markets, which drew criticism on the grounds that permanent exclusion was not a credible threat (Kletzer, 1994) and that countries did not always need to borrow from foreign lenders to smooth consumption in response to output shocks (Bulow & Rogoff, 1989). These criticisms in turn led to the formulation of models that require the presence of direct sanctions. Whether by reputation or direct sanctions, the more general message that costly defaults are a necessary condition for the existence of a sovereign debt market (Dooley, 2000) remains at the center of the economic literature.

2.1.1 State-contingent debt

A social planner that can commit to repay would be able to issue state-contingent debt—for instance, a GDP-indexed bond that pays more when national income is high and less when it is low—and fully insure itself against any income shock. If the sovereign debtor cannot commit, but if creditors can seize k units of its GDP when it fails to pay, it would be able to borrow up to a debt limit that would depend on the size of k . The country would be able to smooth income shocks fully only if $k = y^{max}$ (where y^{max} is the highest possible income realization).

If creditors cannot seize part of the borrower's GDP and the only punishment is loss of reputation, a multi-period borrowing model is necessary for generating a positive level of sustainable debt. Baseline models with state contingent debt, where failure to pay existing debt damages the debtor's reputation and prevents it from borrowing in any future period, yield an equilibrium in which countries never default.

2.1.2 Non-state contingent debt

With state-contingent debt in equilibrium, countries never default and, if they were to default, they would do it when the economy is booming. In practice, governments are more likely to default during economic recessions (Tomz & Wright, 2007). For theory to track empirical evidence requires incomplete financial markets and the more realistic assumption of non-state contingent debt contracts.

In the canonical model, a sovereign exists for an infinite number of periods, and makes borrowing and repayment decisions when it receives a stochastic income y at the beginning of each period. For any given income realization, borrowing and repayment decisions determine the level of consumption. Following Eaton & Gersovitz (1981), the model assumes that only reputable (non-defaulting) sovereigns can borrow, and that output cannot be stored. Hence, sovereigns with bad reputations must set consumption equal to income ($c = y$), while reputable sovereigns can try to smooth consumption by borrowing abroad. The amount of non-contingent debt repayment due in period $t + 1$ is fully determined in period t .

Under these conditions, sovereigns will default if the benefits of higher current consumption outweigh the cost of lost consumption smoothing in the future. These costs determine a country's debt limit. For any level of debt, a negative income realization increases the probability of default. Higher debt stocks are associated with higher probability of default and, consequently, higher borrowing costs.

A simple model with non-state contingent debt appears to be consistent with the empirical finding that defaults and higher borrowing costs are associated with higher debt levels and lower GDP growth. There are, however, several challenges with the baseline formulation of the Eaton and Gersovitz model. First, as noted earlier, the assumptions of uncorrelated income shocks and permanent exclusion after default are unrealistic. Second, the reputational equilibrium completely breaks down if defaulters are allowed to lend in international markets (i.e., save abroad, Bulow & Rogoff, 1989). Third, quantitative models show that reputation alone leads to unrealistically low debt limits.

Modern quantitative models of sovereign debt dealt with the first set of challenges by allowing for serially correlated income shocks and probabilistic re-entry in the international capital market. In order to generate higher sustainable debt levels, most models also assume that defaults have a direct output cost, which is positively correlated with income realization. The latter assumption is particularly important because, besides increasing the level of sustainable debt, it reduces the probability of default in good states of the world.

Models with such characteristics do not have an analytical solution. Uribe & Schmitt-Grohé (2017) calibrate a standard model by assuming that, on average, countries can reaccess the capital market after 6.5 years and that GDP has a quarterly serial correlation of 0.93 with an unconditional standard deviation of 10%. They also choose a discount factor and an output loss function that leads to a quarterly debt-to-output ratio of 60% (corresponding to debt-to-GDP ratio of 15%), 2.5 defaults per century, and an average GDP loss of 7%, conditional on not having access to the international markets.

This calibrated model tracks real-world data with respect to the relative volatility of income and each of consumption and the trade balance, the correlation between income and each of consumption, trade balance and sovereign spreads, and the volatility of sovereign spreads. However, it departs from empirical observations in three key ways.

First, the baseline model generates lower debt ratios than those observed in practice. Moreover, as we elaborate in our review of empirical studies below, face value debt ratios are inappropriate benchmarks for theoretical models that assume very short-term one-period bonds, while theoretically appropriate debt measures are higher than face value debt ratios (Dias et al. 2014).

Second, the model understates expected sovereign spreads. Risk-averse lenders can help solve the puzzle, but only under the unrealistic assumption that defaults have a large effect on global risk-free rates (Uribe & Schmitt-Grohé, 2017).

Finally, in the standard model described above, reputation as such has no effect whatsoever on willingness to pay. Reputation only plays a role if default has a direct output cost. Even then, the quantitative role of reputation is small. A standard model with output cost and no reputational effect yields a debt-to-quarterly output ratio of 53%. Adding reputational effects increases the level of sustainable debt to 59%.

Output losses associated with default are a necessary element in any quantitative model of sovereign debt. Introducing output losses in quantitative models is also useful because it helps match model predictions with the real-world observation that default marks the end of a contraction and the start of a recovery (Levy Yeyati & Panizza, 2011). However, while these quantitative models must assume a causal relationship between default and an output contraction, empirical research has yet to establish such a causal nexus, as we elaborate in Part 3.

2.1.2 Theories of debt composition and debt crisis resolution

Although Eaton & Gersovitz (1981) expressly draw on bankruptcy research, models that build on theirs have little to say about debt structure or debt restructuring institutions. By the late 1980s, debt models had come to recognize the relevance of creditor attributes to debt repayment and debt crisis response. Newer models engage with the currency and maturity composition of sovereign debt, and with the impact of available debt resolution procedures on borrowing and repayment incentives.

When a government borrows in its own currency, it reserves the option of “liquidating” its debt by reducing the value of that currency in lieu of outright nonpayment (see, for example, Reinhart & Sbrancia, 2015). Ottonello & Perez (2019) observe that the share of local currency debt tends to increase during economic expansions and decrease during recessions. This behavior is driven by the fact that borrowing in local currency becomes more costly during recessions when countries have strong incentives to inflate it away. Along similar lines, Engel & Park (2020) show that more credible countries can issue more debt in local and foreign currency, but that the effect of credibility is stronger for local currency debt. Du et al. (2020) emphasize the role of monetary credibility in the presence of risk-averse lenders. They show that limited credibility leads to a high risk premium on local currency debt, which prompts sovereigns that would benefit the most from the insurance embedded in local-currency debt to borrow in foreign currency instead.

Short-term debt is associated with higher rollover risk and the likelihood of a sovereign debt crisis. Cole & Kehoe (2000) show that lengthening debt maturities ahead of a crisis, among other measures, reduces the probability of a self-fulfilling debt crisis. Instead of managing this risk, governments tend to amplify it by issuing more short-term debt when rollover risk is high. Arellano & Ramanarayanan (2012) explain this behavior by showing that short-term debt can reduce borrowing costs in times of crisis because it increases incentives to repay.

