EXECUTIVE BOARD MEETING

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February 20, 2020

To: Members of the Executive Board

From: The Acting Secretary

Subject: **Review of the Adequacy of the Fund's Precautionary Balances**

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Questions	Mr. Unteroberdoerster, FIN (ext. 35448) Ms. Zoli, FIN (ext. 37116)

INTERNATIONAL MONETARY FUND

February 20, 2020

REVIEW OF THE ADEQUACY OF THE FUND'S PRECAUTIONARY BALANCES

EXECUTIVE SUMMARY

Precautionary balances are a key element of the Fund's multilayered framework to mitigate financial risks and safeguard members' resources. They consist of the balances in the General and Special Reserves and in the Special Contingent Account (SCA-1) and provide a buffer to protect the Fund against potential losses resulting from credit, income, and other financial risks.

This paper reviews the adequacy of the Fund's precautionary balances, using the framework approved by the Board in 2010. Under the framework, the Board conducts regular reviews, typically on a two-year cycle, and sets a medium-term target and a minimum floor for precautionary balances based on a comprehensive assessment of the financial risks facing the Fund. The framework includes an indicative range of 20–30 percent for the ratio of precautionary balances to a forward-looking credit measure, but also allows for judgement in setting the target.

Credit risks have increased significantly since the last review in 2018. Credit outstanding has risen by almost 60 percent, and the Fund's lending portfolio has become much more concentrated toward the largest borrower. Also, scheduled repurchases are projected to rise sharply in the coming years. Market-based indicators and sovereign credit ratings suggest a deterioration of the perceived average credit quality of sovereign debt issued by the Fund's borrowers. Income and investment risks are broadly unchanged.

Staff proposes that the medium-term target of SDR 20 billion be maintained for the time being. While credit risks have increased, the target is near the upper end of the indicative range, and still appears adequate to address current risks, absent a broader upswing in Fund lending or deterioration in repayment prospects for existing exposures. Nonetheless, developments need to be kept under close review and the Board could revisit the target before the next regular review if warranted.

The current pace of reserve accumulation also appears adequate at this time. Precautionary balances are now projected to reach the target by FY 2022 under staff's baseline projection, representing an improved outlook since the last review. Given the uncertainties around developments in Fund credit and factors affecting Fund income, however, the pace of accumulation should continue to be monitored closely.

No change is proposed in the current minimum floor of SDR 15 billion, which remains broadly consistent with a sustained medium term income position.

Approved By	Prepared by the Finance Department.
Andrew Tweedie (FIN)	

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INTRODUCTION[1]

1. Precautionary balances are a key element of the Fund's multilayered framework to mitigate financial risks and safeguard members' resources. They consist of three accounts, the General and Special Reserves and the Special Contingent Account (SCA-1), which provide a buffer against potential losses resulting from credit, income, and other financial risks.

2. This paper reviews the adequacy of the Fund's precautionary balances. Taking place on the standard two-year cycle, the review uses the transparent and rules-based framework that has been employed since 2010 to guide the assessment.[2] At the time of the last review in January 2018, precautionary balances stood at SDR 16.8 billion, and the Board decided to keep both the minimum floor and the medium-term target for precautionary balances unchanged at SDR 15 billion and SDR 20 billion, respectively.

3. This paper is one of three papers related to the Fund's finances that will be discussed by the Executive Board this Spring (Box 1).

- A paper on *Provisioning for Impairment Losses in the Context of the Fund* will discuss the role of provisioning for impairment losses in the context of the annual financial statements, and the framework developed by Fund staff for assessing the possible need for provisioning in line with the requirements of International Financial Reporting Standards (IFRS), and taking into account the unique aspects of Fund lending. Given the inter-linkages between provisioning and reserves, these two papers are planned for discussion on the same day.

- The conclusions of the Executive Board's discussion of this paper will provide important inputs into the upcoming *Review of the Fund's Income Position for FY 2020 and FY 2021-2022,* which will be discussed by the Board in April 2020. In particular, the Board's views on the medium-term target and pace of accumulation of precautionary balances will feed into the upcoming discussion on setting the margin for the basic rate of charge.

- Other periodic reviews related to the Fund's finances, including the Fund's investment account and policies on access and surcharges, are on longer review cycles, and will not be considered by the Executive Board in 2020.

4. This paper is organized as follows. The first section reviews the role of precautionary balances in the Fund's multi-layered framework for mitigating financial risks and the framework used to guide the assessment of reserve adequacy. The subsequent section takes stock of developments since the last review in 2018. The paper then assesses the adequacy of the current

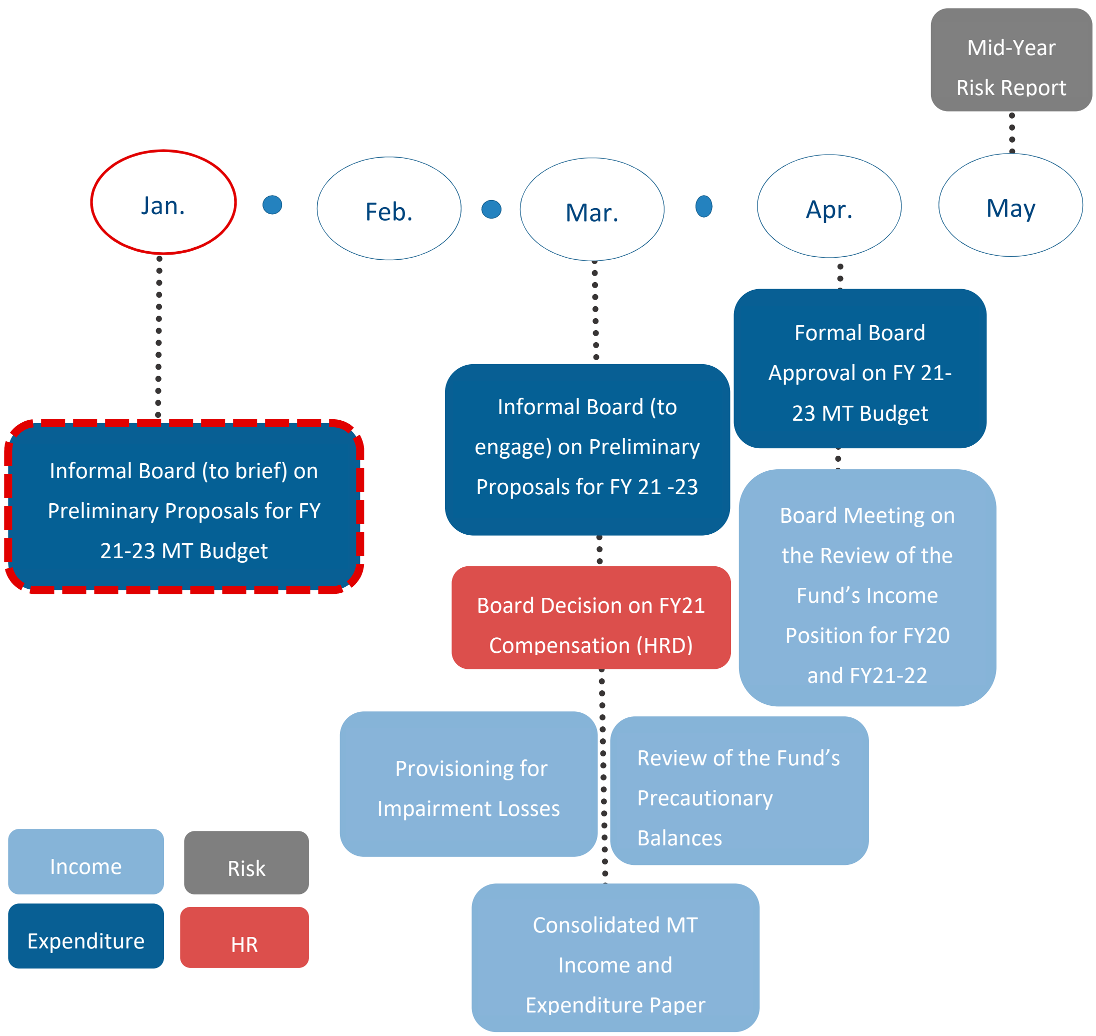
[1] Prepared by a team led by Edda Zoli comprising Parisa Kamali, Joel Chiedu Okwuokei, and Wei Zhang, with contributions from Diviesh Nana, Breno Oliveira, Vidhya A. Rustaman, Yan Sun-Wang, Jessie Yang, and Vera Zolotarskaya, under the guidance of Christian Mumssen and Olaf Unteroberdoerster (all FIN).

[2] Reviews of the adequacy of precautionary balances have been on a two-year cycle since 2002 but can be brought forward by the Executive Board if needed.

medium-term target of SDR 20 billion, the projected pace of accumulation of precautionary balances, and the minimum floor. The paper concludes with suggested issues for discussion.

Box 1. Road Map to Fund's Finances, Budget and Compensation Papers for the Remainder of FY2020

The Executive Board will take a series of decisions that would impact the Fund's finances and balance sheet before the end of FY 2020. The chart below shows the road map of the documents prepared by departments and related board meetings, which are coordinated and sequenced to ensure the Board has a broad view of the interactions among the various aspects of its decisions affecting Fund finances. This paper on the Review of the Fund's Precautionary Balances is scheduled to be discussed at the Board at the same time as the paper on Provisioning for Impairment Losses in the context of the IMF. It also provides background for the review of the Fund's income in April 2020, including the decision on the disposition of the net income and placement to reserves, as well as the decision on the margin for the basic rate of charge that will apply over FY 2021–22.



PRECAUTIONARY BALANCES AND THE FRAMEWORK FOR ASSESSING RESERVE ADEQUACY

Precautionary balances are a key element of the Fund's multilayered framework for managing financial risks and ensuring balance sheet strength. The assessment of the adequacy of precautionary balances is based on a transparent and rules-based framework adopted in 2010.

A. Financial Risks and Role of Precautionary Balances

5. **The Fund faces a range of financial risks in fulfilling its mandate (Box 2).** Credit risk is inherent in the Fund's unique role in the international financial architecture, and is typically the predominant risk. The Fund provides financial support to members facing balance of payments difficulties, including when other financing sources may not be readily available. Lending tends to fluctuate considerably over time and concentration risk can be very high. The Fund also faces other financial risks, including income, liquidity and operational risks and has developed policies to mitigate them. Given the pass-through nature of the Fund's financing mechanism, the Fund does not face significant market (exchange rate or interest rate) risks arising from its lending.[3]

6. **Maintaining an adequate level of precautionary balances is a key element of the Fund's overall strategy for managing financial risks and ensuring balance sheet strength.** Precautionary balances are available to protect the balance sheet in the event that the Fund were to suffer a loss as a result of credit, income, or other financial risks.[4] In this way, they play an important role in seeking to protect the value of reserve assets that members place with the Fund and underpin the exchange of international assets through which the Fund provides assistance to members with financing needs.[5]

[3] The Fund has no exposure to exchange rate risk on its holding of member currencies, including those representing Fund credit, or borrowings as they are all denominated in SDRs, the Fund's unit of account, and members are required to maintain the SDR value of the Fund's holdings of their currencies. The Fund does not incur interest rate risk on its credit as the rate of charge is linked directly, by means of a fixed margin, to the cost of financing (which is the SDR interest rate).

[4] For instance, the Fund drew on its precautionary balances during FY 2007-08 to cover income losses.

[5] Although the Fund's gold holdings are an important factor of strength in the Fund's balance sheet, they are not included in the Fund's precautionary balances given the limitations on their use. In particular, outside of a liquidation of the Fund, the use of gold by the Fund is restricted by the Fund's Articles and any authorized use requires a decision by an 85 percent majority of the total voting power.

Box 2. Typology of Fund Financial Risks and Mitigation

- *Credit risk* refers to any borrowing member's failure to fulfill its financial obligations to the Fund.[1] This risk can fluctuate widely since the Fund does not target a particular level of lending or lending growth. Credit risk is mitigated using a multilayered framework (see paragraph 7).

- *Income risk* is the risk that annual income will be insufficient to cover annual expenses. While the broadening of non-lending income sources under the Fund's new income model is helping mitigate this risk, currently the Fund remains dependent on lending income to cover the bulk of its activities. This risk is managed by ensuring an adequate strategy for the Investment Account, setting the margin for the basic rate of charge on Fund lending, and by the accumulation of precautionary balances, which generate investment income that buffers against income risk.

- *Liquidity risk* is the risk that resources will be insufficient to cover member financial needs and for the Fund to repay its obligations as they fall due, including under Fund borrowing agreements. Mitigation is through liquidity reviews in the near-term, and quota reviews and Fund borrowing over the medium-term. In addition, the Fund retains a prudential balance of quota and borrowed resources to help manage liquidity risks and provide a buffer to support the encashability of members' reserve tranche positions, and claims under borrowing, respectively.[2] Liquidity is monitored daily through the Forward Commitment Capacity (FCC), which measures resources available to finance new commitments over the next 12 months.[3]

- *Financial risks related to the Fund investment activities*, refer specifically to assets held in the Investment Account (IA), comprising the Endowment Subaccount (EA) and Fixed-Income Subaccount (FI).[4] Market and credit risks are the primary risk factors in the investment portfolio. These risks are mitigated through high-level strategic risk parameters defined in the Board approved Rules and Regulations (Rules), additional key risk controls (e.g., credit rating threshold by asset, issuer concentration limits), and diversification requirements.

- *Operational risks* in financial matters refer to the risk of losses attributable to errors or omissions. These risks are mitigated through strong internal controls.

