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A Sovereign Fiscal Responsibility Index

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In the wake of the recent financial crisis, and in light of escalating deficits and mounting debt burdens in a number of major industrialized nations, the issue of fiscal responsibility and sustainability has moved to the forefront of global discussions and political debates, with renewed emphasis on holding governments accountable for their actions or inaction. From the European debt crisis to the U.S. budget deficit debates to Japan's recent credit-rating downgrade, fiscal issues are in the news around the globe.

While many sovereign states have put fiscal responsibility high on their agendas, no simple and comprehensive metric to evaluate sovereign fiscal responsibility currently exists. Many argue the merits on how to define debt and at what level a country will enter a fiscal crisis.[1] The importance and structure of fiscal institutions and fiscal transparency are also contested. Therefore, understanding the relative fiscal position of countries is difficult.

This prompted Stanford University and the Comeback America Initiative (CAI) to try to develop a Sovereign Fiscal Responsibility Index (SFRI). Our SFRI needed to incorporate both quantitative and qualitative metrics that allow one to extensively define "fiscal responsibility" as well as carry out cross-country comparisons. For our study we included the 34 nations belonging to

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1 A fiscal crisis typically is caused by a loss of confidence in the ability of a borrower to effectively manage its financial affairs. In the case of a sovereign nation, it normally results in much higher interest rates and can result in a significant decline in the value of the country's currency. These actions could cause significant economic disruption in the affected country and, depending on the circumstances and the country involved, around the world.

About the Authors

T.J. Augustine, **Alexander Maasry**, **Damilola Sobo**, and **Di Wang** are graduate students in the Public Policy Program at Stanford. **David M. Walker** is founder and CEO of the Comeback America Initiative and former comptroller general of the United States.

This graduate team prepared this report on A Sovereign Fiscal Responsibility Index as part of the graduate Practicum in Public Policy, a two-quarter sequence required for Master,s students in both the Public Policy and International Policy Studies Programs. The client for this project was the Honorable David Walker, founder and CEO of the Comeback America Initiative (CAI) and former comptroller general of the United States. The full report can be obtained from the Public Policy Program at *publicpolicy@stanford.edu*.

Joe Nation served as the instructor and an advisor for this research team and directs the graduate student Practicum at Stanford University. He teaches climate change, health care policy, and public policy.

Nation represented Marin and Sonoma Counties in the State Assembly from 2000-2006. He received a Ph.D. in Public Policy Analysis from the Pardee RAND Graduate School; his graduate work focused on budget modeling and long-term budget projections.

About This Report

The Sovereign Fiscal Responsibility Index (SFRI) is the result of a six-monthlong master's thesis project completed by a team of four students from the International Policy Studies (IPS) and Masters in Public Policy (MPP) programs at Stanford University. The team conducted the project under the guidance of the Honorable David M. Walker, founder and CEO of the Comeback America Initiative (CAI) and former comptroller general of the United States.

The views expressed in this paper are solely those of the authors and not of the Stanford Institute for Economic Policy Research, Stanford University or the experts with whom we consulted.

The goal of this project is to provide a simple but comprehensive analytic tool and framework for citizens, research institutions, and advocacy groups alike to use in understanding sovereign fiscal responsibility and sustainability. It is specifically intended to illustrate where the United States is, where it is headed, and how it compares with other nations in the area of fiscal responsibility and sustainability. Importantly, key data sets used to create the SFRI were obtained from the International Monetary Fund (IMF) and other authoritative, trusted, and neutral international organizations.

the Organization of Economic Co-operation and Development (OECD) and the so-called "BRIC" emerging markets (Brazil, Russia, India, and China). We chose these 38 countries based on relevance, interests, time constraints, and data availability.[2]

To build the index, we had to grapple with tough questions around defining debt levels, determining how much debt countries could manage, and the importance of different qualitative metrics. We also had to consider a country's projected future fiscal path to understand its relative position. The SFRI addresses all of these controversial topics.