Aguiar et al. (2019) develop a model in which the yield curve is based on the evolution of expected default probabilities. In their environment, a negatively sloped yield curve signals that agents expect that default probability decreases over times. However, even if long-term debt is cheaper, “the shape of the yield curve is not an indicator of the benefits or costs of borrowing long-versus short-term” (Aguiar and Amador, 2021, p.130). It reflects the average cost of borrowing at different maturities, but not the marginal cost of altering debt maturity. Aguiar et al. (2019) show that borrowers have no incentives to issue long-term debt because a change in debt structure would alter the yield curve and increase the cost of long-term debt.¹

Short maturity and debt attributes that make it hard to renegotiate respond to creditors’ fear of debt dilution (Bolton & Jeanne, 2009). Bolton & Skeel (2004) suggest that an explicit seniority structure in bankruptcy, could mitigate this problem. Chatterjee & Eyigungon (2012) build a model that makes it possible to assess

¹ For a detailed discussion see Section 7.5 of Aguiar and Amador (2021). In a model in which the efficient debt structure is history dependent, DAVIS (2019) shows that there can be a decentralized equilibrium with long-term debt. The key driver of this result is that prices depend on full repayment and borrowing history. Unlike the standard literature which assumes that that only outright default is punished with a trigger to autarky, DAVIS’ model treats outright default and debt dilution in a parallel way

the distinct contribution of explicit and enforceable seniority, and show that it could lead to substantial welfare gains.

Sovereign debt crisis resolution takes a long time, and often fails to restore debt to sustainable levels. The literature on debt overhang shows that restructuring delays lead to deadweight losses (Krugman, 1988, Sachs, 1988). Theoretical explanations for protracted debt negotiations and sub-optimally small debt relief have emphasized the role of uncertainty about future ability to pay. Benjamin & Wright (2013) focus on shifts in the relative bargaining power of debtors and creditors. Along similar lines, Mariscal et al. (2015) suggest that, because future growth prospects are uncertain, creditors are unlikely to accept deep face value haircuts. State-contingent debt could easily solve the uncertainty problem. In this sense, long crisis resolution timelines are a function of incomplete contracting.

The 1980s debt crisis highlighted the importance of creditor attributes and, related, of their regulatory and accounting constraints. The fact that commercial banks did not have enough regulatory capital or loan loss reserves to absorb principal haircuts delayed crisis resolution, and led to sub-optimal renegotiation outcomes throughout the 1980s (see, for example, Sachs et al., 1987). Implementation of the Brady Plan and the rise of mark-to-market bond traders made bank regulation less salient by the mid-1990s; at the same time, they motivated an influential cohort of theories that predicted even more protracted delays from creditor coordination problems among diverse, dispersed, and unregulated bondholders far less susceptible to regulatory suasion than commercial banks.

A crisis in Mexico's domestic dollar-denominated bonds in 1994-1995 and the official liquidity injection that followed alarmed policy makers, and prompted a flurry of proposals that held center stage in policy and academic circles for at least two decades. The most influential among them split between advocating bankruptcy for sovereigns (for example, Sachs 1995, Krueger, 2002) and contract reforms to speed renegotiation and neutralize free-riders. An influential survey of crisis resolution options in Eichengreen & Portes (1995) is premised on the sovereign immunity (commitment) challenge and simultaneously preoccupied with bondholder coordination problems, both in its analysis of crisis dynamics (a run) and in its recommendations of bondholder committees and collective action (majority amendment) clauses in sovereign bond contracts, among others. Over time, bankruptcy proposals came to serve as a foil to motivate widespread adoption of successive versions of Collective Action Clauses (CACs).

A more recent contribution by Pitchford & Wright (2011) combines inter-creditor coordination and debtor commitment problems in a different way. They show that sovereign debtors' inability to commit to equal

treatment of its creditors can lead to further delays and free-rider litigation. In a similar vein, empirical work by Trebesch (2019) emphasizes the role of political instability in debtor countries in negotiation delays.

In sum, economic theories about sovereign debt assume a commitment-challenged social planner in a low- or middle-income country, who must borrow from foreign private creditors. The creditors write contracts and choose debt structure to maximize the cost of nonpayment and debt restructuring to the sovereign in an effort to mitigate the commitment problem when direct judicial enforcement and asset repossession are hard or unavailable. By design, such contracts delay crisis resolution, cause deadweight losses, and add to human misery *ex post*.

2.2 *Risk-free and political: Theories of advanced economy debt*

Until recently, most of the literature about public debt in advanced economies all but ignored the role of limited commitment and sovereign risk. Neoclassical social planner models of public debt build on Barro (1979) and suggest that governments should manage debt to limit tax distortions. Keynesian models add another dimension to the logic of tax smoothing. Instead of assuming that output is exogenous, they suggest that deficits and the consequent debt accumulation can help boost output during recessions.

The political economy literature assumes that borrowing decisions are made by self-interested politicians—not the benevolent social planner at the center of the sovereign debt literature—who borrow more than is socially optimal. This literature has emphasized four potential sources of excessive debt accumulation: (i) political budget cycles and rent seeking; (ii) intergenerational transfers; (iii) strategic manipulation; and (iv) common pool problems (Fatás et al., 2019, Yared, 2019, and Alesina & Passalacqua, 2016). Whereas the literature about sovereign debtors that repudiate features creditors capable of, and motivated to, discipline the immune debtor (including by refusal to lend), the literature about debtors that do not repudiate features agents of principals that are deluded (political budget cycles), voiceless (intergenerational transfers), coopted (strategic manipulation), or paralyzed by coordination problems (common pool), and therefore powerless to discipline the debtor *ex ante*.

2.3 *Bridging the gap*

Theories of rich country borrowing often look like a mirror image of the sovereign debt canon. They are preoccupied with complex decision-making and domestic political economy factors that are not central to

sovereign debt models applied to low- and middle-income countries.² At the same time, default risk is the central predicament of sovereign debt theories, but was commonly ruled out in the literature on advanced economy debt, at least until the euro area crisis beginning in 2010. That crisis prompted a change of perspective, and a wave of studies applying and extending traditional sovereign debt models with advanced economies in mind (see, for example, Ghosal & Miller, 2016).

A small but growing number of theoretical contributions have tried to bridge this gap and explicitly discuss default risk in models that focus on advanced economies or highlight political economy considerations in the discussion of sovereign debt in emerging and developing countries.

Collard et al. (2015) develop a measure of maximum sustainable public debt for advanced economies and compute theoretical probabilities of default for a sample of OECD countries. One key difference of their approach with respect to the traditional sovereign debt literature is that, instead of assuming that governments weigh the costs of debt service against those of default, they assume that governments always do whatever they can to avoid default, an assumption borne out in Mitchener and Trebesch (2021), observing “debt crises without default.” Ghosh et al. (2013) also estimate debt limits in advanced economies without formally modelling the government’s utility function.

De Grauwe (2012) was the first to point out that with the creation of the euro, several European countries started borrowing in a currency that they did not fully control, making them more vulnerable to self-fulfilling debt crises. Corsetti et al. (2014) and Bianchi and Mondragon (2018) formalize De Grauwe’s idea and show that monetary unions can amplify confidence crises. Models that consider the possibility of self-fulfilling crises within the euro area also include Conesa and Kehoe (2015), Lorenzoni and Werning (2019), and Bocola and Dovis (2019). Corsetti and Dedola (2016), instead, explore what can the central monetary authority (in this case the European Central Bank) do to reduce the vulnerabilities brought about by a monetary union.

