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# **Major Issues in Public Debt Management**

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## **Major Issues in Public Debt Management**

This paper discusses selected issues in public debt management that are of interest to Ukraine. The first two sections of the paper deal with two preliminary issues, the size of the national deficit and accumulated debt and the feasibility of limiting them either through constitutional amendment or through statutory or administrative means. They precede the others because the questions of why deficits are necessary or desirable and whether and how their size should be controlled are logically prior to the more specific questions about fiscal and monetary policy and how they relate to the management of the public debt. An attempt is made in the paper to bring widely accepted best practices to bear on the issues while taking account, wherever possible, of the special circumstances of the Ukrainian government and financial system that may require modifications in their implementation.

### **I. The Size of the Total Government Debt**

There is probably no issue of more fundamental importance to the government debt manager than the size of the total government debt, which is the accumulated value of all previous deficits plus the accrued interest thereon. Depending on a large variety of economic factors, including the health of the domestic economy, the adequacy of the tax collection system, the past performance of the government in meeting its financial obligations, and—to an increasing degree in recent decades—the stability of global financial markets, there is some upper limit to the amount of debt that any country can service on a sustainable basis. A logical starting point in evaluating the appropriate size of the debt is a consideration of the rationale for having deficits in the first place.

#### **The Rationale for Government Deficits**

In principle, one can easily imagine a national government operating on a pay-as-you-go basis, balancing its budget year-to-year or over a limited number of years, so that there is no accumulated debt to deal with and only transitory costs of financing temporary deficits. Many sub-national governmental entities are required by law to do so. In the United States, for example, virtually all of the states are required by their respective constitutions to balance their budgets on a year-to-year basis. In some states, this requirement applies only to the current account, and the state is permitted to borrow to cover capital expenditures. Throughout much of its recent history, the British government has operated under a similar constraint, often referred to as the “Golden Rule.”

**Inter-generational equity.** The exception to balanced-budget requirements for capital expenditures calls to mind the first, and one of the most commonly cited, justifications for government deficits, namely inter-generational equity. Because the benefits of capital expenditures typically extend to future generations, it is argued that the costs should be shared by future generations as well. One way of doing this is by financing such expenditures with debt instead of current taxation. To be sure, it is sometimes argued that, because capital formation necessarily comes out of current production, thereby lowering current consumption, its full cost is necessarily borne by current consumers and the form of financing is irrelevant. This is the argument, frequently used in the United States, that the national debt is of no consequence because “we owe it to ourselves.” However, it ignores important differences in the identities of taxpayers and of those who receive the interest on the bonds sold to finance deficits. If those bondholders are largely

members of the current generation and if that interest is largely paid from taxes paid by workers in the future, there is in fact a partial shifting of the burden from one generation to the next. Today, most countries accept this argument, and it is one of the primary justifications for running more or less perpetual deficits, as well as for a level of debt that increases over time. However, it does not necessarily call for a level of debt that grows relative to GDP.

**Secular stagnation.** A justification for deficits that is rarely heard today, but that received a great deal of attention during the depression of the 1930s was John Maynard Keynes' argument that advanced capitalist economies are subject to secular stagnation—i.e., private investment alone cannot be relied on to maintain full employment. Thus, it is necessary to supplement private investment with public investment either continuously or over the greater part of the business cycle to prevent the economy from operating permanently below capacity. Not only economic theory but also the post-World War II experience with chronic inflation appears to discredit the notion of secular stagnation. Although many prominent economists predicted that the U.S. would relapse into recession following demobilization after World War II, the real problem turned out to be an overheated economy as consumers who had accumulated liquid assets and postponed consumption during the war purchased cars, appliances, and housing at a record pace. A misreading of the evidence could lead one to believe that the experience of Japan in the 1990s—a decade of sub-par growth during which neither monetary policy nor fiscal policy seemed to provide much of a stimulus to the economy—provides support for the notion of secular stagnation. This interpretation has been challenged on a number of grounds. In any case, it has been a long time since secular stagnation was considered among the serious justifications for national deficits.

**Countercyclical fiscal policy.** At the level of economic theory, there have long been reasons for doubting the efficacy of government deficits as a means of stimulating the economy. One of the most durable of these has been the concept of Ricardian Equivalence, named after its leading expositor, the British economist David Ricardo. In simplified form, the concept states that, because consumers are rational and understand that borrowing by the government today will result in higher taxes in the future, they will save more today in order to be able to pay those taxes without unduly restricting their consumption in the future. It would thereby rule out any stimulative effect on total spending of running deficits as a deliberate tool of countercyclical fiscal policy. At the same time, it would suggest that deficits do no harm because they have no effect on the real economy. Although interesting as a logical extension of the concept of rationality on which much economy theory rests, Ricardian Equivalence has generally been rejected—even by Ricardo himself—as an accurate description of how consumers behave. This is largely because it depends on extreme assumptions regarding the distribution and certainty of information that are rarely or never realized in practice.

One of the major legacies of the depression of the 1930s was the respectability it conferred on countercyclical fiscal policy. Increased government spending—including that brought about by such programs as the New Deal in the United States, but most notably that associated with the mobilization for World War II—appeared to play a major role in pulling many economies out of the depression. Countercyclical fiscal policy thereby became the standard prescription for dealing with fluctuations in income. The importance of fiscal policy was given an additional boost by the widespread perception that monetary policy was powerless to influence spending in a depressed economy. This idea, which had seemingly been confirmed by the failure of the extremely low rates of interest in the 1930s to stimulate investment, came to be capsulized in the expression, “you can't push on a string.”

In the United States, countercyclical fiscal policy also received support from the behavior of the economy in the late 1950s and the decade of the 1960s. In 1957, the Eisenhower administration, fearing a growing federal deficit, instituted tax increases and spending cuts with the goal of restoring a balanced budget. These actions pushed the economy into recession, with the result that government revenues fell sharply. The deficit widened to an annual rate of \$8.4 billion in the first

quarter of 1958, a record peacetime level at the time. Then, in keeping with John F. Kennedy's promise during the presidential campaign of 1960 "to get the country moving again," the Democratic administrations in power from 1961-1968 reduced tax rates and increased spending for a variety of domestic programs. The result was that the unemployment rate declined from a cyclical high of 7.5 percent in July 1958 to a low of 3.4 percent by September 1968, a level widely associated with "full employment." It was during this period that the use of countercyclical fiscal policy to stabilize the economy gained considerable support in the United States, as famously reflected in the 1971 statement by President Richard Nixon, a member of a political party long suspicious of the deliberate use of government spending for "pump-priming" purposes, that "I am now a Keynesian in economics."

Ironically, it was toward the end of the decade of the 1960s, clearly the "hey-day" of discretionary countercyclical fiscal policy in the United States, that an unplanned experiment provided evidence on the relative strengths of fiscal and monetary policy. As noted above, the apparent impotence of monetary policy during the depression of the 1930s led to wide acceptance of the belief that fiscal policy was a stronger and more reliable instrument for affecting total spending. During most of the decade of the 1960s, both monetary and fiscal policy in the United States had been stimulative, making it difficult to disentangle their separate contributions to the economic expansion. In 1968, however, concerned by a rising rate of inflation fueled in part by spending for the war in Vietnam, Congress enacted a temporary surtax to slow the growth of aggregate demand. Reflecting the strongly Keynesian thinking of the time, most private and government economists warned of "fiscal overkill." They feared that the restrictive effects of the tax increase would overwhelm the relatively expansive monetary policy and cause a serious recession. In point of fact, the economy continued to grow strongly and inflation accelerated, slowing only after a tighter monetary policy provoked a "credit crunch" in 1969.

This experience toward the end of the 1960s contributed to the more balanced view of the relative strengths of fiscal and monetary policy that prevails today. To a great extent, it reinforced the argument that economists of the monetarist school had been making since the late 1940s—namely, that the alleged impotence of monetary policy in the 1930s was in large part a misconception fostered by characterizing the stance of monetary policy on the basis of the level of nominal interest rates in a depression setting with falling prices. They noted that the behavior of the money supply gave a much more accurate indication of the true thrust of monetary policy under these conditions. In particular, they rejected the notion that there had been a "liquidity trap" in the 1930s that precluded the effective use of monetary policy to counter the depression. The growing evidence that monetary policy was more powerful than suggested by Keynesian interpretations of the 1930s, together with the greater ease and speed with which the stance of monetary policy could be changed, led many countries to rely on monetary policy as the principal tool of countercyclical policy. At least up until the 1990s, the declining severity of recessions in the post-World War II period seemed to confirm the wisdom of this approach.