To the maximum extent possible, we structured the index in an impartial manner. We drew all of our data and structured most of our components on the work and staff papers of major international financial institutions, most notably the IMF but also the OECD and European Union. However, at times we certainly had to make judgment calls, particularly on what to include in the index and how to weight the various components. We will be very explicit in our discussion about where we made judgment calls and what we drew directly from the other sources.

Nevertheless, reasonable people will undoubtedly differ on the structure and elements of the SFRI. Our purpose here is to show relatively how countries fare in fiscal responsibility. We believe that even if some disagree with some of our measurements, our components are nevertheless unbiased such that the relative rankings of countries remain accurate. Further, we conducted sensitivity tests to ensure the rankings were reasonable even if one varies the weightings we applied. We thus firmly believe the SFRI can help policymakers think through what constitutes fiscal responsibility, where their country lies, and what reforms may be needed.

Fiscal Responsibility Is Quantitative and Qualitative

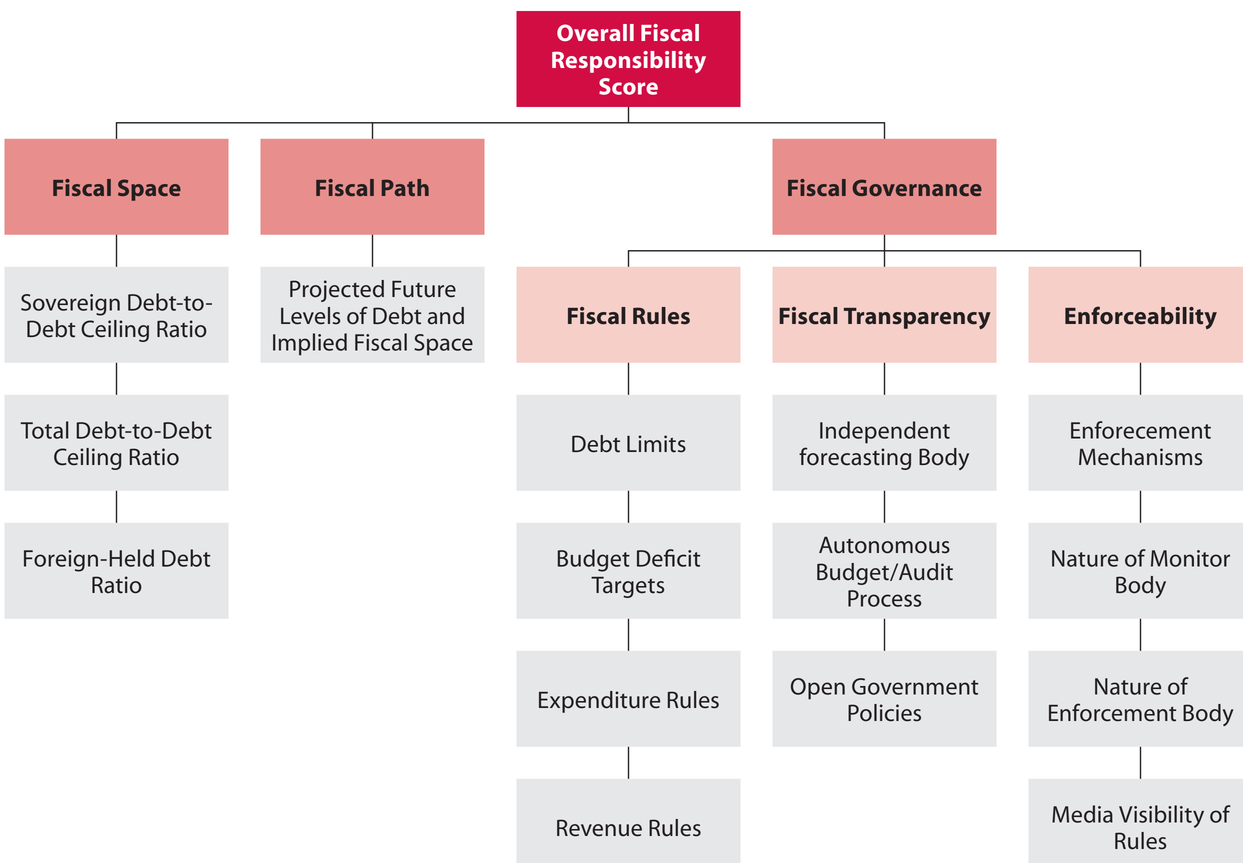
The first step in developing the SFRI is to define fiscal responsibility. The term is applied in many different ways. While the term is typically used to connote government prudence in limiting spending or managing reasonable sovereign debt levels, it also relates to the measures and processes of the government in managing its fiscal affairs. For example, the Maastricht Treaty calls on European nations to exercise fiscal responsibility through maintaining budget deficits of 3 percent or less of GDP and an overall debt level lower than 60 percent of GDP. Conversely, the IMF cites fiscal responsibility in the establishment of transparent, independent institutions that monitor a legislature's spending patterns.