Research in the wake of the euro area debt crisis focused on the “doom loop” that links government debt and financial institutions. Using credit default swap (CDS) rates on European sovereign and bank debt, Acharya et al. (2014) show that in 2008 bank bailouts led to an increase in sovereign CDS and that, in turn, higher sovereign CDS were followed by an increase in bank CDS. Gennaioli et al. (2014) develop an environment in which the main cost of default is the risk of a banking crisis, Bolton & Jeanne (2011) focus

² The influential survey by Elmendorf & Mankiw (1999) rarely mentions the world default. In their analysis, debt can have negative effect on growth because it crowds out private investment, not because of default risk.

on the collateral role of government bonds, and Farhi & Tirole (2018) build a theory that rationalizes the joint presence of domestic bank bailout and international support for a country's government debt.³ Delpla, and von Weizsacker (2010) were among the first to propose to split European debt into senior blue bonds (up to 60% of the issuing country GDP), which would be the joint liability of all EU sovereign issuers, and junior red bonds which would be the sole responsibility of the issuing member state, and potentially defaultable. Brunnermaier et al. (2016) argue that the senior tranche of a diversified portfolio of Eurozone sovereign bonds can be used to create European safe bonds (ESBies) that could be used to attenuate the doom loop without resorting to debt mutualization among euro area members.⁴

The literature that includes political economy considerations in traditional models of sovereign debt is still limited.⁵ Amador (2012) builds a model which assumes that repayment decisions are made by competing political groups. Self-interested politicians in his model have incentives to borrow too much like in traditional political economy models but also incentives to repay because they want to borrow in the future. The model addresses the traditional critique of Bulow & Rogoff (1989) to reputational models because the presence of competing political groups does not provide the incentives to stash-away resources in the post default period (as these resources could be appropriated by the next government). One problem of this modeling strategy is that it requires long-lived reputational costs of default. Aguiar & Amador (2011) also develop a growth model with political frictions and limited commitment. In the presence of limited commitment, high levels of debt increase the temptation to default and this has a negative effect on investment and growth. In this model, the presence of myopic and self-interested politicians who value current consumption delays debt reduction and reduces growth in countries with highly distorted political systems.

Acharya & Rajan (2013) develop a political economy model that can reconcile the experience of developing and advanced economies and does not require long-lasting reputational costs. In their set up, politicians are myopic and do not care about long-term reputation. Instead, they care about continuous access to financial resources in the short-run. If default prevents this continuous access, self-interested policymakers will have incentives to service the debt as long as cash inflows from new borrowing exceed outflows from old debt service. Acharya and Rajan (2013) also assume that, as the economy develops, self-interested politicians stuff domestic banks with government debt. High and growing debt in the banking system creates incentives

³ Mitchener & Trebesch (2021) have a more in-depth discussion and a historical perspective of the doom loop.

⁴ Legislative proposals for European sovereign bond-backed securities in 2018 stressed the imperative of removing regulatory disincentives to bank holding of any new "safe asset."

⁵ Somewhat paradoxically, there is a large literature that explores the implications of political distortions in fiscal policy (e.g., Tornell & Lane, 1999), but these distortions seem to end at the debt management stage.

to pay for the reasons discussed by Gennaioli et al. (2014). In sum, lenders lend because in the short-run, myopic borrowers repay to have continuous access to the international capital market, and in the long-run, use their authority over domestic financial systems in ways that make sovereign default very costly at home.

2.4 Sovereign debt as a legal matter

Law scholars who write about sovereign debt tend to concentrate in three areas: contracts and bankruptcy, public international and administrative law, and financial regulation. Much of the law literature engages with its counterpart in economics—proposing solutions to problems identified by economists, critiquing and elaborating their law-adjacent analysis—starting from the core tenets of the canon we described.

Debt contract studies hew most closely to the economics literature, accepting its diagnoses of commitment and coordination problems. Contract and bankruptcy writing concerned with sovereign debt *as such* is almost entirely dedicated to institutional design (including, for example, Buchheit and Gulati 2002, Hagan 2005, Feibelman 2007, Schwarcz 2016). A closely related line of research studies sovereign debt contracts not for their own sake, but as artifacts that can help explain contracts and contracting in general, sophisticated financial contracts, and the lawyers who draft them (for example, Choi & Gulati 2006, Gulati and Scott 2012, Scott, Choi & Gulati 2017). Studies of the sovereign debt contracting processes fit in-between: they address both sovereign debt management and financial contracting in complex political settings (for example, Gelpern, Gulati, & Zettelmeyer 2019).

Even when lawyers adopt economists' diagnoses of fundamental problems with sovereign debt, their distinct institutional focus can lead to different conclusions. For instance, enforcement and immunity are rarely binary propositions for law scholars: because direct judicial enforcement is often costly or unavailable in practice, they tend to study tradeoffs within a large portfolio of substantive and procedural tools that creditors might use to pressure *any* debtor, even a poor consumer (Weidemaier 2014, Verdier & Voeten, 2015, Block-Lieb & Weidemaier 2019). Different disciplinary perspectives can expose data gathering and disclosure gaps, as in the case of domestic and external debt, which lawyers traditionally defined by reference to governing law, and economists by creditor residence or currency denomination (for example, Gelpern & Setser 2005). Economists who consider legal variables (for example, Reinhart & Rogoff, 2009, p. 9) may use the concept of "jurisdiction" to describe both the act of judicial, legislative, or regulatory power projection over a contract dispute, and the law that governs the dispute, which may be chosen by the contracting parties *ex ante* or by the relevant authority *ex post*.

Lawyers and economists use different definitions of debt default (see for example, Ams et al 2019). Lawyers pay attention to breach of contract and to default conditions in the contract that trigger creditor remedies; economists focus on economic outcomes. Contractual events of default have legal consequences—late paperwork can trigger the right to accelerate principal repayment—even if they are economically irrelevant in their own right. In contrast, what counts as default among economists, such as net present value reduction in creditor claims, may not qualify as breach or default if contractual processes (eg, majority vote) were followed.

Law scholars tend to pay far more attention to the institutional context, including bank and payment systems regulations, public and private dispute resolution regimes, and the relevant transactional practices (for example, Waibel 2011, Lastra & Buchheit, eds, 2014). Put differently, lawyers tend to gravitate to the “how” of economists’ “what” – and may come up with distinct accounts of “why” (Panizza et al. 2009, Bi et al. 2016).

Writers in the public international law vein, such as Lienau (2014), and Goldmann and Bohoslavsky (2016), engage with political science and international relations theories dealing with sovereign debt. A core question in this strand of the literature—why do sovereigns repay?—would be familiar to economists who know the sovereign debt canon, but the starting proposition is that low-income and post-colonial governments overcommit and overpay for lack of a bankruptcy mechanism. Bankruptcy here stands for debt relief, not control over asset disposition envisioned in Eaton and Gersovitz (1981). These writers argue for a more accessible institutionalized restructuring regime invoking public legitimacy and democratic governance (compare, for example, von Bogdandy and Goldmann, 2013, King, 2016, Oosterlinck, Panizza, Weidemaier and Gulati 2021). Their argument overlaps with the efficiency case made by the Guzman, Ocampo, and Stiglitz (2016), among others.

