

CBO

**The Budgetary Effects
of the United States'
Participation in
the International
Monetary Fund**



JUNE 2016

Notes

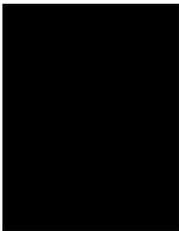
Numbers in the text may not add up to totals because of rounding.

Data underlying the figures are posted along with this report on CBO's website.



Contents

Summary	1
How Does CBO Account for the United States' Participation in the IMF in Budget Estimates?	1
Why Is There a Cost Associated With the United States' Participation in the IMF?	2
How Does CBO Estimate the Fair-Value Cost to the United States of New Commitments to the IMF?	2
Why Does CBO Use a Market-Based Estimate of Cost?	3
How Uncertain is CBO's Estimate?	3
What Other Effects Does Participation in the IMF Have on the Federal Budget?	4
Background on the International Monetary Fund	4
Membership, Quotas, and Additional Financing Resources	4
Lending Activities	6
The IMF's Balance Sheet and Reserves	7
BOX 1: THE INTERNATIONAL MONETARY FUND'S LOANS IN ARREARS	8
The Effects of Large Losses	8
Budgetary Treatment of the United States' Participation in the IMF	10
CBO's Current Budgetary Treatment of Commitments Made to the IMF and the Effect of Recent Legislation	10
Past Budgetary Treatment of Commitments Made to the IMF	13
The Advantages and Disadvantages of Current and Past Budgetary Treatments	14
How CBO Estimates the Fair-Value Cost of the United States' Participation in the IMF	15
Loan Disbursements	17
Scheduled Loan Repayments	17
Loan Losses	17
Income Retained by the IMF	19
Losses Absorbed by the IMF's Reserves	19
Present-Value Calculations and the Cost of Market Risk	20
Other Effects on the Federal Budget of the United States' Participation in the IMF	22
Budgetary Effects of Fluctuations in the SDR Exchange Rate and Interest Rate	22
Budgetary Effects of the United States' Role as a Stakeholder in the IMF	23
Indirect Effects on the Federal Budget of Participating in the IMF	23
List of Tables and Figures	25
About This Document	26



The Budgetary Effects of the United States' Participation in the International Monetary Fund

Summary

Since 1945, when the International Monetary Fund (IMF) was established to promote global economic cooperation and stability, the United States has been its largest contributor. Today, the United States' financial commitment to the IMF totals approximately \$164 billion; that is the maximum amount that the IMF can draw from the United States to make loans to other IMF members.

The budgetary cost of participation in the IMF is, however, significantly smaller than the amount of that commitment. The United States and other countries earn interest on the portion of their commitment held by the IMF, and the IMF's assets, including loans to other members, gold, and financial securities, are sufficient to allow it to return those funds to members in most circumstances. Nevertheless, a small risk remains that the IMF could incur losses on its lending so large that it could not repay the United States the full value of its commitment. Because of that risk, participation in the IMF has a cost to the United States, which the Congressional Budget Office currently estimates to be about 2 cents per dollar committed.

How Does CBO Account for the United States' Participation in the IMF in Budget Estimates?

The nature of the United States' transactions with the IMF makes accounting for them in the federal budget difficult. When the United States pledges funds to the IMF, it commits to loan up to that specified amount to the organization—that is, it extends a line of credit. Some of the pledged funds are immediately transferred to the IMF, which either invests them in a range of securities or lends them to other members. The IMF can draw on the remainder of the pledged funds as needed for lending; it returns those funds to the United States when the borrowing members repay their loans.

In exchange for the funds that it provides to the IMF, the United States receives special drawing rights (SDRs). The SDR, whose value is based on a basket of widely circulated currencies, serves as the unit of account for the IMF. The United States earns interest on its SDRs and retains the right to withdraw funds from the IMF—that is, to cash in its SDRs at the current SDR exchange rate with the dollar—at any time. Thus, each dollar that the United States commits to the IMF retains value over time, though the exact amount that will be returned depends on the extent of IMF lending, the income that the IMF earns on its investments and lending, how much of that income is passed through to members as interest, and the exchange rate between the SDR and the U.S. dollar.

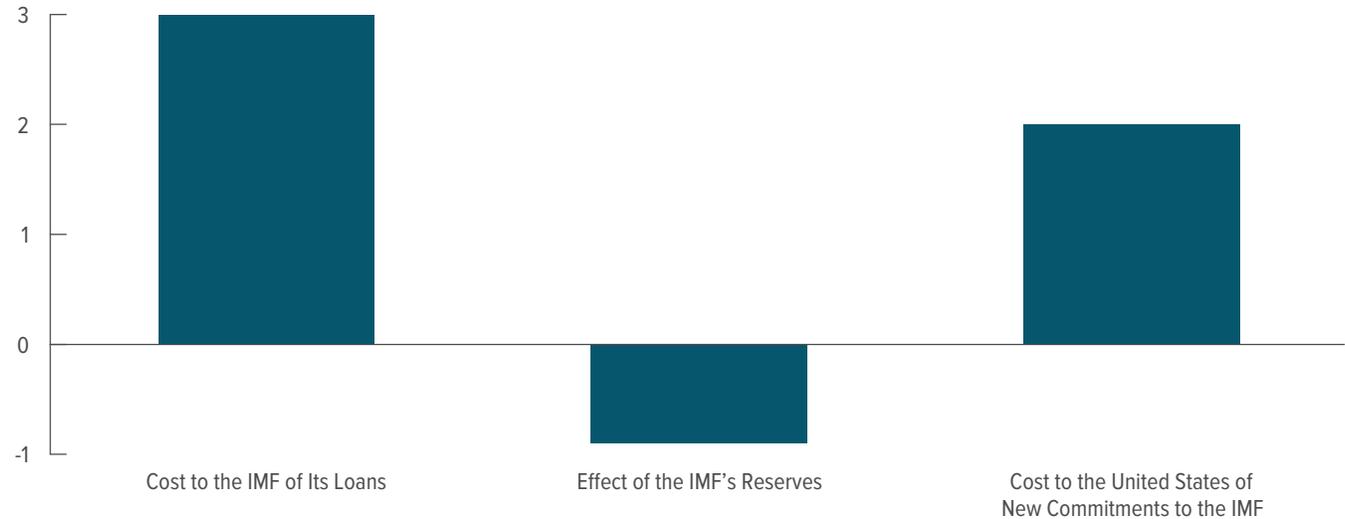
Since 2009, laws providing for additional U.S. commitments to the IMF have specified that the budgetary effects of those commitments be estimated on a fair-value basis—that is, using a present-value amount that is a market-based measure of the net cost of the indefinite commitment of additional funds to the IMF.¹ The use of the present-value method reflects the notion that each dollar committed to the IMF retains most of its value for the United States and is not simply a cash expenditure. But the present value of the cost is not zero—as it would be if the commitment had no cost to the federal government—because the interest that the United States receives on its contributions is not sufficient to fully compensate it for the very small risk of catastrophic losses that could occur following large or widespread defaults by IMF borrowers.

1. A present value is a single number that expresses a flow of future income or payments in terms of an equivalent lump sum received or paid at a specific point in time; the present value of a given set of cash flows depends on the rate of interest—known as the discount rate—that is used to translate them into current dollars.

Figure 1.

Components of CBO's Fair-Value Estimate of the Cost to the United States of New Commitments to the IMF

Percentage of New Commitment



Source: Congressional Budget Office, using data from the International Monetary Fund.

IMF= International Monetary Fund.

Why Is There a Cost Associated With the United States' Participation in the IMF?

When the United States makes a deposit with the IMF, the rate of interest that it receives on its SDRs is indexed to the rates available on a basket of low-risk debt. However, deposits with the IMF pose an additional risk beyond that posed by investing directly in a portfolio of low-risk debts of developed countries because some of the value of those deposits may be lost as a result of financial, economic, or political crises that triggered widespread defaults among borrowers of IMF loans. Although the conditions that the IMF imposes on its lending, its de facto seniority in repayment, and its holdings of gold and reserve assets protect members from losses, the possibility of members having to incur large losses on the IMF's loans remains, though the probability of that happening is very small.

Although the IMF has experienced only negligible losses on its lending to date, global economic circumstances could generate large losses in the future if many IMF borrowers were to cease repayment of their loans. In those circumstances, the IMF would not have enough income from its lending and investments to continue paying members interest on their SDR holdings, and the amounts flowing to the United States and other members would be reduced. Any present-value estimate of the

United States' commitment should therefore reflect the possibility of such a reduction in the future.

How Does CBO Estimate the Fair-Value Cost to the United States of New Commitments to the IMF?

To estimate the cost to the United States of new commitments to the IMF, CBO first estimates the two components of that cost: the cost to the IMF of the loans it makes to its members and the effect of the IMF's reserves (see Figure 1).

The cost of the loans that the IMF makes to its members is equal to the present value of the loan amounts disbursed minus the principal and interest received on that lending. The IMF charges its borrowers a higher interest rate than the rate it pays to members on their SDR holdings. However, CBO estimates that in a crisis in which a large number of borrowers defaulted, the IMF would not receive a significant amount of the scheduled principal and interest payments, which means that the IMF's lending has a small net cost.

Some of the losses on the IMF's loans would be absorbed by the organization's reserves, which would reduce the cost to the United States of its new commitments to the IMF. The IMF adds amounts approximately equal to the income it earns on its loans to its already large

reserves, which it can use to mitigate losses before they are passed on to its members. CBO estimates that those reserves could absorb a substantial share of the losses that could occur in the future.

To make its projections of those two components of the cost of the United States' participation in the IMF, CBO uses a probabilistic model to simulate changes in the IMF's financial assets and liabilities—including inflows and outflows from investments, loans to members, quotas, lines of credit, and operating expenses—under a range of outcomes for loans made by the IMF to member countries. The simulated annual cash flows to and from the U.S. government are expressed as a present value using market-based discount rates.

Why Does CBO Use a Market-Based Estimate of Cost?

The use of the fair-value method to estimate the cost of the United States' commitment to the IMF was established following consultation with the House and Senate Budget Committees and was the method specified in law the last time legislation affecting the IMF was enacted. CBO has concluded that it would continue to use that approach in analyzing future legislation that provided U.S. funding for the IMF.

Because CBO uses market-based discount rates to compute the present value of commitments to the IMF, its estimates include the cost of market risk that is inherent in the IMF's lending activities. Market risk—the risk that remains even after a portfolio has been diversified as much as possible—arises because most investments tend to perform relatively poorly when the economy is weak and relatively well when the economy is strong. Thus, incorporating the cost of market risk accounts for the fact that losses incurred by the IMF will tend to be largest in those cases in which the global economy is weakest. When the U.S. government takes on market risk, that risk is effectively passed on to private citizens who, as taxpayers and beneficiaries of government programs, bear the consequences of the government's financial losses. Private citizens tend to value their income more highly when the economy is weak than when it is strong, so bearing market risk associated with government programs is costly to them.

CBO accounts for the market risk associated with IMF commitments by using slightly higher discount rates to make the present-value calculations than the market rates of interest on the basket of low-risk debt. The use of higher discount rates for IMF cash flows reflects the fact

that those flows have more market risk than funds invested in a basket of low-risk sovereign debt. CBO determines that discount rate from the market yields of sovereign debt securities with risks comparable to those of loans that would be made by the IMF. Without that adjustment to the discount rate, each additional dollar that the United States committed to the IMF would, CBO estimates, have a budgetary cost of approximately 0.5 cents per dollar committed instead of 2 cents.

Some analysts have expressed concern about using the fair-value approach in federal budgeting. One criticism is that adjusting some programs for market risk but not others might make comparison between programs difficult. Another concern is that changes in the cost of market risk over time make estimates more volatile. Finally, some critics of fair-value estimates note that such estimates are more complex than others and that they are therefore more difficult to communicate to policymakers and the general public.

