Methodology
Rating Central Banks
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Thomas Torgerson
Vice President
Financial Institutions & Sovereign Ratings Group
Tel. +1 212 806 3218
ttorgerson@dbrs.com

Fergus J. McCormick
Senior Vice President
Head of Sovereign Ratings
Tel. +1 212 806 3211
fmccormick@dbrs.com

Roger Lister
Managing Director, Chief Credit Officer
Global Financial Institutions Group
Tel. +1 212 806 3231
rlist@dbrs.com

Alan G. Reid
Group Managing Director
Financial Institutions Group & Sovereign Ratings Group
Tel. +1 212 806 3232
areid@dbrs.com
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Overview

This methodology applies to central banks. Central banks, or monetary authorities, are institutions established to manage an economy’s money supply. Central banks typically have a mandate to achieve price stability. Some have broader mandates also encompassing macroeconomic and financial stability. The precise tools used to achieve these objectives vary but often include managing short term interest rates, financial system liquidity, or exchange rates. Central banks often act as a lender of last resort to the banking sector. They also may have broader bank regulatory and supervisory responsibilities. Central banks are usually granted a substantial degree of autonomy in conducting monetary policy, but ultimately operate under the authority of the central government.

In determining the creditworthiness of central banks, DBRS takes into account five key factors affecting the risk of default by a central bank: (1) macroeconomic, financial and political risks as reflected in the sovereign rating of the central government, (2) central bank independence and the effectiveness of institutional constraints on central government interference in central bank operations, (3) overall central bank performance, (4) explicit support commitments from the sovereign or other affiliated entities, and (5) the central bank’s financial strength and profitability. A high degree of transparency and a strong legal and institutional environment are essential to adequately distinguish between the central bank and the central government for purposes of assigning a central bank rating.

The sovereign rating is used to provide a preliminary assessment of a central bank’s creditworthiness and is the most significant factor affecting central bank ratings. However, DBRS may rate central banks above the level of the sovereign for the following reasons:

- **Unparalleled financial flexibility:** Central banks play a unique role within economies as providers of liquidity. Sovereigns typically grant central banks a unique and exclusive legal authority to issue non-interest bearing liabilities. These are used as the primary medium of exchange within an economy (the monetary base) to facilitate the exchange of goods and services in the economy and to promote price stability. This typically makes central banks highly profitable. Also, the traditional liabilities of a central bank are not callables; they exist in the form of banknotes that circulate throughout the economy and as reserves that commercial and other private banks hold at the central bank. In most cases, banknote liabilities can be increased or decreased at the central bank’s discretion, including the redemption of bank reserves. The central bank may also have the authority to regulate the level of mandatory reserves that private banks must hold at the central bank. Consequently, central banks are usually able to avoid defaulting on their direct obligations even when the central government and private banks cannot.

- **Critical public policy mandate and independence:** Although a central bank’s powers are derived from authority granted by the sovereign, it usually remains in the central government’s own interests to preserve existing institutional arrangements. The impact of a sovereign or financial crisis can be particularly severe on the broader economy, and the central bank usually plays a central role in the policy response by extending liquidity support to solvent financial institutions and ensuring that financial markets continue to function. Consequently, rules put in place to enhance the credibility of monetary policy institutions often take on added importance in the eyes of policymakers when a country is facing a severe crisis.

Nonetheless, even a strongly independent central bank cannot be considered entirely risk-free when the sovereign is facing a deep crisis. Particularly for sovereigns that have demonstrated a willingness to experiment with unorthodox policies, there is a risk that central government officials will see some value in imposing a default on specific central bank liabilities. Protracted economic stress can lead to political upheavals and crises of confidence, persuading officials that an unorthodox solution is the best available option. These political risks may be compounded by any unconventional assets and liabilities on the central bank’s balance sheet, which can further increase the likelihood of a central bank default. Severe impairment of non-government guaranteed assets, for example, could increase the temptation to “bail in” a central bank’s creditors. Central bank liabilities that promise payment in foreign currency or some other asset that the central bank does not control may be difficult to honor in full. Or, if a central bank has extensive interest-bearing liabilities that form a substantial proportion of general government debt and contribute to recurrent losses at the central bank, a default on central bank obligations could become a preferred alternative to monetary base creation and the potential inflationary consequences.