Putting legal and economic theories of the same subject side by side—for instance, using the doctrine of Odious Debt—illustrates the contrast between them. Where Jayachandran and Kremer (2006) borrow the logic of odious (illegitimate) debt to design a more efficient sanctions regime, authors such as King (2016) and Lienau (2014) come at the same problem from a distributive justice perspective. The focus on distributive justice among public lawyers does lead to some thematic overlap with the economics literature: both frame sovereign debt as a north-south problem. Law scholars who write about sovereign debt in contract and bankruptcy terms do not distinguish between advanced and developing economies (for example, Mooney 2012).

Advanced economy debt as a subject had all but vanished from legal research agendas in the latter half of the 20th century. While economists and finance scholars continued to write about fiscal policy and treasury debt markets, their counterparts in the legal academy mentioned these in passing, if at all, until the euro area debt crisis of 2010-2015 and the high-profile political battles over the US debt limit during the same period. Writing about contemporary US government debt as a constitutional problem or as a systemically important regulated financial market and part of the global financial infrastructure, is only just emerging.

As in economics, bringing advanced and developing economies under a single theoretical paradigm is challenging. Scholars such as Pistor (2013) may accept commitment and coordination as problematic in sovereign debt, but are far more skeptical of mainstream contractual solutions. In Pistor's (2013) *Legal Theory of Finance*, sovereign borrowing fits within a broader international financial hierarchy, which "solves" the commitment problem with power structure. Governments at the top have no trouble mobilizing liquidity; debtors lower down in the sovereign pecking order have no access to liquidity and must repay by virtue of their subordinate position in the global financial system, as distinct from individual contract enforcement. Governments at the top and the bottom of the hierarchy may have identical contracts and immunities as a formal matter, but legal constraints are relaxed for those at the top, and bind those at the bottom.

3 Sovereign Debt and Sovereign Default: Empirical Evidence

This Part describes the evolution of sovereign debt stocks and their composition in developing economies. We highlight challenges related to measuring sovereign debt and sovereign defaults, describe new evidence on the timing of sovereign default episodes, and highlight key elements of the debt restructuring process.

3.1 Debt levels

Kose et al. (2020) describe the evolution of global public debt over the past 50 years and identify 4 waves of debt. Three of them ended in financial crises, the fourth is ongoing. Figure 1 plots the evolution of the public debt-to-GDP ratio in advanced economies (left panel), emerging, and developing economies (right panel) over the last 30 years. Three trends are evident: (i) While in the early 1990s debt ratios were higher in developing and emerging market economies, public debt started increasing rapidly in advanced economies after the global financial crisis that began in 2007. In developing economies, the average and median debt-to-GDP ratio is much lower now than what it was in the early 1990s, even after it started increasing after 2010 and after the COVID shock (for a discussion of the evolution of public debt post

COVID, see Kose et al., 2021); (ii) Debt ratios are more dispersed in advanced economies than in emerging and developing economies; (iii) Large advanced economies tend to have much higher debt ratios than smaller advanced economies (compare the weighted average with the simple average). In emerging and developing economies, instead, large countries tend to have lower debt ratios than smaller ones.

Figure 1 reports data on the face value of sovereign debt. Face value data are misleading because they only measure the undiscounted value of future principal repayments. Instruments that give different weights to principal and interest payments can have identical cashflows and different face values. Dias et al. (2014) compute debt ratios based on a zero-coupon equivalent (ZCE) face value. They find that for several emerging market countries, ZCE debt ratios are larger than face value debt ratios. This distinction is important for two reasons. First, traditional accounting generates incentives for gaming debt to achieve pre-fixed debt targets. Second, as ZCE calculations tend to yield higher debt ratios, they amplify the disconnect between the maximum debt levels obtained in standard quantitative models (which assume one-period zero coupon bonds) and observed debt levels.

3.2 *Debt composition*

Figure 2 plots the composition of public debt in developing and emerging economies by focusing on the share of external public debt (defined as debt owed to non-residents). We observe three trends: (i) The share of external debt has fallen markedly over the last thirty years; (ii) Large developing economies tend to rely less on external debt (compare the weighted average with the simple average); (iii) Low-income economies have higher external debt shares than middle-income economies.

Figure 2 uses data on total public debt from the IMF and data on long-term external debt sourced from the World Bank's International Debt Statistics (IDS). There are at least three caveats with this approach: (i) The external debt data reported by IDS is unlikely to include all bonds issued domestically and then bought by foreign investors; (ii) The two datasets do not necessarily refer to the same level of government; (iii) IMF public debt data refer to total public debt, but IDS data only include information on long-term debt. Arslanalp and Tsuda (2014) collect detailed data on the holders of government securities issued by 15 emerging markets over 2004-19 and find much larger external debt shares than what reported by IDS (Panizza & Taddei 2020).

The type of external creditor also matters. Lending by private creditors tends to be more expensive, less stable, and more procyclical than multilateral lending (Galindo and Panizza, 2018). Repayment practice

favors some creditors over others, creating a *de facto* priority system with multilateral creditors at the top and official bilateral credits subordinated to all private debt (Schlegel et al., 2019). As a result, official interventions in crisis tend to benefit private creditors, not the distressed sovereign (Gourinchas et al., 2020, Jeanne and Zettelmeyer, 2001). Data on the composition of external debt show that private sector lenders have become relatively more important, going from about 10% of the total in 1970 to 60% of the total in 2019 (Figure 3).⁶

Until recently, there was a close match between residence of the lender, currency of denomination, place of issuance, and governing law, with most debt owed to non-residents being denominated in dollar or other hard currencies (this is the original sin problem described by Eichengreen et al., 2005, 2007) and issued abroad under New York or English law. Over the past decade, a limited number of countries started selling local currency, domestically issued, local law debt to non-residents (Arslanalp and Tsuda, 2014, Shin & von Peter, 2021, and Du & Schreger, 2021). In other words, domestically issued debt tends to remain in local currency and under local law, and debt issued abroad tends to remain in foreign currency and with foreign law. What has changed is the presence of foreign investors who buy debt issued in domestic markets in low and middle-income countries. Data for the 18 emerging economies covered by Arslanalp and Tsuda (2014) show that the share of external public debt denominated in local currency has increased from approximately 11% in 2004 to 35% in 2020 (peaking at 40% in 2017). Data for a larger sample of 24 emerging market countries indicate that the share of local currency external debt went from less than 10% in 1990 to about 20% in 2019 (Shin & von Peter, 2021).

With respect to maturity, emerging and developing economies tend to borrow short; moreover, the share of short-term debt in their debt stocks tends to increase during crisis periods (Broner et al. 2013). Maturity as a source of vulnerability may be understated in the literature. Most empirical work focuses on contractual maturity (usually the date of last principal repayment), but debt contracts with similar contractual maturity can have different cash flow profiles. The ZCE weighted average life of the debt stock developed by Tomz and Wright (2013) yields maturities that are significantly shorter than contractual maturity.

Studies of non-financial debt contract terms in the late 1990s and early 2000s had focused almost exclusively on majority amendment CACs in New York and London markets. Early influential studies assumed a high degree of contract standardization within major markets (for example, Eichengreen &

⁶ Figure 3 is likely to underestimate the true private sector share because, as mentioned above, IDS data do not include all domestically issued bonds held by non-residents. Actual bilateral loans could be higher because statistics on official lending by China tend to be incomplete (see for example Horn et al., 2019). For an analysis of the implications of these new bilateral creditors for debt sustainability analysis, see Alfaro and Kanczuk (2019).