1/ This can be related to, but is distinct from, risks to program performance under Fund arrangements that give rise to review delays and unmet program conditionality.
2/ The prudential balance is currently set at 20 percent of the quotas of members participating in the financing of IMF transactions (Financial Transaction Plan members).
3/ For details see Box 1 of *Adequacy of Fund Resources—Further Considerations* (EB/C/Quota/17/2, 8/2/17).
4/ Amounts in the Fixed Income subaccount currently correspond to the Fund's reserves that are treated as precautionary balances. Article XII, section 6(f)(ii) provides that the amounts of currency transfers from the GRA to the Investment Account shall not at the time of the decision to transfer exceed the total amount of the general and special reserves. A gross transfer of currencies of about SDR 0.2 billion, equivalent to the increase in reserves in FY 2019, were transferred from the GRA to the IA in the first half of FY 2020. See Review of the Fund's Income Position for FY 2019 and FY 2020 (EBS/19/16, 3/19/19).

7. **Precautionary balances are only one element of the Fund's multilayered framework for managing credit risk**. The primary tools are Fund policies on access, program, design and conditionality, which are critical for ensuring that Fund financial support helps members resolve their balance of payments difficulties in a timely manner:

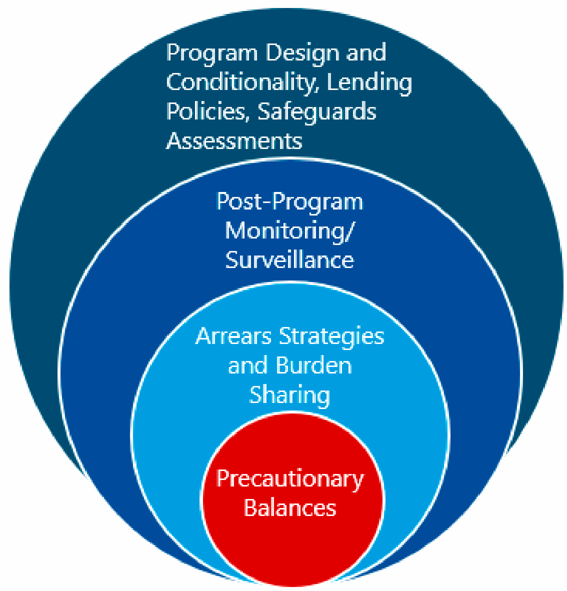
- *Program design and conditionality*, supported by a rigorous internal review process, are tailored to the borrowing country to help members resolve their balance of payments difficulties and address other vulnerabilities while supporting growth.

- *Lending policies* (standard access criteria and limits, charges, the exceptional access policies) are designed to discourage long or excessive use of Fund resources; *safeguards assessments* aim to ensure that Fund resources are adequately monitored and controlled.

- *Post-Program monitoring* allows the Fund to monitor and help strengthen policies affecting the repayment capacity of members with credit outstanding beyond the program period.

- *The Fund's de facto preferred creditor* status helps support its ability to lend when others may be unwilling or unable.

Multilayered Risk Management Framework



Source: IMF Finance Department

- *The cooperative arrears management strategy, and the burden sharing mechanism* help address arrears when they arise and limit their impact.

- *Precautionary balances* are available to absorb any losses that may arise from residual credit risks, notwithstanding the above elements.[6]

B. Size, Composition and Coverage of Precautionary Balances

8. Precautionary balances comprise the Fund's General and Special Reserves, and the Special Contingent Account (SCA-1).[7]

[6] Precautionary balances address credit risks arising from the Fund's non-concessional lending operations, which are managed through the General Resources Account (GRA). The Fund's concessional lending operations are trust-based, so the associated credit and liquidity risks are not on the Fund's balance sheet.

[7] Precautionary balances do not include the portion of special reserves attributed to the gold profits and invested in the endowment as in setting up the endowment, the Board recognized that its sole purpose would be to generate income. On the asset side, the Fund's reserves treated as precautionary balances are either invested in the Fixed-Income subaccount or held in SDRs and currencies.

- *Special reserve – established as a first line to absorb administrative losses*. It was funded initially by the proceeds from a gold investment program, and later with net income allocations. Under the Fund's Articles, no distributions (dividends) can be made from the special reserve.

- *General reserve – established to absorb capital losses and meet administrative losses*.[8] It has been funded through income allocations.[9] Reserves accumulated in the general reserve may be distributed to members, in proportion to their quota, if the Board approves such decision by a 70 percent majority of the total voting power.

- Special Contingent Account (SCA-1) –holds contributions by members that are explicitly targeted to protect the Fund against potential credit losses resulting from the ultimate failure of a member to repay its overdue charges and repurchases in the GRA. It was funded during the period 1987–2006 through the burden sharing mechanism by equal contributions from borrowing and creditor member countries and adjustments to the rates of charge and remuneration, respectively. Under existing decisions, the balances in SCA-1 would be distributed to contributing members when there are no outstanding overdue charges or repurchases.[10] As discussed in Provisioning for Impairment Losses in the Context of the Fund, the distinct nature of the SCA-1 has important implications for the financial reporting under international standards (see also Box 3).

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[8] Established in 1958 to absorb capital losses and to meet administrative losses, it was decided that the reserve contemplated in Article XII, Section 6(a) of the Articles, prior to the Second Amendment, would be referred to as the general reserve to distinguish it from the special reserve.

[9] Net operational income was placed in this reserve in FY 1958–72. Further placements of resources included net operational income generated under the Supplemental Reserve Facility (SRF), after meeting the cost of administering the PRGF Trust (FY 1998–2001); and surcharges on purchases under the SRF, credit tranches and EFF (FY 2002–2006). After a period of Fund income shortfall in FY 2007-08, the Board agreed to resume the practice of placing surcharge income in the General Reserve in FY 2011. Since FY 2016, net income has been allocated equally to the special and general reserves.

[10] The Board has broad discretion to decide, with a 70 percent majority, on the timing and magnitude of any SCA-1 distribution. The Board authorized such distributions in 2007 and 2019 in the context of Liberia's and Somalia's arrears clearance, respectively.

Box 3. Role of the SCA-1 in the Fund's Balance Sheet

The SCA-1 differs from the special and general reserves in two main respects. First, it is intended to provide protection only against the risk posed by overdue obligations and, under current decisions, is to be distributed to members when there are no overdue obligations remaining. Second, the SCA-1 provides protection not only to the IMF's financial position, but also to its annual income. Indeed, an ultimate loss arising from overdue obligations, e.g., after a repudiation of indebtedness by a member that withdraws from the Fund, would first be charged against the SCA-1, thus insulating the Fund's income position.

As a dedicated resource to protect against credit losses, the SCA-1 has allowed the Fund to consistently report its credit balances at full face value, including for the protracted arrears cases, and remain in compliance with international accounting standards. Prior to the adoption of IFRS 9 in 2019, the SCA-1 helped ensure compliance with IAS 39's loss recognition requirements to the extent that its balances more than covered the amount of principal arrears to the GRA. The recent adoption of IFRS 9 for the Fund's financial statements introduced a revised impairment model under which expected credit losses have to be calculated and recognized as a credit impairment loss (if applicable) for the whole portfolio. Expected credit losses are not limited to cases of actual arrears. Staff expects that, even for large exposures, the current SCA-1 balance could be material in determining whether there is a need for the Fund to report a credit impairment.

9. Precautionary balances have more than doubled in SDR terms over the last decade, reaching SDR 17.7 billion at end-FY 2019. At end FY2019 the special and general reserves amounted to SDR 5.7 billion and SDR 10.8 billion, respectively (Figure 1). The balance of the SCA-1, which has remained unchanged at SDR 1.2 billion since 2008, will decline slightly after the expected distribution of SDR 122 million in the context of Somalia's arrears clearance, leaving the Fund's overall protection against credit risk broadly unchanged as arrears to the GRA would decline by SDR 96 million. Prospects for further accumulation of precautionary balances in FY2020 are uncertain, given the sizable pension related (IAS 19) losses recorded in the first half.[11]

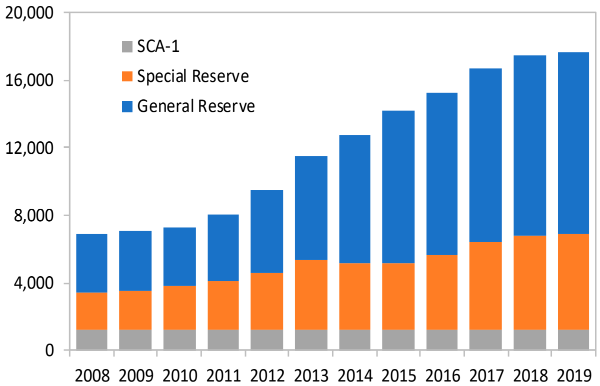
10. Precautionary balance coverage ratios have fluctuated across credit cycles. The recent increase in lending has reduced the coverage by precautionary balances to about 26 percent of credit outstanding—the lowest since FY2015 (Figure 1). By contrast, coverage relative to total commitments and to the Fund's total lending capacity has remained relatively stable in recent years at about 11 percent and 2.5 percent, respectively.

[11] The loss, estimated at SDR 1.1 billion, mostly comprises the actuarially determined loss for the six-month period ended on October 31, 2019, mainly due to a reduction in the discount rate since the beginning of the financial year, together with the financial impact of other changes to actuarial assumptions.

Figure 1. Precautionary Balances Composition, Accumulation, and Coverage

Composition, 2008–2019

(In millions of SDRs, end of financial year)



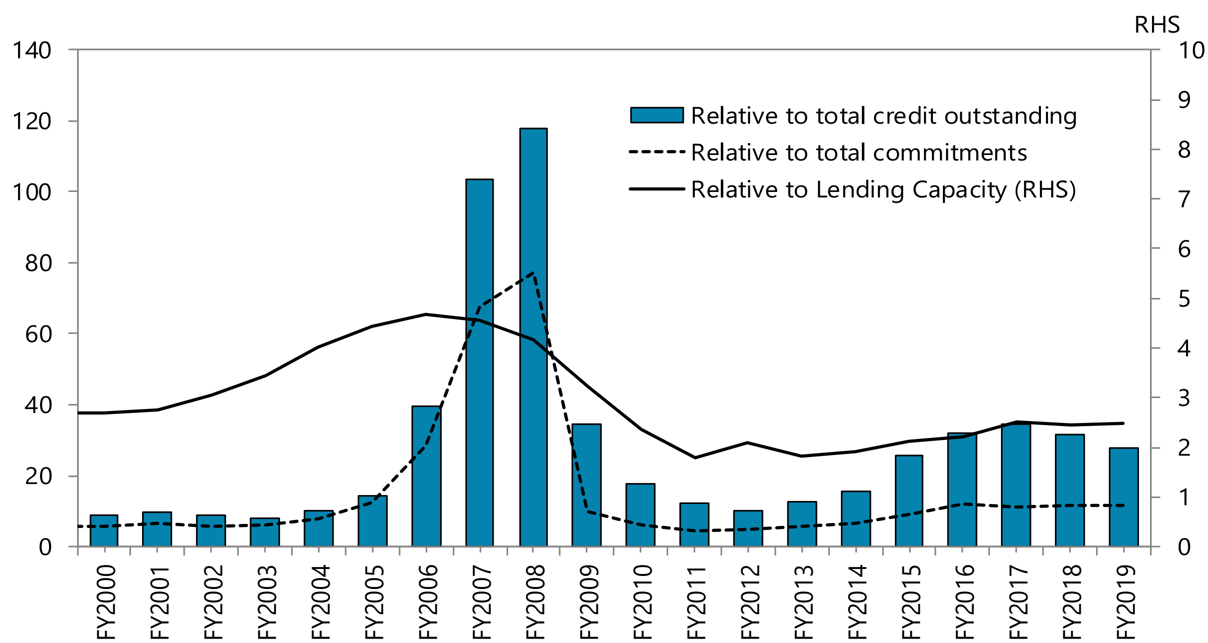
Accumulation[1/]

(In billions of SDR)

	FY 2019 (Actual)	FY 2020 (Projected)
I Precautionary balances - beginning of period 2/	17.5	17.7
II Operational income	1.6	2.2
Lending income including surcharges	1.2	1.9
Non-lending income	0.4	0.4
III Administrative expenses	-0.9	-0.9
IV Net operational income (II-III)	0.7	1.3
V Pension and other benefits related (IAS 19) gain/(loss)	-0.5	-1.1
VI Precautionary balances - end of period (I+IV+V)	17.7	17.8

Coverage Ratios: 2008–2019

(In percent, end of financial year)



Source: IMF Finance Department.

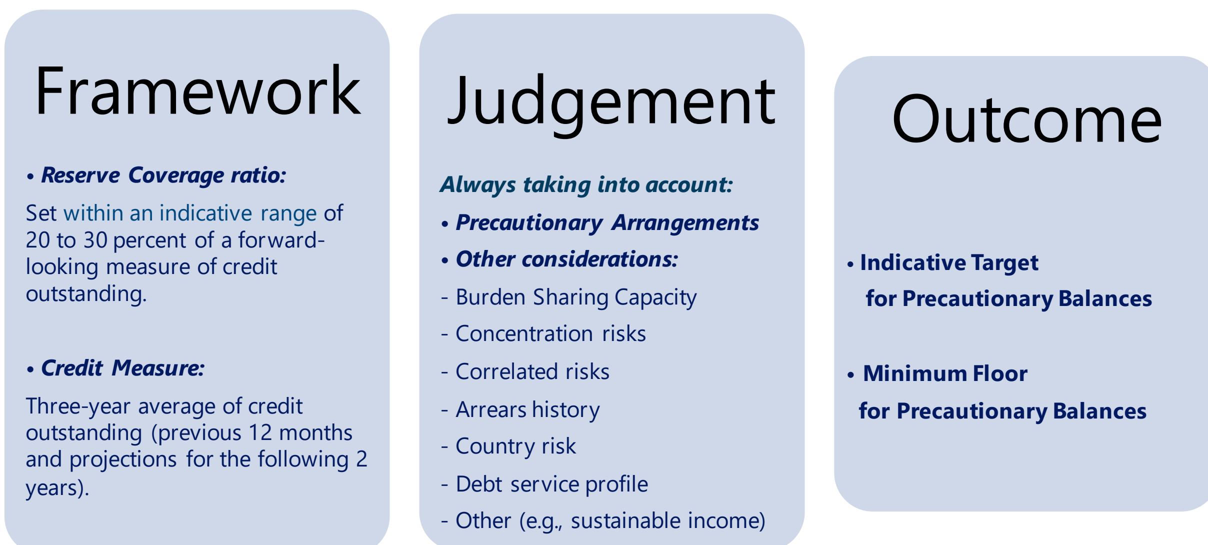
[1/] Components may not sum exactly to totals because of rounding and because for FY 2020 the expected distribution of SDR 122 million from the SCA-1 in the context of Somalia's arrears clearance is not shown as a separate line, but included in the total.