Since the financial crises of the mid-1990s, the pendulum has begun to swing in the other direction again, as much more attention has been focused on countercyclical fiscal policy, both discretionary policy and through the working of automatic stabilizers. Perhaps the most dramatic boost to discretionary countercyclical fiscal policy came from the global recession of 2008-2009, when countries throughout the developed and less-developed world adopted various combinations of tax cuts and expenditure increases designed to foster recovery from the worst downturn since the Great Depression. There remains considerable disagreement regarding the circumstances for which such measures are appropriate, the types of expenditure that are best suited for "stimulus packages," and the optimal sizes and durations of such packages for different countries. However, there appears to be widespread support for the basic idea of countercyclical fiscal policy itself.

Countercyclical fiscal policy has often been viewed as a justification for deficits during the contractionary phase of the business cycle, though often with the caveat that these deficits should be

offset by surpluses during the expansionary phase. Thus, countercyclical fiscal policy is consistent with periodic deficits, but it does not necessarily imply growth in the total national debt over time. In principle, indeed, one can argue that it is consistent with the total absence of deficits. According to the balanced budget multiplier theorem, any desired degree of stimulus can be achieved without a deficit if the total amount of government spending—i.e., the level of the budget, as opposed to to the size of the deficit—is increased sufficiently.<sup>1</sup> But while there is no obvious reason to believe that the balanced budget multiplier would not work in practice, many practical difficulties would have to be overcome to implement it. Moreover, its use might at times require large increases in government spending that would be difficult to reverse once they were no longer needed. This alone would suffice to prevent it from being tested in a real world situation. However, the most serious problem would be the necessity to change tax rates frequently to maintain the balanced budget. Not only would it be difficult to determine in advance the exact size of the change in the tax rate that would be needed to maintain balance, but the very notion of frequent changes in tax rates is objectionable for many reasons. Aside from the administrative problems such changes would entail, the economic theory of tax smoothing provides a powerful argument against them based on welfare considerations.

**Tax smoothing.** In and of itself, the economic theory supporting tax smoothing says nothing specifically about the desirability of deficits. However, by arguing against frequent changes in tax rates, and given that a substantial portion of government expenditures is not readily controlled in the short run, tax smoothing logically implies that there will be periodic deficits. The essence of the tax smoothing argument, as put forward by U.S. economist Robert Barro and others in a number of articles over the past two decades, is that taxes (other than lump sum taxes) are distorting in their effects on the income/leisure trade-off, thereby reducing economic welfare. However, once the market has adjusted to a given set of rates and minimized their distorting effects, it is extremely costly to change them and force a readjustment to a new set of rates. The policy prescription following from this argument is that rates should be changed very infrequently and only when changes are required to restore deficits and debt levels to sustainable levels or for other urgent purposes. As noted above, such a policy would necessarily produce occasional or even frequent deficits, but need not result in a growing debt level over time.

**Lack of government securities for open market operations.** A final argument for government deficits appears on its face to be somewhat frivolous or perhaps a case of “the tail wagging the dog.” This is the argument that deficits and a substantial level of government debt are necessary so that the central bank has an adequate supply of low-risk securities to buy and sell in the conduct of open market operations. This concern arose in the United States during the 1990s, when the U.S. government experienced several years of unprecedented surpluses and the national debt fell substantially. The U.S. Federal Reserve System (Fed) undertook a major study of the problem that involved dozens of personnel and many months of effort. It concluded that, if the surpluses continued for any length of time, they might necessitate a major revision of Federal Reserve operating procedures.<sup>2</sup> This could take the form either of identifying alternative

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<sup>1</sup>This is because each hrythnia of additional government spending increases GDP by one hrythnia times the expenditure multiplier  $1/(1 - mpc)$ , where  $mpc$  is the marginal propensity to consume. At the same time, each additional hrythnia of taxes to finance that spending reduces GDP by only one hrythnia times the tax multiplier  $(- mpc)/(1 - mpc)$ . Adding these two terms, one obtains the balanced budget multiplier  $(1 - mpc)/(1 - mpc) = 1$ . This implies that an additional hrythnia of spending accompanied by an equal increase in taxes to pay for it will result in an increase of GDP in the same amount as the increase in spending. In intuitive terms, an increase in government spending financed completely by an increase in taxes results in a net increase in spending because the government spends all the income that it receives, while the public would have spent only a part of it, as reflected in its aggregate marginal propensity to consume.

<sup>2</sup> Federal Reserve System Study Group on Alternative Instruments for System Operations, *Alternative Instruments for Open Market and Discount Window Operations* (Board of Governors of the Federal Reserve System: Washington, D.C., December 2002).

instruments for the conduct of open market operations or relying more heavily on discount window lending to supply reserves to the banking system.

As things turned out, the perceived emergency took care of itself, as deficits soon reasserted themselves. Indeed, today's major problem is seen as that of an intractable level of debt that may not be sustainable. But even if the surpluses had continued, they would not have constituted an insurmountable problem for monetary management. Continued surpluses would certainly have mandated an important change in the Fed's *modus operandi*, as open market purchases and sales of government securities (either outright or in the form of repos or reverse repos) had long been the primary tools of monetary policy. However, the monetary effects of purchases of securities other than U.S. government securities (or of real assets or anything else of value) are basically identical. To be sure, the expansion of the Fed's open market transactions to a wider range of assets would involve greater risks and additional costs in evaluating the securities involved. But the founders of the Federal Reserve System envisioned that it would extend discount window credit on the basis of collateral in the form of commercial paper. Indeed, for most of its lifetime, the Fed has been empowered to purchase commercial paper on the open market and it has occasionally done so. Thus, a shortage of government securities might complicate the Fed's open market operations but would hardly preclude it from influencing spending in the economy.

In any case, the idea that the government should run deficits simply to assure the Fed's supply of securities for open market operations—which was proposed by a few observers at the time—should be distinguished from the decision of some governments, faced with clearly temporary budget surpluses and sharp declines in their outstanding debt, to continue borrowing at some minimum level in order to maintain well-functioning government debt markets. It should also be noted that the authority of some central banks to issue their own marketable obligations, like the certificates of deposit issued by the National Bank of Ukraine or the bills issued by the Bank of Mauritius, would not solve a problem of this nature unless there was a large amount of such instruments outstanding from earlier periods when the central bank was pursuing a restrictive policy. The problem only arises when the central bank wishes to pursue an expansionary policy by purchasing securities in the open market.

### **The Influence of the Debt Management Office on the Size of Debt**

It can be argued that the size of the total government debt is one of the most important, if not the most important, issues in debt management policy. The costs of managing the debt, whose minimization is often taken as the primary goal of debt management, approach zero as the debt itself becomes smaller, both absolutely and as a percentage of GDP. Moreover, the risks of financial crisis associated with sovereign debt also generally decline with the level of debt. Recognition of the importance of debt management has become so widespread that the great majority of national governments worldwide have established separate debt management offices (DMOs) to carry out this vital function. International financial institutions such as the IMF and the World Bank have devoted enormous resources and given high priority to enhancing their constituent countries' debt management capabilities. This has been manifested in a large number of workshops and seminars devoted to debt management, in the many manuals and other publications devoted to the issue, and in the weight placed on debt management capabilities in the granting of credit to countries under their various lending programs.<sup>3</sup>

Given the enormous importance of the size of the total government debt in determining the success or failure of a nation's public debt management, it is somewhat ironic that the debt management office (DMO) typically has very limited input into the decisions that determine the

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<sup>3</sup> See, e.g., *Guidelines for Public Debt Management: Accompanying Document and Selected Case Studies*, prepared by the Staffs of the IMF and The World Bank (Washington, D.C.: IMF and The World Bank, 2003).

size of a country's debt. For the most part, the DMO must simply take the size of government debt and the current deficit as given and do the best it can to make sure that all due payments are made on time, to contain the costs of managing the debt, and to avoid a financial crisis. To a very large degree, this is unavoidable. Deficits are determined by fiscal policy decisions that involve basic social choices regarding resource allocation, the size and role of government, national security, and the distribution of wealth and income that are at the heart of the ongoing debate over economic policy in any country where the public exercises a significant influence on policymaking. Relative to the importance of these decisions, the cost of financing the deficit or even the outstanding stock of public debt may seem insignificant.

Nonetheless, it is an inescapable fact that, whatever decisions about spending and taxation emerge from the interaction of the executive and legislative branches, the government's ability to implement them depends on its ability to meet its obligations as they fall due. Thus, despite its subordinate role in the decision-making process, it is the DMO's responsibility to keep the other branches of government informed regarding the government's financial condition and ability to sustain the existing and prospective future levels of debt. The DMO is also responsible for reminding them of the consequences of failing to do so. This may be the hardest and most thankless part of the job for the head of the DMO. Nonetheless, it is an inherent responsibility of the position and one that may have to be exercised over and over as a government's planned expenditures exceed the revenue-generating capacity of its tax system. In a well-functioning government, this ongoing input from the DMO—even if it is not determinative in setting policy—is taken seriously and places distinct constraints on policy that help to prevent any excesses from getting out of hand.