Mody, 2004). Contract reform, including new model CACs and *pari passu* (equal treatment) clauses, has contributed to variation across and within sovereign debt stocks, partly attributed to transition. Newer research highlights a variety of contract terms and formulations even within the subset of standardized tradable foreign bonds, potentially affecting debtor-creditor, and more significantly, inter-creditor bargaining in debt distress (see, for example, Carletti et al. 2020). Model terms are routinely customized, and with the exception of bonds sold to the general public, the underlying contracts are rarely disclosed.

Motivated by the emergence of Chinese institutions as the largest bilateral creditors to sovereign borrowers, particularly in low-income countries, a study of 100 Chinese sovereign loan contracts made between 2000 and 2020 has identified muscular commercial safeguards and terms that give creditors additional leverage over borrowing country policies. These include revenue accounts that function as cash collateral, cross-default terms that link the interests of multiple Chinese entities in the same country, expansive confidentiality clauses, and promises to keep the debt out of coordinated international restructurings (Gelpern et al. 2021). Some of the contract terms may be hard to enforce, and are in tension with China's and the debtors' other international commitments. Analysis of a benchmark sample comprising all project-related contracts of Cameroon during the same period suggests that such contract practices for the most part are not unique to Chinese lenders, although they appear to use them more heavily.

This limited window into official and quasi-official lending supports the intuition that creditors use all economic, political, and legal tools available to them creatively to maximize repayment, including effective repayment priority over other creditors. This is not a new phenomenon, nor one that is limited to contracts with sovereign debtors, although it is more theoretically salient in their case. Historians (for example, Flandreau & Flores, 2009) document similar efforts by private creditors and imperial governments in the 19th century to design contracts and market institutions to bolster debtor discipline, colonial debt liquidity, and ultimately their own repayment prospects.

3.3 *When do countries default?*

Tomz and Wright (2013) and Mitchener and Trebesch (2021) describe four major waves of default episodes during which more than half of all developing countries were in default: the 1820s, the 1870s, the 1940s, and the 1980s. The fact that default episodes tend to be clustered indicates that external factors are likely to be more important than country-specific idiosyncratic shocks. Longstaff et al. (2011) and González-Rozada and Levy Yeyati (2008) test this hypothesis and find that a large share of sovereign risk is driven by global

factors, and moreover that the role of global factors has become more important in the last 20 years.⁷ Country-specific fundamentals also matter, and there is evidence that default episodes are correlated with political instability (Van Rijckeghem & Weder, 2009, and Cuadra & Saprizia, 2008), debt structure (maturity and currency composition), and debt levels. D’Erasmus et al. (2016) show that there is a non-linear relationship between debt levels and sovereign risk, with sovereign risk becoming particularly steep when a country approaches its debt limit,

Theory predicts that defaults should happen when the economy is contracting. However, in a study of more than 175 default episodes, Tomz and Wright (2007) found that in about 40% of cases countries defaulted when output was above its long-run trend. They also found that the average output gap at time of default was only -1.7%. There are two potential issues with these estimates. First, measuring output gaps in the context of emerging market economies is challenging because output volatility is more likely to be driven by shocks to trend growth than fluctuations around a stable trend (Aguiar & Gopinath, 2007). Second, the standard Hodrick-Prescott detrending technique used by Tomz and Wright (2007) is often problematic. Panizza (2021) uses the detrending strategy suggested by Hamilton (2018) and finds default patterns that are closer to those predicted by standard quantitative models.

Borensztein et al. (2006) suggest that “sovereigns may sometimes delay debt-restructuring too long” (p. 236). This policy is costly because it requires drastic adjustment policies that inflict substantial pain on the population while, at the same time, not restoring debt sustainability. Along similar lines IMF (2013) stated that “debt restructurings have often been too little and too late, thus failing to reestablish debt sustainability and market access in a durable way.” Delayed defaults are not only costly for the borrowers. They are also costly for lenders, because they reduce both ability and willingness to pay.

There are two possible explanations for delayed defaults. The first is based on the idea that creditors punish countries that default strategically, but forgive “unavoidable” defaults (Grossman & van Huyck, 1988). Countries may thus want to signal that they are good debtors by going through a significant amount of pain (Alfaro & Kanczuk, 2005, Borensztein & Panizza, 2008). The second explanation assumes myopic and self-interested politicians. If defaults are politically costly, self-interest politicians will have an incentive to gamble for redemption to stay in office. These two explanations have different policy implications. If policymakers delay default in order to signal that the country is a good debtor, then the solution implicates

⁷ Du & Schreger (2016) show that local currency spreads are more stable and less sensitive to global factors than foreign currency spreads.

reform of the international financial architecture. If the problem is self-interested politicians who do not maximize social welfare, the solution needs lies primarily with domestic reforms.

Most of the empirical literature classifies default events using binary definitions similar to that of Winkler (1933).⁸ However, there is a growing consensus for moving away from this binary definition of default (Meyer et al., 2019). Countries default in different ways, and the way in which a country defaults has important implications for post default economic outcomes. One key difference is between interim restructurings that fail to restore debt sustainability and decisive restructurings that mark the end of a default spell (Reinhart & Trebesch, 2016). Restructurings also vary across other dimensions, such as coerciveness (Enderlein et al. 2012) and timing relative to default (Asonuma & Trebesch, 2016).

The case of Colombia in the 1980s illustrates the danger of using binary classifications of default. While most empirical studies consider Colombia as the only large Latin American country that did not default in the 1980s, Caselli et al. (2021) show that Colombia conducted a series of debt reprofiling exercises similar to those of the Latin American countries that are normally considered as having defaulted in the 1980s. The key difference is that Colombia leveraged extraordinary political support from the United States government and the Federal Reserve to restructure its debts without an IMF program, and succeeded at presenting its debt exchanges as voluntary to the public and market participants, even though they implied large net present value losses for its bank creditors.

A final issue is whether researchers should only focus on debt crises that result in nonpayment or a similarly observable formal default under the debt contract (Pescatori & Sy, 2007 and Mitchener & Trebesch, 2021). Such formal default may not be economically significant—just as economically significant events, including amendments with CACs, may not qualify as breach or default under the debt contracts. On the other hand, third-party reactions to formal default and negotiated debt relief, including ratings downgrades and credit default swap triggers, can have a far greater economic impact than formal default (Ams et al. 2019). On balance, these factors weigh against limiting the definition of crisis or default to formal breach or failure to perform a contract.

⁸ According to this definition, a country enters default when it fails to pay interest or principal on the stipulated date or negotiates a rescheduling of principal and/or interest on terms less favorable to the creditors than the original contract (Beers & Chambers, 2006).

3.4 *Haircuts and debt relief*

How do investors fare in the aftermath of sovereign defaults and what type of debt relief is associated with default episodes?

Benjamin and Wright (2013) and Cruces and Trebesch (2013) find average haircuts that range between 35% and 40%.⁹ Focusing on a longer sample, Meyer et al. (2019) find a mean haircut of 44%, with higher haircuts in the pre-1970 period and lower in the more recent period. There is, however, large dispersion in haircuts across default episodes.

Mariscal et al. (2015) find a skewed and twin-peaked haircut distribution, and conclude that restructurings with no or limited face value reduction often fail to restore debt sustainability. Reinhart and Trebesch find a similar result (2016). Sturzenegger and Zettelmeyer (2007) and Benjamin and Wright (2013) also show that debt relief is often significantly lower than creditor losses, and that countries often exit default with higher debt ratios with respect to the moment in which they enter default.