Thus, while conventional central bank activities largely preclude any risk of default, the sovereign rating serves as the preliminary basis for determining central bank ratings. Features common to many advanced economy central banks, particularly strong legal and managerial independence and intrinsic financial strength, may provide justification for rating central banks above the level of the sovereign. In other cases, weak performance, a lack of support from the sovereign, and balance sheet vulnerabilities may negatively impact central bank ratings. As a result of these key factors, highly independent central banks operating in investment-grade countries...
with strong political and legal institutions will typically be rated ‘AAA’ or in the ‘AA’ range by DBRS. Some central banks operating in non-investment grade countries in the ‘BB’ or ‘B’ range may also enjoy investment grade ratings, but will more likely be rated in or below the ‘A’ or ‘BBB’ range. However, the weaknesses cited above (e.g., a lack of central bank independence, weak political and legal institutions, poor monetary policy performance, and financial vulnerabilities) tend to be more prevalent in non-investment grade countries, and central banks in such countries are likely to be rated at or possibly even below the level of the sovereign.

Determining Central Bank Ratings

DBRS typically will not rate a central bank unless the following conditions are satisfied:

- Authorities have published IMF Reports on the Observance of Standards and Codes (ROSCs) or comparable analyses that evaluate the country’s adherence to the IMF’s Code of Good Practices on Transparency in Monetary and Financial Policies and IMF Code of Good Practices on Fiscal Transparency, and demonstrate a reasonably high level of compliance with these best practices. These codes call (inter alia) for the institutional relationship between monetary and fiscal authorities to be clearly defined in law, along with the central bank’s agency roles performed on behalf of the government. In the event of significant changes to a country’s monetary policy framework, DBRS may require that an updated assessment be published within a reasonable period of time.

- The central bank regularly publishes audited financial statements in accordance with sections 3.2 and 4.2-4.3 of the IMF Code of Good Practices on Transparency in Monetary and Financial Policies.

The information contained in the publications listed above is essential to clearly determine the linkages between the central bank and the sovereign. It is also needed to distinguish between the obligations of the fiscal and monetary authorities, and to assess the risks faced by the central bank.

Drawing on these and other reliable sources of information, DBRS utilizes a basic scorecard framework to help evaluate the risk of a central bank default. The first and most important factor is derived directly from the DBRS sovereign scorecard. The sovereign score, which ranges from 0 (very low risk) to 60 (very high risk) is a measure of the risk of default by the central government, and captures the broad array of macroeconomic, fiscal, financial and political risks affecting sovereign repayment capacity. DBRS applies the same rating scale used in the DBRS sovereign scorecard, in which a change of two points in the score roughly corresponds to a one notch change in the sovereign rating (the lower the score, the higher the rating). This is a reflection of the very close links between a central bank and the central government, and the fact that debt, currency and financial crises that directly affect the sovereign are the greatest source of risk for a central bank.

Starting with the sovereign score, DBRS evaluates a central bank on the four remaining factors that may affect its creditworthiness: independence, performance, support, and financial strength. The criteria used to determine a central bank’s performance on those factors are described in the next section. The additional factors may result in adjustments to the sovereign score, as summarized in the table below. A negative adjustment produces a lower overall score, implying a lower risk of default and a higher credit rating.

- **Independence**: Strong independence, defined as legal and de facto central bank independence combined with effective institutional checks on the executive power of the central government, can lower the risk of a government interfering in central bank operations during a sovereign debt crisis. Consequently, strong independence may lower a central bank’s score by 4 or more points (improving the rating by 2 or more notches above the sovereign). Moderate to weak independence tends to have no impact on the central bank’s score beyond the risks already reflected in the sovereign score.

<table>
<thead>
<tr>
<th>Individual factor score</th>
<th>Strong/low risk</th>
<th>Moderate/medium risk</th>
<th>Weak/high risk</th>
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<tbody>
<tr>
<td>Independence</td>
<td>-4 to -6</td>
<td>Between 0 and -2</td>
<td>None</td>
</tr>
<tr>
<td>Performance</td>
<td>None</td>
<td>Between 0 and +2</td>
<td>+4 to +6</td>
</tr>
<tr>
<td>Support</td>
<td>None</td>
<td>Between 0 and +1</td>
<td>+2 to +4</td>
</tr>
<tr>
<td>Financial strength</td>
<td>-4 to -6</td>
<td>Between -2 and +2</td>
<td>+4 to +6</td>
</tr>
</tbody>
</table>

• **Performance:** Central bank performance directly affects sovereign ratings. Nonetheless, unusually weak performance by a central bank can potentially undermine political support for the institution and its independence. Consequently, in cases where a central bank’s weak performance is viewed as increasing the risk of government intervention, DBRS may make additional adjustments to increase the central bank’s score (lower the rating). Although weak performance scores are rare among independent central banks, in exceptional cases DBRS could adjust a central bank’s score by more than 4 points (2 or more notches downward in the rating).