### **The Size of the Debt and Sustainability**

In light of the demonstrated susceptibility of the international financial system to crisis—the Latin American crisis of 1994-1995, the Asian crisis of 1998-1999, and, most pervasive and far-reaching of all, the crisis of 2007-2009 that began in the United States but soon engulfed the rest of the world—it is not surprising that countries have turned their attention to the levels of their sovereign debt and the possibility that lowering these levels might reduce their vulnerability to future financial crises. Even before the crises of the 1990s, researchers had devoted considerable effort to identifying the factors that contribute to sustainability. More recently, considerable effort has gone into devising highly sophisticated theoretical and statistical approaches to identifying policies that are sustainable based on historical data.<sup>4</sup> One of the preliminary issues to be dealt with was the definition of sustainability itself. There remains some disagreement even now as to which of several alternative definitions is the most fruitful. However, most are stated in terms of the absence for a significant period of time of defaults, forced debt restructuring, or resort to extraordinary non-concessional financing by international financial institutions. For the sake of convenience, some researchers have used as their dependent variable to be explained the converse of sustainability, debt distress, defined as the occurrence of these events rather than their absence.

As expected, the level of debt itself has been found to play an important role in determining whether a country is likely to be able to meet its obligations and continue to have access to domestic and international debt markets. In isolation, however, the level of debt relative to GDP or of debt servicing costs relative to exports or other measures of the debt burden have relatively little explanatory or predictive value. Moreover, it appears that there is no threshold value or range of values beyond which all countries become susceptible to financial crisis. Rather, countries seem to have widely varying levels of tolerance for debt. Levels of debt that would lead to crisis almost

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<sup>4</sup> See, e.g., *Sustainability of Public Debt*, edited by Reinhard Neck and Jan-Egbert Sturm (Cambridge, MA: The MIT Press, 2008).

immediately in some countries can be borne without difficulty by others. A 2003 study by World Bank economists provided dramatic evidence of the importance of these differences in debt tolerance. According to the authors, "...countries at the 75<sup>th</sup> percentile of our measure of policies and institutions can have a present value of debt to exports that is three times higher than countries at the 25<sup>th</sup> percentile of this indicator, without increasing the probability of debt distress."<sup>5</sup>

Much of the difference in countries' tolerance for debt is related to the degree of development of their financial markets; the quality of their policies and institutions, including their legal systems and debtor-creditor relationships; the severity of any macroeconomic shocks to which they have been subjected; and their past payment performance. The specific explanatory variables used in the best-performing regression in the study cited above included total debt service obligations as a fraction of exports as the measure of debt burden, the World Bank's Country Policy and Institutional Assessment (CPIA) ratings as a measure of the quality of policies and institutions, and real GDP growth in constant local currency units as the measure of macroeconomic shocks.<sup>6</sup> In out-of-sample testing using a regression estimated with pre-1990 data to predict episodes in the 1990s, the model correctly predicted 84 percent of the episodes while incorrectly identifying only 13 percent of "normal times" episodes as distress episodes.<sup>7</sup>

The crucial policy implication to be drawn from this research is that a country can improve the sustainability of its debt as much through reforming its policies and institutions as through reducing its debt burden. In the area of macroeconomic management, some of the key factors are "a monetary/exchange rate policy with clearly defined price stability objectives" and avoiding the crowding out of private investment. In the area of trade, the average tariff should be lowered below 12 percent with the maximum band at no more than 20 percent, and internal taxes should not discriminate between imported and local products. In the financial sector, the proportion of non-performing loans and the level of capital at risk should be low; the size and reach of financial markets should be sufficient to foster economies of size; interest rate spreads should be reasonable; there should be a high ratio of private sector debt to GDP; and payment, clearance, and credit reporting systems should be well developed. The business regulatory environment should be characterized by streamlined licensing requirements, low barriers to entry and exit of businesses, corporate governance laws that encourage disclosure and protect shareholder rights, and a high degree of flexibility in hiring and firing. The legal system should protect property rights; provide a rule-based governance marked by predictability, transparency, and impartiality; and eliminate corruption in the public sector. Although many other criteria with respect to gender equality, social protections, protection of the environment, and other socially desirable policies enter into the CPIA scores, it is likely that the criteria directly related to macroeconomic policy and financial management are most important in determining tolerance for debt.<sup>8</sup>

## **II. The Feasibility of Statutory or Constitutional Rules to Limit Debt**

The pervasiveness of debt management problems throughout the world has been highlighted as never before by the financial crisis of 2007-2009. These problems have given rise to renewed interest in adopting statutory or constitutional provisions to limit the amount of public debt a country can incur. This interest may also reflect a realization that the disciplining role of DMO's

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<sup>5</sup> Aart Kraay and Vikram Nehru, "When Is External Debt Sustainable?" World Bank Policy Research Working Paper 3200, February 2004, p. 2.

<sup>6</sup> *Ibid.*, pp. 12-13.

<sup>7</sup> *Ibid.*, p. 17.

<sup>8</sup> These and other criteria are described in "Country Policy and Institutional Assessments: 2009 Assessment Questionnaire," Operations Policy and Country Services, World Bank, September 10, 2009.

described above is, in many or most countries, insufficient to constrain the growth of debt to a sustainable level. Because debt problems have been in evidence for several decades, a significant number of countries have already adopted such provisions, albeit in many different forms and with varying degrees of success. For the decades from the 1960s through the late 1990s, the excellent survey by George Kopits and Steven Symansky of the IMF offers invaluable insight into the types of fiscal rules and underlying conditions in terms of government policy and national commitment that are conducive to success in limiting debt.<sup>9</sup> Because of the greater difficulty of amending them, often requiring a referendum or supermajority in the legislature, constitutional rules would appear to offer greater protection from early abandonment in the face of adverse circumstances—e.g., in the midst of a financial crisis. For this reason, many of the current proposals for fiscal rules have been cast as constitutional amendments. While not disputing this rationale, Kopits and Symansky report that many factors other than the legal form of a rule appear to be more important in determining its effectiveness. Consistent with this conclusion, they find that statutory or administrative rules can also be effective, given the proper level of commitment to fiscal discipline on the part of the government.

### **Attributes of Fiscal Rules That Are Conducive to Success**

As for the specific content of the rules, this varies greatly over the countries surveyed. Some rules place limits on the total deficit, while others limit the current deficit only, permitting unrestricted borrowing for capital expenditures. The latter type of rule suffers from the inherent difficulty of distinguishing government investment from consumption. As a result, it can be undermined by public officials through their interpretations of its provisions. Other rules, similar to that imposed by the European Monetary Union on its members, place limits on both deficits and total debt and some limit only total debt. Many place a strict limit on, or totally prohibit, direct financing of the government deficit by the central bank. Unfortunately, this restriction can sometimes be circumvented by having the central bank purchase government debt in the secondary market.

Kopits and Symansky reported that successful fiscal rules tended to have a number of characteristics in common. To quote their conclusions about the principal characteristics of an ideal fiscal rule: “Such a rule should be well defined as to the selected indicator, institutional coverage, and escape clauses; highly transparent; adequate with respect to the specified goal; consistent internally as well as with other macroeconomic policies; sufficiently simple in the eyes of the public; flexible enough to accommodate cyclical fluctuations and exogenous shocks; enforceable in the given environment; and supported by efficient policies, including structural reforms, rather than one-off measures.” The authors note that none of the rules they review possesses all of these desirable characteristics because there are trade-offs among several of them. For example, flexibility and simplicity rarely go together, nor do flexibility and credibility. But the rules adopted by New Zealand and EMU participants and under consideration in Switzerland appear to embody most of the desired characteristics.

More recent research indicates additional desirable characteristics of fiscal rules. For example, most of the early fiscal rules are stated as a fixed percentage of GDP, as in  $ps_t = s$ , where  $ps_t$  is the primary surplus as a percent of GDP and  $s$  is a constant. A 2004 paper compares such rules with a variable primary surplus rule, such as  $ps_t = kd_t$ , where  $k$  is a constant and  $d_t$  is the stock of debt. The variable fiscal surplus rule is to dominate the fixed primary surplus rule in two

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<sup>9</sup> George Kopits and Steven Symansky, *Fiscal Policy Rules*, Occasional Paper 162, International Monetary Fund, Washington, D.C., 1998.

respects, namely that it increases the critical debt ratio at which debt becomes unsustainable and it reduces the average primary surplus that is required in the medium term.<sup>10</sup>

### **Other Factors Contributing to the Success or Failure of Fiscal Rules**

Aside from the form and content of the fiscal rules themselves, there are a number of factors—primarily characteristics of the country and government adopting the rules—that are key determinants of their success or failure. Undoubtedly, the most important of these is the commitment of the government itself. No rule can fundamentally change the behavior of a government that has no desire to change. But, if commitment is the crucial factor in determining a rule’s success in bringing about fiscal discipline, why is a rule needed at all? The reason is that the rule may be needed primarily for political economy reasons. For example, it is widely believed that democratically elected governments have a bias toward deficits based on the electorate’s preference for redistributing income from future generations to the present generation of voters. Even a government strongly committed to fiscal discipline may face strong political opposition to the unpopular measures—tax increases and spending cuts—that it must undertake to adhere to that discipline.

