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The Seven Mechanisms for Achieving Sovereign Debt Sustainability

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ABSTRACT

Sovereign debt crises are harmful reoccurring economic phenomena and the subject of how best to achieve sovereign debt sustainability is therefore of paramount importance. For decades economists have struggled to find a robust and consistent means of assessing sovereign debt sustainability. This paper argues that our understanding of sovereign debt sustainability can be enhanced by viewing this subject through the dual lenses of political economy and economic history. These two perspectives help identify seven distinct mechanisms for achieving sovereign debt sustainability. It is important to understand each of these methods as countries can, and often do, pursue multiple strategies in their efforts to achieve debt sustainability. Sovereign debt sustainability is often as much a political as an economic challenge with competing internal and external dimensions.

Introduction and Background

The economic harm inflicted by too much debt has been well documented.¹ During the past several decades almost all sovereign debt problems² occurred in developing countries.³ Prior to the current crisis, the last significant sovereign debt bout occurred around the turn of the 21st century when an all too familiar pattern was repeated: one developing economy after another suffered a financial crisis, leading to several sovereign defaults.⁴ Since then many developing economies have achieved comparatively low debt-to-income levels (Figure 1) while concurrently stockpiling significant reserves.⁵ (See Figure 1)

In contrast to the experience of many emerging and developing countries over the last half-century, some claim that the last time an advanced economy defaulted was over six decades ago.⁶ However, in the past several years many advanced countries have assumed significant debts with today's levels matched only by the periods following the two world wars (Figure 2).⁷ At present, a number of advanced economies find themselves either unable to obtain financing at sustainable rates of interest or largely shut out of the capital markets.⁸(See Figure 2).

¹ (Reinhart and Rogoff 2009, pp. 223-239)

² In this paper 'sovereign debt sustainability' refers to whether a government can service its public debt (pay interest and principal) while also meeting agreed upon terms (e.g., payment deadlines). Sustainability in today's world, where a significant portion of public debt is regularly 'rolled over' in markets, is linked to confidence in the sovereign's *ability* and *commitment* to continue meeting its obligations.

³ Examples of recent emerging market sovereign defaults include Mexico's in August 1982, which was followed shortly thereafter by Argentina, Brazil, Nigeria, the Philippines, Turkey and others. The late-1980s saw several Latin-American countries default again (Reinhart and Rogoff 2009, pp. 18, 96)

⁴ Both Russia (1998) and Argentina (2001) defaulted, with Argentina's roughly 75% 'haircut' on \$100 billion in debt representing the largest sovereign default in history at that time (Porzecanski 2010).

⁵ (Dominguez, Hashimoto, and Ito 2011; Blanchard, Faruqee, and Klyuev 2009) China's approximately \$3 trillion in foreign reserves receive wide publicity. However, less well known is the fact that Russia, Saudi Arabia, Brazil, India, Thailand, Algeria, Mexico, Malaysia and Indonesia also hold reserves comparable to or in excess of many advanced countries (Central Intelligence Agency 2010).

⁶ (Milne 2012)

⁷ A perhaps important distinction between today's debt levels, which are roughly in line with World War I but still below World War II levels, is that they occurred largely in the absence of major global wars. Large government debts have previously been the result of large-scale conflicts and their aftermath (Ritschl and Centre for Economic Policy 1996). This distinction may influence the degree of social commitment to service government debt (James 2011).

⁸ Further complicating the current debt picture is the dramatic increase in private debt levels, particularly those of financial institutions and households. Such private debts can often turn into public debts, as was the case with Ireland's recent bank bailouts (Reinhart and Rogoff 2011).