[2/] Includes SCA-1 of SDR 1.2 billion.

C. Framework for Assessing Precautionary Balances

11. The current rules-based framework for assessing precautionary balances was adopted in 2010.[12] Under this framework, the target for precautionary balances is to be broadly maintained within an indicative range linked to a forward-looking measure of credit outstanding. At the same time, the Board retains flexibility to determine where the target should be set based on a comprehensive assessment of the risks facing the Fund. While it is generally envisaged that the target will be maintained within the indicative range, there could be circumstances where the Board would decide to set or maintain a target outside the range, as was the case at the 2016 and 2018 reviews, if this is warranted by a broader assessment of financial risks. In this context, the Board has repeatedly stressed the importance of judgment.

Figure 2. Framework to Determine the Indicative Target and the Minimum Floor for Precautionary Balances



Source: IMF Finance Department.

12. The framework entails several elements (Figure 2): (i) an indicative range for the *reserve coverage ratio*, set at 20 to 30 percent of a forward-looking measure of credit outstanding. This element draws on approaches in other IFIs (Annex I), adapted to the specific circumstances of the Fund (in particular the highly concentrated and demand-driven nature of its lending portfolio);[13]

[12] See *Public Information Notice: IMF Board discusses the Adequacy of the Fund's Precautionary Balances* (9/22/10), *Review of the Adequacy of the Fund's Precautionary Balances* (EBS/10/161, 8/25/10).

[13] The framework also has elements in common with the methodologies used by rating agencies in assessing capital adequacy in supranational lending institutions (see Annex II in *Review of the Adequacy of the Fund's Precautionary Balances* (SM/16/21, 1/26/16)).

(ii) a specific *forward-looking credit measure* to anchor the range—the three-year average of credit outstanding covering the past twelve months and projections for the next two years—which helps smooth year-to-year volatility of credit movements.[14] Commitments under precautionary arrangements are excluded from the credit measure used to derive the indicative range, but are considered by the Board in setting the target; and (iii) a *minimum floor* to protect against an unexpected increase in credit risks, particularly after periods of low credit, and ensure a sustainable income position.[15]

13. Based on this framework, the Board has increased the target for precautionary balances twice and the minimum floor once. The Board agreed in 2010 to raise the indicative medium-term target by SDR 5 billion to SDR 15 billion in light of the sharp increases in commitments and actual and projected lending, the projected increases in individual exposures, and the limited capacity of the burden sharing mechanism. The target was further increased to SDR 20 billion in 2012, and reaffirmed in 2014, 2016 and 2018, even though the target exceeded the indicative range in the last two reviews. A minimum floor of SDR 10 billion for precautionary balances was agreed in 2010 and reaffirmed in the 2012 and 2014 reviews. The floor was increased to SDR 15 billion in 2016 as this was seen as more consistent with maintaining a sustainable income position in the medium term and would also provide a larger buffer to protect against risks associated with any unexpected rise in credit. The floor was reaffirmed in 2018.

The Floor and Target Agreed at Each Review, 2010–2018

(In billions of SDRs)

Review year	Floor	Target
Before 2010 review	-	10
2010	10	15
2012	10	20
2014	10	20
2016	15	20
2018	15	20

Source: IMF Finance Department.

14. The framework applies to precautionary balances as a whole. The Board has not adopted separate targets for the sub-components, i.e., balances in the special and general reserves and the SCA-1. The appropriate distribution of net income between the special and general reserves is considered by the Board each year as part of the annual review of Fund income. The Board has not had an explicit discussion of the role and level of balances in the SCA-1 for several years. Depending on Directors' views on this paper and also taking account of the informal discussion on provisioning, staff could come back to this topic at a later date.

[14] The two-year projection is based on scheduled net disbursements under non-precautionary arrangements. The methodology makes no provision for possible future arrangements (which could bias the projections downwards) or for delays in scheduled disbursements or early repurchases (which could bias the projections upwards).

[15] While Fund credit is highly volatile and can increase sharply, it takes a considerable time to rebuild precautionary balances. Thus, the floor provides a buffer in the face of an unexpected increase in credit risks. The floor is kept under review in light of changing conditions and longer-term trends in Fund lending.

DEVELOPMENTS SINCE THE LAST REVIEW

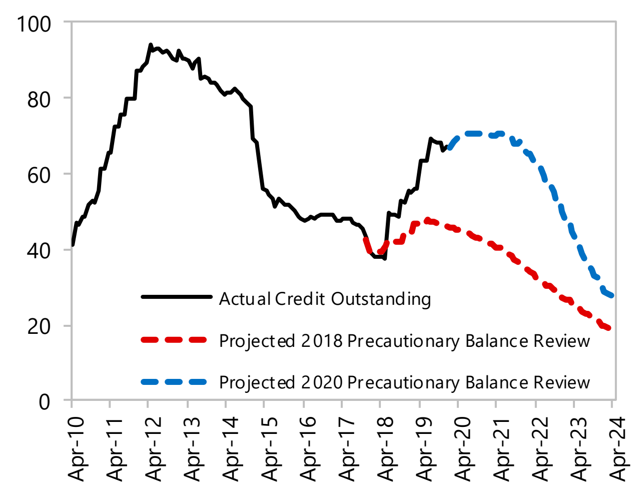
Credit risks have increased significantly since the last review, and the lending portfolio has become considerably more concentrated toward the largest borrower. Income and investment risks remain broadly unchanged.

A. Credit Risk

15. Credit outstanding has risen sharply and is on a higher trajectory than projected at the time of the last review. After declining by about 60 percent from the crisis peak, Fund credit has risen by about 35 percent since mid-2018, driven mainly by drawings under Argentina's Standby arrangement approved in June 2018. At end-December 2019, credit outstanding stood at nearly SDR 67 billion, compared to SDR 43 billion at the time of the last review, an increase of almost 60 percent. Excluding Argentina, however, credit outstanding would have dropped to about SDR 35 billion, partly reflecting sizable advance repurchases by Greece, the largest borrower at the time of the last review, and Portugal.[16] Based on current arrangements, credit outstanding is expected to peak in FY 2021 at about SDR 70 billion.[17] Compared to the last review, the projected credit path has increased by an average of SDR 22 billion over the period FY 2020–24 (Figure 3).

Prospective Credit Outstanding Based on Existing Arrangements at Precautionary Balance Reviews in 2018 and 2020[1/]

(In billions of SDRs)



Source: IMF Finance Department.

[1/] This figure shows actual credit outstanding through Sept., 2019 and projected credit outstanding at each respective precautionary balance review date.

16. Total outstanding commitments have also risen, though only modestly. Total commitments stood at about SDR 142 billion at end-December 2019, compared to about SDR 137 billion at the time of the last review (Figure 3). This includes undrawn balances under existing arrangements as well as commitments under precautionary arrangements, including the FCL arrangements for Colombia and Mexico, the PLL arrangement for Morocco and three precautionary SBAs. In total, 13 new arrangements amounting to about SDR 110 billion were approved since

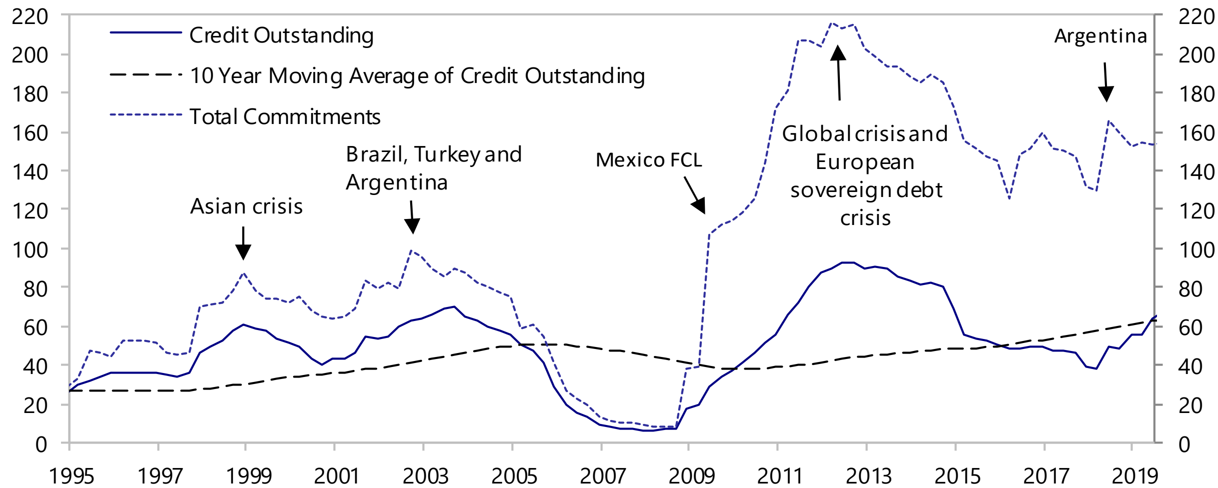
[16] Fund credit outstanding toward Greece declined from SDR 9.5 billion in November 2017 to SDR 4.6 billion at end-December 2019. Fund credit toward Portugal, which stood at SDR 5.4 billion in November 2017, was fully repaid.

[17] Throughout the paper—unless otherwise indicated— baseline projections for credit, income, precautionary balances, and other relevant variables are based on the assumption that purchases and repurchases under existing active non precautionary arrangements will take place as scheduled. For Argentina's 2018 SBA arrangement, though, it is assumed that no additional disbursements will be made, as the new government has indicated thus far that it does not plan to request further purchases under the current program.

November 30, 2017, of which SDR 54 billion were for non-precautionary arrangements, with Argentina's 2018 SBA accounting for SDR 40.7 billion.

Figure 3. Total Commitments and Credit Outstanding: January 1995–December 2019[1/]

(in billions of SDR)



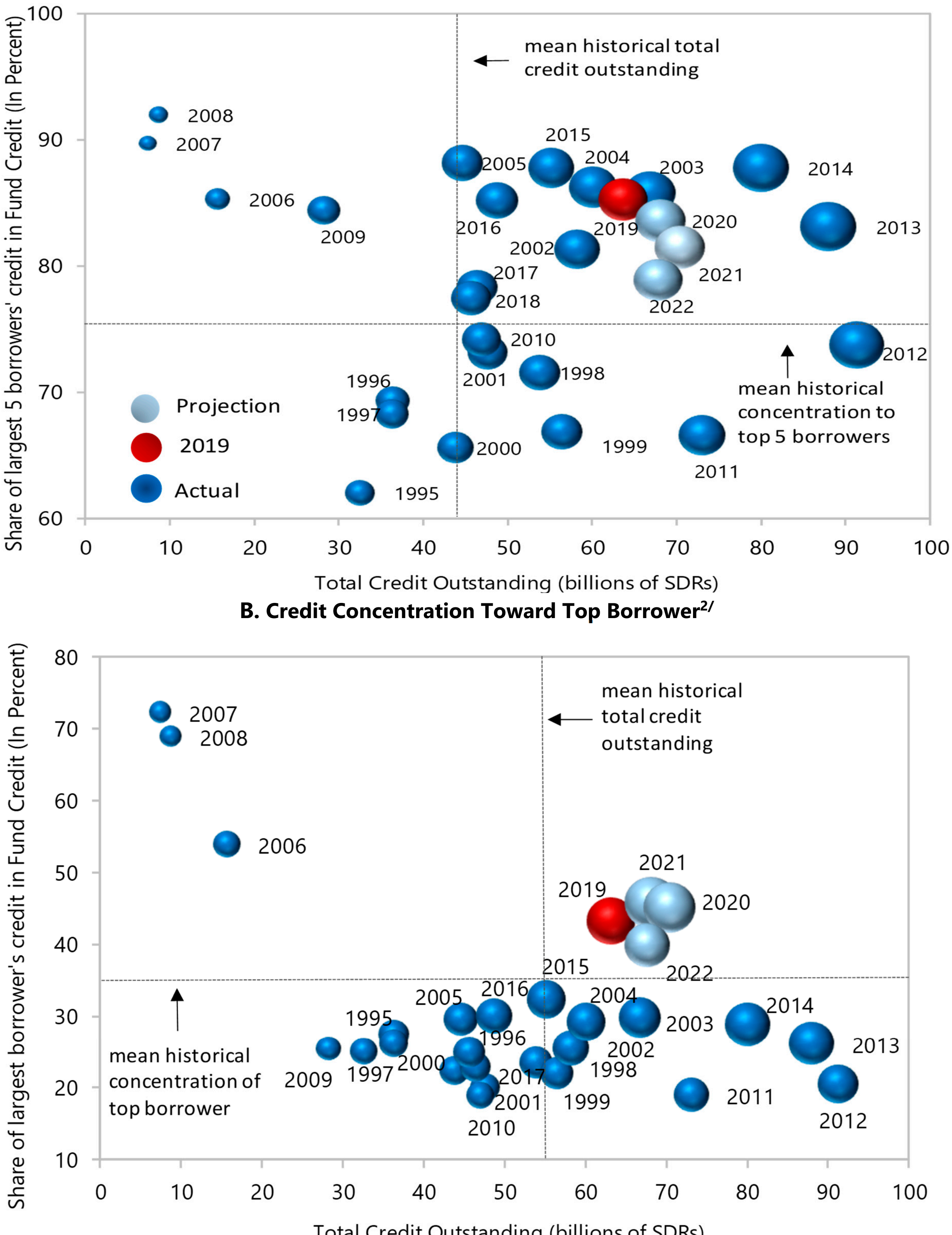
[1/] Total commitments equal GRA credit outstanding plus undrawn balances.