A rule adopted by the legislature or embedded in the constitution provides political cover to the government in carrying out these measures. Essentially, the government can argue that it has no alternative to compliance with the law of the land. Indeed, to borrow from another area of government activity where rules have received a lot of attention, it may be useful to consider the monetary policy rule of a constant rate of growth in the money supply long advocated by the late Professor Milton Friedman of the University of Chicago. Friedman openly acknowledged that the rule was not optimal from an economic standpoint. Nonetheless, he considered it a major improvement over the policies actually followed by central banks—many of which had permitted sharp declines in the money supply during the depression of the 1930s. Most of all, however, he favored it on the political economy grounds that it provided the central bank with cover for such unpopular actions as allowing sharp increases in interest rates during the expansion phase of the business cycle. In modern jargon, a fiscal rule is conducive to time consistency in fiscal policy—i.e., it helps to assure that policymakers will not abandon the predetermined sequence of actions when circumstances change and those actions become less palatable.

**The effect of rules on the variability of output.** One of the potential concerns regarding fiscal rules is that they might constrain the working of discretionary fiscal policy or automatic stabilizers, thereby causing the variability of output to increase. Put another way, they might result in a policy that was procyclical instead of countercyclical. Kopits and Symansky cited several studies that, though finding that the balanced-budget rules of many U.S. states limited budget flexibility, did not find evidence that the rules affect the variability of output.<sup>11</sup> They also conducted their own stochastic simulations on the Group of Seven economies, based on shocks from historical data, to ascertain the likely effect of various balanced-budget rules on the variability of output and other macroeconomic variables. They concluded that, “except for the most rigid (symmetric) definition of the balanced-budget rule, the simulated rules add very little variability to output as compared with variability under the baseline simulation.” Moreover, “both the no-deficit target (similar to the proposed U.S. constitutional amendment) and the 3 percent of GDP deficit ceiling (consistent with the EMU reference value) provide a sufficiently comfortable margin to allow for the operation of automatic stabilizers.” All in all, these results are favorable with respect

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<sup>10</sup> Erdem Basci, M. Fatih Ekinici, and Murat Yulek, “On Fixed and Variable Fiscal Surplus Rules,” IMF Working Paper WP/04/117, International Monetary Fund, Washington, D.C., July 2004.

<sup>11</sup> Alberto Alesina and Tamim Bayoumi, “The Costs and Benefits of Fiscal Rules: Evidence from U.S. States,” NBER Working Paper No. 5614 (Cambridge, MA: National Bureau of Economic Research, 1996).

to the working of balanced-budget rules in the sense that they suggest such rules would not have significantly procyclical effects.

### **Controlling Other Public Sector Debt**

If the borrowings of sub-national governmental entities and state-owned or sponsored enterprises became excessive, they could threaten the credit ratings of both the national government and other borrowing entities in the country, public and private. For this reason, many countries have national statutes or constitutional provisions limiting the borrowing of sub-national entities. For example, Germany imposes a balanced-budget rule on both the federal government and the *Laender* through the federal constitution, and that restriction is confirmed by budget laws at each level of government. In the United States, such limitations are contained only in the constitutions of the individual states. Other countries have limitations on the debt of sub-national entities that are variations of these approaches. Because such debt is rarely mentioned as a serious problem, it appears that the existing provisions are adequate to the task.

As for limitations on the debt of state-owned and state-sponsored enterprises, there was relatively little research on this problem until recently. Because the problems in this area relate primarily to the implicit or explicit guarantees provided by national or sub-national governments to these enterprises, they are discussed in some detail in Section V on contingent liabilities.

## **III. The Government Budget and the Business Cycle**

### **The Development of Countercyclical Fiscal Policy**

For many years, discussion of countercyclical fiscal policy focused on problems of implementation. Timing was at the heart of the discussion. Not only are there lags in recognizing that the economy is in recession, there are lags in devising and implementing fiscal measures to stimulate spending. Finally, there are lags between the time that tax rates are reduced or government spending is increased and the desired effects on consumption and investment spending. In view of the economy's own demonstrated powers of recovery, it is quite possible that discretionary fiscal measures could have their most powerful effects long after the economy had begun to recover on its own. If so, they would be procyclical, rather than countercyclical, in their impact. Available evidence appears to support the conclusion that this is often the case.<sup>12</sup> However, this conclusion must be considered highly tentative because of a conceptual shortcoming of many of the available empirical studies. Although lags in the operation of fiscal policy have long been considered one of the most serious problems in its use as a stabilization tool, most studies designed to determine whether it has been procyclical or countercyclical have simply looked at the degree to which the timing of fiscal measures coincided with the state of the economy. However, given substantial outside or impact lags—the time between when a fiscal action is taken and when it has its major impact on the economy—this procedure provides little solid evidence regarding the cyclicity of fiscal policy.

At the same time, the long inside or implementation lags associated with fiscal policy led economists and government officials who still believed in its potential for economic stabilization to search for ways to overcome its deficiencies for that purpose. Some proposed that the government prepare advance plans for a series of public investments that could be implemented on short notice as the economy weakened. Other economists—often, but not always, conservatives opposed to any

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<sup>12</sup> Alberto Alesina and Guido Tabellini, "Why Is Fiscal Policy Often Procyclical?" NBER Working Paper No. 11600 (Cambridge, MA: National Bureau of Economic Research, 2005).

expansion of government spending—called for greater reliance on tax cuts, which can be implemented much more quickly and easily. Finally, there was an increased emphasis, in both theory and policy, on “automatic stabilizers”—adjustments to government revenues and expenditures that occur without discretionary actions by government officials and which can be designed to enhance their countercyclical effects.

### **The Key Role of Automatic Stabilizers**

The tax and social insurance laws of most countries contain features that cause them to counteract the business cycle. For example, the graduated income tax rate schedules in many countries have the effect of reducing marginal and average tax rates and total tax revenue when income is falling in a recession. The cushioning effect on after-tax income helps to maintain aggregate consumption, thereby moderating the recession. On the expenditures side, there are government programs like unemployment insurance that help to offset the declines in income and spending that accompany the loss of jobs in a recession. These automatic stabilizers were once taken for granted and their beneficial effects underestimated. However, recent research shows that they are the most effective and reliable measures currently available to stabilize income over the business cycle. According to the authors of a recent study carefully designed to avoid the bias in previous estimates of the effect of automatic stabilizers: “Results generally provide strong support for the view that fiscal stabilization operates mainly through automatic stabilizers. By contrast, fiscal policies systematically linked to cyclical conditions—be they pro- or counter-cyclical—do not appear to have a meaningful impact on output volatility.”<sup>13</sup>

Despite the strength of these results, they do not establish either the adequacy of automatic stabilizers as the sole approach to stabilizing the economy or the ineffectiveness of all efforts to formulate a discretionary countercyclical policy. As has been pointed out on several occasions, large stabilizers imply large governments, which some countries would prefer to avoid. In particular, the results do not demonstrate the futility of attempting to improve a country’s ability to conduct discretionary counter-cyclical fiscal policy. They do, however imply that “...fiscal policy is unambiguously effective at durably stabilizing the economy when it operates in the same way as automatic stabilizers (in a timely, reasonably predictable and symmetric way).”<sup>14</sup> Moreover, the results reinforce the skepticism expressed above regarding the difficulty of timing fiscal actions to produce stabilizing effects and provide evidence that the efforts of many countries to pursue such policies have not been successful.

### **Fiscal Rules Combining Debt Limits with Countercyclical Policy**

The growing concern beginning in the late 1960s over what appears to be a secular rise in government deficits and debt and the efforts described in the two preceding sections to constrain, by statute or constitutional amendment, government spending within the bounds of available revenue led to the adoption of fiscal rules by a number of countries. However, despite the growing concern with budget deficits and keeping debt at sustainable levels, it is widely recognized today that it would not be wise to try to balance national budgets on an annual basis. The likely procyclical effects of doing so have led to a variety of rules designed to limit deficits and the growth of debt in the longer run while allowing some flexibility to run deficits in a given year. An example is the EU’s rule limiting annual deficits to 3 percent of GDP and total debt to 60 percent of GDP. Because the deficit limit is not contingent on the state of the economy, it may require a government to cut expenditures or raise taxes during a contraction, making fiscal policy procyclical.

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<sup>13</sup> Xavier Debrun and Radhicka Kapoor, “Fiscal Policy and Macroeconomic Stability: Automatic Stabilizers Work, Always and Everywhere,” IMF Working Paper WP/10/11 (Washington, D.C.: International Monetary Fund, 2010).

<sup>14</sup> *Ibid.*, p. 30.

Alternatively, it has encouraged some countries to falsify their reported revenues and expenditures, thereby undermining the limits on deficits.