The fact that countries exit default with higher debt ratios challenges theories based on the idea that countries default strategically. However, it also highlights yet another problem with focusing on the face value of debt (see Section 3.1 above). Debt restructuring can lead to a large drop in the net present value of expected debt payments, for instance, in a long-term rescheduling, without affecting its face value.¹⁰ If the borrower's GDP contracts in the meantime, we would observe an increase in the debt-to-GDP ratio that may not reflect the debt relief provided. Besides leading to an underestimate of actual debt reduction, debt restructuring techniques with large NPV losses but limited face value reductions lead, immediately after the exchange, to low market prices that overestimate sovereign risk (Sturzenegger & Zettelmeyer 2007). Apparent market preference for rescheduling is thus puzzling because, by adopting alternative strategies (such as face value reduction or shorter maturities with higher interest), countries could get more debt relief without increasing investor losses.¹¹ Sturzenegger & Zettelmeyer (2007) suggest that this behavior is probably driven by the fact that countries fear price penalties or disruptions in market re-access after a debt restructuring. Institutions like the IMF are well-placed to serve as safety net in the event of temporary

⁹ It is now standard to measure haircuts using the approach developed by Sturzenegger & Zettelmeyer (2006).

¹⁰ This would be the case if the restructuring consists of a maturity extension with low interest rates but unchanged face value.

¹¹ For a theoretical discussion of why an efficient debt restructuring shortens maturity, see Section 7.5.3 of Aguiar and Amador (2021).

market disruption and, by improving access to credit when a debt restructuring restores debt sustainability, could lower its social cost.

Another line of empirical research focuses on long term returns associated with investing in emerging market bonds. Eichengreen & Portes (1989) study returns on bonds issued in New York in the 1920s and find that ex-post returns on international dollar bonds were substantially higher than returns on U.S. Treasury securities. Klingen et al. (2004) find that returns on sovereign debt issued by emerging and developing economies over 1970-2000 were similar to the return on US Treasuries, but with substantial over-time variance, Panizza (2022) finds that average excess returns were substantial over 2000-2020. Lindert & Morton (1989) find no excess returns over US treasuries over 1850-1983. Studying an even longer period (1815-2016), Meyer et al. (2019) find a very large excess return (4%) over US and UK government bonds.

3.5 *Debt enforcement and the debt restructuring process*

The enforcement landscape has changed since the early years of modern sovereign debt literature, which assumes that creditors have no legal recourse whatsoever. In line with theories that emerged in the mid-1990s, Schumacher et al. (2021) show that creditor lawsuits have become more frequent in recent decades, owing in part to the change in creditor composition, and that this has increased the cost of default for sovereign debtors.

A growing number of studies observe discrimination among creditor groups during default episodes. Examining three case studies at the turn of the 21st century, Gelpert & Setser (2005) suggest that foreign and domestic creditors rarely receive equal treatment even when they hold the same contracts at the outset. Sovereign debtors have used information asymmetries, as well as regulatory, market, and police powers to separate creditors into different instruments, to make side payments to a subset of creditors, or a combination of tools to produce politically acceptable loss distribution in a debt crisis. The ability to discriminate between domestic and foreign creditors in turn can have an effect on willingness to pay (Broner et al, 2010). Erce's (2012) study of discrimination between domestic and external creditors in 10 default episodes between 1998 and 2006 shows that differences in behavior are correlated with the size and health of the domestic banking sector, and with domestic firms' need to access international capital markets. Along similar lines, Erce & Malucci (2018) find that domestic law bonds defaults are more likely in countries with small financial markets and that foreign law bonds default are more likely in countries with a small import

sector. Enderlein et al. (2012) moreover show that democracies tend to be more coercive with external creditors.

Here as in the preceding examples, government borrowers do not behave merely as commitment-challenged firms. They use sovereign authority to marshal resources to avoid default, to default selectively, and to allocate limited resources among creditor groups to their political and economic advantage. Authority and resources vary widely among governments, with implications for their crisis management capacity.

3.6 *Costs of default*

Empirical work on the costs of sovereign default has focused on several economic outcomes emphasized by the theoretical literature, such as access to the international capital market, GDP growth, and trade restrictions. Cross-country regressions suggest that defaults are associated with a short-term decrease in GDP growth of approximately 2 percentage points and a long-lasting level effect (Sturzenegger, 2004, Borensztein & Panizza, 2009, and Esteves et al. 2021, Caselli et al., 2021). Output costs of 2-3% are standard in calibrated models of sovereign debt and default (for example, Arellano, 2008).

One problem with these cross-country studies relates to the fact that, as shown above, defaults tend to happen in periods of low growth. Using high frequency data, Levy Yeyati and Panizza (2011) show that output collapses tend to precede defaults, and that output starts growing after the quarter in which the default took place.

The manner and outcome of debt restructuring factor into the relationship between default episodes and recessions. For example, less conflictual restructuring processes and “decisive” debt restructurings tend to have lower output costs (Trebesch & Zabel, 2017, Asonuma & Trebesch, 2016, Reinhart & Trebesch, 2016, and Asonuma et al., 2019). Forni et al. (2016) show that the positive growth effect of “final” restructurings is linked to the fact that they markedly reduce the net present value of debt.

The empirical and theoretical literature on the output costs of default suffers from its inability so far to specify the mechanism by which default can affect GDP growth. The most promising explanation is the transmission of sovereign risk to banks and the real sector, as discussed in Part 2 above. However, the literature is not clear on whether the risk of default or the event of default generates these costs. In other words, when sovereign risk is already very high, is there an actual cost to validate this risk and default? Mendoza and Yue (2012) suggest that after default, domestic firms face problems importing intermediate

outputs and that this has a negative effect on productivity. Arteta and Hale (2008) show that after sovereign default, domestic firms lose access to the international capital markets.

Lastly, the empirical literature is mixed with respect to the central idea of capital market reputation as the driver of sovereign willingness to repay. While there is evidence of capital market exclusion in the immediate aftermath of a default, most countries regain access rather quickly (Gelos, Sahay, & Sandleris, 2011), with global credit cycles as the more important determinant of re-access than particular features of individual default episodes. Focusing on borrowing costs, Eichengreen & Portes, (1986), Flandreau & Zumer (2004), and Borensztein & Panizza (2009) find short-lived effects. Along similar lines, Caselli et al. (2021) show that Colombia did not obtain long-lasting reputational gains by honoring its debts when all other Latin American countries defaulted. However, Ozler (1993) finds that countries that defaulted in the 1930s or in the postwar period faced slightly higher spreads in the 1970s, Cruces & Trebesch (2013) find that reputational costs are increasing with the size of creditor haircuts, and Catao & Mano (2017) suggest that the costs of default are persistent.

Conclusions

On September 14, 1982, Citibank Chairman Walter Wriston published a soon-to-be-infamous op-ed column in the New York Times:

If we had a truth-in-Government act comparable to the truth-in-advertising law, every note issued by the Treasury would be obliged to include a sentence stating: 'This note will be redeemed with the proceeds from an identical note which will be sold to the public when this one comes due.' ... When this activity is carried out in the United States, as it is weekly, it is described as a Treasury bill auction. But when basically the same process is conducted abroad in a foreign language, our news media usually speak of a country's 'rolling over its debts,' with the implication that the world is about to go bankrupt and take the banking system down with it. (Wriston, 1982)

The world did not go bankrupt and the banking system was saved, but at the cost of a lost decade of growth and human suffering in large parts of the developing world. Wriston's column was later mocked as cynical, naïve, or both, but his opening analogy to the US Treasuries is revealing. The difference between poor countries' unenforceable debts and the world's premier risk-free assets is thinner than most would admit.