Source: IMF Finance Department.

17. The loan portfolio has become considerably more concentrated toward the largest borrower. The share of outstanding Fund credit toward the five largest borrowers (currently, Argentina, Egypt, Ukraine, Pakistan and Greece) has increased to 86 percent, compared to 75 percent at the time of the last review. While above the historical average, such a high degree of credit concentration to the largest five borrowers is not unusual and has occurred in several instances since the early 2000s (Figure 4 panel A). By contrast, credit concentration to the largest borrower has reached close to 50 percent, a historical high, excluding the 2006–08 period of exceptionally low total credit outstanding (Figure 4, panel B). Based on currently scheduled purchases and repurchases, concentration risks are projected to remain high over the medium term.

Figure 4. Credit Concentration Toward Top Borrowers, 1995-2022

A. Credit Concentration toward Top Five Borrowers[1/]



B. Credit Concentration Toward Top Borrower[2/]

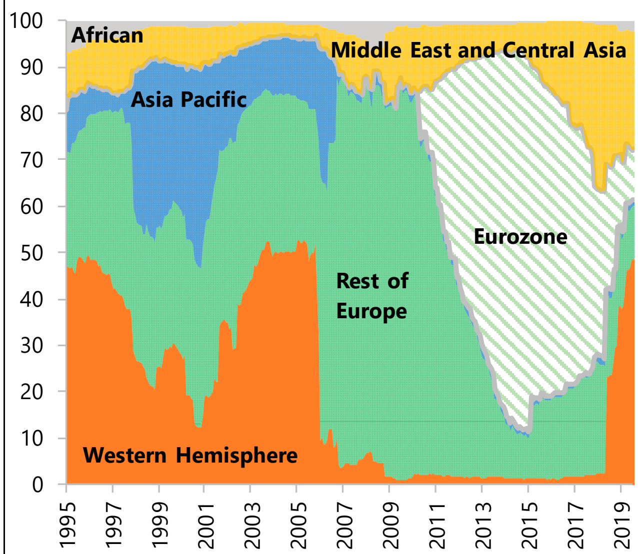
[1/] The relative size of the bubbles reflects the amount of Fund credit outstanding to the largest five borrowers.

[2/] The relative size of the bubbles reflects the amount of Fund credit outstanding to the largest borrower.

18. Regional concentration has shifted from the euro area to Latin America. Given the Fund's crisis lending role, regional concentration of credit is often high and tends to fluctuate across economic cycles. Since the last review, lending exposure to euro area countries has declined considerably to about 8 percent of Fund credit in December 2019, compared to 45 percent in November 2017. At the same time, exposure to the Western Hemisphere has climbed to about 50 percent of Fund credit, mainly on account of the arrangement with Argentina. Exposure to this region is even higher on a commitment basis (i.e., including the FCL arrangements with Mexico and Colombia). Lending to the Middle East and Central Asia has remained fairly elevated, representing 25 percent of the Fund's credit. Overall regional concentration—as measured by the Herfindahl index—remains similar to the last review.[18]

Credit Concentration by Region: 1995–December 2019

(In Percent of Total Fund Credit)



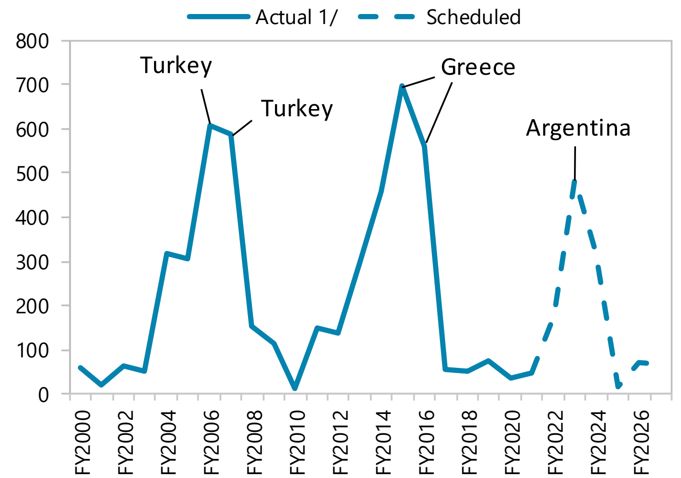
Source: IMF Finance Department.

[18] The Herfindahl-Hirschman index is a statistical measure of concentration, computed as the sum of the squares of the shares of the credit outstanding toward each region to total credit outstanding. It takes values between 0 and 1. As of December 2019, regional concentration was 0.34 compared to 0.31 at the time of the last review.

19. Credit concentration risks are heightened by a sharp jump in repurchases falling due in the coming years (Figure 5). Total scheduled repurchases jump sharply to about SDR 37 billion in FY 2023–24, compared with around SDR 9 billion in FY 2020-21.[19] This is more than double the peak of less than SDR 15 billion in FY 2022-23 projected at the time of the last review. Argentina's repurchases alone account for SDR 15.5 billion and SDR 10.3 billion in FY 2023 and FY 2024, respectively. Historically, such large repurchases in SDR terms from a single borrower have been rare—the highest scheduled repurchases by an individual borrower since FY 2000 included those by Brazil in FY 2004 for SDR 9.6 billion, and Greece in FY 2015 for SDR 7.7 billion.[20] Relative to the country's economic size, as proxied by quota, Argentina's scheduled repurchases for FY 2023–24 are also large, although a few other borrowers have made repurchases of a similar or even larger share of their quota since FY 2005.

Top Repurchases as a Share of Quota

(In Percent)



1/ Excluding early repurchases.

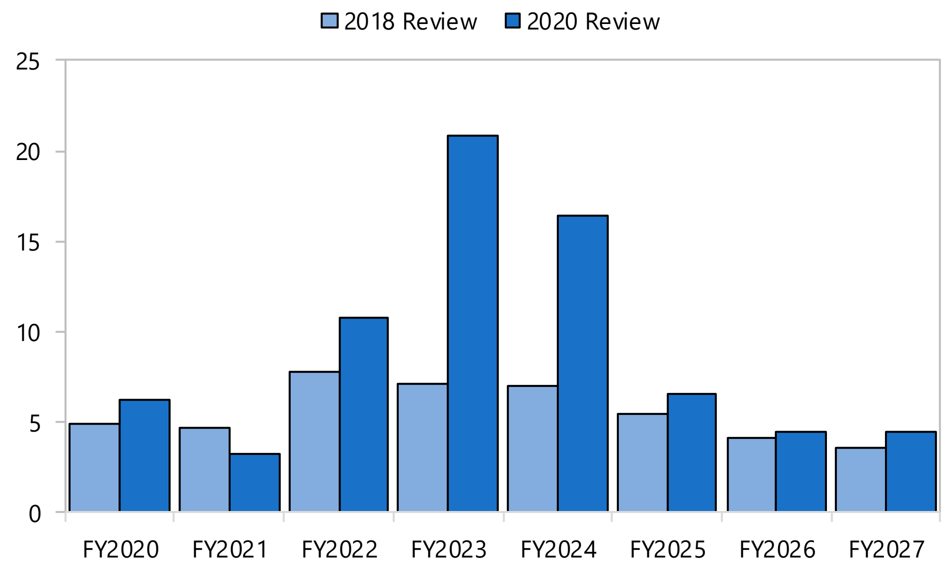
20. Recent changes of government in some of the Fund's largest exposures also add to policy uncertainties. This includes Argentina, where the new government took office in December, and has thus far signaled its intention not to make further purchases under the existing arrangement. Policy discussions with the new administration are progressing. There is also a new government in Ukraine, where staff-level agreement was reached on a new program in late 2019.[21]

[19] The average maturity of the Fund's loan portfolio, weighted by share in outstanding credit, reached 4.5 years in 2015 but has since declined to 3.5 years in December 2019. This is still somewhat above the average maturity of slightly over 3 years prevailing in the wake of the global financial crisis.

[20] The largest early repurchases since FY 2000 were those by Brazil in FY 2006 for SDR 14.2 billion and by Ireland in FY 2015 for SDR 15.7 billion.

[21] In addition to the SDR 31.9 billion exposure to Argentina, the Fund's largest individual exposures include SDR 8.6 billion to Egypt, where the extended arrangement expired in July 2019; SDR 6.9 billion to Ukraine, where staff level agreement on a 3-year extended arrangement was reached with the new government in December 2019; and SDR 4.8 billion to Pakistan, where a new extended arrangement was approved in July 2019. Currently, the only borrowing arrangement with exceptional access is the Stand-by program with Argentina approved in 2018. Prior to that, 30 GRA programs with exceptional access were approved over the period 2008-2017.

Figure 5. Scheduled Repurchases at Current and Last Review: FY 2020–27
(In billions of SDRs)



Source: IMF Finance Department.

21. Arrears remain low, with no new cases of protracted arrears since the last review. As of end-December 2019, protracted arrears to the GRA of Somalia and Sudan amounted to about SDR 1.1 billion, including principal arrears of SDR 0.3 billion, which are more than covered by existing balances in the SCA-1. In December 2019, the IMF Board approved a plan to finance arrears clearance and debt relief for Somalia.[22]

22. In line with previous Board guidance, staff does not conduct internal credit ratings for the purpose of assessing the adequacy of precautionary balances. Rather, the framework provides room for Board judgment on the level of risk embodied in the current loan portfolio when determining the precautionary balances target. To help inform this judgment, staff has analyzed publicly available sovereign credit ratings and market-based indicators such as bond spreads and credit default spreads. Such indicators reflect perceptions of risks facing private investors, which cannot be translated directly to assess credit risk faced by the Fund given its unique role. Moreover, these risks may diverge significantly when a Fund borrower undergoes a private debt restructuring. Nonetheless, monitoring such indicators can be useful to the extent that the factors affecting the perceived ability of sovereigns to repay private creditors could also have a bearing on their ability to repay the Fund.

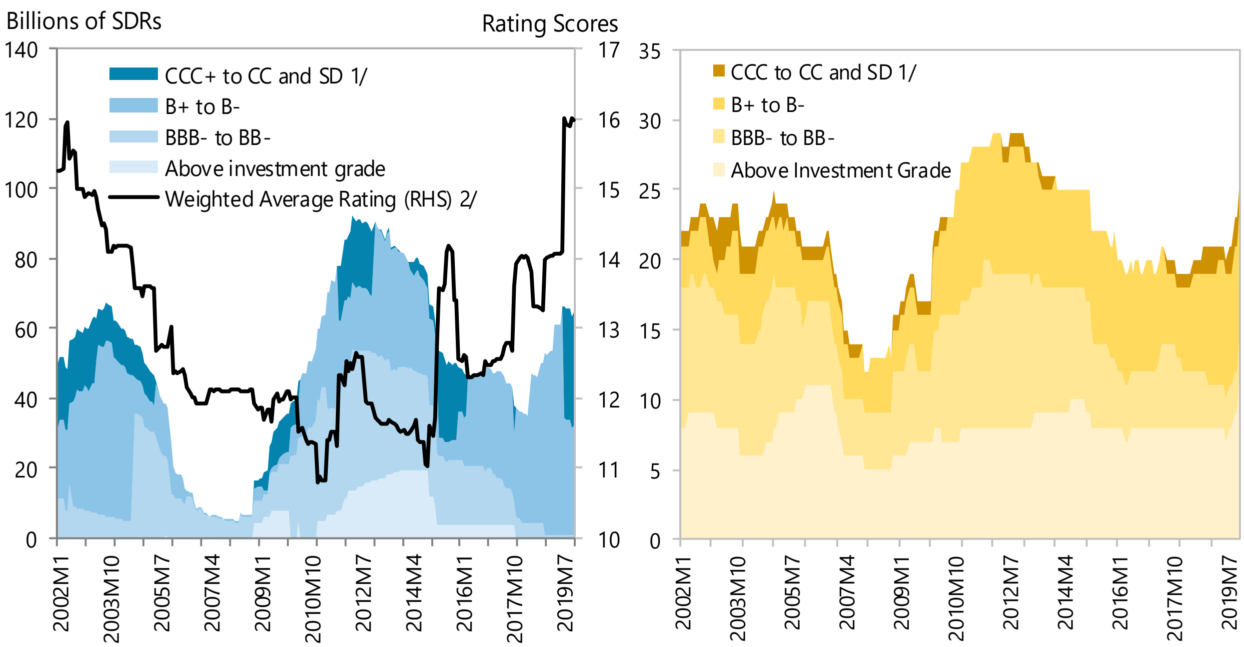
23. The weighted average of sovereign credit ratings of the Fund's borrowers has deteriorated significantly since the last review. The average sovereign credit rating of the Fund's borrowers, weighted by Fund outstanding credit in each rating category, has been on a downward trend since 2016, and has now reached levels last observed in 2002 at the time of several major

[22] See Press release No. 19/470 (December 18, 2019).

crises in emerging market economies (Figure 7, left panel). [23] In this context, Fund lending to member countries rated less than BB- by leading rating agencies stood at about SDR 57 billion at end-November 2019 (93 percent of total Fund credit to rated countries), up from about SDR 21 billion at end-November 2017 (67 percent of total Fund credit to rated countries).[24] This deterioration reflects larger exposures to member countries with relatively lower sovereign credit ratings, whereas the *number* of Fund borrowers rated less than BB- has remained fairly stable (Figure 7, right panel).[25]

Figure 6. Fund Credit and Number of Countries by Sovereign Rating Category

A. Credit Outstanding (In billions of SDRs) | **B. Number of Countries**



Source: Standard & Poor's, and staff calculations.
1/ SD stands for "selective default".
2/ To construct the weighted average rating, worse sovereign credit ratings are assigned higher numerical scores, so a higher weighted average rating indicates a deterioration in ratings.