Proponents of the fair-value approach counter that decisions about spending the public's money should take into account how the public assesses financial risks as expressed through unbiased market prices. They also note that concerns about volatility and complexity can be mitigated by using well-developed accounting practices.

How Uncertain is CBO's Estimate?

Although the risk posed by the IMF's lending strongly suggests that the United States' participation in the IMF has *some* budgetary cost, there is a great deal of uncertainty about the magnitude of that cost. No market-based financial instrument shares exactly the same risks that are inherent in IMF lending, so there is no comparable data from which the cost of members' commitments to the IMF could be inferred. There is also no clear historical precedent for an event that would generate losses to the IMF that were significant enough that they would be passed on to the United States; thus, the parameters of such losses are estimated with a large degree of uncertainty.

Those parameters include the frequency, magnitude, and duration of crises extreme enough to bring about a large increase in the IMF's lending and to cause a significant number of the borrowers to default on those loans. In addition, the terms of those loans (the interest rate paid by borrowers, for example) and the IMF's reserves affect the value of the United States' commitment. Finally, the actions of members and other entities may affect the

IMF's finances and thus the value of the United States' commitment to the organization: Some actions, such as establishing programs to assist borrowing members to repay their IMF loans, might help the IMF's financial position, but others, such as challenging the priority of the IMF's claims above those of other debt holders, might hurt it. CBO intends for its estimate of the cost of the United States' participation to reflect the central estimate of the range of uncertain outcomes for each of those factors.

What Other Effects Does Participation in the IMF Have on the Federal Budget?

The United States' participation in the IMF has potential budgetary effects beyond those incorporated in CBO's fair-value estimates. Those effects include gains and losses attributable to fluctuations in interest rates and exchange rates, the potential value to the United States of the IMF's gold and other reserve assets, and the indirect effects on the budget from the IMF's role in stabilizing the global economy.

Background on the International Monetary Fund

The United States is one of 189 member countries that belong to the IMF and further the organization's mission of promoting financial stability and monetary cooperation. When a member country has a large deficit in its balance of payments—that is, when its imports and financial outflows exceed its exports and financial inflows—and it cannot address that problem through regular borrowing, monetary policy, and fiscal measures, it can request a loan or technical assistance from the IMF to help stabilize its currency and improve its economic conditions.

Membership, Quotas, and Additional Financing Resources

The lending programs and operations of the IMF are supported by financial contributions made by its member countries. Each country is assigned a quota on the basis of a formula that includes measures of the size, strength, and openness of its economy; that quota represents the country's primary financial commitment to the IMF. A member is typically required to pledge approximately three-quarters of its quota as a non-interest-bearing promissory note held in its own central bank.² The remaining one-quarter of the quota is immediately deposited with the IMF in a widely circulated currency or in the IMF's own reserve asset, known as the special drawing

right. The member earns interest on almost all of that deposited amount and on any additional funds that the IMF may draw on as needed for lending. The IMF returns those additional funds to the member when the borrower repays its loan.

The SDR serves as the unit of account for the IMF. The value of the SDR is based on a basket of widely circulated currencies—currently the U.S. dollar, euro, Japanese yen, and pound sterling—that are reviewed and, if necessary, adjusted every five years.³ As of May 2, 2016, one SDR was equivalent to \$1.42.⁴ The IMF pays its members interest at a rate, referred to as the SDR rate, that is based on the short-term interest rates charged on the debt of the countries whose currencies are in the basket; a floor of 0.05 percent was established on the SDR rate in October 2014. The interest rate that members borrowing from the IMF pay on their loans is higher than that SDR rate but indexed to it.

Voting power at the IMF is apportioned on the basis of members' financial commitment. Each member is granted voting shares roughly proportional to the size of its quota. Voting rights are exercised through two boards established by the IMF: the Board of Governors and the Executive Board. The Board of Governors, which consists of one board member from each member country, is the main decisionmaking entity of the IMF; each board member's vote is weighted on the basis of the member country's voting shares. The Board of Governors delegates day-to-day management of the fund as well as certain other powers to the Executive Board, which consists of 24 directors (appointed or elected by one of the larger countries or by groups of smaller countries) and a managing director (appointed by the full Executive Board). Those directors cast the voting shares of the country or countries that they represent on the Executive Board. A few major decisions require support of members representing at least 85 percent of the total voting power, so as the only member whose voting share is more than 15 percent, the United States holds certain veto powers.

2. International Monetary Fund, *IMF Financial Operations, 2015* (October 2015), pp. 39–41, www.imf.org/external/pubs/ft/finop/2015.

3. The Chinese renminbi will be added to the SDR's basket of currencies on October 1, 2016.

4. The SDR value is calculated daily. Unless otherwise noted, all conversions from SDRs to U.S. dollars in this report are based on a rate of \$1.42 per SDR.

Table 1.

Voting Shares and Quotas of IMF Members

Member	Voting Share (Percent)	Quota	
		Billions of Dollars ^a	Percentage of Total
United States	16	118	17
Japan	6	44	6
China	6	43	6
Germany	5	38	6
France	4	29	4
United Kingdom	4	29	4
Italy	3	21	3
India	3	19	3
Russia	3	18	3
Brazil	2	16	2
All Other Members ^b	47	302	45
Total	100	677	100

Source: Congressional Budget Office, using data from the International Monetary Fund.

Data were current as of February 2016.

IMF = International Monetary Fund; SDR = special drawing right.

a. The IMF uses its own international reserve asset, the SDR, as its unit of account. SDR amounts were converted to U.S. dollars at the rate of \$1.42 per SDR.

b. In February 2016, 178 other countries belonged to the IMF.

The IMF reviews the quotas once every five years and recommends adjustments to the system if necessary. The most recent adjustment was agreed upon by IMF members in December 2010 and implemented in January 2016 after the United States approved it. The main changes made were to increase the IMF's ability to respond to members' borrowing needs by doubling the total size of the quotas across all nations (to approximately \$677 billion) and to realign the quotas among members to more accurately reflect each nation's contribution to the world economy.⁵ The United States, Japan, China, Germany, France, and the United Kingdom now have the largest quotas and voting shares (see Table 1).

Permanent funding pledged through quotas is not the IMF's only source of financing. In the event that members' borrowing needs exceed available quota resources, the IMF has arranged to obtain additional resources through two standing multicountry borrowing programs—the General Arrangements to Borrow (GAB) and the New Arrangements to Borrow (NAB)—and through

bilateral agreements with individual member countries (or their central banks). When the IMF draws on non-quota funds, the member nation providing those funds receives SDRs in exchange and earns the SDR interest rate on those holdings, just as it does on its quota funds. As of March 2016, the IMF's nonquota resources totaled \$654 billion (\$258 billion in the combined GAB and NAB and \$396 billion in bilateral agreements), only slightly less than the \$677 billion that its quota resources are currently worth.

The United States' commitment to the IMF currently totals approximately \$164 billion, including \$118 billion in quotas, \$40 billion in the NAB, and \$6 billion in the GAB. In recent years, lawmakers took two legislative actions that affected that commitment. First, in 2009, in response to the global financial crisis, they approved an increase of about \$8 billion in the United States' quota and a pledge of about \$100 billion to the NAB. Then, in 2015, lawmakers approved the 2010 IMF quota and voting reforms, increasing the United States' quota by approximately \$60 billion but reducing its NAB obligation by that same amount, leaving its total commitment to the IMF unchanged. Those changes were written into the Consolidated Appropriations Act, 2016 (Public Law 114-113), which the President signed into law in

5. International Monetary Fund, "IMF Board of Governors Approves Major Quota and Governance Reforms" (press release, December 16, 2010), www.imf.org/external/np/sec/pr/2010/pr10477.htm.

Table 2.

The IMF's Total Outstanding Loan Balances, by Borrower

Billions of Dollars	
Borrowing Member	Outstanding Balance
Portugal	21.0
Greece	17.5
Ukraine	10.9
Ireland	5.4
Pakistan	5.1
Jordan	1.8
Tunisia	1.4
Iraq	1.3
Cyprus	1.1
Cote d'Ivoire	1.1
All Other Members ^a	11.7
Total	78.4

Source: Congressional Budget Office, using data from the International Monetary Fund.

Data were current as of February 2016.

Amounts shown represent the outstanding portion of the lending arrangement between the IMF and the borrowing member; they do not include any undrawn balances available to the borrower under the terms of the arrangement.

The IMF uses its own international reserve asset, the SDR, as its unit of account. SDR amounts were converted to U.S. dollars at the rate of \$1.42 per SDR.

IMF = International Monetary Fund; SDR = special drawing right.

a. In February 2016, 178 other countries belonged to the IMF.

December 2015. The cost to the federal government of that \$60 billion quota increase was approximately \$1.2 billion, or about 2 cents per dollar committed, CBO estimates. (The NAB rescission resulted in a reduction in cost of similar magnitude, but those outlays were scheduled to be made over a different period.)

The 2010 IMF reforms that took effect following the enactment of the Consolidated Appropriations Act, 2016, had only a small effect on the United States' position within the IMF. Although they nearly doubled the United States' quota, they had little effect on its share of all quotas, reducing it slightly, from 17.7 percent to 17.4 percent. The country's voting share also decreased, from 16.7 percent to 16.5 percent, but the United States retains its veto over a few major IMF decisions—such as a change in quotas or the authorization to sell gold—because it still holds more than 15 percent of the voting shares.

Lending Activities

The resources committed by the United States and other member countries are available to the IMF to provide loans to its members under a variety of lending programs.

The amount outstanding at any point in time fluctuates with local, regional, and global economic conditions. For example, lending increased by nearly 40 percent from January 1995 to December 1995 largely because of distress in Mexico, the Russian Federation, and Argentina. It spiked again between 2001 and late 2003 primarily as a result of loans to Brazil, Turkey, and Argentina. Finally, outstanding loan balances increased by more than 800 percent from early 2007 to the end of 2011 in response to the global financial crisis. The unpaid amounts declined to less than \$80 billion in February 2016 because many loans issued during the crisis had been repaid either in part or in full (see Table 2). Outstanding loans are now most prevalent among European borrowers. Almost two-thirds of those loans have been made to three countries—Portugal, Greece, and Ukraine.

The potential call on the IMF's resources is larger than the outstanding loan balances at any particular time because most of the IMF's borrowing programs offer member countries a line of credit that can be drawn on as needed. The undrawn portion of that credit line is not included in the outstanding loan balances given above. For example, in February 2016, Mexico was approved for a credit line of more than \$67 billion but had not drawn on that line. In total, available but undrawn credit equaled \$112 billion at the beginning of February 2016. (Only \$6 billion in such undrawn credit was available at the end of 2007, after the global financial crisis had begun).⁶

The IMF provides loans to member countries under a number of different lending programs depending on the circumstances that the member faces. In general, those programs differ on three main dimensions:

- *Length of loan*—IMF loans are designed to assist countries with temporary imbalances or longer-term structural difficulties. Shorter-term loans require repayment in less than five years, whereas longer-term programs have terms of up to ten years.
- *Conditionality*—Most loan programs require borrowing members to adopt reforms in exchange for IMF support. Those reforms are designed to alleviate conditions such as high inflation and budget deficits, to fix structural issues in the financial system and tax

6. Undrawn lines of credit at the end of 2007 totaled 3,573 billion SDRs; CBO converted that amount to U.S. dollars using the rate in effect at the time, which was \$1.57 per SDR.

system, and to increase the likelihood of repayment to the IMF. Conditions are monitored throughout the disbursement and repayment periods to ensure adequate progress is made against quantitative and qualitative benchmarks.⁷

- **Concessions**—Some loan programs offer terms, such as initial interest rates as low as zero percent, designed to make repayment easier for borrowing members identified as low-income countries. In addition, the IMF has partnered with the World Bank and other institutions to implement programs that provide debt relief to heavily indebted countries in an effort to reduce poverty and to allow those countries to retain the resources necessary to implement social support initiatives.⁸

In spite of lending terms that are designed to improve borrowing countries' economic circumstances, some IMF loans go into arrears. Such arrearages have been limited because members have generally prioritized the repayment of IMF loans over the repayment of debt owed to other creditors, thereby granting the IMF de facto senior creditor status.⁹ In addition, the IMF has developed a set of policies designed to foster collaboration with member countries to allow them to repay their arrears and protect the organization's finances. (See Box 1. for a discussion of arrearages on IMF loans.)