2 Due to data constraints, we have included 34 of these 38 countries in our final rankings. The countries that were excluded are Switzerland, Russia, Czech Republic, and Turkey.

Our definition of fiscal responsibility involves three factors: a government's current level of debt, the sustainability of government debt levels over time, and the degree to which governments act transparently and are accountable for their fiscal decisions. This implies that responsibility is more than managing one's annual deficits. Creating sound institutions, rules, and procedures that regulate the budget process are essential. In addition, the existence of appropriate enforcement mechanisms is also important to ensure compliance. Many studies have shown that in the long run, governments need fiscal rules, transparent institutions, and effective enforcement to remain fiscally responsible.[3]

We derive the SFRI from this definition and create three major components of the index. We measure current government debt levels and consider a country's *fiscal space.* We assess the sustainability of government debt levels over time by looking at a country's *fiscal path.* Lastly, in determining degree of transparency and accountability, we evaluate each country's *fiscal governance,* including the current rules and institutions in place to check for responsible fiscal decision making. These three major components are described below. (See Figure 1 for an overview of the SFRI categories.)

Figure 1. Overview of SFRI Categories



3 International Monetary Fund (2009), Fiscal Rules—Anchoring Expectations for Sustainable Public Finances, Working paper SM/09/274, Washington, D.C., IMF.

Fiscal Space: Staying Clear of One's Debt Ceiling

The question of "how much debt is too much" frequently permeates any debate on fiscal responsibility, especially international comparisons. Since countries can sustainably service different levels of debt, it is key to understand each country's debt limit and how much more debt it can issue. The answer depends on its fiscal space.

Fiscal space represents the additional amount of debt that a country could theoretically issue before it is virtually certain to have a fiscal crisis. Fiscal space is the difference between a country's current weighted-average debt level and its so-called "debt ceiling." The weighted-average debt level is a judgment our team made to create an indicator more accurate than debt-held-by-the-public. We start with the definition of debt exhibited in the IMF's world economic outlook: gross sovereign debt obligations, including intra-governmental holdings like social security trust fund debt (one must add such implicit liabilities in order to compare debt across countries in an equal manner). We then create a second factor that adds sub-national government debt to gross sovereign debt. Next, we use a third indicator that is the amount of sovereign public debt held by foreigners. Weighting each of these components equally, we come up with a weighted-average debt level. In this way, we account for all obligations, as well as the nature of the holders of debt, to get the most complete picture of a country's debt level.

A country's debt ceiling is an IMF term depicting the level of debt at which a country will be unable to avoid a fiscal crisis (not to be confused with the U.S. government's legal "debt ceiling").[4] We borrow this term from an IMF staff paper.[5] Using statistical analysis, several IMF economists estimate a debt ceiling for each country based on past behavior, stability of government, and a few economic indicators.[6] For example, Australia's current weighted-average debt level is 24 percent of GDP while its debt ceiling is 192 percent of GDP. Hence, Australia's fiscal space is 168 percent of GDP.