One consequence of these problems with existing debt limits is that there has come to be greater emphasis on balancing budget *over the cycle*, as opposed to year-to-year, with surpluses during the expansion offset by deficits during the contraction. This goes beyond conventional countercyclical fiscal policy only to the extent that budget balance—whether year-to-year or over the cycle—had been largely ignored in practice until recently. Concern over the actual deficit has been largely replaced by concern over the structural, or high employment, deficit—i.e., the deficit that would result under existing levels of government spending and tax rates if the economy were at a level consistent with full (or high) employment.

If spending levels and tax rates were set at levels that would produce a balanced budget at that level of income, they would automatically produce deficits at lower levels of income and surpluses at higher levels of income. Of course, this alone would not guarantee that the surpluses accumulated near the peak of the cycle would exactly balance the deficits incurred during the trough of the cycle, as there is no necessary correspondence between the duration and depth of the recession and those of the expansion. Thus, even if it were possible to estimate accurately the tax rates and volume of government spending that would produce budget balance at full employment, this would not assure budget balance over the entire cycle. Equally important, it would not guarantee that fiscal policy was optimal in the sense that it was making its maximum feasible contribution toward stabilizing income and employment.

Together with the difficulties of conducting discretionary countercyclical fiscal policy and the demonstrated efficacy of automatic stabilizers in moderating fluctuations in output, the growing concern over deficits has culminated in recent efforts to devise fiscal rules that combine debt limits with countercyclical policy. In their 2007 article on fiscal policy in South Africa, du Plessis and Boshoff describe these efforts as the “third wave in the history of fiscal rules,” which they describe as “a combination of a numerical target for government expenditures and procedural rules to support the numerical rule and to provide additional transparency for fiscal policy.”<sup>15</sup> They cite an example of such a rule, while pointing out that the substance of the rule was suggested in another article whose authors did not intend for it to be viewed as a fiscal rule.<sup>16</sup> The essence of the rule is to fix the level of government expenditure relative to GDP, while allowing government revenue to fluctuate with the economic cycle.<sup>17</sup> Another example of a “third wave” rule is the contingent or feedback rule proposed in a 2006 article which relates the appropriate deficit to the state of the economy and the existing stock of debt.<sup>18</sup> One problem with the rule is that, while the debt stock is a matter of public record, estimation of the output gap is a matter of controversy. Chile’s fiscal rule, which calls for a structural surplus of at least 1 percent of GDP, deals with the political problem of calculating potential GDP by delegating it to an independent panel of experts. According to du Plessis and Boshoff, “Chile’s combination of numerical and procedural fiscal rules

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<sup>15</sup> Stan du Plessis and Wimpie Boshoff, “A Fiscal Rule to Produce Counter-Cyclical Fiscal Policy in South Africa,” Stellenbosch Economic Working Papers 13/07, Department of Economics and the Bureau for Economic Research, University of Stellenbosch, 2007, p. 17.

<sup>16</sup> The policy underlying the rule was proposed by J. Frankel, B. W. Smit, and F. Sturzenegger, “South Africa: Macroeconomic Challenges after a Decade of Success.” CID Working Paper No. 133. Cambridge, MA: CID, September 2006.

<sup>17</sup> Stan du Plessis and Wimpie Boshoff, “A Fiscal Rule to Produce Counter-Cyclical Fiscal Policy in South Africa,” Stellenbosch Economic Working Papers 13/07, Department of Economics and the Bureau for Economic Research, University of Stellenbosch, 2007, p. 16.

<sup>18</sup> P. Burger and C. Jimmy, “Should South Africa Have a Fiscal Rule?” *South African Journal of Economics*, vol. 74, no. 4 (2006), pp. 642-669.

with explicit attention to transparency typifies what Kopits has called the third wave of fiscal rules.” At least up until 2007, it had been successful in lowering the debt burden, allowing the automatic stabilizers to work in a mildly countercyclical manner, and made fiscal policy more predictable to the markets and to government departments.<sup>19</sup>

The structural surplus rule used in Chile included a tax revenue gap term and a copper sales revenue gap term on the right-hand side, each multiplied by a coefficient of 1. However, a 2009 IMF Working Paper shows that, within the confines of a New Keynesian model that contains significant nominal and real rigidities and a non-Ricardian element, liquidity constrained households, an alternative tax revenue gap targeting rule with a coefficient greater than one on the tax revenue gap term and an additional debt gap term is much more countercyclical than Chile’s rule and results in substantial welfare gains.<sup>20</sup> Among the variants of the equation considered by the authors were some in which they estimated potential tax and copper revenues as moving averages of current and past actual values, simplifying the calculations and perhaps coming “closer to what policymakers actually do.”

It appears, therefore, that fiscal rules combining restrictions on deficits and debt with provisions allowing room both for automatic stabilizers and some degree of discretionary fiscal policy, have made considerable headway over the past few years. The considerable difficulty encountered in finding a generally accepted means of estimating potential GDP and the output gap remains a barrier to the adoption and implementation of such rules. Moreover, the boost given to highly activist discretionary fiscal policy by the length and depth of the recession associated with the financial crisis of 2007-2009 might seem to conflict with this trend. However, this appears to be true only with respect to recessions of similar magnitude and duration, which remain rare occurrences. For the typical business cycle, the new generation of fiscal rules appears to be the best alternative now available. Governments trying to reconcile policy credibility with a fiscal policy that is, on balance, countercyclical should give it serious consideration.

#### **IV. Coordination of Monetary Policy and Debt Management Policy**

The use of the term “coordination” in discussing the relationships between monetary policy, fiscal policy, and debt management policy is probably unfortunate, as modern best practice is now seen to lie in separating these functions, with the possible exception of fiscal and debt management policy, as far as practicable. This is because each has a primary goal that can be pursued independently of the other two. Most importantly, none of those goals should be subordinated to either of the other two. However, the achievement of the goals of each of the three types of policies can be affected by the conduct of the other two, and it may be necessary to adjust each policy based on knowledge of how the other two are being pursued.

**Monetary policy and debt management.** To take the most obvious case first, achievement of the cost minimization goal of debt management policy is clearly affected by the level of interest rates. At least in the short run, monetary policy can greatly reduce the cost of debt management by keeping interest rates low. However, it can do so only by sacrificing its economic stabilization goals. In the longer run, the increased inflation premium generated by excessive monetary expansion to keep interest rates low in the short run will make it infeasible to continue such a policy indefinitely. Because this relationship is widely recognized, nearly all countries have adopted organizational structures designed to maintain the independence of monetary policymaking from debt management considerations. Thus, it is rare or nonexistent for a central bank to be responsible

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<sup>19</sup> M. Garcia, P. Garcia, and B. Piedrabuena, “Fiscal and Monetary Policy Rules: The Recent Chilean Experience,” Central Bank of Chile Working Papers No. 434, 2005.

<sup>20</sup> Michael Kumhof and Douglas Laxton, “Simple, Implementable Fiscal Policy Rules,” IMF Working Paper WP/09/76, International Monetary Fund, Washington, D.C., April 2009.

for both monetary policy and debt management. This is true even though, as in the United States and many other countries, the central bank serves as the treasury's fiscal agent in conducting auctions of new issues and in operating book-entry accounting systems for transferring and redeeming outstanding securities. This does not mean that debt management considerations never influence monetary policy decisions. It does mean, however, that most governments recognize that there is a serious potential problem that can best be addressed by keeping the two policies independent.

**Fiscal policy and monetary policy.** In view of the fact that both increases in government expenditures and increases in the rate of growth of the money stock have expansionary effects on total spending, it is possible for fiscal and monetary policy to be either mutually reinforcing or at odds with one another. For example, there might be good reasons for fiscal policy to be restrictive—say, for balance of payments reasons—while the desired thrust of overall macroeconomic policy was to stimulate aggregate demand. In such a case, monetary policy could be eased sufficiently to compensate for the restrictiveness of fiscal policy. What is essential is that the central bank be fully informed at all times regarding the stance of fiscal policy. In general, ongoing consultation between the agencies responsible for the two policies—taking the concrete form, in the United States, of frequent breakfast meetings of the Chairman of the Federal Reserve Board and the Secretary of the Treasury—should be adequate to achieve that end.

## V. The Growing Problem of Contingent Liabilities

An area of government financial activity that has grown rapidly in importance in recent years is the provision of a variety of guarantees. These include such familiar programs as deposit insurance, unemployment insurance, medical insurance and disability insurance, and flood insurance. More and more they include guarantees of loans made by private financial institutions and a number of types of implicit or explicit guarantees of government-owned or government-sponsored enterprises in the form of guarantees of debt or lines of credit. What they all have in common is that they are contingent liabilities, i.e., obligations to pay that only become effective in the event that certain events come to pass. In that sense they are similar to the options, credit default swaps, and other off balance sheet items that have come to play a prominent role in the risk management strategies of so many private financial institutions.