The IMF's Balance Sheet and Reserves

The IMF's largest assets are its currency holdings—those deposited by members that it holds directly as well as amounts pledged but retained at members' central banks for which the IMF holds promissory notes—and outstanding loans to borrowing members (see Table 3 on page 10). The balance between currencies and outstanding loans fluctuates with changes in members' need for credit. The IMF also holds investments in a range of financial securities—deposits with international financial institutions, sovereign and corporate bonds, and a global portfolio

of common stocks, for example. In addition, the organization holds gold in reserve: In the early years of the IMF, members paid part of their initial quotas in gold, and later transactions with member countries added to those holdings. The IMF's largest liabilities are the quotas of member countries, which it must repay, and the amounts owed to members that have lent money to the organization under the NAB, the GAB, or separate agreements with the IMF.

At the end of October 2015, the IMF reported that its assets exceeded its liabilities by nearly \$26 billion. The IMF records that excess amount as reserves, but it effectively represents the organization's net worth. The reported amount is based on the value of the IMF's nearly 3,000 metric tons of gold being recorded at historical cost—that is, at the value of the gold when it was acquired. If those gold holdings were instead recorded at the market price on October 31, 2015, the value of the IMF's reserves would increase by nearly \$100 billion, increasing the difference between assets and liabilities to about \$126 billion (see Figure 2 on page 11).

The IMF's total reserves have grown since 2008. Based on the market price of gold, the value of all reserves increased by nearly 80 percent from 2008 to 2015. In large part, that growth resulted from an increase in the market price of gold, which rose from \$724 per ounce in October 2008 to \$1,721 per ounce in October 2012 before falling to \$1,142 per ounce in October 2015. In addition, in 2010 the IMF began to build up its reserves in response to increases in current and projected lending. Excluding its gold holdings, the IMF's reserves grew from less than \$1 billion in 2008 to slightly less than \$21 billion in 2015.

The IMF can use its reserves to mitigate any losses that it might incur on its outstanding loans before those losses are imposed on members.¹⁰ For example, if the IMF wrote off a loan to a member country in arrears, the IMF could use reserves to cover the shortfall, thereby maintaining the quota balances of the members whose funds

7. International Monetary Fund, "IMF Conditionality" (March 24, 2016), www.imf.org/external/np/exr/facts/conditio.htm.

8. International Monetary Fund, "IMF Support for Low-Income Countries" (April 1, 2016), www.imf.org/external/np/exr/facts/poor.htm.

9. The preferred creditor status derives from the traditional practices of debtors; it is not specified in the articles of agreement of the IMF. See General Accounting Office, *Status of the Heavily Indebted Poor Countries Debt Relief Initiative*, NSIAD-98-229 (September 30, 1998), www.gao.gov/products/NSIAD-98-229.

10. The ability of the IMF to sell gold to offset losses is restricted. Such sales can be vetoed by the United States or any combination of other countries whose collective vote totals 15 percent of all voting power. See International Monetary Fund, "Gold in the IMF" (April 13, 2016), www.imf.org/external/np/exr/facts/gold.htm; and Government Accountability Office, *IMF: Planning for Use of Gold Sales Profits Under Way, but No Decision Made for Using a Portion of the Profits*, GAO-12-7666R (July 26, 2012), www.gao.gov/products/GAO-12-7666R.

Box 1.**The International Monetary Fund's Loans in Arrears**

Although the International Monetary Fund (IMF) has never incurred a loss severe enough that the loss was passed on to its members, some of its loans have gone into arrears—that is, the borrowers have failed to make obligated scheduled payments on those loans (see the figure). Total arrearages have never exceeded \$6 billion; however, arrearages as a percentage of outstanding loan balances have exceeded 10 percent during two different periods since 1984—from 1988 to 1994, when arrearages peaked at 15 percent of outstanding balances in 1990, and from 2006 to 2007, when they reached 19 percent as the IMF's total outstanding loan balances dropped significantly during the global economic boom that preceded the worldwide recession that started in 2007. Some countries have been in arrears for 10 years or more.

Not all countries that ultimately clear their arrearages do so by resuming normal payments of principal and interest to the IMF. Liberia, for example, resolved its 23-year delinquency to the IMF by taking a loan from the United States that it used to repay its IMF loan. It then borrowed new funds from the IMF to repay the loan from the United States. The IMF granted Liberia debt relief in 2010, so it never repaid those new IMF loans in full.¹ Because of the relatively small amount of money involved, forgiving those loans had a very small impact on the IMF's overall financial position, but the example illustrates one channel through

which the IMF's lending activities have led it to record a net reduction in its net worth.²

In addition to offering its own debt-relief programs, the IMF has benefited from the assistance provided by other nations to help borrowing members clear their arrearages on IMF loans. Perhaps most notable is the case of Greece, which missed two payments to the IMF on June 30 and July 13, 2015. After receiving more than 7 billion euros in assistance from the European Union (EU), Greece settled its overdue payments with the IMF on July 20, 2015.³ To avoid losses, the IMF has thus depended on successfully coordinating arrangements between its debtors and other creditors. As of February 2016, Greece still owed the IMF \$17.5 billion; its ability to repay those loans will most likely depend on additional support from the EU.

1. International Monetary Fund, *IMF Financial Operations, 2015* (October 2015), p. 73, www.imf.org/external/pubs/ft/finop/2015.
2. Generally, debt-relief activities are funded separately from the IMF's regular lending operations using resources from the IMF's prior gold sales as well as nonquota commitments made by member countries.
3. Council of the European Union, "EFSM: Council Approves €7bn Bridge Loan to Greece" (press release, July 17, 2015), <http://tinyurl.com/jb3gbgn>.

Continued

provided the loan. (Although borrowers, such as Greece in 2015, have missed required payments on loans and the IMF has forgiven some loans to poorer nations, the organization has never deemed one of its loans to be unrecoverable.)

The Effects of Large Losses

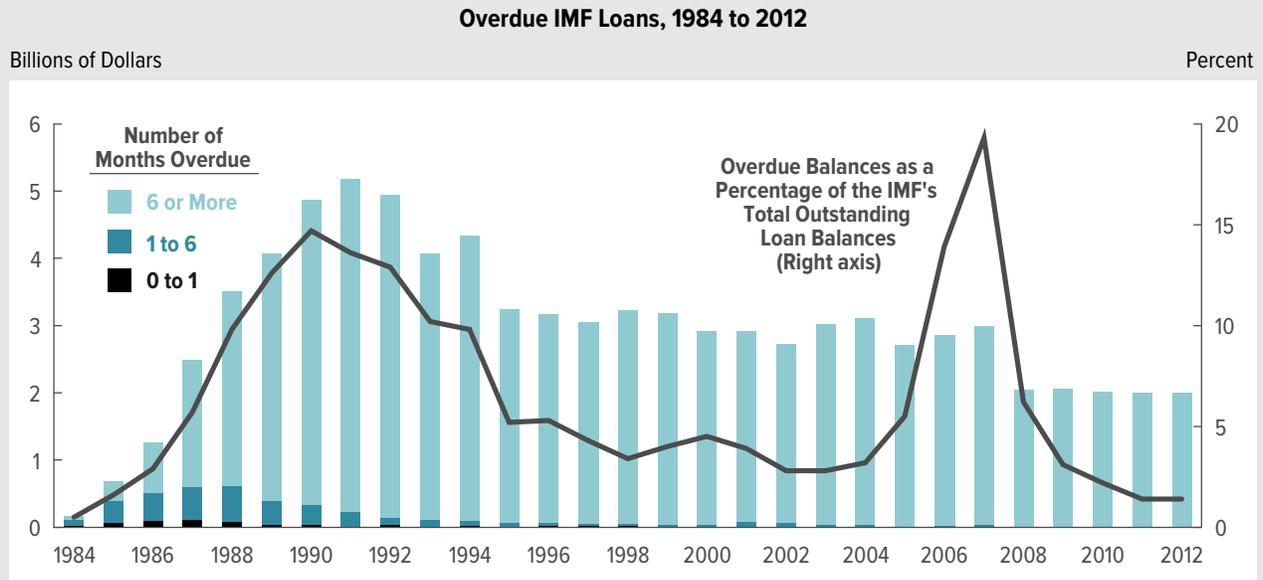
If the losses that the IMF incurred on its loans were large enough, it would eventually pass some losses on to its members. The timing and form of the losses that members would incur depend on the actions that the IMF took in response to a crisis. The IMF could, for example, liquidate its investments and gold reserves as needed to

pay interest owed on members' SDR holdings. If the losses were large enough, those balances would eventually be exhausted, and the IMF would then have no choice but to lower the interest that it paid to members. Alternatively, the IMF could retain its investments and gold resources and immediately limit the interest payments that it made to its members to the proceeds available. Although the amount of interest received by members in those two cases would be different, in either case members would incur similar losses, which in present-value terms would roughly equal the amount of the losses on the IMF loans minus the value of the organization's reserves.

Box 1.

Continued

The International Monetary Fund's Loans in Arrears



Source: Congressional Budget Office, using data from the International Monetary Fund.

The IMF uses its own international reserve asset, the SDR, as its unit of account. SDR amounts for each year were converted to U.S. dollars using the exchange rate that was in effect at the end of that calendar year.

IMF = International Monetary Fund; SDR = special drawing right.

The frequency of arrearages on IMF loans is lower than the frequency of default on loans provided by other sovereign creditors because the IMF's position in the international finance community often allows it to negotiate the most favorable repayment terms. Before providing emergency financial assistance to Greece, for example, the IMF, with the backing of the EU, required other holders of Greek debt to first take

losses and write down their debts. If Greece cannot pay all of its remaining debts in the future, those creditors will have a lower payment priority than the IMF. The experience with Greece highlights how the terms that the IMF negotiates, including its repayment priority, make its loans more secure than other sovereign debt.

Other alternatives would probably require Congressional approval before the IMF could implement them, but it is unlikely that those actions would lower the cost to members of resolving a loss. Members could, for example, choose to recapitalize the IMF either by providing it with funds to allow the write-down of loans in arrears or by providing funds to the borrowing members to repay those loans. The United States most likely could not participate in a recapitalization of the IMF without authorization by the Congress. The United States could abstain from participating in such a recapitalization, but the possibility of a recapitalization occurring without the United States' involvement is, in CBO's judgment, remote.

Another option would be for the IMF to liquidate its assets and pay the proceeds to members that still held SDRs.¹¹ The amounts that the IMF would receive from selling its portfolio of loans (those in arrears as well as those in good standing) and other assets would be less than its liabilities—the largest being the quotas of its members—so each member's share of the proceeds would

11. The IMF's articles of agreement describe the approval process for a liquidation (Article 27, Section 2) and settlement of liabilities from funds acquired as a part of that liquidation (Schedule K). See International Monetary Fund, *Articles of Agreement of the International Monetary Fund* (April 2016), www.imf.org/external/pubs/ft/aa.

Table 3.