Clearly, fiscal space is an estimate rather than a hard number. No one could exactly predict how much more room a country has before it experiences a fiscal crisis. Undoubtedly, a country could have a fiscal crisis before it reaches its debt ceiling, as was the case in Ireland's EU bailout this year. Conversely, a country may not hit crisis when it reaches its debt ceiling. Japan's sovereign debt is nearly at its debt ceiling yet few suspect that a Japanese fiscal crisis is imminent. However, fiscal space is at least directionally useful (Ireland has little space left and Japan recently had its credit rating downgraded). Further, in that fiscal space treats countries in an unbiased manner, it allows one to establish relatively how much fiscal room countries have left, precisely what the SFRI aims to illustrate.

Fiscal Path: Managing Debt Levels over Time

Equally if not more important than a country's fiscal space is its fiscal path, or its projected future levels of debt. A country with a medium level of debt today but with projected fiscal balance over time is much better off than a country with a low level today but rapidly rising government deficits.

Using IMF *Fiscal Monitor* data on future government spending patterns, we project the future fiscal path for each country until 2050.[7] Our projections reveal a country's debt level for each year into the future. We then can measure how many years it takes

4 Ostry et al. (2010), Fiscal Space, IMF Staff Position Note, September 1, 2010.

5 Ibid.

6 We should note that the work cited (Ostry etal.) is not the work or position of the IMF and reflects only the view of the authors. We recognize not all may agree with the findings, but we believe the findings are directionally and relatively useful in comparing countries.

7 Calculations are based on the IMF"s October 2010 *Fiscal Monitor*. That publication lists each country's cyclically adjusted primary balance (CAPB) and projects increases in health care and pension spending until 2050. Combining these data with projected GDP growth rates and current interest rates, we are able to create projected government deficits and debt levels each year from now until 2050.

for a country to reach its debt ceiling. For example, using IMF statistics on projected spending patterns (assuming no reforms), the United States will hit its debt ceiling in 2027, 16 years from now. Other countries, such as Sweden, do not hit their debt ceiling by 2050 and hence have more than 40 years before they reach their limit.

One must remember two important features of fiscal space when looking at the future fiscal path. First, since the debt ceiling is directional, fiscal path is also directional. It reveals approximately how long countries may have before a crisis, especially relative to one another. Undoubtedly, a fiscal crisis could occur well before the suggested number of years of fiscal path.

Second, our analysis of fiscal space suggests a country should maintain at least 50 percent of GDP of fiscal space to remain less at risk of fiscal crisis. Countries under real fiscal scrutiny today—including Greece, Ireland, Portugal, and Japan—all have less than 50 percent of GDP of fiscal space. For fiscal path, the number of years for many countries until fiscal space is less than 50 percent of GDP is much fewer than the number of years until they hit their debt ceilings. For example, the United States' fiscal space will be less than 50 percent of GDP of fiscal space in just three to five years—and possibly within two years, given more recent deficit projections.

Fiscal Governance: Rules, Transparency, and Enforceability

As suggested by our definition of fiscal responsibility, it is essential for a government to be transparent and accountable to its citizens. Strong institutions, rules, and processes are needed to ensure governments maintain responsible behavior over time. Following IMF analysis and data, we use three categories in the fiscal governance component of the SFRI: rules, transparency, and enforceability.

Fiscal Rules

Fiscal rules are effective methods of maintaining fiscal responsibility. By the force of law, they limit a government's ability to spend irresponsibly. Countries such as Australia and New Zealand that have implemented strong fiscal rules have seen declining debt levels and reasonable government spending.

To assess fiscal rules, we create a scoring system directly based on two IMF studies.[8] The first study rates the types of rules that are most important, with debt limits at the top and spending/revenue rules at the bottom. While there are differences of opinion regarding the relative importance, we follow the IMF's methodology for consistency purposes.[9] Then, the second study rates the strength of the rules, with a constitutional mandate being the strongest and a political statement the weakest. While the combined scores of the two studies are our own, the inputs come directly from IMF frameworks and data.