### Government Guarantees of Public Insurance Funds

At present, most governments manage a number of insurance plans designed to protect firms or individuals from the financial consequences of a variety of adverse events or occurrences. These events include bank failures, catastrophic illnesses, aging, floods, and unemployment. Very often, to help defray the costs of providing these benefits, governments require the policyholders to pay premiums that may or may not be related to the risks of the events. Similarly, these premiums go into a fund that may or may not be sufficiently large in the aggregate to cover the required payouts over time. Thus, these programs range from pure insurance plans, in which the premiums collected fully defray the cost of the payments made by the fund, to government income redistribution programs in which the premiums bear little relationship to the risks and there is a large element of subsidy financed by general taxpayers.

**Problems associated with aging, other trends.** Most countries have social insurance programs designed to provide at least a basic level of income to their citizenry after they reach a specified age. These programs are extremely popular with the electorate, despite occasional displays of discontent on the part of those still working who resent the degree to which they are subsidizing the elderly. Nonetheless, it has long been considered the equivalent of stepping on the

third (electrified) rail for politicians to suggest any significant reduction in these benefits. However, as populations age—a trend most pronounced in the older countries of Europe and in the United States, where population is growing relatively slowly or declining—the burden of paying for such benefits naturally increases. In the short run, any excess of costs over available revenues can be covered by borrowing. But the growing costs of Social Security and Medicare have become so large in the United States that there is a serious question how long they can be sustained without significant cuts in benefits or increases in the average retirement age. Indeed, the age at which retirees qualify for full Social Security benefits has already been raised from 65 to 67 and further increases are not out of the question.

**The pervasive problem of moral hazard.** More than any other event in recent history, the banking and savings and loan crisis of the 1980s and early 1990s brought home to many people the importance of a concept previously discussed only by managers of insurance companies: moral hazard. It is most simply defined as the incentive that insured parties have to ignore, or willfully accept, risks that they would try to avoid if they were liable for the full financial consequences of the events. Moral hazard played a major role in prolonging and exacerbating the savings and loan crisis. First of all, deposit insurance severed the connection that would otherwise exist between risky lending and the interest rates that depository institutions paid on their deposits. In particular, small depositors, whose deposits were fully insured, had no incentive to worry about the safety of their bank or savings and loan. Later on, as some institutions accumulated so many nonperforming loans that their insolvency was virtually assured, their managements had a strong incentive to “gamble for resurrection.” That is, they had an incentive to pursue risky strategies even if they offered a negative expected return, so long as they offered at least a small positive probability of success in averting insolvency. The failure of regulators to close such institutions promptly enabled them to take such risks, greatly adding to the costs of resolving them.

### **Guarantees of Loans Made by Banks, Other Institutions**

It is common for governments to guarantee repayment of loans made by private financial institutions to specific sectors of the economy or to classes of borrowers that are accorded a high social priority. In many countries, the favored sectors include housing and export industries and, in recent years, alternative energy sources and environmentally friendly manufacturing. Favored classes of borrowers at times have included small and medium sized businesses, students, minorities, and the elderly. Bearing the risk of such lending reduces the cost and increases the supply of lending to these borrowers and areas of the economy. In general, these programs have been successful in redirecting resources to the targeted areas of the economy, although the efficiency with which they do this has often been questioned. As a number of researchers have noted, in many cases direct subsidies could achieve similar results at a lower cost. This is particularly the case when the laws governing such lending have not been carefully designed to achieve the desired results. For example, lending collateralized by residential real estate traditionally has been favored with guarantees because it contributes to the expansion of home ownership and/or the improvement of existing residential properties. However, the growing use of home equity loans for general consumption purposes—in many cases without giving up the deductibility of interest for tax purposes originally designed to encourage housing—negates that intention.

### **Guarantees of the Obligations of Government-Sponsored Enterprises**

Perhaps the most traumatic events during the 2008-2009 financial crisis and recession in the United States were the near-simultaneous failures and takeovers by the federal government of the Federal National Mortgage Association (Fannie Mae) and the Federal Home Loan Mortgage Corporation (Freddie Mac). Among the largest financial institutions in the world, these

government-sponsored enterprises (GSEs) were founded to improve the flow of credit to the housing industry with the ostensible purpose of fostering home ownership. Fannie Mae was founded in 1936 during the Great Depression to promote housing by creating a secondary market for home mortgages guaranteed by the Federal Housing Authority (FHA). One of its accomplishments was to promote the use of the fixed-rate, fully amortized 30-year mortgage that eventually became the standard mortgage product offered by lenders in the United States. It also pioneered mortgage-backed pass-through securities, which were securities backed by a portfolio of mortgage loans that “passed through” the interest and principal payments by the borrowers to the holders of the securities. Originally fully owned by the federal government, Fannie Mae was restructured as a federally chartered corporation in 1968 and its shares were sold to the public. Freddie Mac was founded as a stockholder-owned corporation in 1970 to perform similar functions for conventional (non-government-insured) home mortgages.

Initially, Fannie Mae and Freddie Mac received considerable praise for their innovations in the mortgage market, including their pioneering of the securitization of mortgage loans and their apparent contribution to expanding home ownership. However, as early as the early 1980s, they became the subject of close scrutiny and growing criticism. Much of the criticism was directed at the funding subsidy that the two agencies enjoyed because of their close association with the federal government. Because investors believed that the government—despite the absence of any statutory language to that effect—implicitly guaranteed the debt of the two companies, Fannie Mae and Freddie Mac were able to borrow at rates just slightly above those paid by the U.S. Treasury. They thereby enjoyed a competitive advantage over private lenders, including banks and savings and loans. With the aid of the subsidy, they eventually acquired a combined share of the U.S. mortgage market of over 40 percent. A 1986 study by the Congressional Budget Office estimated that only two-thirds of the subsidy provided by the implicit guarantee benefited borrowers. The remainder enriched shareholders and managers of the two GSEs. Of equal or greater concern, their wealth and the strong support that their mission of encouraging home ownership enjoyed in Congress allowed them to lobby successfully against stringent regulation similar to that to which banks were subject. A widely heard complaint was that the two companies had “privatized the profits and socialized the risks” of their lending operations.

As recently as 2006, the House Committee on Financial Services of the U.S. Congress held hearings at which its members severely criticized the head of the Office of Federal Housing Enterprise Oversight (OFHEO) for proposing increased capital requirements for the two companies—despite the fact that their capital as a percent of assets was only about half of that held by banks. The chairman and several other members of the committee insisted that neither Fannie Mae nor Freddie Mac faced any “safety and soundness” problem and attributed political motivations to their critics. When loan losses due to the housing collapse caused the two companies to fail in September 2007, they were taken into conservatorship by the Federal Housing Finance Agency. Within a year of their failure, the U.S. Treasury had advanced nearly \$100 billion to make up for losses and restore their capital. It had also committed an additional \$300 billion to cover future losses. The futures of the two companies remain in doubt. Some insist that they be restructured as government agencies, while others call for their full privatization.

Among the lessons to be learned from the experience with Fannie Mae and Freddie Mac is that it is a mistake to assign a public function and give special privileges to a company that is—both by law and by personal motivation—devoted to earning profits for stockholders. Even so, it is conceivable that such a flawed business model could work reasonably well if subjected to strong prudential supervision and to strict public-utility style regulation to prevent monopoly pricing. But neither of these was present in the case of the two housing GSEs.

## Taking Account of Contingent Liabilities in Budget Planning

Clearly, contingent liabilities can be quite large and need to be taken into account in the budget planning process. The payments required to honor such liabilities in the event that the contingency was realized could not only destroy budget balance but could put a huge strain on a country's ability to sustain its debt. Ignoring them is not an option. However, it is also true that generally accepted accounting practice is not to recognize contingent liabilities on the balance sheet, but to disclose them in the notes to financial statements.<sup>21</sup> Although efforts have been made to find a means—perhaps through weighting such liabilities by the probability that they may be realized or fully recognizing them if that probability exceeds some specified level—but no well-accepted way of doing this has been found.<sup>22</sup>

On the other hand, one should distinguish accounting treatment for public disclosure purposes from the actions required to assure that they do not cause undue financial distress. The way in which certain contingent liabilities are reported in the financial statements need not preclude the government from taking protective measures to limit their potential impact. Thus, provisioning as in the case of loans that a bank has reason to believe may become nonperforming in the near future would also be prudent for a government having contingent liabilities deemed likely to be realized. For example, the Federal Deposit Insurance Corporation in the United States makes provisions for all identified institutions expected to fail in the near future. However, it does not do this for institutions not yet identified, even if, based on prevailing economic and financial conditions, it is widely believed that a number of them will fail.