Literature Overview

A vast literature on sovereign debt sustainability has developed over the last several decades. However, such research has generally examined advanced countries from the creditor rather than debtor perspective due to the aforementioned paucity of debt sustainability problems amongst advanced economies in recent decades. This perhaps poses some limits on the usefulness of previous sovereign debt research to today's challenges given the significant socio-political and institutional differences which exist between developing and advanced economies. A perhaps more fundamental problem is posed by the lack of a generally agreed upon quantitative framework for assessing sovereign debt sustainability.⁹ This is not to say that there are no quantitative measures available for evaluating the safety of sovereign debt levels; a wide mix of ratios and figures are presently utilized to assess the debt position of nations.¹⁰ However, it is unclear how much importance or weight should be assigned to these measures. Further, attempts to compare some measures across different countries and define consistent rules for debt sustainability have proven problematic.¹¹

The objective of this paper is not to describe the various ways in which a sovereign debt sustainability problem can arise but to instead outline the different mechanisms which exist for addressing an unsustainable level of debt. Some economists identify four or five sovereign debt reduction options, and these frameworks are often presented as collectively exhaustive.¹² This paper argues that from both a political economy and economic history perspective that seven distinct mechanisms are available to most advanced economies for achieving debt sustainability.

⁹ (Neck and Sturm 2008, p. 1) This is due to the difficulty posed by understanding and modeling creditor perceptions, a sovereign's ability and or willingness to repay its debt, and other factors.

¹⁰ Some of the more commonly referenced indicators are: i) the nation's debt-to-income ratio; ii) the government's primary budget balance (whether there is a deficit or surplus before interest expense is accounted for); iii) GDP growth rate compared to the rate of interest paid on government debt; iv) the average time to maturity of the total government debt portfolio (Economist 2010).

¹¹ For example, at present Portugal's debt-to-income ratio is approximately 60%, which is in line or below that of the U.S., Germany, Belgium, and the UK. During the current crisis these latter countries have thus far not encountered any difficulties in the public debt capital markets. However, Portugal cannot find private financing at a sustainable rate of interest. Compare and contrast the case of Portugal with Japan, which has a debt-to-income ratio of approximately 220% yet also enjoys one of the lowest borrowing rates of any sovereign. A commonly cited explanation for the financing difficulties encountered by Portugal's government is the country's relatively low rate of economic growth.

¹² (Buiter 1985, p. 22; Reinhart and Sbrancia 2011, pp. 1-2; Sbrancia 2011, p. 1; Nasar 2011, pp. 220-1; Taylor 2011, p. 49). Buiter lists four methods for reducing sovereign debt; Reinhart et. al. five.

The seven mechanisms

What follows is an overview of the seven distinct mechanisms for achieving sovereign debt sustainability and a discussion of their respective political economy tradeoffs. (This framework has been summarized in Table 1.)

1. **Economic growth** can reduce a nation's public debt to income ratio, perhaps the most closely watched measure of sovereign debt sustainability. An expansion in a nation's products and services typically generates additional tax revenue without necessitating an increase in tax rates.¹³ This aspect of economic growth makes it particularly desirable for many policymakers.¹⁴ Some argue that historically economic growth is the only means by which large debt burden relief has been successful.¹⁵ While economic growth is often a popular solution to a debt problem, there is considerable debate about how best to achieve growth. Further, recent research suggests that countries with high debt-to-income levels may have difficulty achieving robust economic growth.¹⁶ In addition, considerable debate exists over just how much influence policymakers have on economic growth and the timeframe required to affect meaningful change.
2. **Financial aid** to sovereign nations can take many different forms. One common means by which governments attempt to address a sovereign debt problem is by securing additional funding for investment and consumption to stimulate economic growth. Such 'bridge' financing can help countries weather temporary economic downturns.¹⁷ Since World

¹³ For most countries Gross Domestic Product and Gross National Product, which excludes the profits of foreign residents and corporations, are nearly identical. However, present day Ireland, which is home for the regional headquarters and operations of many foreign companies, is a notable exception. An estimated 20% of GDP is generated by 'ghost corporations' and considered un-taxable under present Irish law (Johnson 2010, 2010). In such cases growth in GNP would be a more useful measure than GDP in evaluating debt sustainability.