The IMF's Balance Sheet

Billions of Dollars	
Category	Amount
Assets	
Currencies	296.8
Outstanding loan balances	73.3
Total currencies and outstanding balances	370.1
Investments	21.2
SDR holdings	20.3
Gold holdings ^a	4.5
Property, plant, and equipment	0.6
Interest and charges receivable	0.5
Other assets	0.6
Total assets	417.7
Liabilities	
Quotas	338.2
Borrowings	50.0
Special contingent account	1.7
Employee benefits	1.3
Other liabilities	1.1
Total liabilities	392.3
Reserves (Total assets minus total liabilities)	25.5

Source: Congressional Budget Office, using data from the consolidated financial statements of the General Department of the International Monetary Fund.

Data were current as of October 31, 2015.

Amounts shown include holdings in the IMF's general resources account, investment account, and special disbursement account.

The IMF uses its own international reserve asset, the SDR, as its unit of account. SDR amounts were converted to U.S. dollars at the rate of \$1.42 per SDR.

IMF = International Monetary Fund; SDR = special drawing right.

a. The IMF holds 2,814 metric tons of gold in reserve. The value shown is based on the historical cost of those reserves; the market value of those holdings was an estimated \$105 billion as of October 31, 2015.

be less than the value of its quota. Like recapitalization, liquidation would require Congressional action before the United States could vote to approve such a decision.

Budgetary Treatment of the United States' Participation in the IMF

The budgetary treatment of the United States' participation in the IMF has changed several times since 1945. Because the United States' commitments to the IMF are sufficiently different from other spending programs in the federal budget, they are not easily assessed using the

accounting methods applied to those other programs. The current treatment, first used in 2009, records the nation's commitments to the IMF in the budget on a fair-value basis—that is, on a present-value basis with an adjustment to account for market risk. Before 2009, commitments were treated either as having no impact on the budget or as creating budget authority equal to the full value of the commitment. (Budget authority is the authority provided by law to incur financial obligations that will result in immediate or future federal outlays.) Each treatment has advantages and disadvantages in providing a useful measure of the cost of the United States' participation in the IMF.

CBO's Current Budgetary Treatment of Commitments Made to the IMF and the Effect of Recent Legislation

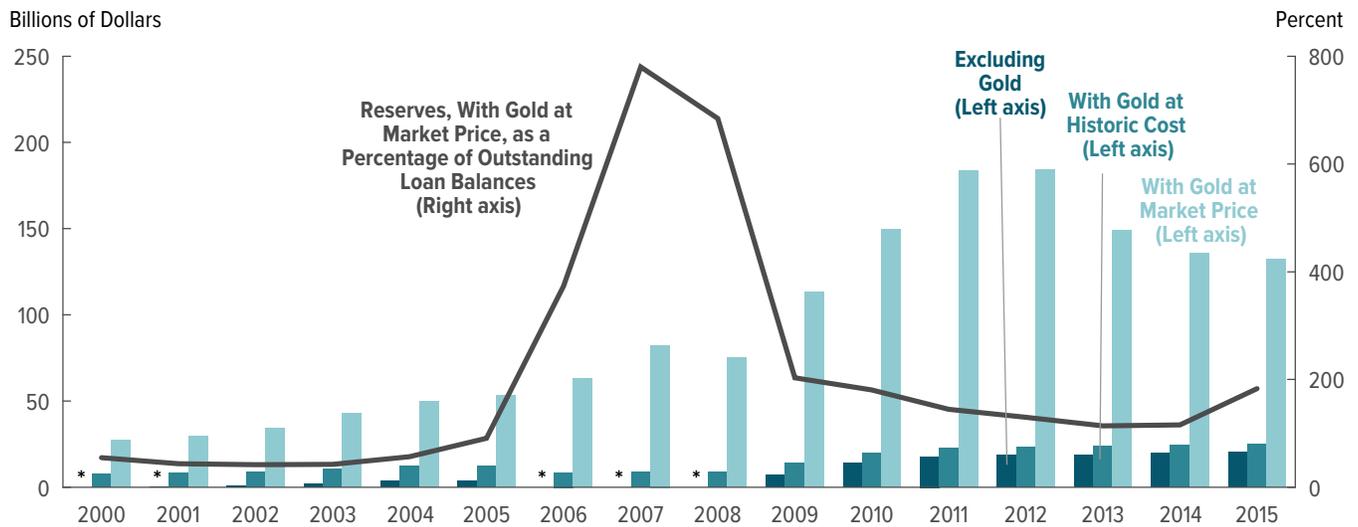
The use of the fair value method to estimate the cost of the United States' commitment to the IMF was first mandated in the Supplemental Appropriations Act, 2009 (P.L. 111-32), which provided an increase of about \$8 billion in the United States' quota and a pledge of about \$100 billion to the NAB. That approach was reaffirmed in the Consolidated Appropriations Act, 2016, the last time legislation affecting U.S. funding for the IMF was enacted. CBO has concluded that it would continue to use that approach in analyzing future legislation that provided U.S. funding for the IMF, even if the proposed legislation specified a different methodology. CBO would modify its approach if a change to the budgetary treatment of IMF funding was enacted into law, if the Congress specified a different treatment in a budget resolution, or if the Congress and the Administration jointly agreed to a different treatment.¹²

Under that approach, the cost of any new commitment is estimated by projecting how it would change the net cash flows between the United States and the IMF over time and then using a discount rate to convert those cash flows to an equivalent single lump sum today—a present value. Because the agency uses a market-based discount rate that

12. On a few occasions in recent years, CBO provided cost estimates for bills using a different treatment—a present-value approach that did not include an adjustment to account for market risk. CBO has now concluded that it would use the fair-value approach in analyzing future legislation that provided U.S. funding for the IMF. See, for example, Congressional Budget Office, cost estimate for S. 2124, the Support for the Sovereignty, Integrity, Democracy, and Economic Stability of Ukraine Act of 2014 (March 24, 2014), www.cbo.gov/publication/45204.

Figure 2.

The IMF's Reserves, 2000 to 2015



Source: Congressional Budget Office, using data from the consolidated financial statements of the General Department of the International Monetary Fund.

Reserves are measured as the difference between total assets and total liabilities.

The IMF uses its own international reserve asset, the SDR, as its unit of account. SDR amounts for each year were converted to U.S. dollars using the exchange rate that was in effect at the end of October of that year.

The value shown for the IMF's reserves with gold holdings at market price for each year reflects the market price of gold on October 31 of that year.

IMF = International Monetary Fund; SDR = special drawing right; * = less than \$1 billion.

reflects the time value of money and the cost of the market risk associated with the United States' commitment to the IMF, the resulting fair-value estimate approximates the price that the federal government would need to pay a market participant to provide the same commitment to the IMF under identical terms.¹³

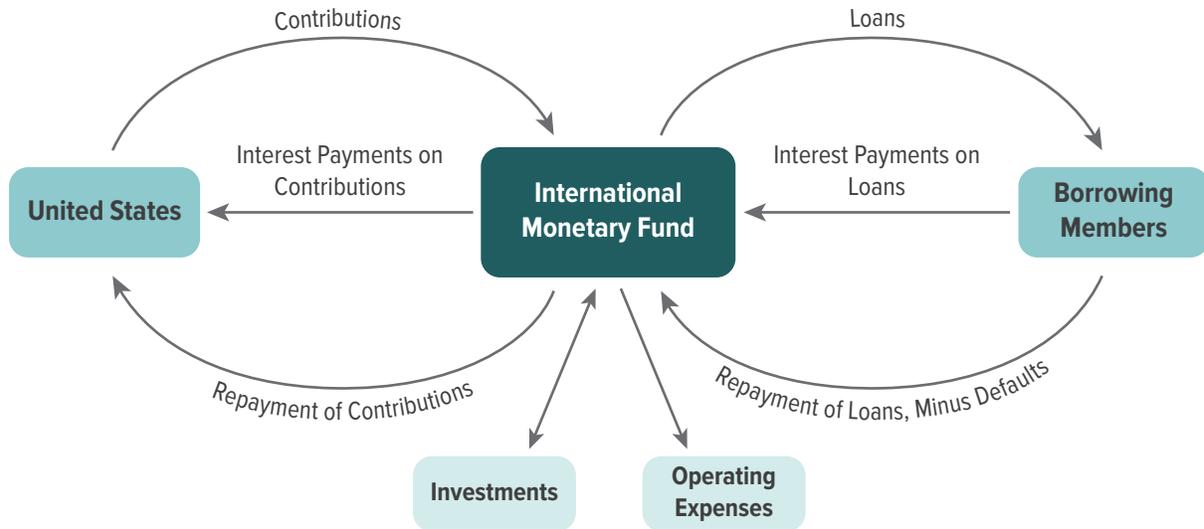
The present-value estimate is based on a probabilistic assessment of the range of outcomes for loans made by the IMF to member countries, which is described below. Historical experience suggests that, in most scenarios, the IMF would suffer no losses and would collect interest and the full principal amount of a given loan by the end of its term. However, CBO estimates that in some scenarios, the IMF would collect less than the full principal amount disbursed to the borrowing country. Some of those cases could involve losses so large that they would exceed the

IMF's reserves and would lead to losses to members. In CBO's judgment, losses would be largest when which the global economy is weakest and the market price of risk is elevated. Thus, the inclusion of an adjustment for market risk results in costs that are significantly greater than the probability-weighted average of all possible loss outcomes discounted at the rates appropriate for safe, nominal cash flows.

The current budgetary treatment applies only to commitments that the United States has made to the IMF since 2009. To estimate the budgetary effects of just those amounts in its baseline budget projections, CBO first constructs two projections of the IMF's finances: one with the United States' commitments made after 2009 and one without them. For each of those projections, the agency simulates the inflows and outflows to the IMF from investments, loans, quotas, lines of credit, and operating expenses to estimate the organization's assets and liabilities under a range of outcomes for loans made by the IMF to member countries (see Figure 3). CBO then calculates the difference in the cash flows of those two projections to estimate the cost of the new commitments.

13. Loans, including loans to large multinational organizations such as the IMF, have market risk because borrowers tend to default more frequently when the global economy is weak, and thus their risk cannot be eliminated through diversification. For further discussion, see Congressional Budget Office, *Fair-Value Accounting for Federal Credit Programs* (March 2012), www.cbo.gov/publication/43027.

Figure 3.

Cash Flows Between the United States and the IMF

Source: Congressional Budget Office.

IMF = International Monetary Fund.

Annual cash flows are averaged across all scenarios and expressed as a present value using a discount rate that includes the cost of market risk inherent in IMF lending.

When analyzing proposed legislation that would change the United States' commitment to the IMF, CBO also uses such a present-value approach to calculate projected budget authority and outlays. Because the IMF would not draw on all of the new resources immediately, the outlays stemming from that budget authority are projected to occur over many years.

CBO's method of accounting for the budgetary effects of the United States' participation in the IMF is illustrated by its estimate of the changes authorized in the Consolidated Appropriations Act, 2016. As a part of that act, the Congress approved the IMF's recommendation to shift funding from the NAB to quota commitments, providing roughly \$60 billion for an increase in the United States' quota commitments to the IMF and rescinding an equivalent amount of support for the NAB. For both the \$60 billion increase in the United States' quota and the \$60 billion NAB rescission, CBO's baseline shows a change in budget authority of about \$1.2 billion, or 2 percent per dollar committed. Hence, the legislation resulted in no net change in budget authority. CBO estimates that the legislation will have the net effect of increasing outlays by \$236 million in 2016 because of differences in CBO's

estimates of when the budget authority for quota and NAB commitments result in outlays.¹⁴

The Administration also estimates the cost of the United States' commitments to the IMF made after 2009 on a present-value basis, but its estimates differ from CBO's in both size of the costs and the timing of when they are reflected in the budget. Whereas CBO's estimate is driven by expected losses and the market risk associated with those losses, the Administration's estimate does not reflect the cost of any estimated losses. Those differences can be seen in the respective estimates of the budgetary effect of the 2016 quota increase. In its proposed budget for fiscal year 2017, the Administration attributed budget authority of \$0.145 billion to the roughly \$60 billion quota

14. For changes in the United States' quota, CBO projects that 25 percent of the budget authority results in outlays in the year that the legislation authorizing a change becomes effective. In each of the next 15 years (year 2 through year 16 after the legislation becomes effective), 5 percent of the remaining budget authority is projected to result in outlays. For changes in the United States' NAB or GAB commitments, CBO projects that 5 percent of budget authority results in outlays in each of the 20 years following enactment. Although the timing of when budget authority results in outlays is different for changes in the quota and changes in NAB or GAB commitments, CBO uses the same cost of 2 cents per dollar, which is based on expectations about the timing of when the IMF will use the United States' commitments (of any form) to support its lending.