• **Support:** Strong support – defined as an explicit commitment by the government to protect the central bank against significant losses, grant the central bank ample discretion in the distribution of its profits, or otherwise guarantee repayment of its liabilities – is typically assumed and is a core reason for rating the central bank at or above the level of the sovereign. Such commitments typically go hand-in-hand with legal independence. However, when support commitments are lacking or come into question, additional downward adjustments to the central bank’s rating may be warranted. In some cases, a lack of support commitments could increase the central bank’s score by more than 2 points (1 or more notches in the rating).

• **Financial strength:** This factor can either improve or worsen a central bank’s score. Maintaining a strong, conventional balance sheet and structural profitability helps to safeguard the central bank’s independence, and can significantly reduce the possibility that a crisis affecting the sovereign will create difficulties in meeting central bank obligations. In contrast, taking on excessive risks with the central bank’s balance sheet and undermining the institution’s financial position could potentially warrant a rating below the level of the sovereign. Consequently, the financial strength score may adjust the central bank’s score by 4 or more points in either direction.

It must be emphasized that these four factors are positively correlated with one another. In most cases, central banks operating in investment grade sovereigns enjoy strong scores across all four factors; central banks in non-investment grade sovereigns often have moderate or weak scores. Normally, central bank ratings should fall within 4-6 notches of the sovereign, either because the sovereign rating is in the AA/A range and the central bank rating cannot be above AAA, or because factors that lower the sovereign rating are associated with relatively weaker central bank independence, performance or financial strength.

Central bank ratings below the sovereign rating are likely to be exceptionally rare. First, the credit quality of sovereigns with exceptionally weak central banks is likely to be well into speculative grade (i.e., in the B range), and ratings significantly below B would imply a relatively high probability of imminent default. Second, transparency is typically lacking in such countries, making DBRS unlikely to rate such central banks at all.

Key Factors

**Sovereign Creditworthiness**

The calculation of the sovereign score is described in detail in the DBRS sovereign methodology, Rating Sovereign Governments of October 16, 2014. Although the precise weighting of risk factors affecting the central bank varies slightly from the weighting of risk factors affecting the sovereign, these differences are taken into account in the remaining factors described below.

**Independence**

If a central bank has a high degree of independence and if there are well-defined and respected laws governing the institutional relationship between the sovereign and central bank, the central government may face significant barriers to imposing a default on the central bank’s liabilities. At a minimum, the government may have to pass legislation in order to force the central bank into a default. In democratic regimes where political power is divided between the executive and legislative branches, or between two or more political parties, taking such controversial legislative actions in the midst of a crisis may not be viable. Crisis conditions can prompt legislatures to take extreme measures quickly or even to cede emergency powers to the government, but the rationale for existing laws granting strong central bank independence is not likely to be completely forgotten.

The first section of IMF Monetary and Financial Policy Transparency ROSCs discusses the “Clarity of Roles, Responsibilities and Objectives of Central Banks for Monetary Policy.” This forms a key input into DBRS assessments of central bank independence. In addition, DBRS looks for evidence of continued managerial and operational independence on the part of the central bank. This evidence may include the tendency of central bank officials to fulfill their appointed terms, the existence of a set timetable for new
appointments of central bank officials that is independent of government elections, and the consistency of observed net changes in central bank financing to the non-financial public sector with medium-term price stability and financial stability objectives.

In addition, DBRS evaluates the effectiveness of constraints on the executive authority of the central government, particularly with regard to altering laws, regulations and institutional rulemaking. DBRS relies on several sources of information for this assessment, including the IMF ROSCs mentioned above, the World Bank Governance Indicators,\(^4\) and other information available on the institutional checks and balances inherent in the country’s form of government. Of the six World Bank indicators, particular emphasis is placed on the rule of law, voice and accountability, government effectiveness, and control of corruption.