¹⁴ Economic growth does have its critics. For an overview of alternative perspectives see 'Rethinking the Growth Imperative' (Rogoff 2012)

¹⁵ Indeed, a popular misconception is that countries resolved their large World War II debts through economic growth. This narrative, however, is at best incomplete and in some cases inaccurate. Nobel Laureate Amartya Sen, writing in the UK's *Guardian*, stated "There are lessons from history here, too. The big public debts of many countries when the second world war ended caused huge anxieties, but the burden diminished rapidly thanks to fast economic growth." <http://www.guardian.co.uk/commentisfree/2011/jun/22/euro-europes-democracy-rating-agencies>. (Sen 2011) However, Buiter (1985) and Reinhart and Sbrancia (2011) have demonstrated that inflation and financial repression, respectively, played a significant role in the reduction in post-World War II sovereign debt burdens for many countries. In the UK, for example, the debt reduction effects of economic growth and fiscal deficits canceled each other out following World War II, leaving the reduction in debt levels explained by inflation. For a decomposition analysis of the decline in the UK's national debt-income ratio from 1948-84 see (Buiter 1985, pp. 18-19).

¹⁶ (Cecchetti, Mohanty, and Zampolli 2010; Reinhart and Rogoff 2010; Kumar, Woo, and International Monetary 2010) Greece has recently struggled to grow its economy while battling unsustainable debt levels. In 2011 it is estimated the Greek economy, even with substantial foreign aid, actually shrank 7%.

¹⁷ (Krugman 1988)

War II international lending organizations, such as the International Monetary Fund (IMF), have played a central role in coordinating foreign credit for countries in debt distress.¹⁸ However, the practice of saddling an already highly indebted nation with even more debt is controversial.¹⁹ Both grants and debt forgiveness can immediately aid a country's return to a sustainable debt position and are perhaps a not surprisingly popular form of financial aid with debtor countries.²⁰ An agreement by creditors to lengthen the repayment schedule, referred to sometimes as a 'payment holiday' or 'bisque'²¹, can also provide a country with additional time to reestablish debt service. All such forms of financial aid, however, are rarely, if ever, provided with only financial strings attached. For example, IMF loans are typically contingent on the recipient implementing economic and political reforms and include regular IMF auditing to ensure compliance. While IMF programs are aimed at improving economic efficiency and competitiveness to help ensure repayment, they often prove unpopular with some political constituencies.²²

3. **Fiscal adjustment** can reduce deficits and debt levels by decreasing government expenditure and or increasing tax revenue. Such adjustments, however, can be very unpopular amongst those affected and difficult to implement. Further, sovereign debt crises often strike during periods of economic weakness, or precisely when Keynesian demand management theory argues that government should be stimulating the economy by spending more or reducing taxes.²³ However, such government efforts to stimulate the economy may run up against resistance from creditors who view the sovereign as already overly-indebted. A loss in the confidence of creditors over the sovereign's *commitment* and or *ability* to service its debt can result in a sudden increase in debt expense, which would further exacerbate the debt sustainability challenge.
4. **Asset sales** can help balance the government ledger. Many governments own substantial domestic and foreign assets, and throughout history real

¹⁸ Governments also lend to each other on a bilateral (e.g., 1946 Anglo-American Loan) and regional basis (2010 European Financial Stability Fund). Sovereign funding can also be provided by banks and other private or quasi-private institutions (e.g., pension funds).

¹⁹ For example, the providers of foreign aid to Greece have been accused of 'throwing good money after bad' as one version of the IMF-EU-ECB program calls for Greece's debt-to-GDP rise significantly from (at the time of this writing) 130% to 160%.

²⁰ (Bulow and Rogoff 1989; Neumayer 2002) For example, in 1947 both Australia and New Zealand forgave a portion (£38 million) of what Britain owed those countries on debt related to World War II. U.S. Marshall Plan funding for Western Europe in 1948 was a form of grant aid.

²¹ For example, in 1956-57 the UK negotiated an amendment to the American loan which allowed the country to 'take a bisque', meaning it could elect to suspend payments of principal and interest in any year, up to seven times, during the remaining life of the loan. (Cosío-Pascal and Bankruptcy 2006, p. 7).