## VI. Problems of Debt Management Strategy Implementation

### Principles of Debt Management

Although the average size and variability over time of the government's deficit are two of the major determinants of the cost and sustainability of its debt, the debt management agency typically has little ability to influence these key variables. Essentially, the task of the DMO is to take the deficits as given and then minimize the cost of financing them to the best of its ability, subject to an agreed-upon risk constraint. To be sure, it is not strictly true that the size of the government's issuance of debt in any period is equal to the excess of its spending over its tax revenues, or current deficit. The government holds cash and other assets that can be drawn down or increased to smooth the volume of debt issuance over time. However, the quantitative significance of these asset holdings is typically not great and can be ignored for most purposes without doing too much violence to the principles involved.

**The goal of cost minimization.** Although governments have good reason to want to minimize the cost of debt management, there are compelling reasons why this goal should not be pursued on a period-by-period basis. The primary reason is similar to the reason why short-run profit maximization is usually not the best strategy for a private corporation: there are important tradeoffs between success in the short run and success over a period extending many years into the future. For example, short-run profit maximization may call for charging customers a higher price on average and raising prices sharply when disturbances to market supply result in shortages at prevailing prices. However, such a strategy may involve high costs in the form of customer

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<sup>21</sup>International Accounting Standard 37, "Provisions, Contingent Liabilities and Contingent Assets," September 16, 2009.

<sup>22</sup> "High Time to Abandon the Accounting for Contingent Liabilities," *The Accounting Onion*, [accountingonion.typepad.com](http://accountingonion.typepad.com), May 22, 2009.

dissatisfaction, leading to a loss of future business and, in extreme cases, eventual bankruptcy. In the case of public debt management, the tradeoffs between short-run and long-run cost minimization take a slightly different form but the principle is the same. Short-run cost minimization might call for conducting auctions only in those securities whose yields appeared to be unusually low in the current period to minimize short-run interest and operational expense. Often, but not always, this would entail the issuance of securities with short maturities. But such a strategy runs the risk that a sharp rise in interest rates could greatly increase the cost of servicing the debt.

## **Developing the Domestic Government Debt Market**

Moreover, aside from risk considerations, such a myopic approach ignores the fact that the efficiency of securities markets in the United States and major European countries is largely a function of their breadth, depth, and resiliency. These are qualities that can only be built up over a considerable period of time. One of the ways in which this is done is by issuing a significant and predictable volume of the same class of securities at regular intervals over a period of many years. It is widely accepted that best practices in public debt management include efforts to encourage the development of the domestic debt markets. Among the major ways in which a government can encourage that development are relying to a substantial degree on the domestic market to finance its deficits,<sup>23</sup> furthering participation in the market by announcing in advance the schedule and projected amounts of government securities to be offered at auction over the coming year, and, insofar as feasible, adhering to that schedule. Such behavior on the part of the government contributes to trust and predictability, two of the key ingredients in developing a domestic securities market that is both broad and deep.

**Borrowing in the domestic currency.** With respect to at least one of these recommended practices—reliance on the domestic market—it might appear that the Government of Ukraine’s (GOU’s) performance has been excellent. Beginning in 2008, the Ministry of Finance (MoF) has relied exclusively on borrowing in the domestic currency. However, this has been by necessity rather than a deliberate policy choice. Prior to 2008, the MoF was relying on borrowing in foreign currencies for as much as 84 percent of its total annual borrowing. Its reliance on the domestic market since then reflects primarily its inability, in the wake of the world financial crisis, to borrow in foreign markets.

**Primary dealer system.** Another factor that can contribute to the development of the government securities market and the reduction of debt management costs over time is the introduction of a primary dealer system. Although entailing significant short-run costs in the form of the exclusive privileges accorded the primary dealers, the obligations imposed on them to make markets in specified securities and to participate at specified minimum levels in auctions on a regular basis contribute to the broadening and deepening of the markets. Ukraine’s introduction of such a system in February 2010 would normally be considered a highly favorable sign of progress in debt management. Unfortunately, the conduct of government security auctions by the MoF during the first half, and through June, of 2010 has not been calculated to make the most of this system. Early in the year, the MoF announced its intention to borrow UAH 66 billion in the domestic market in 2010. However, the amount of bids accepted at auctions in recent months has declined almost continuously, going from a high of UAH 2.86 billion at the April 27 auction to a low of UAH 71 million at the June 8 auction. The result is that, as of early June, the MoF had borrowed only UAH 21 billion, requiring it to borrow UAH 45 billion in the remainder of the year. Given the limited capacity of the market—which has been further reduced by the MoF’s rejection

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<sup>23</sup> The arguments for increasing the share of domestic currency borrowing in Ukraine are discussed in Christoph Trebesch, Ricardo Giucci, and Vitaliy Kravchuk, “The Currency Structure of Government Debt in Ukraine: Why the Share of Hryvnia Bonds Should be Increased,” Institute for Economic Research and Policy Consulting in Ukraine, German Advisory Group on Economic Reform, Kyiv/Berlin, February 2007.

of a large proportion of the bids in the first half of the year—it is not clear that this is a feasible undertaking.

Although MoF officials have complained at times of the lack of competition in bidding at the domestic market, the decline in the volume of accepted bids has reflected neither a lack of bids submitted nor an increase in the cost of financing in the domestic market. The volume of bids submitted, although declining since the beginning of the year, has consistently exceeded the amount accepted by a wide margin. Yields, on the other hand, have actually declined, from a range of 16%-17.3% at the March 16 auction to 10.5%-13% at the June 8 auction. The MoF's continued rejection of bids in recent months would seem to violate its commitment to market prices in its auctions, one of the elements of conditionality in the GOU's last borrowing from the IMF. As a German research institute noted in recommending that Ukraine introduce a primary dealer system in 2007, "The government should demonstrate its determination to market development by issuing considerable volumes of domestic debt each month and with a market-oriented issuance strategy."<sup>24</sup>

**Ascertaining investor preferences.** Perhaps one of the most important changes the MoF could undertake to foster the development of the domestic market would be to ascertain the preferences of investors so that it could tailor the securities offered at its auctions to the tastes and needs of the bidders. For example, it might canvass potential investors to ascertain their preferences regarding maturities, denominations, issue sizes, frequency of issuance, whether there is a substantial demand for inflation-linked bonds, the matrix to be used to determine adjustments of the principal on inflation-linked bonds, and how comfortable they are with having the state's fiscal agency select that matrix. In order to enhance the liquidity of securities issued, it is necessary to limit the number of issues. In order to maximize bidding and keep borrowing costs low, these issues should match investors' preferences as closely as possible.

## **The Case for Conservatism in Public Debt Risk Management**

Important as the operational and organizational issues involved in cost minimization may be, managing the risk involved in debt management is even more critical. The risks faced by debt management offices include interest rate risk, refinancing risk, foreign exchange risk, and counterparty risk. Although there are proven strategies for managing these risks, there is no known way to eliminate them. Thus, there is reason to take issue with Principle of Risk Management 3.1 enunciated in the Ministry of Finance Draft Regulation on Public Debt Related Risk Management: "absolute aversion to risk: avoiding risk altogether or its maximally possible minimization, taking into account the situation in the financial markets." In a world characterized by risk and uncertainty regarding interest and exchange rates, this is simply not an option. Risk is inherent in the activity of debt management. In some ways, it is analogous to a hypothetical situation in which a man fleeing a forest fire comes to a river. He must choose between staying on the riverbank and trying to swim across the river. Staying on the riverbank offers a 40 percent chance of dying of burns or smoke inhalation and a 60 percent chance of surviving. Trying to swim across the river offers a 30 percent chance of being eaten by a crocodile, a 20 percent chance of being severely bitten but surviving, a 10 percent chance of drowning, and a 40 percent chance of surviving without injury. The point is that there is no choice that is risk-free, and this needs to be recognized by everyone involved in public debt management.

That being said, debt management entails a number of important decisions concerning the types of securities to be sold, their maturity distribution, whether they are denominated in domestic or foreign currency, whether they carry fixed or floating rates, and whether they contain any

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<sup>24</sup> Christoph Trebesch, Ricardo Giucci, and Vitaly Kravchuk, "A Primary Dealer System for Government Bonds in Ukraine: Why and How it Should be Introduced," Institute for Economic Research and Policy Consulting in Ukraine, German Advisory Group on Economic Reform, May 2007.

embedded options such as call provisions. While, as noted above, no set of decisions with respect to these questions can eliminate risk, all of them have a significant effect on the *level of risk* to which a government or private company is exposed. While it is common for a private business in pursuit of profit to accept a significant probability that it will fail and disappear within a few years, governments typically view themselves as existing in perpetuity. So it is reasonable for them to display a greater degree of risk aversion than a private business. One of the problems of risk management is that its practitioners is that they have often had an inflated view of their ability to recognize and measure risk.