Although DBRS makes every effort to assess the risk of different political scenarios and how these might affect the central bank’s independence in the future, this assessment can be susceptible to political event risk. An example of this is an unexpected major change in the government that appears to significantly alter support for the existing monetary and fiscal policy framework.

**Performance**

Although the relevant aspects of central bank performance are already reflected in the sovereign score, they take on added weight in the context of central bank ratings. DBRS evaluates performance with regard to price stability, the development of domestic savings and credit markets, and unemployment.

In a stable legal and political environment, the successful achievement of a domestic price stability mandate (i.e., one resulting in low and stable inflation) can effectively ensure that a central bank’s primary liabilities will remain in demand. Under such circumstances, the central bank is unlikely to face any meaningful constraints on the refinancing of its existing liabilities. In contrast, high and unstable inflation can lead to a loss of confidence in the central bank and the currency it issues, including within the government itself. Prolonged deflation could also undermine confidence in the central bank, albeit for slightly different reasons, raising the risk of political intervention.

While price stability may be the sole explicit mandate of a central bank, other elements of central bank performance are also taken into consideration. Strong policy credibility helps to encourage the development of domestic savings and the availability of credit. The central bank may have little control over laws governing creditors’ rights and other fundamental factors that influence the level of credit in the economy. It may not have a direct bank supervisory role or adequate powers to prevent excessive risk-taking on the part of financial institutions. Nonetheless, widespread and stable access to credit at low real interest rates and to other financial services generate positive perceptions of the value of financial institutions, and by extension, the central bank that supports the functioning of the financial system.

In addition, high and rising unemployment, whether within the central bank’s mandate or not, generates political pressures and can negatively affect public attitudes toward the government and the adequacy of the country’s monetary framework. In a crisis affecting the sovereign, these perceptions can in turn fuel the risk of legislative changes that could affect the central bank’s ability to meet the terms of its current liabilities.

**Support**

Sovereigns often issue explicit guarantees on specific central bank assets or guarantee payment on central bank liabilities. Sovereigns may make ex ante commitments to inject capital into or reduce profit distributions from the central bank. Alternatively, an independent central bank may have substantial autonomy in determining the disposition of its retained earnings. The explicit commitments made by the sovereign to ensure that the central bank is able to meet its obligations can be very important, particularly in a stressed environment.

As a result, DBRS central bank ratings take into account explicit legal commitments from the sovereign to guarantee central bank liabilities, the quality of policy coordination between the fiscal and monetary authority, and the government’s expressed views toward the central bank and its activities. The relative importance of various support commitments depends in large part on the nature of risks faced by the central bank (see the next section on financial strength).

Explicit commitments by the public sector to cover losses on central bank assets or to guarantee payment on central bank liabilities may be contained in the central bank’s charter or in specific asset or liability contracts. DBRS relies on information contained in the central bank’s charter, or authorizing legislation, and on other information published by the government explaining the specific conditions under which the central government will provide support to the central bank. Public statements by government officials may be taken into account if they appear to offer alternative interpretations of those commitments. The intrinsic value of support received from the sovereign (i.e., the credit quality of the sovereign) is already taken into account within the sovereign score. Thus, this assessment focuses purely on the quality and comprehensiveness of the commitments made.

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Financial strength

Central banks do not have an explicit objective of generating profits. Furthermore, the concept of capital is not particularly relevant in the context of central bank activities. Nonetheless, a central bank’s profitability and its overall solvency position can, in a time of crisis, weigh on the sovereign’s ability and willingness to protect central bank creditors from losses. In addition, risks contained in a central bank’s balance sheet can (in the absence of fiscal transfers) have an impact on the central bank’s capacity to honor its liabilities, while also attaining its price stability objectives.

To assess a central bank’s financial strength, DBRS first evaluates a central bank’s structural earnings. The interest earned on central bank assets less interest paid on liabilities, combined with fees, commissions for services as well as average mark-to-market gains or losses less operating and other expenses, determine the bank’s capacity to generate stable earnings. When non-interest bearing liabilities form a large proportion of the central bank’s balance sheet, earnings will be – on average – positive. However, a common challenge faced by emerging market central banks in particular is the accumulation of large interest-bearing liabilities to sterilize purchases of foreign exchange reserves. These liabilities often pay higher yields than the country’s foreign exchange reserves held by the central bank as part of its assets, which could put significant negative pressure on the bank’s net interest income and its earnings.