²² (Blustein 2005; Obstfeld and Taylor 2004, p. 162; Blustein 2003)

²³ (Keynes 1936; Krugman 2009)

estate, bullion, and even warships have been sold to pay off debts.²⁴ In addition to paying down public debt, it has been argued that the sale of state-owned enterprises may also help improve economic efficiency and growth.²⁵ However, liquidating national treasure to pay off creditors can provoke political controversy, particularly when such creditors are foreign. Further, national assets often generate reoccurring revenue which could be lost in the event of a sale, making the challenge of servicing the debt even more difficult. Selling government assets may also prove a relatively slow process, while a rushed 'fire sale' is also unappealing. Even if a state was able to realize the full value of assets available for sale the proceeds may only reduce the state's debts by a small fraction.²⁶ It may also prove difficult to reacquire – either through trade or nationalization – any state assets which have been sold at a future date, particularly ones which reside (or can be moved) outside the country's borders. All of these factors combine to make the sale of state assets perhaps one of the least attractive options for managing sovereign debt sustainability. However, asset sales can often play an important psychological role in signaling to creditors a commitment by the sovereign to continue servicing its debt.

5. **Inflation surprise**, referred to by some as the government's 'trump card'²⁷, can significantly reduce the real burden of sovereign debt in a relatively short timeframe.²⁸ However, if creditors observe (or simply suspect) substantial inflation then large-scale capital flight may commence and thereby negate some of the debt reduction benefits of inflation. Hence the need for surprise. Political instability often accompanies high inflation regardless of whether or not controls which inhibit capital movement are in place.²⁹ Importantly, inflation only reduces the real

²⁴ The U.S.'s purchase of the Louisiana territory from Napoleonic France is one of the more famous sovereign asset sales. Less well known was the UK Treasury's sale of British Imperial Tobacco shares in the U.S. in February 1940, which the U.S. insisted as prerequisite for obtaining Lend-Lease support (Skidelsky 2000, pp. 75-76).

²⁵ (MacKenzie 1998; Megginson and Netter 2001)

²⁶ For example, the U.S. Treasury currently lists total federal non-defense related assets at a book value of \$233 billion, a figure which may in fact be significantly understated. However, if this figure was quadrupled and everything sold the proceeds would still only amount to less than 10% of the approximately \$15 trillion in U.S. public debt. (Ferguson 2011)

<http://www.thedailybeast.com/articles/2011/02/21/america-should-sell-national-assets-to-balance-the-books.html>

²⁷ (Stella, International Monetary Fund, and Exchange Affairs 1997, p. 11)

²⁸ This is accomplished through a process termed 'debt monetization', which is the purchase and retirement of sovereign debt by the central bank (Mishkin 2007). Seigniorage can also generate revenue for the government, which can reduce the real value of debt burdens. However, Buitert (1985) shows that "the maximum possible yield of this tax is also small" (Buitert 1985, p. 26).

²⁹ 1923 Weimar Germany (annual percentage inflation of 2.22E +10), 1989 Argentina (annual percentage inflation of 3,080), and 1946 Hungary (annual percentage inflation of 9.63E + 26, the modern record), are cases where hyperinflation was followed by political instability (Sargent 1982). However, much more modest double-digit inflation has also been attributed as a key reason behind U.S. President Jimmy Carter's defeat to Ronald Reagan in 1980. For a further

burden of non-floating rate (non-indexed) debt which has been issued in the domestic currency controlled by the central bank.

6. **Financial repression**, when accompanied by a modest level of inflation, can play a significant role in reducing the government's debt burden.³⁰ Financial repression, which is sometimes referred to as a 'stealth' tax³¹, can encompass a complex and opaque range of policies which are designed to provide the government with funding at preferential rates of interest. The regulations placed on the financial system which accompany financial repression, such as capital controls, are often unpopular. Previous research has also shown financial repression to have a negative impact on economic performance and growth.³² What constitutes financial repression is a source of ongoing debate.³³ For example, 'prudential' measures aimed at increasing the stability of the financial system, such as Basel III and Solvency II requirements for financial institutions to hold a higher percentage of 'safe' capital (e.g., sovereign instruments), have also been characterized as financial repression as they would force private firms to hold more government debt than they would otherwise.³⁴ Last, like inflation surprise it is important to note that the debt reduction benefits of financial repression only work for debt issued in the domestic-currency.³⁵
7. **Repudiation** (also referred to as 'default'³⁶) has historically perhaps been the most common means for reducing unsustainable levels of sovereign debt.³⁷ Default, however, is not without negative consequences for borrowers and lenders alike.³⁸ Countries which have defaulted can suffer

discussion of the history of inflation and hyperinflation see Reinhart and Rogoff (2009) pp. 180-189.