Fiscal Transparency

The degree of fiscal transparency within a country translates directly into greater fiscal discipline. It forces governments to reveal its spending patterns and reduces corruption. This in turn translates into better economic performances and lower sovereign debt.

As in fiscal rules, we draw directly on an IMF framework on the subcomponents that constitute fiscal transparency: open government, autonomous budgeting/auditing, and independent forecasting.[10] The scoring system we use for each subcomponent is taken directly from this study. To create an overall score for the fiscal transparency category, we use our judgment and weight all three subcomponents equally. We do so because we do not find a compelling reason why any one of the three subcomponents of fiscal transparency is more relevant than the others.

8 International Monetary Fund (2009), Fiscal Rules—Anchoring Expectations for Sustainable Public Finances, Working Paper SM/09/274, Washington, D.C., IMF; Kopits, G. (2001), Fiscal Rules: Useful Policy Framework or Unnecessary Ornament? IMF Working Paper 01/145.

9 For example, Anderson and Minarik find that spending rules are more effective than debt/deficit rules, Anderson, B., and J. Minarik, "Design Choices for Fiscal Policy Rules," *OECD Journal on Budgeting*, vol. 5, no.4, 2006.

10 International Monetary Fund (1998), Transparency in Government Operations, IMF Occasional Paper 158.

Fiscal Enforceability

Fiscal enforceability assesses the degree to which rules and processes are followed and enforced. A rule that is not enforced does little to limit fiscal irresponsibility. For example, in the United States, the congressional debt ceiling law has little enforceability strength because Congress raises the debt ceiling each time the federal debt approaches its limit. In addition, the European Monetary Union (EMU) debt and deficit rules have historically not been effectively enforced.

Again, we use IMF guidelines to determine the subcomponents of fiscal enforceability: automatic enforcement mechanisms, the type of enforcement body, the type of monitoring body, and media visibility. Based on an EU scoring index, we assess countries in each of these four subcomponents.[11] However, unlike in fiscal transparency, here we exercise our judgment and do not weight the four subcomponents equally. We place the greatest significance on an automatic enforcement mechanism because it is the most reliable method to ensure compliance. The other three subcomponents are weighted substantially less because they are enablers for enforcement, rather than enforcement itself.

Overall Fiscal Governance

To arrive at an overall fiscal governance score, we normalize the scores from each category and then weight them equally. We believe rules, transparency, and enforceability are all important components and do not have a view that one would be more important than the others.

To create an overall ranking for the SFRI, we take each country's rank within the three main components (fiscal space, fiscal path, and fiscal governance) and average those rankings to create an overall ranking. However, we display in the overall table all three components because each in its own right is a fundamental component of fiscal responsibility.

Results: Emerging Markets, Reformers Lead the Way

Based on our rankings, the most fiscally responsible countries are not necessarily the ones we would expect (see Table 1). Four of the top 10 countries are emerging markets or recently developed countries, and virtually every developing country finishes in the top half. This turnaround by emerging markets starkly contrasts with the world of the 1980s and 1990s, when fiscal crises frequently occurred in the developing world.

The two top-performing countries are Australia and New Zealand. Both of these countries passed budget reforms and enacted strong fiscal governance over the past 20 years. As a result, their debt levels have declined in recent years and their future paths look strong and sustainable. They reveal the power of good fiscal governance.

Conversely, many traditional powers find themselves near the bottom of the list. The so-called PIIIGS of Europe (Portugal, Italy, Ireland, Iceland, Greece, and Spain) are all in the bottom third. With a sovereign debt greater than 200 percent of GDP, Japan finishes fourth to last. The United States is 28 out of the 34 countries rated.