[23] Figure 7 shows the weighted average rating and Fund credit by sovereign rating category based on Standard & Poor's ratings; similar trends are evident if the ratings from Moody's or Fitch are used instead.

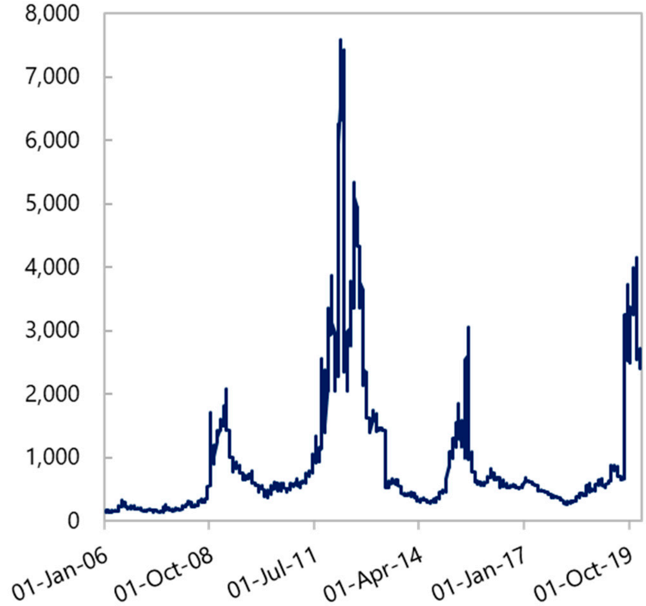
[24] These figures represent the averages obtained using Fitch, Moody's, and Standard & Poor's ratings.

[25] If Argentina is excluded, the weighted average rating of the Fund portfolio would point to a more modest deterioration since the last review.

24. CDS spreads on sovereign debt issued by the Fund's borrowers, weighted by the Fund's credit portfolio, have also increased sharply since the last review, largely on account of perceived credit risks emanating from the Fund's largest borrower. The weighted average of the sovereign CDS spreads of the Fund's largest five borrowers (accounting for some 85 percent of total credit outstanding) spiked in September 2019, driven by a hike in Argentina's spreads, and remained elevated. Since 2005, there has only been one instance in 2012-13 when the Fund's largest five borrowers had higher sovereign CDS spreads than at present. That said, spikes in CDS spreads have typically occurred around sovereign debt restructurings, which can help improve members' capacity to repay the Fund, as noted above.

Sovereign CDS Spreads of Largest Five Borrowers[1/]

(Basis points)



Source: Bloomberg.

[1/] Weighted by respective shares in Fund credit to top 5 borrowers.

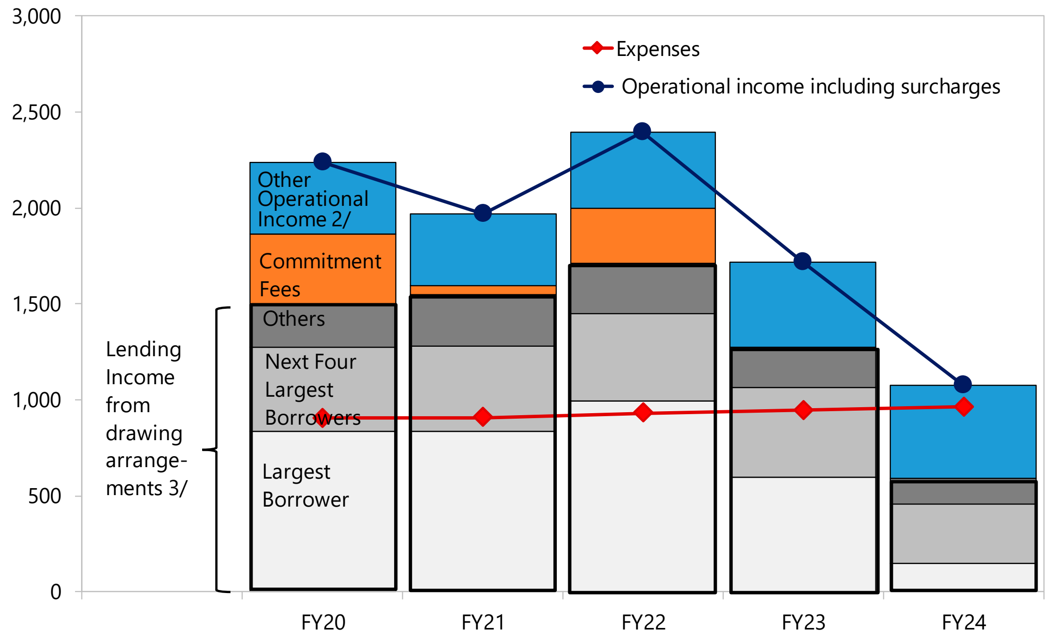
B. Income Risks

25. The Fund's near-term income risks remain low but are subject to increased uncertainty.[26] Even assuming no additional arrangements, staff projections suggest that total operational income (including surcharges) would exceed total expenditures by a wide margin, averaging almost SDR 1.2 billion annually in the four-year period through FY 2023 (Figure 8). Projected lending income has increased significantly compared with the prior review reflecting mainly the new GRA arrangements approved since January 2018. The higher projected lending income is partly offset by moderately lower projections for non-lending income over the medium term, mainly reflecting the lower projected path for interest rates. At the same time, expenses are projected to trend only slightly higher in SDR terms reflecting the strengthening of the U.S. dollar against the SDR and a flat net administrative budget in real U.S. dollar terms. While the projected operating income margin has increased significantly, it remains subject to the increased concentration risks discussed above. Of the average lending income projected through FY 2023, about half is accounted for by the Fund's largest borrower and 30 percent by the next four top borrowers.

[26] The current projection is compared to the baseline projections presented in the 2018 *Review of the Adequacy of the Fund's Precautionary Balances* (SM/17/351, 12/27/17).

Figure 7. Medium-Term Projected Operational Income and Expenses: 2020–2024[1/]

(In millions of SDRs, end of financial year)



Source: IMF Finance Department.

[1/] Operational income including surcharges excludes IAS 19 gains and losses and includes investment income from the Fixed-Income Subaccount and payouts from the Endowment Subaccount. The endowment payout projection assumes a constant payout of the net asset value (in US$) starting in FY 2021, adjusted for inflation in the following years.

[2/] The item "other operational income" includes investment income, interest free resources, and reimbursements related to the SDR Department and the PRG Trust.

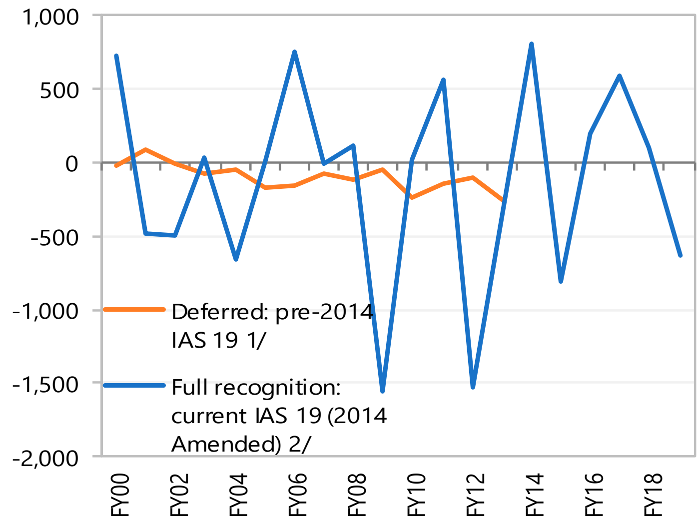
[3/] Includes margin income, service charges, and surcharges.

26. The Fund's income projections also remain sensitive to a number of assumptions. Beyond the path of outstanding credit and Fund commitments (see also below on forward-looking credit measure), the assumptions include the path of SDR interest rates and the U.S. dollar/SDR exchange rate, returns on the Fund's investments (see below), as well as the margin on the basic rate of charge. As in previous reviews, these factors will be considered by the Board in the context of the annual review of the Fund's income position in April. Other valuation adjustments also contribute to uncertainty around the baseline projection:

- **Reassessment of obligations under IAS 19:**[27] Since the adoption of the amended IAS 19 in FY 2014 and the elimination of the option to defer recognition of gains and losses on the Fund's employee benefits plan over time, the Fund's annual income has been subject to significant volatility. The gains or losses are mainly driven by the periodic re-measurement of the defined benefit obligation—which is highly sensitive to small variations in the discount rate—and by changes in the fair value of the Plan assets.[28] While IAS 19 gains contributed positively to income at the time of the last review, recent developments point to a potentially significant negative contribution in FY 2020, as noted above.

Effect of IAS 19 on Income: Deferred (Pre-2014) and Full Recognition of Gains and Losses: FY 2000–19

(In millions of SDRs, in financial year)



Source: IMF Finance Department.

1/ Previously, the Fund had deferred the recognition of a portion of the gains and losses related to IAS 19 under the so-called "corridor" method. This practice ceased after FY 2013 with the adoption of the amended IAS 19.

2/ Starting in FY 2014, the full impact of gains and losses during the financial year is reflected in the annual IAS 19 expense under the amended IAS 19.

- **Impairment recognition under IFRS 9:** Under the new accounting standard for impairment (IFRS 9) adopted by the Fund in FY 2019, it is no longer necessary for a credit event to occur to recognize credit losses. Instead, entities are required to estimate expected credit losses (ECL) based on a probability-weighted assessment of a range of possible future outcomes. The application of IFRS 9 to the Fund portfolio takes into consideration the unique aspects of Fund lending and its financial safeguards, including the burden sharing mechanism and balances in the SCA-1. Under IFRS 9, if the risk of a member entering into protracted arrears increases significantly, a provision for an impairment may need to be recognized at an earlier stage than under the previous standard. However, no such adjustments have been recognized to date.[29]

[27] IAS 19 is the International Financial Reporting Standard that deals with accounting for pension and other employee benefits. For further discussion, see *Review of the Fund's Income position for FY 2019 and FY 2020* (EBS/19/16, 3/19/19).

[28] A one percent increase (decrease) in the discount rate yields a decrease (increase) in the range of about 17 to 19 percent in the Fund's defined benefit obligation. See *Audited Financial Statements for the Financial Years ended April 30, 2019* for the sensitivity of the present value of the defined benefit obligation to changes in actuarial assumptions at April 30, 2019.

[29] See *Provisioning for Impairment Losses in the Context of the Fund*.

C. Financial Risks Related to Investments

27. Financial risks related to the investment assets of the Endowment Subaccount and the Fixed-Income subaccount remain broadly unchanged. The Endowment Subaccount (EA) and the Fixed Income (FI) subaccount have distinct investment objectives and pursue different strategies accordingly. Highlights of relevant developments related to the investment strategies and the outlook for risk and returns are as follows[30]

- **FI investments**. A greater portion of the FI is being invested in line with the expanded FI investment strategy as the planned 5-year phase-in of longer duration investments is approaching completion in FY2021. As a result, the average duration of FI investments has increased gradually to 1.2 years (from 0.7 years). FI returns are expected to be challenging under the current market conditions. A flatter yield curve could mean relatively limited excess returns above the 3-month SDR rate although overall returns are expected to remain positive over the short to medium term. Staff's risk return scenarios suggest downside risks are likely to remain moderate over a 1-year horizon.

- **EA investments**. The Board approved refinements to the EA's strategic asset allocation in March 2018 aimed to improve risk return trade-offs. The refinements have resulted in a slightly shorter duration of 5.5 years (compared to around 7–8 years previously) and an increase in equity allocation by 5 percent. In addition, the Board endorsed a 5 percent allocation into private infrastructure debt which will be gradually implemented starting in the second half of FY 2020. The March 2018 review also established a framework for future EA payouts, with a delay in payouts for three years. For the EA, risks to the return outlook remain broadly unchanged from previous reports and achieving the long-term return target of 3 percent real return in US dollar terms remains challenging under the current market conditions given very low yields and concerns over the outlook for global growth.

[30] See *Annual Report of the Investment Account and Trust Accounts for FY2019* (EBS/19/76, 07/22/19) and *Annual Report of the Investment Account and Trust Accounts for FY2018* (EBS/18/74, 07/31/18) for further details.

ASSESSMENT OF THE ADEQUACY OF PRECAUTIONARY BALANCES

While credit risks have increased, the target remains near the upper end of the indicative range. Staff proposes that the medium-term target of SDR 20 billion be maintained for the time being. However, the situation needs to be kept under close review. The current pace of reserve accumulation also appears adequate at this time.

A. Indicative Precautionary Balances Target

28. The current target for precautionary balances of SDR 20 billion is now within the forward-looking indicative range.

- Under the agreed framework, the starting point for assessing precautionary balances is a forward-looking measure of average credit outstanding over three years, which is now expected to peak at about SDR 68 billion in FY 2020.[31] This is about SDR 23 billion higher than at the time of the previous review in end-November 2017 (Table 1, column 1). As in previous reviews, and consistent with baseline income projections above, staff assumed that no additional arrangements are approved over the forecasting period, purchases and repurchases are made as scheduled, and there are no drawings under existing precautionary arrangements.