³⁰ (Giovannini and Demelo 1993; Reinhart and Sbrancia 2011; Agénor and Montiel 2008; Beim and Calomiris 2001; Easterly 1989; Easterly and Schmidt-Hebbel 1994)

³¹ (Reinhart and Sbrancia 2011, p. 19)

³² (Shaw 1973; McKinnon 1973; Goldsmith 1969; De la Torre, Gozzi, and Schmukler 2007; Easterly 1993; Lanyi and Saracoglu 1983; Galindo et al. 2002; Roubini and Salaimartin 1992; World Bank 1989; Todaro and Smith 2003)

³³ (Turner 2011)

³⁴ Some have argued that the Federal Reserve's and Bank of England's quantitative easing programs, which have had the effect of keeping interest rates on U.S. and UK government debt securities low, constitute financial repression (Treadway 2012). Efforts aimed at restricting the actions of credit rating agencies have also been described as a novel form of financial repression (Evans-Pritchard 7 July, 2011).

³⁵ (Rogoff and Reinhart 2011)

³⁶ What constitutes a 'default' is a common source of confusion. For economic analysis, Grossman and Vay Huyck conceptually define default as "the failure to meet contractually agreed upon obligations in full", such as the repudiation of debt or the failure to repay the loan on time (Grossman and Van Huyck 1988, p. 1088). They go on to note that "window dressing" is often employed to avoid legally classifying debts as in default for regulatory purposes. Reinhart and Rogoff (2009) also define a certain level of inflation as constituting a default in real terms.

³⁷ (Reinhart and Rogoff 2009)

³⁸ (Reinhart, Rogoff, and Savastano 2003)

from a number of hardships, including reduced access to capital markets, sudden forced fiscal retrenchment, higher interest rates, and political turnover.³⁹ While default often leads to significant losses, lenders often have enough leverage to enforce some level of repayment even if considerable time has passed since the default event.⁴⁰ A common alternative to outright debt repudiation is the amendment of loan terms, earlier described as a form of financial aid. However, such 'restructurings' or 'partial' defaults can still constitute a technical default and will often result in more expensive and or restricted credit for countries in the future.

A nation which finds itself with an unsustainable level of debt will almost always prefer to grow its way out of the problem (option 1). However, nations which are unable to achieve sufficient growth must consider one or more of the above six remaining mechanisms for achieving debt sustainability.

³⁹ (Eaton, Gersovitz, and Stiglitz 1986; Bordo and Oosterlinck 2005; Eaton and Gersovitz 1981; Eaton and Gersovitz 1981; Eichengreen 1991, pp. 155-156; Cole, Dow, and English 1995)

⁴⁰ (Reinhart and Rogoff 2009, pp. 61-63) For example, following the Soviet Union's collapse, Russia was only able to return to international capital markets after its Tsarist-era default from eight decades prior was addressed.

Internal and external political dimensions of debt sustainability

Sovereign debt sustainability is as much a political as economic challenge. In particular, tension often develops between foreign and domestic creditors whose interests are frequently pitted against each other. The notion that 'all politics is local' is arguably the driving force behind the perception that foreign creditor interests are often subjugated to domestic ones. However, foreign creditors have not always quietly accepted their fate as losers in the often contentious battles over debt sustainability. For example, during the 19th century a 'protectorate' was established over Egypt by Britain to ensure payment on its credit.⁴¹ For debtors, the plundering of foreigners as a means of shoring up a nation's finances extends back through the Viking raids to at least as early as Roman times.

While the days of both creditors and debtors employing direct military force as a means for achieving financial objectives seem to have passed, the use of geopolitical leverage has continued into more recent times. For example, during the 1956 Suez Crisis the U.S. informed Britain that unless its military forces were withdrawn from engagement with Egypt the U.S. Treasury would sell its vast holdings of British sovereign debt. This was considered a significant enough threat to the financial stability of Her Majesty's Government that British troops quickly departed the Sinai Peninsula.⁴² The Suez Crisis is often presented with a favourable view towards the American position and the power of the country's financial leverage over Britain. However, from a debt-sustainability perspective, Britain's military manoeuvres had the effect of increasing the value of holding British gilts in the eyes of the Americans. Such geopolitical deals are typically shrouded in secrecy and confirmable only decade's after-the-fact when official records have been declassified. Nevertheless, such secrecy has not stopped contemporaries from speculating about present day events.⁴³

⁴¹ (Coggan 2011, p. 252) In 1915 the U.S. managed a similar operation in Haiti.