Fiscal Space Results

In the fiscal space category, emerging markets and recently developed countries[12] (led by China and Chile) are in very strong fiscal shape, most of them with fiscal space levels greater than 100 percent of GDP. Scandinavian countries and former British colonies also appear well positioned with fiscal space in excess of 100 percent of GDP as well. Next, with fiscal space between 60 percent and 95 percent of GDP, the Central and Northern European powers (Germany, United Kingdom, France, and Spain) are currently in decent shape but at risk of falling under

11 EU Fiscal Rules Database, January 2011.

12 We include six members of the OECD in the "recently developed countries" category. These countries have all joined the OECD in the last 20 years: Chile, Estonia, Hungary, Poland, Slovak Republic, and Slovenia.

Table 1.
Overall SFRI Rankings

Country	Fiscal Space (% of GDP, 2010)	Fiscal Path (# of years)	Fiscal Governance (pts out of 100)	Overall Rank
Australia	168.2	40+	65.9	1
New Zealand	163.6	38.0	68.5	2
Estonia	138.1	40+	61.7	3
Sweden	153.7	40+	59.0	4
China	184.9	40+	49.4	5
Luxembourg	178.0	22.0	61.8	6
Chile	193.3	40+	45.9	7
Denmark	153.1	34.0	54.7	8
United Kingdom	90.8	27.0	66.4	9
Brazil	102.3	39.0	56.9	10
Canada	106.0	39.0	51.5	11
India	97.3	40+	56.3	12
Poland	94.9	31.0	58.0	13
Netherlands	92.7	12.0	72.3	14
Norway	171.6	22.0	47.9	15
Slovak Republic	107.7	33.0	50.9	16
Korea	124.9	40+	27.5	17
Mexico	112.1	30.0	50.7	18
Israel	113.0	40+	40.5	19
Slovenia	105.2	21.0	54.3	20
Austria	76.4	12.0	67.8	21
Finland	99.2	13.0	57.9	22
France	58.7	15.0	62.8	23
Spain	81.5	12.0	60.7	24
Germany	75.7	18.0	57.4	25
Belgium	42.3	8.0	61.2	26
Italy	17.8	7.0	59.2	27
United States	62.4	16.0	46.0	28
Hungary	53.2	12.0	46.1	29
Ireland	38.1	6.0	48.4	30
Japan*	49.0	5.0	47.2	31
Iceland**	17.1	20.0	20.2	32
Portugal	27.8	5.0	45.1	33
Greece	0.0	0.0	45.0	34

*Japan's debt rating has just been downgraded.

**Iceland has already defaulted and its Sustainable Fiscal Path reflects reforms made since default occurred.

threat should their debt levels increase significantly. Next, the PIIIGS are already close to their debt limits and many of them are facing difficult circumstances as a result. Lastly, the United States, with roughly 60 percent of GDP of fiscal space, sits at a level between the Southern European and Northern European countries. While U.S. fiscal space is not as bad as that of Southern Europe, it could easily deteriorate to similar levels in the next few years.

A crisis of confidence can occur due to a variety of factors. It typically involves a market reaction to a belief regarding the willingness and ability of a sovereign borrower to act and not simply whether it has passed a particular metric or date. Therefore, it is important to realize that the remaining years of fiscal space are intended to be a relative and not absolute measure. A closer look at the results suggests that a country can become at risk when its fiscal space drops to less than 50 percent of GDP. Japan (49 percent), Ireland (38 percent), Portugal (28 percent), Italy (18 percent), Iceland (17 percent), and Greece (0 percent) are the nations currently facing credit downgrades, bailouts, or investor speculations. All the countries with fiscal space greater than 50 percent of GDP seem to be on sturdier ground. Importantly, without reform, the United States should see its fiscal space drop to less than 50 percent of GDP within the next three years and possibly fewer, given recent deficit projections.

Fiscal Path Results

Only eight of the 34 countries in the sample will not hit their debt ceilings by 2050. These countries mainly consist of two groups of countries. First, fast-growing emerging markets such as India and China have low primary balance deficits over time and are able to grow fast enough to avoid mounting debt obligations. Second, former British colonies and several Scandinavian countries such as Australia, New Zealand, and Sweden have already made many fiscal reforms limiting government spending. The reforms are robust enough such that the IMF believes they will hold government spending and corresponding debt at reasonable levels over time.