- The calculated indicative range now stands at about SDR 13 to 20 billion, with the midpoint at about SDR 16.5 billion, up from about SDR 11 billion at the last review (Table 1, columns 2–4). Thus, the SDR 20 billion target is now within the indicative range. This situation contrasts with the previous two reviews, when the SDR 20 billion target was above the indicative range, but the Board decided that it should be retained given the elevated risks facing the Fund.

29. Forward-looking projections suggest the target would remain within the indicative range in the next two years. In the baseline without new Fund programs, the calculated indicative range would fall slightly below the target again in FY 2021. However, staff has also considered an alternative scenario built around the Fall 2019 WEO global economic outlook. Under this scenario, which envisaged a modest recovery in global growth, new demand for Fund programs, including successor arrangements, over FY 2020 and FY 2021 could raise the indicative range to between around SDR 14 billion and SDR 22 billion, with the SDR 20 billion target remaining in the upper half (see Annex II for details).

[31] Such measure calculates the average of credit outstanding over the past 12 months and projections over the next 24 months.

Table 1. Forward Looking Credit Measure and Calculated Range for Precautionary Balances at Each Review: 2010–2021[1/]

(In billions of SDRs, end of financial year)

	Forward-looking Credit Measure [2/]	Coverage: Lower Bound 20%	Coverage: Upper Bound 30%	Mid-point of bounds	Precautionary Balances Target [3/]
	(1)	(2)	(3)	(4)	
Jul. 2010	59.5	11.9	17.8	14.9	10
Feb. 2012	91.8	18.4	27.6	23.0	15
Nov. 2013	83.6	16.7	25.1	20.9	20
Nov. 2015	51.4	10.3	15.4	12.9	20
Nov. 2017	44.9	9.0	13.5	11.2	20
Dec. 2019	67.6	13.5	20.3	16.9	20
A. No additional Fund programs					
FY2020	68.4	13.7	20.5	17.1	
FY2021	63.9	12.8	19.2	16.0	
B. Additional Fund programs					
FY2020	71.4	14.3	21.4	17.8	
FY2021	71.8	14.4	21.6	18.0	

Source: IMF Finance Department.

[1/] Figures from Jul. 2010 to Nov. 2017 reflect calculations at the time of past reviews (see EBS/10/161, 8/25/2010; SM/12/63, 3/23/2012; SM/14/21, 1/15/2014; SM/16/21, 1/26/16; and SM/17/351, 12/27/2017). Figures for FY 2020-21 are based on projections.

[2/] Three-year average of past 12 months average and projections 2 years forward.

[3/] Before review completion.

30. Some other considerations suggest there could be a case for raising the target:

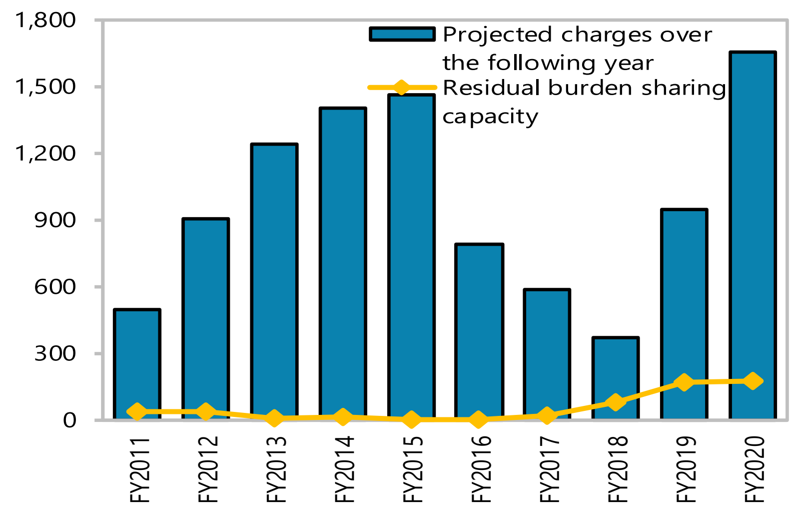
- As noted, the Fund's loan portfolio has become much more concentrated, with credit outstanding to Argentina alone now reaching 1½ times the current SDR 20 billion target. The higher concentration risks are heightened by increased uncertainty about Argentina's debt and economic situation, as the authorities develop detailed policy plans, as well as a heavy bunching of scheduled repurchases in the next few years. Also, market-based indicators point to a deterioration of the perceived average credit quality of the sovereign debt issued by the Fund's borrowers.

- The membership has agreed that the Fund's overall lending capacity should be maintained in the coming years to ensure it is able to meet potential financing needs should downside risks materialize.[32] [33] While not formally part of the framework for setting the indicative target, Directors have agreed to include credit capacity among the indicators for assessing where to set the precautionary balances target. The Executive Board has in the past discussed a precautionary balances target to credit capacity ratio of 6 percent. Applying this ratio to the Fund's current credit capacity would yield an indicative target of more than SDR 40 billion, more than double the current target.

- The Fund's burden sharing capacity has improved somewhat since the last review but remains low. The burden sharing mechanism plays a key role in protecting the Fund's income position in the face of unpaid charges by members in arrears (Annex III). Since the last review, the capacity of the mechanism has improved somewhat, primarily on the back of a rise in the remunerated reserve tranche positions. However, the current residual capacity of about SDR 158 million, taking account of existing arrears by Somalia and Sudan, remains very low relative to projected charges coming due over the coming year.[34] For example, charges and fees due in FY 2021 by the five largest Fund's borrowers amount to about SDR 1.2 billion. The emergence of new unpaid charges could thus have a sizeable negative impact on Fund income.

Residual Burden Sharing Capacity and Projected Charges, FY2011-20

(In millions of SDRs)



Source: IMF Finance Department

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32 The Fund's lending capacity consists of the Fund's total usable resources, before any lending, less relevant prudential balances, and currently amounts to close to US$1 trillion.

33 On January 16, 2020, the Board approved a doubling of the NAB to a total of credit arrangements of SDR 364.7 billion, which is expected to become effective January 1, 2021, and a new NAB period through end 2025. With a view to maintaining the Fund's overall resource envelope, the Board is expected to consider shortly a new round of temporary bilateral borrowing covering the period beyond end-2020, when the current Bilateral Borrowing Agreements will expire.

34 After Somalia's arrears are cleared, the residual burden sharing capacity is expected to increase by about SDR 2 million.

31. On the other hand, other considerations suggest that a further increase in the target may be premature:

- The recent increase in credit exposure and loan concentration is largely related to a single program, and there are no indications at this point of a broader upswing in Fund credit. In this regard, it is worth noting that when the current target of SRD 20 billion was first set in 2012, Fund credit was significantly higher than is the case today, at around SDR 88 billion, and was expected to peak at about SDR 100 billion (Table 2).

Table 2. Current versus Past Reviews: 2008–2019[1/]

Source: IMF Finance Department.

	Oct-08	Jul-10	Feb-12	Nov-13	Nov-15	Nov-17	Dec-19
	(In billions of SDRs)						
Precautionary balances	6.9	7.3	9.2	12.3	14.5	16.8	17.8 [3/]
Arrears [2/]	1.1	1.1	1.1	1.1	1.1	1.1	1.1
Largest individual exposure							
Actual	5.7	9.0	17.5	22.2	16.4	9.6	31.9
Projected	11.0	26.4	28.1	27.6	16.4	12.9	31.9
Credit outstanding							
Actual	17.2	48.6	88.5	84.1	51.5	42.7	66.9
Projected peak [4/]	30.0	78.2	100.6	87.1	51.5	47.9	70.8
Total commitments [5/]	36.5	144.0	201.6	189.9	146.0	137.2	142.3
Lending capacity	165.9	310.1	451.4	668.7	665.2	693.4	713.8
Precautionary balances	(In percent of)						
Credit outstanding	40.5	15.1	10.4	14.6	28.1	39.4	26.6
Total commitments	19.0	5.1	4.6	6.5	9.9	12.3	12.5
Lending capacity	4.2	2.4	2.0	1.8	2.2	2.4	2.5

[1/] *Review of the Adequacy of the Fund's Precautionary Balances*; EBS/08/107 (12/08/2008), EBS/10/161 (8/25/2010), SM/12/63 (3/23/12), SM/14/21 (1/15/2014), SM/16/21 (1/16/2016), and SM/17/351 (12/27/17).
[2/] Includes charges and principal.
[3/] Projected for end-FY 2020.
[4/] Highest projected credit over January 2020-December 2031.
[5/] Total commitments equal GRA credit outstanding plus undrawn balances.

- Commitments under the Fund's precautionary arrangements have actually fallen by about a quarter to SDR 55 billion as of end-December 2019, down from SDR 76 billion at the last review, Under the framework, these commitments are not included in the calculation of the forward-looking credit measure, but are taken into account judgmentally when setting the precautionary balances target. Given the low historical incidence of drawings and no new developments since the last review, staff continues to consider this treatment as appropriate.[35]

- As noted, no new arrears have arisen, and borrowers remain committed to meeting their obligations to the Fund in a timely manner.

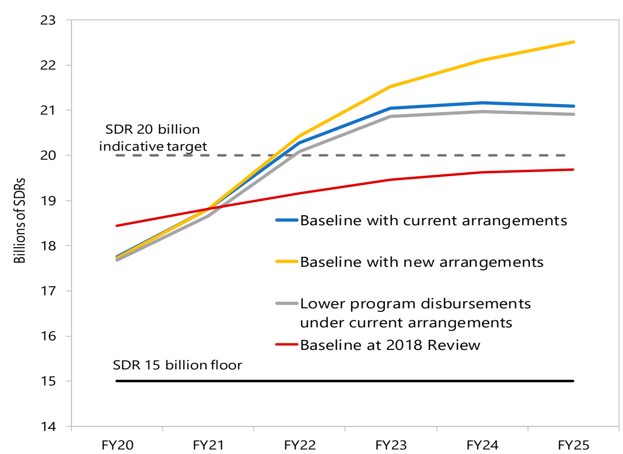
32. On balance, staff proposes that the medium-term target of SDR 20 billion be maintained for the time being. While credit risks have increased, the target remains near the upper end of the indicative range, and still appears adequate to address current risks, absent a broader upswing in Fund lending or deterioration in repayment prospects for existing exposures. Other factors, including income and investment-related risks, do not appear to have materially changed since the last review, although higher uncertainty surrounds the income projections. Nonetheless, the situation needs to be kept under close review and the Board could revisit the target before the next regular review if warranted by developments.

B. The Pace of Accumulation

33. Precautionary balances are now expected to reach the target in FY2022. At end-FY 2019, precautionary balances stood at SDR 17.7 billion, compared with a projected level of SDR 17.6 billion at the time of the 2018 review. Staff's baseline projections as of end-December 2019, incorporating the new arrangements approved since the last review, and an IAS19 estimated loss for FY 2020, indicate that precautionary balances would reach SDR 20 billion at end-FY 2022 and peak at around SDR 21 billion in FY 2024. The projection assumes no additional program approvals, that the margin of the basic rate of charge remains at 100 basis points, and a SCA-1 distribution of SDR 122 million in the context of Somalia's arrears clearance.

Projected Precautionary Balances under Alternative Scenarios: FY2020-FY2026

(In billions of SDRs, end of financial year)



Source: IMF Finance Department

34. The projected path of precautionary balances is subject to significant uncertainty. Projections are sensitive to assumptions about the pension-related (IAS 19) adjustment, potential new programs, and timely completion of program reviews. Weaker program performance that affects scheduled purchases and charges could slow the accumulation of precautionary balances. Under a scenario analysis, based on programs' track record, in which some scheduled reviews are

[35] See Annex V in *Review of the Adequacy of the Fund's Precautionary Balances* (SM/16/21, 1/26/16).

not completed, precautionary balances would still achieve the target by end-FY2022, and peak at less than SDR 21 billion in FY 2024.[36] Further uncertainty arises from the heightened credit risks noted above and their potential impact on income. On the other hand, the approval of new arrangements would result in higher lending income and a faster accumulation of precautionary balances above the current target (see Annex II).

35. On balance, staff does not believe that additional steps are needed to achieve the SDR 20 billion target at this time. Notwithstanding the continued uncertainties, the SDR 20 billion target is projected to be achieved by the end of FY2022. This is sooner than anticipated at the previous review, when the staff's baseline projection suggested that precautionary balances would remain just short of the indicative target throughout the projection period. Nonetheless, the pace of accumulation should continue to be monitored closely.

C. Minimum Floor

36. The minimum floor was increased at the 2016 review from SDR 10 billion to SDR 15 billion based on both income and credit risk considerations.[37] With the bulk of precautionary balances invested, they represent an important source of Fund income, and a certain minimum level of precautionary balances is consistent with a sustainable income position under the new income model. Also, Fund credit can be highly volatile and increase sharply with little notice, while it can take time to build precautionary balances. Thus, the Fund needs to maintain an adequate reserves buffer to protect against an unexpected rise in credit risks. Under the framework the floor is expected to be changed only occasionally, as it is based on longer-term considerations.

37. Staff proposes that the floor be kept at SDR 15 billion. Staff does not see reasons to change the floor in this review, as it remains broadly consistent with sustainable medium-term income and continues to provide an adequate minimum buffer relative to credit levels expected in the medium term.

ISSUES FOR DISCUSSION

38. Directors may wish to comment on the following issues:

- Do Directors agree with staff's assessment of the credit risks facing the Fund?
- Do Directors agree that the indicative medium-term target for precautionary balances should be kept unchanged at SDR 20 billion at this stage?
- Do Directors agree that the target needs to be monitored closely in light of developments in credit outstanding and evolving risks within the portfolio, including the largest exposures?