⁴² (Kunz 1991)

⁴³ For examples, there was recent speculation on a U.S.-European deal banning Iranian oil imports from several European countries facing debt sustainability challenges in exchange for U.S. support for additional IMF funds for those same European governments (Talley 2012). Limited U.S. weapon sales to Taiwan in exchange for China's on-going purchase of U.S. Treasuries are another area of speculation.

Conclusion

In order to achieve sovereign debt sustainability countries will often utilize more than one of the seven mechanisms described in this paper. While overly indebted countries often have economic similarities, optimal debt sustainability solutions must be tailored to a nation's unique political and economic circumstances. In short, there is no 'one-size-fits-all' solution to the challenge of debt sustainability.

The degree to which any one of the sovereign debt reduction options can be influenced by policy varies, and in some instances market-driven debt dynamics may outpace official action. In considering the different policy alternatives a country must balance what is economically achievable against what is politically viable, while also considering the time available.

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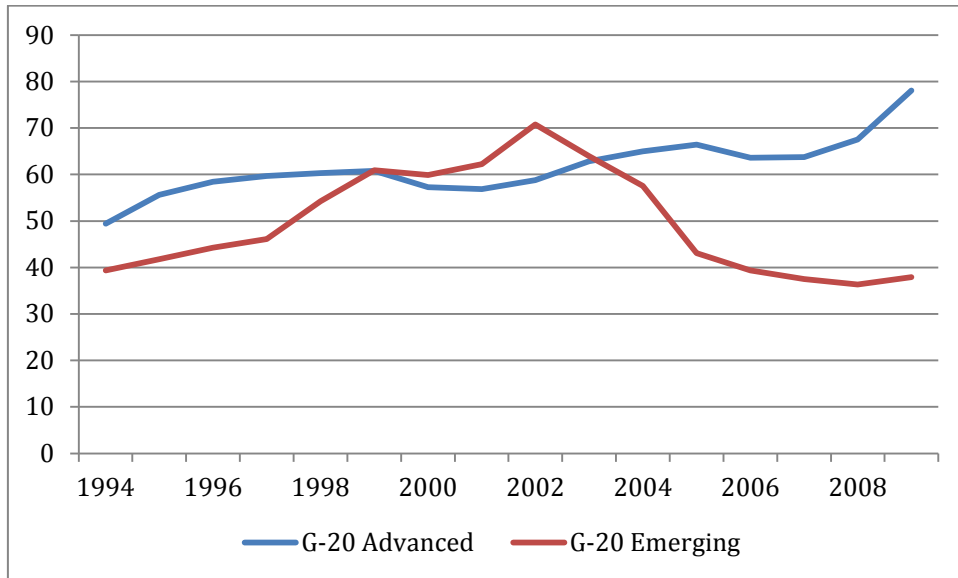
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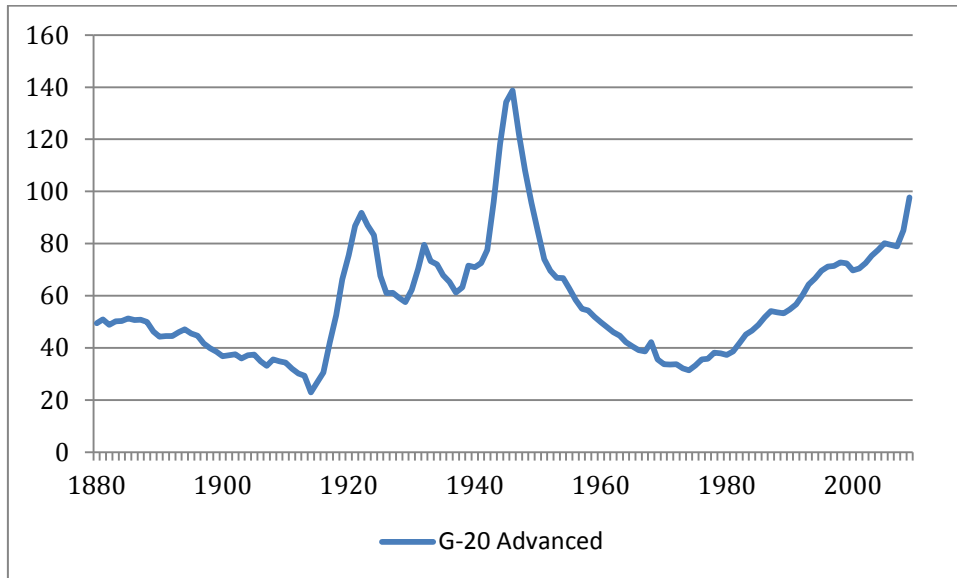
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Figure 1: Public Debt-to-GDP (%) for G-20 Advanced and Emerging Countries