In Western Europe, most countries have 15 to 30 years until they reach their debt limits. This suggests that needed reforms have some time until they are absolutely necessary, but the longer reforms are delayed the more serious they become.

Other countries are clearly in worse shape. All of the PIIGS and Japan will hit their debt ceilings within 15 years. The United States will do so in 16 years. And given that crises can occur well before a country's debt ceiling is reached, this suggests that many of these countries, including the United States, may have much less time to reduce government deficits.

Fiscal Governance Results

In a handful of countries the blueprint for why fiscal governance does matter exists. The top four countries overall (Australia, New Zealand, Estonia, and Sweden) each underwent serious reforms in the past 15 to 20 years and are the top finishers in the SFRI today.

Many emerging markets perform less well in fiscal governance. Countries such as China, Korea, and Chile score quite well in fiscal space and fiscal path but have low scores in fiscal governance. As their citizens demand a greater social safety net and growth slows over time, fiscal governance may become more relevant in these countries to ensure responsible spending over time.

For many other countries, including the United States, fiscal governance is moderate to weak. While most countries in the SFRI are rather transparent, fiscal rules frequently have weak legal stature and limited enforcement. The result is that debt has grown over time and there is little to prevent it from rising in the future. Yet, the situation is not irreversible. For example, if the United States implemented the recommendations of the National Fiscal Responsibility and Reform Commission (NFRRC) today, or a package of reforms with the same fiscal impact, it would move immediately to No. 3 in fiscal governance and become one of the top 10 countries in the overall SFRI.

Recommendations: Comprehensive, Timely Reforms Needed

The recent U.S. housing market collapse and ensuing financial crisis reminds us that crises usually are both unanticipated and extremely costly. Our SFRI indicates that while we can never truly know exactly when a crisis will occur, our analysis suggests the United States is three to five years away from an indebtedness crisis like that of the European nations currently facing fiscal strain. Several other large countries seem to have a bit more time, but nevertheless early action is safer and less costly.

As the United States thinks through reforms, we should keep in mind that fiscal responsibility is both quantitative and qualitative. On the quantitative side, we will have to make tough decisions regarding both spending and revenue. From our perspective, the SFRI is agnostic as to whether to focus more on revenues or on spending cuts. There are countries with much higher (Sweden) and much lower (Chile) tax rates finishing near the top of the SFRI. What is most important is that we do in fact make those decisions and reverse our debt path.

Further, the United States should not forget the importance of fiscal governance. Process and rule reform will not only make long-term fiscal responsibility easier to manage but it also can improve the chances of budget compromise in the near term. The National Fiscal Responsibility and Reform Commission plan offers not only a strong fiscal path but it also suggests improvements in fiscal governance that will greatly facilitate responsible government spending into the future.

In the rest of the world, major European powers also need timely reforms. France, Germany, and the United Kingdom also must find a way to further reduce government deficits in the face of aging populations. The longer these countries wait the more costly and difficult reforms become.

Lastly, many emerging markets that perform well today in terms of fiscal space and fiscal path should not be complacent. Fiscal governance is extremely important in the long run, especially as emerging markets liberalize and citizens demand more from their governments as wealth rises. Enacting fiscal governance at this early stage in their development will ensure long-run fiscal viability.

In sum, we openly recognize that the SFRI is not perfect and that we have made several judgment calls in the development of the index. We understand that some people may disagree with some of our components and some of the judgments that we have made. However, we tested for sensitivities, such that the relative rank of countries would not move much even if the weightings or components were changed, and we do believe that our analysis is objective. Further, we strongly feel that the possibility of near-term fiscal crisis in many countries, including the United States, is much closer than many believe. Comprehensive and timely reforms are needed to ensure fiscal responsibility and sustainability—and to avoid a debt crisis in the United States that would be felt around the world. It's time to begin to act on putting the nation's finances in order.

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