[36] The statistical approach of survival analysis is used to model the process of program review delays, following the methodology presented in Annex VI of the 2016 IMF Risk Report.

[37] See *Review of the Adequacy of the Fund's Precautionary Balances* (SM/16/21, 1/26/16).

- Do Directors agree that it would not appear necessary at this point to take additional steps to accelerate the pace of precautionary balance accumulation, but this should be kept under close review?

- Do Directors agree that the minimum floor for precautionary balances should be kept unchanged at SDR 15 billion?

Annex I. Overview of Other IFIs' Capital Adequacy Frameworks

This annex updates the summary of capital adequacy frameworks in selected International Financial Institutions (IFIs) presented during the 2010-18 reviews.[1,2] Most other IFIs, unlike the Fund, borrow from capital markets, and therefore in determining their approaches seek to maintain a high foreign currency long-term credit rating (AAA) by preserving a strong financial footing.

Table 1. Summary of the Capital Adequacy Frameworks in Selected International Financial Institutions (IFIs) Presented During the 2010–16 Reviews	
Credit risk. The IBRD, and the ADB employ, or employed until recently, an explicit target for equity to loan types of measures. Since the global crisis, these IFIs have gradually moved towards a more comprehensive approach to assess capital adequacy though credit risks still account for the major component of required capital. In the same direction, the EBRD, AfDB, IDB, and the BIS have similar frameworks built on risk-based capital measures, where the economic capital available to support risk taking is based on an assessment of the institution's loss absorbing capacity. Available capital typically comprises paid-in capital and reserves and usually excludes callable capital. While definitions vary according to the institutions, in general, economic capital consumption is calculated by taking into account unexpected financial losses that the institution may incur subject to a targeted solvency level.	The **IBRD** set a target for the equity-to-loans ratio in the range of 23-27 percent in 2008. The minimum equity-to-loans ratio was reduced to 20 percent from 23 percent in FY 2014, in light of improvements in portfolio credit risk; the ratio at end-June 2019 stood at 22.8 percent. The minimum 20 percent equity-to- loans ratio is based on an internal income-based stress test that requires IBRD to hold sufficient capital to ensure that income earning capacity remains positive following a large nonaccrual shock. The **IDB** had until 2009 employed a formal target for its equity-to-loans ratio of 32–38 percent. In 2010, it introduced the capital utilization ratio (CUR) as the main indicator of capital adequacy and in 2015 concluded a comprehensive review of its capital adequacy policy framework. The policy uses Capital Coverage Ratio (CCR) as the main indicator of capital adequacy. The IDB continues to publish the equity-to- loans ratio in its information statements to investors. The CCR is the ratio of adjusted equity to base capital requirements, which covers

[1] The International Bank for Reconstruction and Development (IBRD), the Inter-American Development Bank (IDB), the Asian Development Bank (ADB), the African Development Bank (AfDB), the European Bank for Reconstruction and Development (EBRD), and the Bank for International Settlements (BIS). Based on the latest publicly available information and Fund staff estimates.

[2] The 2010 precautionary balances paper reviewed the capital adequacy practices of the IBRD, the IDB, and the ADB. The 2014 and 2016 papers summarized the overall risk management approach (capital adequacy as well as market and operational risks).

Table 1. Summary of Capital Adequacy Frameworks in Selected International Financial Institutions (IFIs) Presented During the 2010–16 Reviews (continued)	
	financial risks, including credit, market, defined benefit pension plan, and operational risks. The CCR targets the top of a buffer zone placed on top of the minimum capital. The **ADB** uses a minimum equity-to-loans ratio (ELR) target of 34 percent for long term financial planning, following the transfer of the Asian Development Fund concessional lending operation to the ADB. The ADB holds capital for credit risks and other risk exposures. Point-in-time capital adequacy is tested using a Capital Utilization Ratio (CUR) which is defined as total economic capital to total available capital. ADB is currently reviewing its Capital Adequacy Framework and is proposing to discontinue the use of the minimum ELR and use CUR as indicator of capital adequacy for both financial planning and capital adequacy test. The **EBRD**'s capital adequacy framework aims at maintaining the ratio of required capital (aimed at covering potential capital losses based on credit, market and operational risks) to available capital below 90 percent. Required capital varies by product and counterparty rating in the banking book. Overall internal capital requirements are calibrated relative to external benchmarks: the Basel capital framework and rating agency frameworks. The **AfDB**'s economic capital framework, which is enshrined in its risk appetite statement, caps the ratio of required risk capital to available risk capital at 100 percent with a recapitalization trigger at 90 percent. Economic capital for credit and market risk (including the pension benefits plan) is determined using a value-at-risk model and incorporate balance sheet optimization operations. Capital for operational risks is based on a basic indicator approach. The AfDB's risk capital utilization rate (RCUR) was about 77 percent at end-June 2019, of which the bulk was reserved for credit risks. The **BIS**'s economic capital framework which covers credit risk, market risk and operational

Table 1. Summary of Capital Adequacy Frameworks in Selected International Financial Institutions (IFIs) Presented During the 2010–16 Reviews (continued)

	risks, is geared to a higher solvency level than the minimum Pillar 1 capital level required. The framework was reviewed recently. As of April 2019, risk-bearing capacity is defined as the BIS's Common Equity Tier 1 (CET1) capital. Economic capital for credit risk is determined on the basis of a portfolio value-at risk model. In addition, the BIS maintains a "minimum capital cushion" of 15 percent of CET1 capital with a view to sustaining a potential material loss without the need to reduce other capital allocations or liquidate assets.
Market risks. Treatment of market risks in the IFIs' capital adequacy frameworks varies. Several IFIs have integrated market risks in their capital frameworks, although the specific risks covered and the amount of allocated capital vary considerably.	The **IBRD** minimum equity-to-loans ratio of 20 percent includes a buffer for market risks. The **ADB**'s capital metrics mentioned above include the capital required for equity investment risk, interest rate risk, currency risk, and pension-related market risk. The **IDB** manages overall interest rate risk through setting a target for equity duration. In addition, it sets a risk appetite for its investment portfolio as measured in the form of value-at-risk. The CCR quantifies capital requirements for interest rate risk on the whole bank balance sheet (including its pension plans) and for foreign exchange risk. Capital requirements for market risk are aggregated with those of other financial risks through the use of a correlation matrix. The **AfDB** sets the maximum economic capital for all non-core risks (market, operational and pension plan) at 10 percent of total available capital. At end-June 2019, about 9.6 percent of the AfDB's economic capital was reserved for non-core risks including interest rate, currency, liquidity and counterparty credit risks as well as residual risk exposures to its staff retirement plan. The **EBRD** operates within Board-approved limits for market risk on treasury and banking debt assets based on value-at risk approach. Minimum capital requirements for treasury activities (credit and market risk) are set at five percent of the investment portfolio.

Table 1. Summary of Capital Adequacy Frameworks in Selected International Financial Institutions (IFIs) Presented During the 2010–16 Reviews (concluded)

	The **BIS** determines the economic capital for market risk on the basis of a value-at risk modelling based on stressed market data.
Operational risks. All IFIs give priority to the management of operational risk through strong internal controls. With regard to capital adequacy, the treatment of operational risks varies across IFIs.	For the **IBRD**, the minimum equity-to-loans ratio of 20 percent includes a buffer for operational risks. The **ADB**'s capital requirement for operational risk is set at 1 percent of total assets in the balance sheet. Off balance sheet commitments and undisbursed loans and guarantees are considered in the calculation of total assets. ADB is currently reviewing its Capital Adequacy Framework and is proposing to reduce the capital requirement set aside for operational risk. The **IDB** allocates capital of one percent of total assets to operational risks. Capital requirements for operational risk are aggregated with those of other financial risks through the use of a correlation matrix. The **AfDB**'s capital adequacy framework provides for an operational risk capital charge based on Basel II of 15 percent of the average operating income for the preceding three years. At end-June 2019, about 0.9 percent of the AfDB's economic capital was reserved for operational risks. The **EBRD**'s required capital takes operational risks into account consistent with Basel II, using a capital change of 15 percent of the average operating income for the preceding three years. The **BIS** allocates economic capital to operational risks on the basis of a value-at risk approach that is consistent with the methodology set out in the Basel II advanced measurement approach. The methodology is currently under review with the objective of moving towards an approach based on the new Basel III Standardized Approach.

Annex II. Demand for New Programs

This annex explains the methodology used to estimate the potential demand for new Fund credit in 2020-21 under a scenario consistent with the Fall 2019 WEO outlook and mild financial market volatility. It shows that in the absence of major shocks, the outstanding stock of Fund credit from new programs could add some SDR 5 billion at its peak to the projected stock from existing arrangements. As a result, precautionary balances could by higher and reach SDR 22.7 billion over the medium term. However, precautionary balances would surpass the indicative target only in the course of FY 2022, and remain close to the target level by the time of the next review.

1. The analysis uses a panel logit regression to identify countries that are likely to tap IMF resources under the General Resources Account (GRA). Drawing from the literature, the model relates the probability of entering a new Fund arrangement to global and country–specific determinants. The sample covers 96 advanced, emerging and frontier market economies over the period 1992–2018, and 104 GRA arrangements. Estimated results suggest that the probability of a country requesting Fund support increases with higher external financing needs , higher financial market volatility, tighter global financial conditions, and lower GDP growth, among other factors (Table 1). A threshold for the probability of entering a program is then determined by minimizing the weighted average of missed new programs (Type I error) and false alarms (Type II error) for the in–sample forecasts. Under the assumption of equal weights for Type I and Type II errors (i.e., a 1:1 ratio), the threshold is found at 3.2 percent.[1] Using this threshold, the model correctly identified 95.4 percent of new programs over the period 1992–2018 (Table 2).

2. Estimated results are then used to predict the probability of sample countries entering an IMF program in FY 2020 and FY 2021. The analysis uses the Fall 2019 WEO baseline data for each sample country for the next two years, and the 2019 year-to-date average VIX level of 15.7, to reflect the global economic outlook and financial market conditions. A country is assumed to enter in a new IMF program if its predicted probability exceeds the 3.2 percent threshold in a given year. Under this approach, 10 countries are predicted to enter a new Fund-supported programs in FY 2020–21.

3. The potential call on Fund resources could be sizable. Access is calculated using the average size of Fund programs in the past ten years–at 4.7 percent of the member's 2020 GDP. Adjusting for outstanding Fund credit, and projected disbursements and repurchases to limit exceptional access cases, the aggregate new demand for IMF financing under the 10 arrangements could reach about SDR 24 billion over FY 2020 and FY 2021.

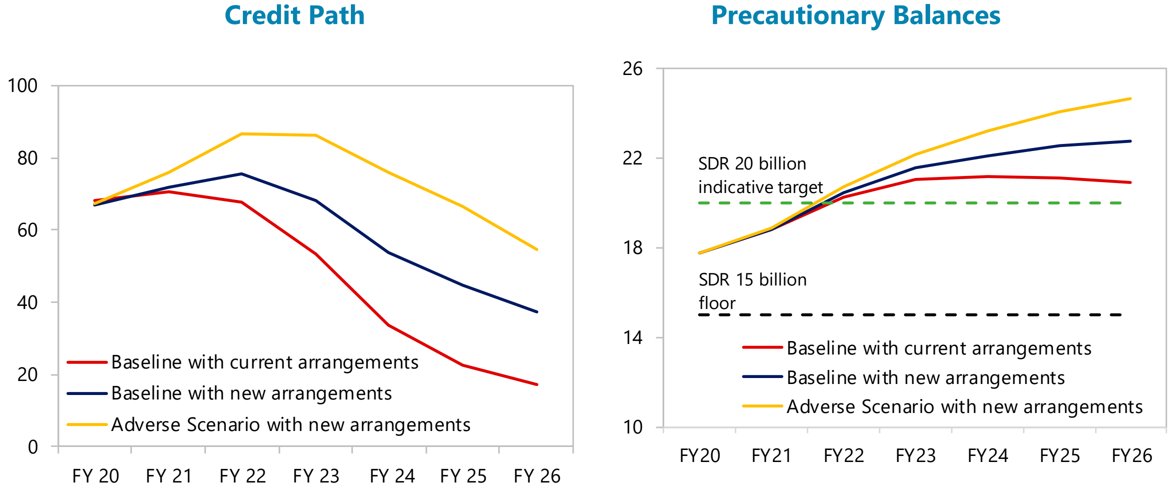
[1] Type I error represents the ratio of actual new programs that the model failed to predict to total new program observations, while Type II error refers to the ratio of predicted programs that did not occur to total non-program observations. Higher thresholds of 6.8 and 16.4 percent are identified when Type I and Type II errors are minimized in the ratios of 2:1 and 3:1, respectively, as such an approach penalizes false alarms more and flags fewer countries requesting Fund's program.

4. Under this baseline new programs scenario, the outstanding stock of Fund credit is projected to increase over the stock resulting from existing arrangements by about SDR 5 billion at the peak in FY2022. A combination of five Stand–By Arrangements (SBAs) and five Extended Fund Facilities (EFFs) is assumed, with even phasing over three years for SBAs and four years for EFFs. The average outstanding stock of Fund credit is projected to rise from about SDR 67 billion in FY 2020 to a peak of SDR 75.2 billion in FY 2022 (Figure 1), including existing arrangements and prospective arrangements under this baseline scenario. This compares with a peak of SDR 70.2 billion if only existing arrangement are taken into account.