Table 4.

Budgetary Treatment of the United States' IMF Quota Commitments

Billions of Dollars

Date of Commitment	Budgetary Treatment	Amount of Commitment
Before 1980	Not recorded in the budget	9
1980 to 1999	Recorded as an increase in budget authority with no effect on outlays	37
2011	Recorded under Federal Credit Reform Act rules with an adjustment for market risk ^a	8
2016	Recorded at fair value (present value with an adjustment for market risk)	60
	Total Commitment	114

Source: Congressional Budget Office, using data from the International Monetary Fund.

The IMF uses its own international reserve asset, the SDR, as its unit of account. SDR amounts were converted to U.S. dollars using the exchange rate that was current at the time the commitment was made. Exchange rate data were not available for some years. For commitments made before 1972, an exchange rate of \$1.00 per SDR was used; for those made between 1978 and 1983, a rate of \$1.10 per SDR was used.

IMF = International Monetary Fund; SDR = special drawing right.

a. The budgetary treatment was specified in the Supplemental Appropriations Act, 2009 (Public Law 111-32), which authorized the additional commitment.

increase—reflecting a cost of about 0.25 cents per dollar committed to the IMF instead of CBO's estimated 2 cents per dollar. In addition, CBO allocated the budget outlays for the authorized amounts over several years whereas the Administration recorded the full amount of the budget authority as an outlay in the fiscal year in which the funds were committed.

Past Budgetary Treatment of Commitments Made to the IMF

Although more than half of the United States' total quota (\$68 billion of about \$114 billion) results from commitments that have been made to the IMF since 2009 and is thus accounted for using the current treatment, portions of the total quota arising from commitments made before 2009 are treated differently in CBO's baseline budget projections (see Table 4).¹⁵

Before 1980, the United States' commitments to the IMF generally did not appear in the federal budget on the grounds that transactions with the IMF were strictly an exchange of assets of equal value: The United States provided dollars and in return received a liquid claim on the IMF in the form of SDRs.¹⁶ Beginning in 1980, the Congress and the Administration agreed to a new treatment that remained in place until 2009. The commitments to increase the quota that were made in that period

(all of which were made between 1980 and 1999) were counted in the budget as increases in budget authority equal to the full amounts provided, but no corresponding outlays were recorded for those transactions.

When a new commitment to the IMF was authorized in 2009, lawmakers, in consultation with CBO and the Office of Management and Budget, directed the agencies to estimate the budgetary effect on a present-value basis, in accordance with the Federal Credit Reform Act of 1990 (FCRA). The agencies were also required to include an adjustment for market risk in the discount rate that they used to calculate the present value.¹⁷ The Consolidated Appropriations Act, 2016, specified the same risk-adjusted present-value approach without referencing FCRA. Dropping the reference to FCRA simplified the budgetary record keeping for the Administration.

16. Congressional Budget Office, *International Balance of Payments Financing and the Budget Process* (August 1977), www.cbo.gov/publication/20626.

17. The treatment of federal loans and loan guarantees is spelled out in FCRA, which requires that loans and loan guarantees made by federal agencies be evaluated by estimating all future cash flows for those loans and discounting the projected stream of such cash flows back to the time of loan approval. However, FCRA does not automatically apply to the United States' assistance to the IMF because that assistance takes the form of a membership subscription with an exchange of financial assets and a line of credit, neither of which meets the simple definition of a loan that includes a contract that requires the repayment of such funds.

15. The same issue exists for GAB and NAB commitments. Those commitments were not included here because of their small size, relative to the United States' quota, before 2009.

The Advantages and Disadvantages of Current and Past Budgetary Treatments

The changing budgetary treatment of commitments to the IMF results from the fact that each treatment has advantages and disadvantages in providing a transparent and comprehensive picture of the United States' exposure to risks through its participation in the IMF. The approach that was used before 1980 recognizes that IMF commitments, like deposits in a traditional bank, are made in exchange for a claim against the IMF's assets and could be withdrawn at some point in the future. One drawback of that method is that it effectively treats deposits with the IMF as if they were equivalent in risk to investing funds in short-term securities of the countries whose currencies make up the SDR basket when they are not.

The change made in 1980 to recognize an equal increase in budget authority (while continuing to show no outlays) for any increase in the United States' commitment to the IMF was an acknowledgment that such commitments obligate the United States to provide funds to the IMF up to the specified amount. Including the full commitment in the budget made decisions about the United States' commitment to the IMF a part of the Congressional budget process and fostered additional oversight of the organization's activities by lawmakers.

In moving to a present-value approach in 2009, lawmakers recognized that, for legislation affecting financial transactions, recording the total financial commitment as budget authority may be less useful than recording the generally much smaller projected net cost. Recording only the projected net cost as budget authority (as is done for federal loans and loan guarantees) allows lawmakers to better distinguish the likely amount of spending that they are authorizing when comparing financial transactions with identical commitment sizes but different terms and risks. Such estimates, however, are very uncertain. The lack of an observed history of default on IMF loans poses a significant challenge to estimating, with any degree of certainty, the risk involved although that absence itself suggests that the risk is small.

The rationale for including the cost of market risk in estimating the costs of the government's financial transactions is that doing so results in a more comprehensive measure of cost, one that reflects how the public values the risks taken on by the government.¹⁸ The cost of the market risk associated with any particular program can be estimated using the prices of securities with comparable risks.

The fair-value approach has several benefits that neither the previous approaches to accounting for new commitments to the IMF nor a present-value approach that excludes a market risk adjustment have. First, fair-value estimates can be intuitively interpreted as either the price that would be determined by participants in a competitive market for taking on the government's obligations or as a measure of the economic subsidy that is being provided to the beneficiaries of the program. Second, fair-value estimates can help policymakers understand trade-offs between policies that involve differing degrees of market risk. For example, if commitments to the IMF were being weighed against bilateral loans to other nations that did not include the benefits of the seniority and the conditionality of IMF lending, those bilateral loans would have considerably more market risk. The United States would need to charge a higher interest rate on those bilateral loans than the rate it receives from the IMF to offset that additional market risk. Finally, aligning budgetary costs with the market values makes financial transactions conducted at market prices budget neutral and thereby eliminates the incentive to conduct such transactions solely to achieve budgetary savings.

Some observers have argued that the current fair-value treatment and previous treatments ignore the gains and losses on SDRs that may result from differences in earnings from holding debt denominated in foreign currencies versus debt denominated in U.S. dollars. Those differences, which can come from variations in exchange rates, interest rates, or both, would affect projections of the cost of the IMF if the IMF were accounted for on a cash basis like other federal programs. For example, if CBO projected that the exchange value of the U.S. dollar would appreciate against the SDR then quotas held in SDRs would (if interest rates were held constant) be projected to be less valuable in terms of U.S. dollars in the future. However, a projected increase in the SDR interest rate in relation to U.S. rates could offset part or all of that loss in value.

Although such a relationship between exchange rates and interest rates is generally assumed to hold over the long term in many economic models (an assumption known as uncovered interest rate parity), projected movements in

18. Testimony of Douglas W. Elmendorf, Director, Congressional Budget Office, before the Committee on Financial Services, U.S. House of Representatives, *Estimates of the Cost of the Credit Programs of the Export-Import Bank* (June 25, 2014), www.cbo.gov/publication/45468.

exchange rates and interest rates do not necessarily offset each other over a decade. Nevertheless, current exchange rates and interest rates are generally interpreted as reflecting expectations and risk tolerances of participants in the financial market. Thus, one rationale for excluding those effects from budget estimates is that the SDR interest rate and exchange rate are based on market-determined rates that effectively compensate the holder of SDRs for the exchange and interest rate risks that they bear. CBO accounts for market participants' demand to be compensated for that risk by discounting SDR cash flows in present-value estimates using the weighted average of yields on debt of the countries whose currencies are in the SDR basket and then converting the SDR amount to U.S. dollars at the prevailing exchange rate. CBO does not, therefore, make any further adjustment to its present-value estimates to account for its projections of exchange rates or interest rates.

Other observers argue that the basis for assessing the size and probability of any loss associated with defaults by IMF borrowers is subjective, as is the size of an appropriate market risk adjustment, and that the estimates are therefore particularly uncertain. One approach that could mitigate that uncertainty is to exclude the market risk adjustment for losses, or the possibility of losses altogether, from the estimate. Without the market risk adjustment for losses, CBO's estimate of the cost of additional commitments to the IMF would be 0.5 percent of the commitment instead of 2 percent. If the possibility of loss was excluded altogether, any estimate would simply be based on the difference between the rate paid by the IMF on the SDRs and the safe, nominal rates used to convert those payments to a present value. To the extent that those rates are approximately the same, the estimate would be close to zero, matching the exchange-of-assets approach. If such an approach was adopted, lawmakers would no longer receive signals as part of the budget process about changes in the risks of the United States' commitments to the IMF as market conditions and lending policies changed. Some analysts, however, contend that lawmakers already receive sufficient information about the IMF's lending through the Treasury's reports to the Congress and other sources, or that, given the estimating uncertainties, fair-value estimates should be used only as supplemental information.

Other concerns about a fair-value approach are not specific to transactions with the IMF; rather, they are the general concerns expressed by analysts who oppose the

use of fair-value accounting for federal credit programs in the budget.¹⁹ First, fair-value estimates include costs that will not be paid directly by the federal government if actual cash flows turn out to match expected cash flows, which makes comparing such estimates with estimated costs for programs that have market risk but whose costs are not accounted for with a market risk adjustment more difficult. Second, fair-value estimates may be somewhat more volatile, more difficult to produce, and more difficult to communicate to policymakers and the public than estimates without market risk because of changes in the cost of market risk. Third, producing fair-value estimates is typically more complex than producing estimates without an adjustment for market risk, so it is often more difficult to explain to policymakers and the public the basis for such estimates than it is to explain the basis of estimates that do not include adjustments for market risk.

How CBO Estimates the Fair-Value Cost of the United States' Participation in the IMF

CBO estimates that increases in the United States' financial commitment to the IMF have a cost on a fair-value basis because the rate of interest that the United States earns on the funds deposited with the IMF does not fully compensate it for the small risk of a sharp decline in the value of its commitment. When the United States makes a deposit with the IMF, it receives a rate of interest on its SDRs that is equivalent to or slightly higher than the rate it could earn investing directly in the low-risk debt of the countries whose currencies make up the SDR basket.²⁰ Deposits with the IMF pose an additional risk, however, because some of their value may be lost as the result of a large-scale loss stemming from widespread defaults on IMF loans.

Under the fair-value approach to estimating costs, the benchmark for determining the net cost of a particular investment is the return that would be earned on an investment with comparable risk; if the cash flows from the investment fall short of that benchmark, the investment

19. See Government Accountability Office, *Credit Reform: Current Method to Estimate Credit Subsidy Costs Is More Appropriate for Budget Estimates Than a Fair Value Approach* GAO-16-41 (January 2016), www.gao.gov/products/GAO-16-41.