**Hubris regarding our understanding of risk.** A few examples from the not-to-distant past will serve to illustrate the overconfidence of economists and financial practitioners alike with respect to their understanding of risk and their ability to manage it. In the 1960s, a U.S. firm called Equity Funding, which pioneered a financial product that combined life insurance with mutual funds announced that it no longer cared whether the stock market rose or fell, as it had mastered the art of making money in either up or down markets. Within five years, it was out of business, in part because of fraud but largely because it had gambled and lost in the market. In the early 1970s many bankers and economists ridiculed the Federal Reserve's Analysis of Bank Capital (ABC) form, which weighted assets and liabilities based on their performance during the Great Depression in calculating desired levels of capital for banks. These critics all agreed that no banking debacle on a scale similar to that of the 1930s would ever occur again because of tightened regulation, deposit insurance, and more enlightened monetary policy. However, losses as a percentage of deposits during the banking crisis of the 1980s and early 1990s were of the same order of magnitude as those in the 1930s, although bank runs were largely avoided. One of the most extreme examples of hubris in risk management was the experience of Long Term Capital Management (LTCM). LTCM was a hedge fund whose managers included several Nobel Prize-winning economists cited for their work on risk in financial markets. However, it survived severe market losses in the financial crisis of 1998 only because of a privately financed bailout engineered by the U.S. Federal Reserve System. Two years later, it was no longer in existence. Finally, the financial crisis of 2007-2009 was marked by the failure or rescue by public bailout of some of the most venerable firms on Wall Street and one of the largest insurance companies in the world. That the managers and key employees of these firms were paid salaries and bonuses of millions of dollars should dispel the notion that high rates of pay are a guarantee of infallibility in playing the market. All of these examples should lead one to avoid pursuing any debt management policy that involves outguessing the market.

A 2003 survey of 18 countries by the International Monetary Fund and World Bank suggests the relevance for debt management of this call for humility regarding our understanding of risk. Only four of the countries in the survey actively managed their debt portfolios in an effort to profit from movements in interest rates and exchange rates. Two of those countries, Ireland and Portugal, are now on most observers' lists of countries in danger of defaulting on their obligations. This is not to say that innovation and risk-taking are bad *per se*. Call options, junk bonds, and sub-prime mortgages all have important roles to play despite serious under-pricing of risk at some point during their development. The same is undoubtedly true of credit default swaps. But it is not a good idea to bet the farm on them during their first few years of existence. This is apparently what the giant insurance company AIG did in taking on enormous exposures to credit default swaps prior to the financial crisis of 2007-2009. As former U.S. Comptroller of the Currency John Heimann noted in the 1980s, we really don't know much about the risk characteristics of a new financial instrument until it has gone through at least one complete business cycle. In the case of public debt management, policies characterized by diversification of risks can be expected to yield the most consistent results. What this means in practice is the issuance of securities distributed over a wide range of maturities as opposed to concentrations at points on the current yield curve currently appearing to offer the lowest costs, a distribution of securities by currency that closely matches the government's planned disbursements, and the use of options, futures, swaps, and other derivatives only for well-understood hedging purposes and with adequate attention to counter-party risk.

**Managing refinancing risk.** While the bulk of the literature on the role of risk management in managing public debt is devoted to interest rate and foreign exchange risk, perhaps the risk most characteristic of—and peculiar to—debt management is rollover, or refinancing, risk. This is the risk that, when currently outstanding debt comes due and must be rolled over or refinanced, conditions in the debt market will have changed so much that it is either prohibitively costly or impossible to do so. The risk is magnified if the government has no reserves or other liquid assets that it can convert into cash to pay off the maturing debt. Unlike interest rate and most other risks, refinancing risk increases as the time to maturity becomes shorter, as it only comes into play at that time. Looked at from the standpoint of the lender or bondholder, it is sometimes referred to as the “crisis at maturity.”

The most common and most effective way of managing rollover risk is to maintain a wide range and relatively even distribution of maturities on outstanding debt, so that only a small fraction of it comes due at any one time, as indicated by its redemption profile. This greatly reduces the likelihood of problems at maturity and the possibility that a large refinancing could precipitate a financial crisis. At present, the amount of debt owed by and guaranteed by the GOU relative to GDP, though increasing from 12.3 percent in 2007 to a budgeted level of 40.1 percent in 2010, is still well within the 60% ceiling set by the Budget Code of Ukraine. For the most part, the redemption profile of Ukraine’s currently outstanding debt over the years 2011 through 2020 looks reasonable, with annual redemptions of less than USD 2.5 billion for all years other than 2012 and 2013. However, the amounts to be refinanced in those two years, respectively USD 3.27 billion and USD 3.98 billion, could present a formidable problem for the GOU. This is particularly true of 2013, as the debt coming due is equal to 2.4% of projected GDP, and 93 percent of the debt coming due that year is external debt, a share much larger than that for any other year through 2020.

Among the alternatives open to the MoF to prevent such a potential problem from becoming an actual one is to shift the redemption profile through “switch auctions.” These are competitive auctions at which holders of the securities whose refinancing at maturity is deemed a potential problem may offer those securities in exchange for longer or shorter term securities that are not deemed to pose such a risk. As conducted on occasion by the Debt Management Office of the United Kingdom, switch auctions are held only for securities within the same maturity bracket (usually 0-7 years or 5-15 years), are open to all holders although bids must be submitted through primary dealers, and leave a sufficient amount of the switched issue outstanding to enable a viable, liquid market to exist following the auction.<sup>25</sup> Another possibility is a debt buyback, frequently used in the United States, or open market repurchases, conducted for several years in the recent past by the Reserve Bank of Australia on behalf of the Australian Office of Financial Management.<sup>26</sup> Still another option is a reverse auction. However, several countries have found open market repurchases to be less costly, in part because the government can choose the time to buy when market prices appear favorable and purchase as much or little as it finds advantageous.

## **VII. Recommendations**

Based on the discussion of issues in this paper, we offer the following recommendations related to public debt management in Ukraine:

1. Ukraine should seriously consider adopting a well-grounded and explicit policy or legal provision limiting the debt of the national government. There is strong evidence that such provisions serve to

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<sup>25</sup> See *Guidelines for Public Debt Management: Accompanying Document and Selected Case Studies*, p. 245.

<sup>26</sup> United States General Accounting Office, *Debt Management: Insights and Tools From Selected Nations*, Report to Congressional Requesters. Washington, D.C.: General Accounting Office, November 2001, p 4.

fortify the resolve of government officials and provide political cover when unpopular spending or taxation decisions have to be made. An effort should be made to incorporate in the rule the qualities discussed in Section II.A. that have been found conducive to success.

2. Consideration should also be given to combining the debt limit with provisions assuring that automatic stabilizers have room to work and allowing some flexibility for the pursuit of countercyclical fiscal policy to combat serious downturns. So far as possible, such rules should be fashioned in such a way as to avoid the subjectivity and possible bias in estimating such crucial magnitudes as potential GDP and the output gap. One way is by entrusting such calculations to an independent panel of experts. Another would be to adopt a tax revenue gap targeting rule as described in the 2009 paper by Kumhof and Laxton and estimating potential tax and other revenue as moving averages of current and past actual values, as the authors did in some variants of their equation. Another is by excluding such refinements from the rule, relying instead on simpler but more arbitrary rules, such as a requirement that the government run a surplus whenever GDP exceeds some percentage of its previous high. In the process of doing this, an assessment should be made of the efficacy of existing automatic stabilizers in the tax structure and social insurance laws of Ukraine.

3. While control of fiscal, monetary, and debt management policy should be separated, it is important that the current policy stance and future intentions of the authorities responsible for each policy be communicated to the other two authorities on a regular basis. There should be no cases in which the authorities responsible for any of the three policies are taken by surprise by the actions of the others. Frequent meetings, regular exchanges of written materials, and greater transparency—including public disclosure of all but the most sensitive information regarding the conduct of their ongoing operations—are the best means of assuring this.

4. In making direct loans or guaranteeing loans made by private or government-sponsored enterprises to favored sectors of the economy or classes of borrowers, the government should be fully aware of the risks associated with such lending. When economic downturns or other special circumstances make it more likely that defaults will occur on such loans, the government should take full account of that possibility both in its accounting and in the provisions it makes to assure that its losses can be covered. For example, it can write down the value of loans on its books and increase its reported provision for loan losses. It should also avoid creating inappropriate incentives, as in giving public responsibilities to a state-sponsored enterprise enjoying implicit guarantees of its debt but owned by stockholders and obligated to further their interests.

5. In carrying out its responsibilities for managing the state debt, the MoF and departments thereof should do much more to establish their credibility with investors and to foster the development of a broad and deep government securities market. To do this will require that they discard several current practices. In particular, a high priority should be given to adhering to the schedule of borrowings announced early in the year by accepting a much higher proportion of bids at the periodic auctions. To do otherwise would be inconsistent with the commitments made earlier to promote market pricing of government securities. Moreover, pursuit of such a policy would not only permit the GOU to lengthen the average maturity of its outstanding borrowings, lessening its interest rate and refinancing risk, but would also reduce its cost of borrowing in the long run.

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