Formally, all sovereign debtors are immune. Practically, when developing economy debts threaten to bring down advanced economy banks, immunity is rather beside the point.¹²

We started our review with a COVID-era puzzle: the avalanche of sovereign debt defaults and a 1980s-level crisis that has not come. They may come yet. But the sovereign debt literature has had to grapple with versions of this puzzle for four decades. Commitment-challenged governments in low and middle-income countries persist at borrowing far more than theories of their debt would predict. Advanced economy governments, exempted until recently from theories impugning their commitment, have shown themselves in the meantime far more capable of stiffing their creditors than theories applicable to them had supposed. At this writing, Ukraine insists on making its Eurobond payments as the world watches the systematic destruction of its productive capacity, streaming in real time. For its part, Russia threatens to sue over its right to pay its foreign debts in the face of sanctions. On the other hand, news stories of US debt ceiling standoffs and stalled attempts to launch a market in euro area sovereign debt appear regularly in the financial press. Sovereignty—conceived in terms far broader than immunity, enforcement, or financial market reputation—seems to be the point.

We have argued that applying different theoretical frames to developing and advanced economy sovereigns is hard to justify and potentially damaging in today's complex and integrated world. Theories inform policies, attitudes, and research agendas. Commitment fears can set off a scramble for collateral in low-income countries and reject the possibility of default in the euro area. Vulnerable countries can exacerbate their debt problems when they try too hard to signal commitment to foreign creditors and make their debt stocks progressively more fragile with shrinking maturities, higher interest rates, and rigid indexation (see, for example, Cole & Kehoe, 1998, 2000).

Advanced and, increasingly, emerging market governments go to great lengths to avoid outright default in practice. Outright default is becoming more costly with domestic financial systems on the line and more lawsuits abroad. At home, governments project authority over institutions and markets designed to support demand for their debt to mobilize liquidity and, when all else fails, to redefine default. Nearly two-thirds of the debt issued by emerging market governments since January 2020 ended up in the hands of domestic banks (IMF 2021b). Before dismissing such news as evidence of backwardness, we must at least acknowledge that crude forms of financial repression—stuffing banks with government paper or inflating debt away—are points on a governance spectrum that also includes capital, liquidity, and collateral rules in

¹² Exposure to top 33 debtors stood at 166% of U.S. bank capital in 1982, 47% in 1989, and 33% in 1992 (Cline 1995).

advanced economies. Abroad, governments use their authority to negotiate favorable market access, emergency liquidity, and a more robust safety net as part of the international financial architecture. International financial institutions, central bank swap lines, favorable regulatory treatment, official and quasi-official lending are some of the already-familiar tools in a growing repertoire available to sovereign debtors alone.

Meanwhile, new public, private, hybrid, and mixed-motive creditors are gaining sovereign debt market share. Going forward, the tools and tradeoffs implicated in projecting authority to avoid default are bound to get more complex, and merit further study.

Can sovereign authority turn unenforceable debt contracts into safe assets? Under what circumstances could a government declare that its debt “shall not be questioned” and make it so?¹³ How would we know the difference between a temporary transformation—a Cinderella moment—and one that was durably “Hamiltonian”? Governments’ response to the pandemic suggests potential answers to such questions, but these are neither definitive nor complete. We continued to see extreme aversion to outright default among emerging market and low-income governments. Freer capital flows enabled governments across the national income spectrum and around the world to reap collateral benefits from unprecedented stimulus in advanced economies. A more diverse creditor base helped countries mobilize resources and, at least in theory, created more opportunities for managing debt distress in light of creditors’ different time horizons, political, regulatory, and accounting constraints. Bigger and better-capitalized domestic financial sectors in emerging economies absorbed an enormous amount of new debt to meet pandemic-era needs. In all, sovereign borrowers seem far better positioned to avoid default and far more motivated to do so. Nonetheless, the same recent developments can amplify countries’ vulnerability to sudden stops, exacerbate coordination problems, and feed the bank-sovereign doom loop. If default is deferred and not averted altogether, far more disruptive crises may lurk around the corner.

Perhaps a more useful lesson, insufficiently absorbed in the euro area crisis and the 2020 disruptions in the US Treasury markets and beyond, is that the safety of government debt in advanced and emerging economies alike is not only (or even primarily) a matter of economics. Sovereign debt is a political institution, a projection of government authority; it is embedded in the fabric of society, and is only as healthy.

¹³ The U.S. Constitutional formulation is instructive: “The validity of the public debt of the United States ... shall not be questioned.” Reflecting the provision’s post-Civil War context, the next sentence effects a repudiation of Confederate debts. (U.S. Constitution, XIV Amendment, Sec. 4)

These are hard interdisciplinary research questions that reach beyond the scope of this review, implicating political science, international relations, history, sociology, economics, finance and the law. They are worth pursuing to help more governments move closer to the stable side of the sovereign debt spectrum.

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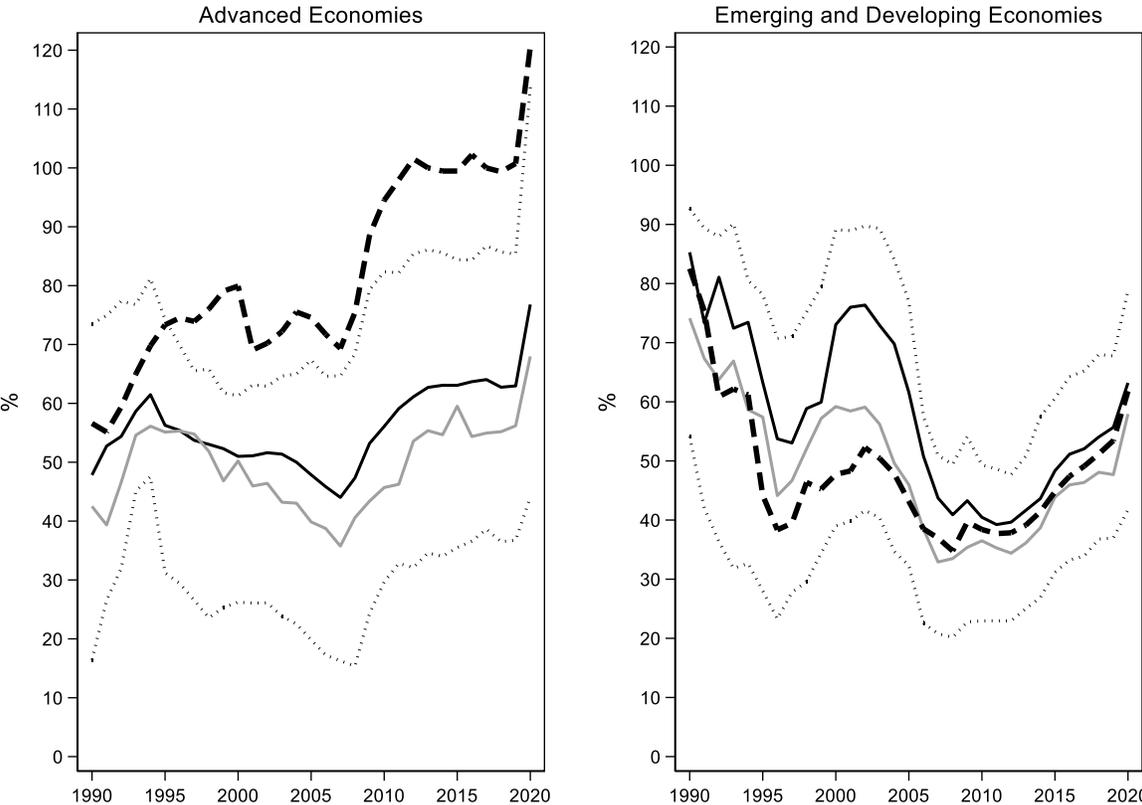
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Figure 1: Debt-to-GDP ratio in advanced and emerging and developing economies