20. The 0.05 percent floor on the SDR rate provides a slightly better return than investing in the debt of the countries whose currencies are included in the basket when yields on those countries' debts are negative, as some have been since 2014.

Table 5.

CBO's Fair-Value Estimate of the Cost to the United States of New Commitments to the IMF

	Cash Flow (Percent)^a
Loan Disbursements ^b	138.9
Scheduled Loan Repayments	-141.3
Loan Losses	5.3
Cost to the IMF of Its Loans	3.0
Income Retained by the IMF as Reserves	2.4
Losses Absorbed by the IMF's Reserves	-3.4
Combined Effect of the IMF's Reserves	-0.9
Cost to the United States of New Commitments to the IMF	2.0

Source: Congressional Budget Office.

IMF = International Monetary Fund.

- a. Amounts shown represent the net present value of cash flows associated with new loans disbursed by the IMF as a result of a new commitment, expressed as a percentage of that commitment.
- b. CBO estimates that each dollar of a new commitment to the IMF would result in a sequence of loan disbursements that, on a present-value basis, exceeds the amount of the commitment.

has a net cost. Investments with more market risk generally provide a higher expected rate of return than those with less market risk to compensate investors for bearing the additional risk. The United States' commitment to the IMF has slightly more market risk (stemming from the possibility of losses triggered by widespread defaults) than investing directly in the low-risk debt of the countries whose currencies are included in the SDR basket, so market participants would demand a slightly higher interest rate than the SDR rate to compensate them for that risk. If the IMF paid a higher rate than it currently pays on SDRs, that would reduce the cost of the United States' participation in the IMF. Conversely, if the IMF paid members a lower rate, that would increase the cost to members.

To quantify the cost of an increase or decrease in the amount of the United States' commitment to the IMF, CBO models the cash flows between the United States, the IMF, and its borrowers. Because the sequence of events that would generate losses for the United States' commitment to the IMF has no clear historical precedent, those cash flows are highly uncertain.

The modeling approach involves a series of steps, each of which produces a set of cash flows that represents the effect of a change in the United States' commitment on the amount that the IMF lends out in each year.²¹ The components of the IMF's cash flows can be grouped into two categories: the costs of lending and reductions in the

costs that the organization passes on to members resulting from its reserves. CBO estimates the amounts of the loans that the IMF would disburse to borrowers as a result of the new commitment, the scheduled repayments of principal and interest on those loans, and the present value of any losses that the IMF would incur if borrowers defaulted. The IMF uses its reserves to reduce the amount of losses that are borne by members. To build those reserves over time and to cover its operating costs, however, the IMF retains a portion of the proceeds from its lending, which reduces the interest payments that it makes to the United States.

Each of those sets of cash flows can be expressed as a present value; added together, those present values constitute the estimated net cost of United States' participation in the IMF (see Table 5). Combining the present value of the IMF's loan disbursements, scheduled repayments, and losses yields a net cost to the IMF of 3 percent of its

21. Quota deposits that are not lent by the IMF are invested in a range of securities purchased at market prices or held as currency. On a fair-value basis, those investments will provide cash flows that fully offset their purchase prices, and they therefore have no effect on the fair-value cost of the United States' commitment to the IMF. The remaining portion of the quota commitment that is not deposited with the IMF is retained at the Federal Reserve Bank of New York in the form of a non-interest-bearing promissory note until it is drawn on by the IMF, so it does not affect the net cost of the commitment either.

loans. The net cost indicates that the IMF provides loans on terms that are more generous than those that would be demanded by other creditors if they were granted the same seniority and made loans under the same conditions as the IMF. The cost that is passed on to the United States is increased by a small amount because the IMF retains some of the interest it receives, but the cost is lowered by a much greater amount by the organization's reserves, which insulate the United States from most losses. Together those effects reduce the net cost to the United States of an increase in its commitment to the IMF to 2 percent of the additional commitment—lower than the costs that the IMF itself bears on its loans.

Loan Disbursements

CBO projects that for any given increase in the United States' commitment, the IMF would, on average, have about 10 percent of that increase loaned out to members in any given year, though that amount will vary from year to year with changes in global economic conditions. That projected share is slightly higher than the 8 percent share of total resources on loan that the IMF has maintained since expanding its lending resources in 2009 in response to the global financial crisis but lower than the 16 percent share maintained between 2000 and 2008. CBO estimates that IMF loans will mature after about two years, so with nonamortizing loans (that is, loans for which the principal is due at the maturity date) that projected share amounts to disbursements equaling 5 percent of the new commitment each year, in perpetuity. The present value of that sequence of future disbursements is 139 percent of the commitment.

Scheduled Loan Repayments

The IMF would receive interest on outstanding balances of its loans to borrowing members that stemmed from the new commitment at a rate approximately equal to the projected SDR rate plus a nearly 1 percentage-point spread, CBO estimates. That estimate is roughly consistent with the rates that the IMF has charged on its loans over the past 20 years. The expected stream of principal repayments (5 percent of the IMF's total resources each year) and interest payments (on the 10 percent of total resources that the IMF is projected to have in outstanding loan balances each year) has a present value of 141 percent of the new commitment.²² The difference between that amount and the present value of loan disbursements is the value of the income that the IMF would earn by charging its borrowers an interest rate higher than the rate it pays to members on their SDR holdings.

Loan Losses

The projection of losses on the loans made by the IMF to member countries is the most uncertain component of CBO's estimate of the cost of commitments to the IMF. It is based on estimates of several key parameters—the frequency of large losses, the severity of losses, and the amount of IMF loans extended when such losses occur—all of which are very uncertain and subjective. That uncertainty stems in large part from the lack of any history of significant losses incurred by the IMF. That history suggests that, in most scenarios, the IMF would be protected from substantial losses by the seniority of its claim, the conditionality of its lending, and the actions of other nations intended to ensure that borrowers repay their IMF loans.²³ Thus, CBO's estimate focuses on losses that would occur in severe crises when global levels of public and private indebtedness are high and the factors that make the IMF's lending safer than other sovereign debt are more likely to be tested.

In CBO's judgment, events similar to the Great Depression or the recent financial crisis are most likely to cause the IMF to incur significant losses. Approximately 75 years separated those two events, which CBO considers to be a reasonable estimate of the frequency of severe crises. However, the IMF did not incur losses on the loans it made in the last financial crisis, suggesting that not all such events lead to losses. Thus, CBO estimates that the IMF would incur a large loss in only one out of every four such events. Combining those probabilities, CBO estimates that the annual probability of a crisis occurring that triggered large IMF losses is 1 in 300.

During such a crisis, CBO estimates, an average of 30 cents of each dollar of any new commitment that the United States made to the IMF would end up in arrears. That estimate reflects two expectations about such a crisis—that IMF lending would increase and so, too, would the

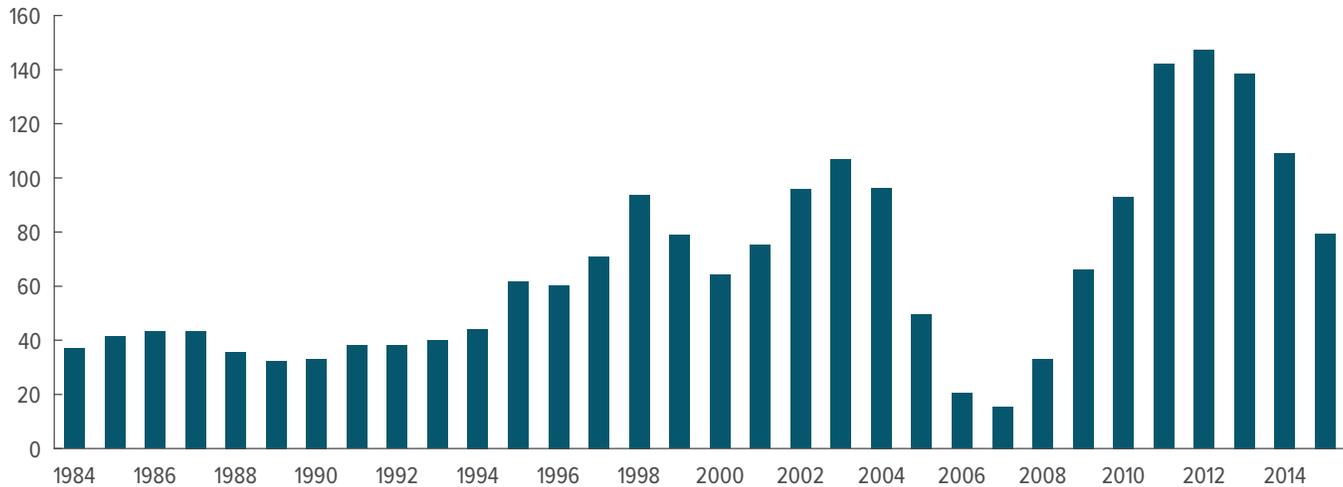
22. The estimates of interest rates that would be paid by members on their loans include the effects of the 0.05 percent floor on the SDR rate, which raises the value of the scheduled loan repayments by approximately 0.20 percent of the commitment.

23. In addition to the specific elements of the IMF's lending practices, the coordinated interventions of the United States and the European Union to address the recent global crisis helped the IMF avoid losses. The liquidity swap lines established by the Federal Reserve System, the United Kingdom's Exchange Equalisation Account, and eurozone members' European Stability Mechanism are examples of such coordinated efforts.

Figure 4.

The IMF's Total Outstanding Loan Balances, 1984 to 2015

Billions of Dollars



Source: Congressional Budget Office, using data from the International Monetary Fund.

Amounts shown represent the outstanding portion of the lending arrangements between the IMF and borrowing members at the end of each year; they do not include any undrawn balances available to borrowers under the terms of those arrangements.

The IMF uses its own international reserve asset, the SDR, as its unit of account. SDR amounts for each year were converted to U.S. dollars using the exchange rate that was in effect at the end of that calendar year.

IMF = International Monetary Fund; SDR = special drawing right.

probability that borrowers would go into arrears.²⁴ CBO anticipates that the amount of lending and the number of lines of credit extended during a crisis would be much greater than the average of 10 percent of the United States' commitment projected by CBO. Historically, the IMF's lending has grown significantly during international economic crises. For example, lending increased during the Latin American debt crisis of the 1980s, the Asian financial crisis of the 1990s, and the global financial crisis of the late 2000s (see Figure 4). In addition, during that global financial crisis, the IMF extended lines of credit that remained undrawn but nevertheless allowed for an even greater increase in outstanding loan balances. When the IMF's lending in response to the global financial crisis peaked in 2012, outstanding balances and

credit extended but undrawn represented a total of more than 20 percent of the IMF's lending resources of approximately \$1.3 trillion. Although none of the crises mentioned resulted in losses to the IMF, they represent periods in which the possibility of losses was elevated. CBO expects that in the very rare event of a more severe crisis, outstanding loan balances could grow to significantly larger amounts than anything that has been experienced historically.

CBO projects that borrowers who were in arrears during such a crisis would ultimately repay only 50 percent of the balance of their loans in present-value terms. (That present-value amount would be reflected in reductions in the amount of interest paid to members on their SDR holdings that would arise if a large number of loans went into arrears.) Although significant uncertainty surrounds that estimate, a low recovery rate is supported by the experience of the Great Depression. In the early 1930s, the United Kingdom and a number of European countries defaulted on loans from the United States, including significant debts incurred during and immediately after World War I, prompting the federal government and other debtholders in the United States to write down a

24. Such a pattern has been observed for lines of credit offered by private financial institutions and is an important determinant of their cost. A line of credit is often not used until the recipient experiences financial distress, which is more likely to occur in periods of overall economic distress. For more information, see Robert A. Jones and Yan Wendy Wu, "Credit Exposure and Valuation of Revolving Credit Lines," *Journal of Derivatives*, vol. 22, no. 4 (Summer 2015), pp. 37–53, <http://dx.doi.org/10.3905/jod.2015.22.4.037>.

large amount of those nations' debt. All told, creditors in the United States wrote down sovereign debt estimated to be worth more than 15 percent of the country's gross domestic product. In today's terms, that would amount to a write-down of more than \$3 trillion.²⁵ If write-downs of a similar scale were to occur on IMF loans, it is very likely that the IMF would incur very large losses.²⁶ CBO's projected loss rate also reflects the possibility that, during a more severe crisis, the IMF's senior status could be disregarded.²⁷ Furthermore, losses in a crisis could be severe because the conditionality of the IMF's lending and the assistance of and pressure applied by other nations to members in arrears could be weakened by political and economic turmoil.