5. As a result of projected new arrangements, precautionary balance could reach SDR 22.4 billion over the medium term. While this is higher than projections based only on existing arrangements, precautionary balances would surpass the indicative target only in the course of FY 2022, and remain close to the target level by the time of the next review of the adequacy of precautionary balances in FY 2022.

6. Additional demand for Fund resources over this baseline could materialize in a downside scenario. Given the uncertain global economic outlook, staff considered an adverse scenario where the projected growth for 2020–21 for a country is assumed to fall by ½ standard deviation of its historical values relative to the Fall 2019 WEO baseline, combined with a moderate financial market shock (VIX level of 20). Under this scenario, total estimated demand for new arrangements, would be higher than under the baseline with new arrangements, raising the outstanding stock of Fund credit to a peak of SDR 86.2 billion by FY 2022 and precautionary balances to SDR 24.7 billion over the medium term.

Figure 1. Projected Precautionary Balances and Credit Path under Alternative Scenarios[1/ 2/]



1/ Includes pension-related IAS 19 loss for about SDR 1.1 billion for FY 2020.

2/ Assuming no disbursements to Argentina since September 1, 2019.

Table 1. Model Output

Logit Estimation Results

Dependent variable: Start of a GRA Arrangement (dummy)

Independent Variables	dy/dx	Robust SE	P-value
Past program (dummy)	0.405***	0.067	0.000
Reserve accumulation	-0.0745**	0.034	0.027
External Financing Needs	0.651**	0.304	0.033
GDP growth	-0.0902***	0.027	0.001
GDP per capita	-1.026***	0.192	0.000
GDP	0.0115	0.108	0.915
Credit gap	0.0221**	0.009	0.019
Exchange rate variation	-0.376	0.398	0.344
Government stability	-0.322***	0.076	0.000
3M US int. rate variation	0.123	0.127	0.332
Import coverage	-0.106**	0.047	0.023
VIX	0.0808***	0.027	0.003
Oil price	-0.0053	0.006	0.410
Access to RFA (dummy)	0.236	0.305	0.439
Pseudo R2	0.465		
Observations	2,026		
Countries	96		
GRA Arrangements	137		
Likelihood ratio (p-value)	0.002		

Notes: the table reports the marginal effects of the panel logit estimation using random effects. A constant is estimated but not reported.
***, **, and * denote significance at the 1, 5, and 10 percent levels, respectively.

Annex III. Burden Sharing Capacity

This annex discusses the role of the Fund's burden sharing mechanism as well as the factors that determine its capacity. It observes that, despite an improvement since the last review in 2018, the current burden sharing capacity provides only a limited buffer relative to scheduled charges falling due under the Fund's exposures.

Role of the Burden Sharing Mechanism

1. The burden sharing mechanism was established in 1986 to compensate the Fund for any unpaid charges by members in arrears ("deferred charges"), and in so doing, to offset the impact of unpaid charges on Fund income. Under burden sharing, the Fund's creditor and debtor members contribute temporary financing in equal amounts to cover the amount of unpaid charges. This is achieved through increases in the rate of charge paid by debtor members and reductions in the rate of remuneration to creditor members.[1]

2. The burden sharing mechanism has proven important in protecting the Fund's income position and in enabling the Fund to recognize no impairment for its credit outstanding under International Financial Reporting Standards (IFRS). Specifically, even though a member may not be meeting its obligation to pay charges, the collection of an equivalent amount from other members through the burden sharing mechanism enables the Fund to demonstrate that, on a net present value basis, there is no impairment of outstanding credit under the IFRS.

3. Should the loss of income from deferred charges exceed the capacity of the mechanism, the carrying value of the asset in arrears on the Fund's balance sheet may need to be reduced. The deferred charges in excess of the burden sharing capacity would reduce the Fund's annual net income and reduce the pace of accumulation of precautionary balances. Moreover, future cash flows due from members in arrears would not be expected to be collected in full, which could undermine the Fund's ability to demonstrate that the carrying value of credit outstanding has not been impaired, giving rise to the possibility of an impairment loss.[2] Recognition of an impairment loss arising from deferred charges would need to consider a variety of factors, including the unique nature of the Fund's financing mechanism, but could have a further negative impact on the Fund's net income and precautionary balances.[3]

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[1] These adjustments are currently set to match charges in arrears but could also include the possible accumulation of balances in the SCA-1, which are part of precautionary balances. Accumulations to the SCA-1 were suspended effective of November 1, 2006, due to high projected adjustments to the rates of charge and remuneration in a low and concentrated credit environment.

[2] Under IFRS, the amount of the loss is measured as the difference between an asset's carrying amount and the present value of estimated future cash flows.

[3] Recognition of an impairment loss is not equivalent to writing off the outstanding claims against the member in arrears, since it does not relieve the member of its obligations to the Fund. The impairment loss may be reversed in future years as the arrears are cleared.

Capacity of the Burden Sharing Mechanism

4. The total capacity of the burden sharing mechanism to cover unpaid charges is the sum of the maximum feasible reduction in remuneration expenses and the maximum feasible increase in income from charges:

- Article V, Section 9 (a) of the Fund's Articles of Agreement states that the rate of remuneration shall be no less than four-fifths (80 percent) of the SDR interest rate, limiting the maximum reduction in remuneration expenses to: *0.2 * SDR Interest Rate * Remunerated Reserve Tranche Positions*. The Board has set the current floor for remuneration at 85 percent of the SDR interest rate, which may be changed with a 70 percent majority of the total voting power.[4]

- The maximum capacity of a symmetrical burden sharing mechanism is simply twice the above amount, because debtors and creditors contribute equally.[5] However, the contributing debtor base declines in the event of arrears, which may in practice limit the maximum feasible adjustment to the rate of charge without overburdening these members.

5. The burden sharing capacity depends on the following factors:[6]

- **Quotas payments:** quota increases typically result in higher reserve tranche positions, as members acquire additional liquid claims on the IMF as part of their quota payments.[7] As reserve tranche positions increase, the remunerated portion also increases, thus allowing for a larger maximum reduction in remunerated expenses and higher burden sharing capacity. Remunerated reserve tranche positions have increased from SDR 40 billion at the end of 2017 to SDR 73 billion in December 2019.

- **Outstanding credit and borrowing by the Fund:** Reserve tranche positions also move in tandem with changes in outstanding credit financed from quota resources. However, no burden sharing adjustment is made to the interest paid to creditors on borrowed resources (New Arrangements to Borrow and bilateral loan or note purchase agreements). Therefore, outstanding credit financed by borrowed resources would not affect the Fund's burden

[4] See Decision No. 12189-(00/45), April 28, 2000, as amended.

[5] Under the terms of the burden sharing Decision No. 11945-(99/49), adopted April 30, 1999, the operation of the mechanism would need to be reviewed if the adjustment in the rate of remuneration falls below the agreed floor of 85 percent of the SDR interest rate. Absent any Executive Board decisions at such a review, debtor members would be required to cover any remaining amounts of unpaid charges through further (uncapped) adjustments to the rate of charge, and burden sharing would become asymmetric.

[6] Burden sharing capacity can also be affected by other Fund operations and transactions involving changes in the GRA currency holdings, such as transfer of currencies to the Investment Account and sales of SDRs to members in exchange for currencies.

[7] Quota increases paid in currencies do not affect members' aggregate RTP positions.

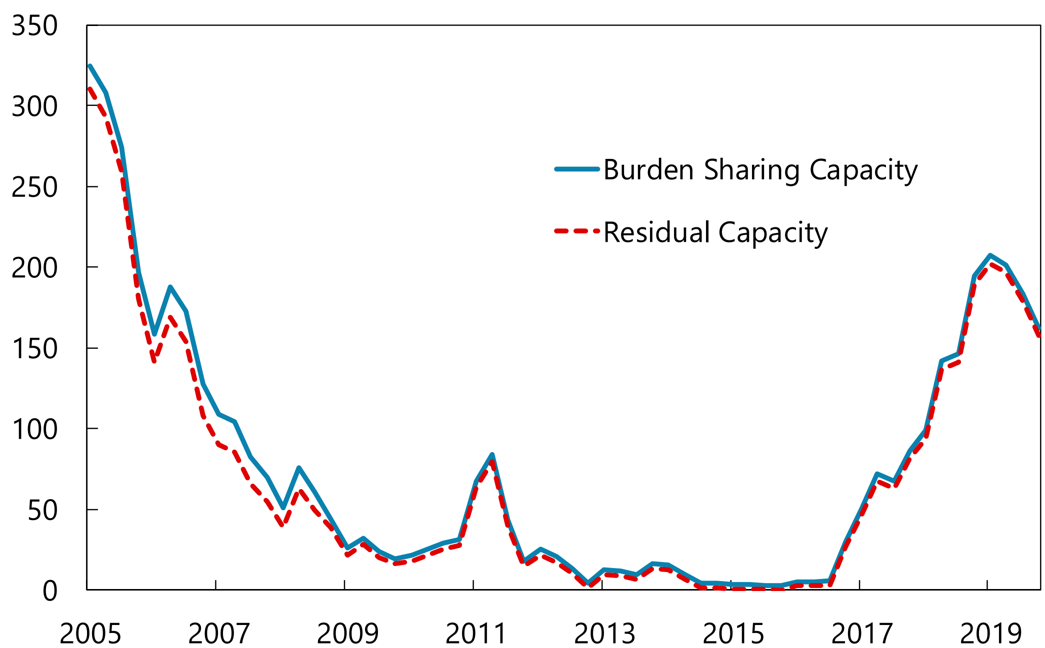
sharing capacity. As of end-December 2019, the share of Fund credit financed by borrowed resources is around 15 percent compared to 60 percent in end-November 2017.

- **SDR interest rate:** as the burden sharing adjustment to the rates of remuneration is set as a proportion of the SDR interest rate, a higher SDR interest rate increases the total burden sharing capacity. As of end-December 2019, the SDR interest rate was 0.740 percent, compared to the 0.733 percent SDR interest rate as of end-November 2017.

6. The burden sharing capacity has increased since the 2018 precautionary balance review primarily owing to the increase in remunerated reserve tranche positions. As of end-December 2019, the annual burden sharing capacity (based on the current floor for remuneration at 85 percent of the SDR interest rate) is around SDR 162 million, compared to just over SDR 86 million at the end of 2017. After accounting for deferred charges by Sudan and Somalia, the residual burden sharing capacity is at around SDR 158 million, compared to under SDR 82 million at the end of 2017.

Figure 1. Burden Sharing Capacity 2005-2019[1/]

(In millions of SDRs)

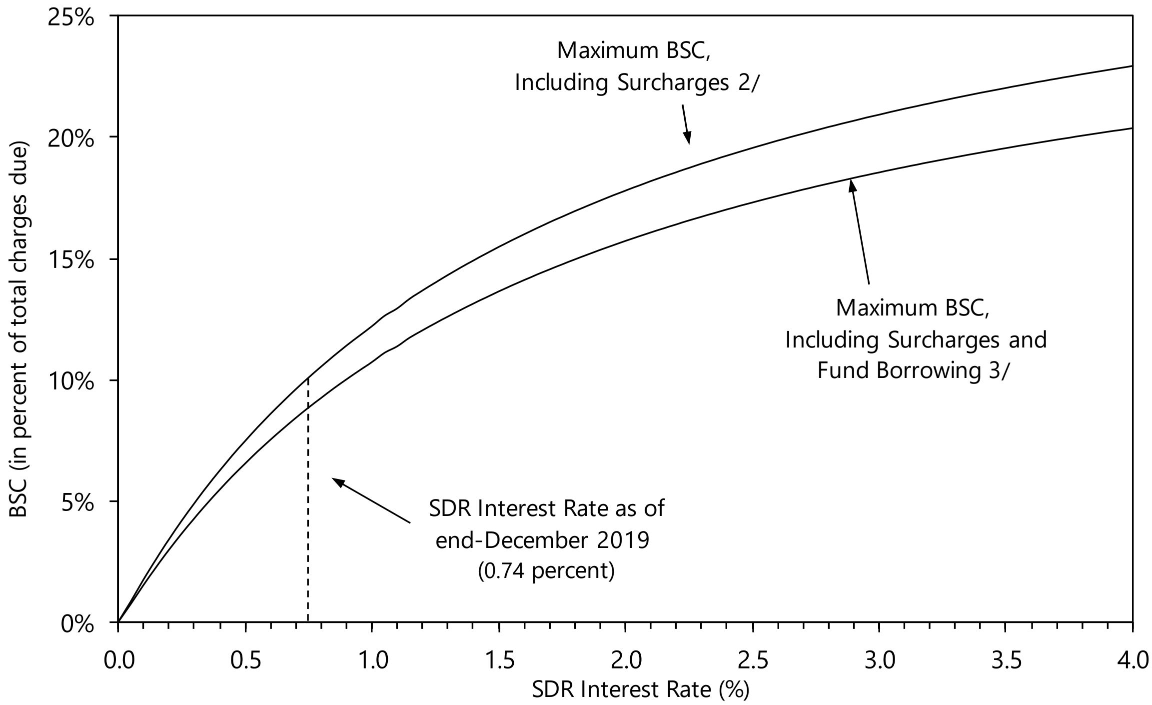


Source: Finance Department.

[1/] Under a floor for remuneration of 85 percent of the SDR interest rate.

Figure 2. Burden Sharing Capacity at Different Levels of the SDR Interest Rate[1/]

(In percent of total charges)



Source: Finance Department.

[1/] The figure assumes a floor for remuneration of 80 percent of the SDR interest rate.
[2/] A basic margin of 100 basis points plus average surcharges of about 85 basis points for the credit outstanding (based on FY 2019-21 projected average). Assuming that remunerated reserve tranche positions (RRTP) equals credit outstanding, i.e. no borrowing by the Fund.
[3/] As footnote 2 but assuming borrowing share at 15 percent of total credit.