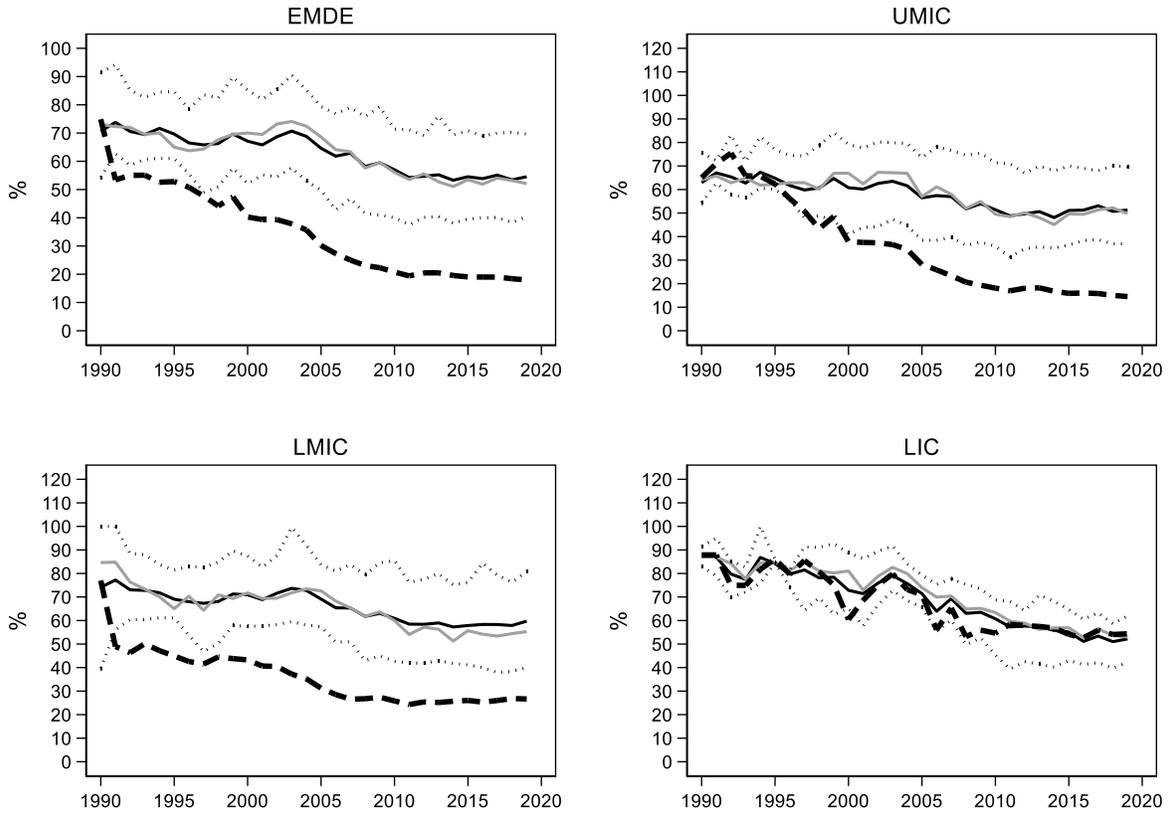
The solid black line is the simple average, the solid grey line is the median, and the dashed black line is the GDP-weighted average. The dotted lines plot the interquartile range.



Source: Own elaborations based on IMF-WEO data.

Figure 2: Share of External Debt over Total Public Debt

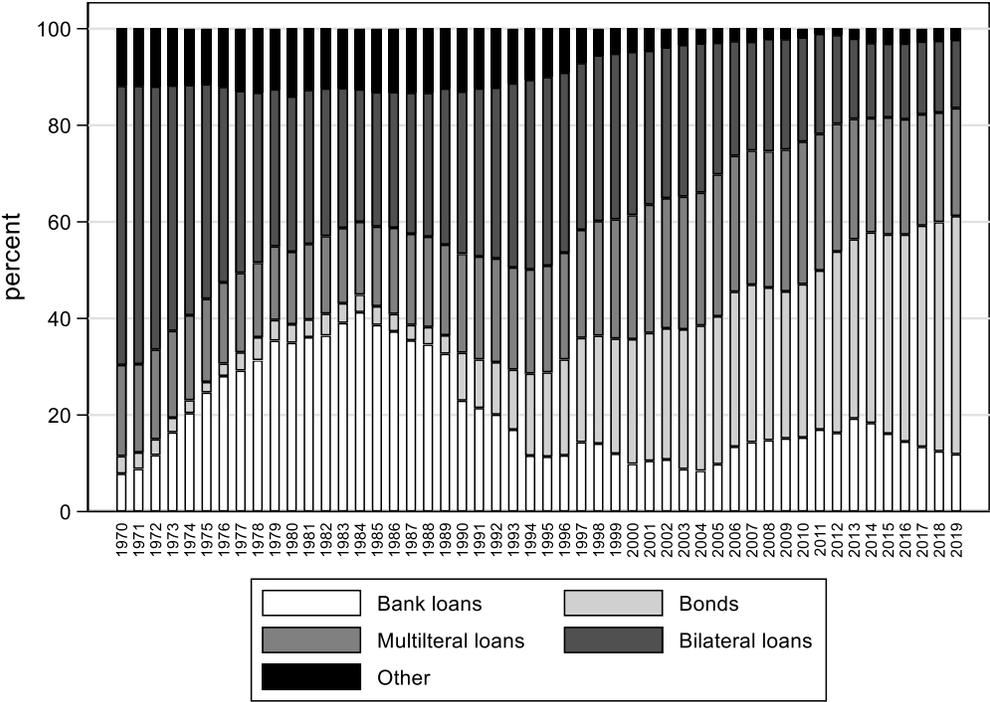
The figures plot the evolution of the share of external debt over total public debt in emerging and developing economies (EMDE), upper middle-income economies (UMIC), lower middle-income economies (LMIC), and low-income economies (LIC). The solid black line is the simple average, the solid grey line is the median, and the dashed black line is the GDP-weighted average. The dotted lines plot the interquartile range.



Source: Own elaborations based on IMF-WEO and World Bank's IDS data.

Figure 3: External debt by type of lender and instrument

The figures plot the evolution of the share of **public and publicly guaranteed (PPG)** external debt by types of lenders and instrument.



Source: Own elaborations based on World Bank IDS data