From the projections of those key parameters, the expected annual amount of losses on IMF loans and the present value of those amounts can be estimated. Multiplying the percentage of the IMF's loans projected to be in arrears (30 percent) by the percentage of loans expected to remain unrecovered (50 percent) yields a projected average loss rate to the IMF of about 15 percent in a severe crisis. Multiplying that projected loss rate by the probability of those losses occurring (1 in 300, or 0.33 percent) results in a projected *annual* loss of 0.05 cents per dollar committed to the IMF. That point estimate is

25. Carmen M. Reinhart and Kenneth S. Rogoff, *Financial and Sovereign Debt Crises: Some Lessons Learned and Those Forgotten*, Working Paper WP/13/266 (International Monetary Fund, December 2013), pp. 12–15, www.imf.org/external/pubs/cat/longres.aspx?sk=41173.0.

26. Reinhart and Rogoff show that the conditions for such events are widespread indebtedness (both private and public), a number of countries experiencing inflation greater than 20 percent, and a wave of banking crises. Although some of those conditions existed in the 2007 global financial crisis—and still exist today in the form of the high-level indebtedness of several IMF member countries—they did not combine in such a way as to result in an increase in losses to the IMF.

27. Generally, loss rates are higher for less senior debt. A recent Moody's study of corporate debt, for example, shows that senior bonds (defined as debts with a higher priority than 70 percent of other bonds issued by the same issuer) had loss rates of less than 10 percent of the principal amount of the bonds, whereas more subordinated debt (bonds with payments senior to at least 25 percent but junior to at least 25 percent of the company's other debts) had loss rates of 40 percent, on average. The magnitude would probably differ for sovereign bonds, but the pattern would be similar. See Kenneth Emery and others, *Moody's Ultimate Recovery Database* (Moody's, April 2007), <http://tinyurl.com/jf9z9vu> (PDF, 426 KB).

intended to represent the central tendency of a range of possible configurations of the uncertain parameters underlying it, such as more frequent crises with smaller losses or less frequent events with larger losses. Expressed as a present value and further adjusted to account for the cost of market risk (as described below), the loan losses are estimated to be 5.3 cents for each additional dollar that the United States commits to the IMF.

Income Retained by the IMF

The IMF retains a portion of the interest it charges borrowers to cover its operating costs and to accumulate reserves, thus reducing the net proceeds of loans that flow through to member nations. CBO estimates that the IMF will retain approximately 1 percentage point of the interest paid on loans outstanding in a given year. In an average year, approximately 10 percent of the United States' new commitment would be on loan from the IMF, so the average amount of interest retained by the IMF per year would be approximately 0.1 percent, or, expressed as a present value, 2.4 percent of the new commitment.²⁸ The amounts retained by the IMF that were not used for operating costs would increase the IMF's reserves.

Losses Absorbed by the IMF's Reserves

The IMF's reserves are available to absorb losses. With gold valued at its market price, those reserves were approximately \$126 billion on October 31, 2015 (or slightly less than 10 percent of the \$1.3 trillion that members' quotas and other commitments totaled in 2016), and they will grow over time as the IMF retains some of the interest income from its loans and gains from its investments. (Compared with the existing stock of reserves, those additional amounts have a very small effect on CBO's estimate of the cost of the United States' commitment.) In CBO's estimate for the severe-crisis scenario, which is the scenario most likely to result in losses to the United States, the average loss rate to the IMF would be approximately 15 percent. With reserves initially covering less than 10 percent, the losses flowing through to members would amount to approximately

28. The floor on the SDR rate reduces the interest income that the IMF retains below what would be retained if no floor existed by approximately 0.50 percent of the commitment. Because the floor also applies to the rate that the IMF's borrowers pay, which raises the value of the scheduled loan repayments by approximately 0.20 percent of the commitment, the net effect of the floor is to lower the net cost of the United States' commitment to the IMF by approximately 0.30 percent of that commitment, CBO estimates.

6 percent. CBO projects that, on average, smaller losses would be borne by members over time, because the agency estimates that the IMF's reserves will grow slowly over time and provide slightly more protection against losses.²⁹

Multiplying the portion of members' commitments that would be protected by the IMF's reserves (10 percent) by the 0.33 percent probability of a severe crisis occurring results in an expected *annual* reduction in United States' losses of 0.03 percent.³⁰ Expressed as a present value, the annual losses absorbed by the IMF's reserves would reduce the net cost to the United States of its new commitment by 3.4 percent.

When the components of cost enumerated above are combined, the projected net cost to the United States of any additional commitment to the IMF comes to 2.0 percent of the amount of the new commitment (see Table 5 on page 16).

Present-Value Calculations and the Cost of Market Risk

The present-value estimates described above account for the cost of market risk associated with each set of cash flows.³¹ Because all of those cash flows are denominated in SDRs, their value in U.S. dollars is sensitive to fluctuations in the SDR exchange rate and the SDR interest rate. Also, losses resulting from defaults by borrowers of IMF loans depend on the occurrence of crises. Exchange rates, interest rates, and the likelihood of lending losses all fluctuate with global economic conditions, so all of the cash flows have some degree of market risk. Incorporating the

cost of the market risk associated with interest rates and exchange rates is straightforward because the readily observable prices of foreign bonds and the exchange rates of the currencies in the SDR basket compensate investors for the market risks associated with fluctuations in those rates. Cash flows that have only interest rate and exchange rate risks can therefore be discounted using the weighted-average yield on the bonds of countries whose currencies are in the SDR basket and then converted to U.S. dollars using the current SDR exchange rate. That discounting approach can be applied to cash flows in fixed SDR amounts, such as principal disbursements and repayments, as well as to cash flows indexed to the SDR rates, such as loan interest payments.

An important factor in estimating the market risk associated with new commitments to the IMF is that the amount of losses stemming from defaults by borrowers of IMF loans will be sensitive to global economic conditions. Because those losses would be large only in a severe crisis and negligible otherwise, they have considerable market risk. The pricing of investments that expose investors to large losses during aggregate economic downturns suggests that investors demand compensation that is significantly greater than the expected value of such losses to bear that risk. Thus, because of their market risk, the present value of the IMF's losses will be larger than the expected amount of those losses discounted at the SDR discount rate.

Determining the market risk inherent in the IMF's lending losses is challenging because there is no traded bond that has the same loss characteristics as the IMF's lending. The amount of market risk in a bond can be inferred from the difference in yields (expressed in a common currency) between a bond with a risk of default and a bond without default risk. The difference in yield, called a

29. The amount of losses absorbed on a new commitment to the IMF depends on the size of the new and existing commitments relative to the IMF's reserves. Before lawmakers authorized the IMF's recent quota increase, the IMF's resources were less than half of their current level, and CBO estimated that the IMF's reserves would have been large enough to absorb almost all potential losses. The increase in total IMF resources available for lending has led to more lending, thereby increasing the risk that IMF lending losses could exceed reserves.

30. CBO's estimate of reserves available during a severe crisis reflects gold valued at current market prices, though actual values may be significantly different in a crisis. In addition, that estimate is based on the assumption that the IMF would be able to obtain the necessary approval to sell gold should doing so be necessary to reduce losses to its members.

31. The procedures described are a simplification of a financial valuation approach, known as contingent claims analysis, that is used to compute the present value of investments with market risk. That approach is useful for valuing a wide range of financial instruments. For example, it provides a more rigorous way to establish the value of senior debt, such as that held by the IMF, relative to junior debt using only the prices of junior debt. See Dale F. Gray, Robert C. Merton, and Zvi Bodie, "Contingent Claims Approach to Measuring and Managing Sovereign Credit Risk," *Journal of Investment Management*, vol. 5, no. 4 (2007), pp. 5–28, <http://tinyurl.com/z572eto>.

spread, effectively represents the amount of compensation that investors regard as sufficient for bearing the risk. Although there are no bonds that give a precise indication of the spread for IMF loans, some bonds have similar characteristics, and examining those bonds is instructive.

Sovereign loans with a credit rating of A from Moody's, for example, have historically had annual default rates that are similar to CBO's estimated rate for IMF loans.³² That similarity suggests that the spreads for A-rated sovereign loans, which CBO estimates to be an average of 0.5 percentage points, should be informative for imputing the spreads for IMF loans. However, a significant portion of the spreads for A-rated sovereign loans can be explained by the relative illiquidity of those sovereign bonds.³³ Therefore, CBO estimates that the spreads for IMF loans should be less than 0.5 percentage points.

Furthermore, empirical evidence suggests that the relationship between the spread and risk of default for relatively risky sovereign bonds is informative for estimating the spread on IMF loans. The relationship between the spread and the risk of default can be summarized as a multiple: A loan with a spread of 0.5 percentage points and an expected loss of 0.05 percent, for example, has a multiple of 10. Empirical evidence across a wide range of debt securities—including sovereign, municipal, and corporate debt—suggests that larger multiples are typically observed for safer bonds than for riskier bonds and that those larger multiples reflect greater market risk. Even though those safer bonds generally have lower spreads and smaller losses than riskier bonds, losses that do occur will be more concentrated in economic downturns; thus, a greater proportion of the spread for those safer bonds than for riskier bonds represents compensation for market risk.³⁴

The multiple between the spread and the risk of default for a relatively safe, more senior IMF loan to a member would therefore be expected to exceed the multiples of the borrower's more junior debts to other lenders.³⁵ In

32. Moody's Investors Service, *Sovereign Default and Recovery Rates, 1983–2012H1* (July 30, 2012), <http://tinyurl.com/zqf6ldx> (PDF, 1.43 MB).

33. The effect of bond illiquidity on yield spreads is well documented. See, for example, Jacob Ejsing, Magdalena Grothe, and Oliver Grothe, *Liquidity and Credit Risk Premia in Government Bond Yields*, Working Paper Series 1440 (European Central Bank, June 2012), <https://ideas.repec.org/p/ecb/ecbwps/20121440.html>.

particular, CBO estimates that the multiple for sovereign bonds issued by borrowers of IMF loans, such as Greece, is approximately 2, suggesting that the multiple for IMF loans is greater than 2. Taking into account those factors as well as other characteristics of IMF loans, CBO estimates that a representative multiple for IMF loans would be about 4.

Thus, market participants would, CBO estimates, demand annual compensation for bearing the risk of a large loss on the IMF's loans that was four times greater than the expected value of annual losses on the IMF's loans (0.05 percent of the United States' commitment), or an amount equal to 0.2 percent of the commitment. Discounting that stream of imputed compensation at the SDR discount rate (because the commitment is denominated in SDRs) yields a present value of losses equal to 5.3 percent of the commitment.

The IMF's reserves reduce the risk to members. To estimate the losses that would be absorbed by the IMF instead of being passed through to the United States, CBO takes into account a multiple that is close to that for the 0.03 percent expected annual reduction in U.S. losses discussed above. The agency estimates that investors would demand 0.12 percent of the United States' commitment in annual compensation.³⁶ Discounting

34. For example, one study of corporate bonds indicates that spreads over swap rates (a relatively risk-free rate) are as much as nine times larger than estimates of expected annual losses for bonds with an A rating but only five times greater than estimates for Baa-rated bonds. See John Hull, Mirela Predescu, and Alan White, "Bond Prices, Default Probabilities and Risk Premiums," *Journal of Credit Risk*, vol. 1, no. 2 (Spring 2005), pp. 53–60, <http://tinyurl.com/ze7cwnp>.