Source: International Monetary Fund. *G-20 Advanced*: Australia, Canada, Italy, Japan, Republic of Korea, United States, Germany, France, United Kingdom; *G-20 Emerging*: Argentina, Brazil, People's Republic of China, Indonesia, India, Mexico, Russian Federation, Saudi Arabia, Turkey, South Africa

Figure 2: Public Debt-to-GDP (%) for G-20 Advanced Countries, 1880 - 2010



Source: International Monetary Fund. *G-20 Advanced*: Australia, Canada, Italy, Japan, Republic of Korea, United States, Germany, France, and United Kingdom.

Table 1: Mechanisms for Sovereign Debt Sustainability and their Political Economy Tradeoffs⁴⁴

Mechanism	Description	Advantages	Disadvantages
1. Economic Growth	Growth of a nation's taxable GDP of sufficient size to service debt.	+ Automatically generates increased tax revenue without higher tax rates + High political support	– Potentially difficult to achieve, particularly for highly-indebted economies – Opposition to growth
2. Financial Aid	Bridge financing to enable economic growth. Debt forgiveness and or restructuring can also constitute aid.	+ Large source of funds available internationally + Can engender improved economic efficiency + Expand foreign trade + Rescheduling debt can be mutually beneficial	– Rarely provided with no-strings attached – Unpopular, difficult to implement debtor concessions – Aid arrives too late ('throw good money after bad')
3. Fiscal Adjustment	Reducing government expenditure and or increasing tax revenue.	+ Fiscal adjustments are within domestic control + Avoidance of foreign commitments + High transparency	– Counter-growth and may lead to an ill-timed economic contraction – Politically unpopular – Implementation challenges
4. Asset Sales	The sale of government assets, such as state-owned enterprises, bullion, geopolitical influence, etc.	+ Source of hard currency + Liberalization may help boost economic growth + May be reversible through later repurchase and or nationalization	– May only reduce debts by small fraction – Reduce government revenue generating assets, exacerbating problem – Slow; 'fire-sale' prices
5. Inflation Surprise	Unexpected spike in inflation, triggered by the government, which reduces the real debt burden.	+ Quickly reduces the real value of debt + Can be implemented at government's discretion	– May trigger capital flight, a currency crisis and hyperinflation – Severe political instability – Only reduces debt issued in domestic currency
6. Financial Repression	A system of controls and interest rate caps, accompanied by modest inflation, which reduces the real value of sovereign debt.	+ Can deliver a steady reduction in the real value of the debt over time + Historically compatible with economic growth + Low transparency	– Reduced economic efficiency – Complex implementation and enforcement (e.g., black markets) – Slower than alternatives – Low transparency – Only reduces debt issued in domestic currency
7. Repudiation	Suspension and/or cancelation of principal and or interest owed to creditors. Restructuring of certain loan terms, such as the repayment schedule, may also constitute default.	+ Quickly reduces debt + Debtor can target repudiation of certain creditors (e.g., foreigners) + Debate over the degree of negative consequences for debtor (e.g., capital markets access) + A common approach	– Reduced access to capital markets – Higher interest expense going forward – Only partial repudiation is typically possible – Restructuring still constitutes a default and has negative consequences

⁴⁴ Except economic growth the seven mechanisms are not ranked in any particular order of attractiveness.

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