35. Former IMF Chief Economist Michael Mussa argued that comparisons between the rates that the IMF charges its borrowers and the yields observed on those borrowers' other debts fails to account for the seniority and conditionality of IMF's lending and that the false comparison has led to a number of erroneous policy conclusions about the appropriateness of the rates that the IMF charges. See Michael Mussa, "Reflections on the Function and Facilities for IMF Lending" (paper presented at the Conference on IMF Reform, Institute for International Economics, Washington, D.C., September 23, 2005), <http://tinyurl.com/gqqb24e>.

36. That amount is 3.62 times the expected annual amount of those losses (0.033 percent of the commitment). The multiple is slightly smaller than the multiple used for total losses because the amount of losses absorbed is capped by the value of reserves and therefore has a slightly reduced exposure to market risk.

that stream at the SDR discount rate yields a present value of 3.4 percent of the commitment.

Those risk adjustments for net lending losses have a significant effect on the present-value estimate of the cost to the United States of its participation in the IMF. In previous years, Members of Congress have requested additional present-value estimates of the IMF's cost that exclude the market risk adjustment for losses but still use a foreign currency discount rate to convert SDR amounts. That approach involves discounting the expected value of those annual losses (0.05 percent) and the losses that are offset by IMF reserves (0.03 percent) at the safe, nominal rate. Doing so sharply reduces the estimated cost of the IMF from 2.0 percent of the United States' commitment to 0.5 percent.

Other Effects on the Federal Budget of the United States' Participation in the IMF

The United States' participation in the IMF has potential budgetary effects beyond those incorporated into CBO's fair-value estimates. Those effects include the gains and losses resulting from fluctuations in the SDR interest rate and exchange rate, the value to the United States of the IMF's reserves and other assets, and indirect effects on the budget from the IMF's role in stabilizing the global economy.

Budgetary Effects of Fluctuations in the SDR Exchange Rate and Interest Rate

The United States and other countries that contribute to the IMF earn interest on their SDR holdings, including the SDRs that they receive in exchange for the portion of their quota that they deposit with the IMF as well any SDRs that they receive for subsequent quota, GAB, or NAB commitments that the IMF draws on to support its lending.³⁷ Receiving interest payments denominated in SDRs poses some exchange rate and interest rate risk to the United States that it would not face if instead it invested in Treasury securities. Exchange rate risk comes from the fact that payments denominated in SDRs could

be worth less if SDRs decreased in value in relation to the U.S. dollar. (Those payments could, however, be worth more if the SDR exchange rate became more favorable to the United States.) Interest rate risk arises because the SDR-based interest rate could decrease in relation to the rate earned on Treasury securities, causing the interest payments made by the IMF to be less than the interest payments made by the Treasury to holders of its securities.

Despite those risks, uncertainty about exchange rates and interest rates does not, on a fair-value basis, represent an additional cost. The primary reason is that the SDR interest rate and exchange rates match the underlying market exchange rates and interest rates of the countries whose currencies make up the SDR basket. The interest rate and exchange rate risks borne by the United States are no different from those that would be incurred if the federal government purchased, at market prices, the basket of securities that determine the SDR interest rate. Thus, the SDR rate paid by the IMF effectively compensates the United States for the interest rate and exchange rate risks that it bears.

Changes in exchange rates and interest rates do, however, affect the federal deficit. Gains and losses on the United States' net holdings of SDRs that stem from changes in the value of SDRs relative to the U.S. dollar are recorded as mandatory budget authority and outlays in an IMF account of the federal budget. Interest income on those net holdings is recorded in the accounts of the Treasury's Exchange Stabilization Fund, which is used to conduct the federal government's transactions in foreign exchange markets.³⁸

The U.S. dollar and Treasury interest rates play significant roles in determining the value of the SDR and the SDR interest rate, so often the value of the SDR moves with the value of the U.S. dollar, and the SDR interest rate moves with the U.S. interest rates. The U.S. dollar represents nearly 42 percent of the weighting used to set the value of the SDR, and Treasury rates are a commensurate share of the interest rates used to determine the SDR interest rate. As a result, movements in the value of the SDR and the SDR interest rate often have modest effects on the federal budget.

37. Members do not earn interest on the SDRs that they received for the quota deposit that they made at the inception of the IMF, which were made in gold. The United States therefore does not earn interest on its share of the gold deposited with the IMF, which, valued at the market price of gold at the end of 2015, is worth about \$20 billion.

38. Department of the Treasury, "Exchange Stabilization Fund" (updated December 1, 2010), <http://go.usa.gov/cSDYG>.

Budgetary Effects of the United States' Role as a Stakeholder in the IMF

CBO's current method of assessing the cost of new financial commitments by the United States to the IMF excludes the value of the IMF's net worth to the United States. An alternative approach would be to view the United States' commitments as providing both a source of financing for the IMF's lending and a claim on the organization's net worth. Such a claim could arise through a number of channels. For example, if the IMF was to be dissolved, all outstanding quota balances would be returned, and the IMF's remaining assets, including gold holdings, would presumably be distributed to its members. Alternatively, if the IMF's reserves rose above a level that the organization considered necessary to maintain, it might begin to pay dividends to its members. Under what could be described as an equity method of accounting for the IMF, the value of the United States' share of the IMF's reserves could be considered as an asset of the U.S. government, and an increase or decrease in that value could be recorded as a change in the federal budget deficit each year.³⁹

An equity method of accounting for the United States' commitments to the IMF would have several consequences. First, by explicitly recognizing the value of the United States' stake in the IMF's net worth, a loss incurred by the IMF would effectively pass through, on a prorated basis, to the federal government whether or not the IMF used its reserves to reduce that loss. If, for example, the IMF sold gold or other reserve assets to cover its losses, its net worth would decrease, reducing the United States' equity value in the IMF. Second, a portion of the interest payments from borrowers that the IMF retained as reserves would be recorded as net receipts to the United States, so any policy changes that the IMF made to raise or lower the interest rates that its borrowers paid would more directly affect the budgetary cost to the United States of its participation in the IMF. Finally, because the effect on the federal budget would be the same whether the IMF passed on loan losses directly to members or used its reserves to reduce them before passing them on, the net cost of each additional dollar of the United States' commitment would simply be the cost of the IMF's lend-

ing without the effect of reserves (that is, 3 cents instead of 2 cents under the current approach).

One argument against such an equity-based approach is that the U.S. government has never in the past recorded the value of its ownership in the IMF or recognized the gains associated with its share of the increase in the net worth of the organization. The fact that the United States' claim on the IMF's assets is contingent on such unlikely conditions as the dissolution of the organization or a change in policy that required the IMF to pay dividends to its members weakens the case for including those claims in the budget. Furthermore, some observers may be concerned that accounting for the IMF in such a manner would effectively treat the IMF as if it were a branch of the federal government. Despite the veto power of the United States, the federal government has far less control over the operations of the IMF than it has over the federal agencies that appear in the budget.

Indirect Effects on the Federal Budget of Participating in the IMF

CBO's estimates do not capture any indirect effect on the federal budget of the IMF's role in promoting global economic stability. When the IMF draws upon the resources provided by its members to offer assistance to one of its members, it effectively represents a coordinated international response. The IMF's membership model spreads the burden of providing assistance across multiple members rather than leaving that responsibility to a few nations that are able and willing to assist in a crisis. In addition, because the IMF has financial resources in excess of \$1 trillion at its disposal, it can facilitate a sizeable and quick response to a crisis that might mitigate damage to the economy of the borrowing nation or prevent spillovers to the economies of other nations. Avoiding such contagion may help to stabilize the global economy as a whole, which could alleviate the deficit increases that often accompany global recessions.⁴⁰

Some analysts argue that the availability of the emergency assistance offered by the IMF creates moral hazards. For example, member countries may be less risk averse and borrow excessively from private creditors because they can expect to receive assistance from the IMF if they

39. For a description of the equity method of accounting, see PricewaterhouseCoopers, *Consolidation and Equity Method of Accounting* (PwC, 2015), <http://tinyurl.com/gw7yvlm>.

40. Barry Eichengreen and Ngaire Woods, "The IMF's Unmet Challenges," *Journal of Economic Perspectives*, vol. 30, no. 1 (Winter 2016), pp. 29–52, <http://dx.doi.org/10.1257/jep.30.1.29>.

experience a crisis. In the view of such critics, the IMF's presence makes the international financial system prone to crises that could spill over into the global economy.⁴¹

In part because of those opposing effects, it is difficult to quantify the degree to which the United States' participa-

tion in the IMF indirectly reduces or increases the effects of crises on the federal budget. Those indirect effects should not, however, be confused with the direct economic effects that are incorporated into CBO's estimates of default and recovery rates. In its estimates, CBO attempts to account for the fact that the IMF generally provides assistance only after the borrowing nation has agreed to take various actions intended to make its economy more stable, which makes that nation more likely to repay its IMF loans. But CBO does not make a more explicit adjustment to its estimates of the cost of the United States' participation in the IMF to account for any potential effects on the United States' economy that might result from that participation.

41. For a discussion of the moral hazard associated with the IMF's assistance, see Barry Eichengreen, *Can the Moral Hazard Caused by IMF Bailouts Be Reduced?* Geneva Reports on the World Economy Special Report 1 (International Center for Monetary and Banking Studies, 2000), www.icmb.ch/ICMB/Publications.html; and Kenneth S. Rogoff, "Moral Hazard in IMF Loans: How Big a Concern?" *Finance and Development*, vol. 39, no. 3 (September 2002), <http://tinyurl.com/j4teomj>.

List of Tables and Figures

Tables

1. Voting Shares and Quotas of IMF Members	5
2. The IMF's Total Outstanding Loan Balances, by Borrower	6
3. The IMF's Balance Sheet	10
4. Budgetary Treatment of the United States' IMF Quota Commitments	13
5. CBO's Fair-Value Estimate of the Cost to the United States of New Commitments to the IMF	16

Figures

1. Components of CBO's Fair-Value Estimate of the Cost to the United States of New Commitments to the IMF	2
2. The IMF's Reserves, 2000 to 2015	11
3. Cash Flows Between the United States and the IMF	12
4. The IMF's Total Outstanding Loan Balances, 1984 to 2015	18

About This Document

This Congressional Budget Office report was prepared as directed in the Consolidated Appropriations Act, 2016. In keeping with CBO's mandate to provide objective, impartial analysis, the report makes no recommendations.

Mitchell Remy prepared the report with guidance from Damien Moore. Leigh Angres, Sunita D'Monte, Theresa Gullo, Mark Hadley, Sarah Jennings, Wendy Kiska, Jeffrey Kling, Samuel Papenfuss, and David Torregrosa provided useful comments on various drafts of the report.

Clay Berry of the Institute of International Finance; Barry Eichengreen of the University of California, Berkeley; Deborah Lucas of the Massachusetts Institute of Technology (and a consultant to CBO); Meg Lundsager of the Woodrow Wilson International Center for Scholars; and Edwin Truman of the Peterson Institute for International Economics also provided helpful comments. Budget experts and economists at the Government Accountability Office provided a number of technical comments, which CBO considered and incorporated as appropriate. The assistance of external reviewers implies no responsibility for the final product, which rests solely with CBO.

Wendy Edelberg and Robert Sunshine reviewed the report, and Bo Peery edited it. Maureen Costantino and Jeanine Rees prepared the report for publication. An electronic version is available on CBO's website (www.cbo.gov/publication/51663).



Keith Hall
Director

June 2016