In addition, DBRS evaluates financial risks in the central bank’s asset portfolio. Typical central bank assets are short-term local currency claims on the sovereign and carry very little risk for the institution; even if a sovereign defaults to private creditors, it will typically avoid defaulting on securities owned by the central bank or simply recapitalize the institution to avoid any questions about the central bank’s solvency. In contrast, other claims on local financial institutions, non-financial corporations, or foreign entities may expose the central bank to a variety of interest rate, liquidity, foreign exchange, credit, and counterparty risks. To quantify these risks, DBRS computes a ratio of ‘risky’ assets over total assets, using a basic risk weighting framework. Assigned risk weights tend to be quite different from those implied by historic loss experience; the risk weights are selected for each individual case to reflect DBRS’ view of the losses that a central bank would likely incur in the event of a wave of sovereign defaults, including default by its own central government, to private sector creditors. A risk weight of 0% typically applies to gold and to all claims on the central government (e.g., holdings of t-bills). In some cases, a risk weight between 0-20% may be applied to long-term fixed rate lending to the central government to capture the associated interest rate risks. A risk weight of 10-30% is typically applied to collateralized lending and claims on foreign entities (including foreign exchange reserves). A risk weight of 100% typically applies to any unsecured central bank claims on other domestic entities.

Finally, the composition of central bank liabilities can influence the institution’s risk profile. If interest bearing term liabilities form a large proportion of the central bank’s balance sheet, this could potentially limit the central bank’s flexibility in a crisis situation. Large foreign currency liabilities could raise questions about the central bank’s capacity to honor its debts in the event of a significant depreciation of the local currency. However, central banks with significant foreign currency exposure (which is typical of some emerging markets) usually maintain net long foreign currency positions. This implies that a depreciation of the local currency will normally generate large mark-to-market profits for the central bank. Consequently, while DBRS uses quantitative indicators to measure the share of interest bearing term liabilities and foreign currency denominated instruments in total liabilities, these are considered in the context of the central bank’s net open foreign exchange position, overall demand for foreign exchange reserves in the broader economy, the country’s exchange rate regime, and the flexibility associated with the central bank’s asset portfolio. DBRS also takes into consideration the central bank’s access to foreign exchange liquidity facilities, such as swap lines from foreign central banks, precautionary credit lines from international financial institutions, and reserve pooling arrangements.

DBRS may adjust the relative emphasis on the above measures of financial strength, if a central bank has a highly unconventional balance sheet. For example, if a central bank has an unconventional asset portfolio that poses unique risks to the institution, the relative emphasis on asset quality might be increased.

Local Currency Ratings

DBRS usually applies the same differential to a central bank’s local and foreign currency ratings as it applies to the respective sovereign ratings. However, when a central bank has significant foreign currency liabilities on its balance sheet, but faces no meaningful constraints on its ability to service its local currency obligations, the local currency rating may be higher than the foreign currency rating.
Currency Unions

Currency unions formed between multiple countries entail the formation of a supranational central bank (a “union central bank”) to manage monetary policy for the entire area. National central banks inside a currency union are usually empowered to act only to carry out the policies of the union central bank, though they may still perform agency roles on behalf of their respective sovereign. The following considerations apply to rating union central banks and national central banks operating within the union.

Union Central Banks

- **Sovereign score**: DBRS computes a shareholder-weighted average sovereign score from a group of core shareholders. DBRS identifies the group of core shareholders based on their size and commitment to the institution. The core group usually accounts for at least 50% of the central bank’s capital. However, if DBRS has reason to believe that one or more minority shareholders remain fully committed to the union’s monetary framework and would step in to support the union central bank as necessary even in the context of other countries exiting the union, core shareholders could account for less than 50% of the central bank’s outstanding shares.
- **Independence**: Union central banks are typically strongly independent, unless the bank is under the effective control of a single sovereign that dominates the union. Sovereigns usually have a very limited capacity to intervene in the operations of the union central bank, even if the bank is headquartered within their territory.
- **Performance**: DBRS uses aggregate measures of inflation, unemployment, and financial intermediation across the currency area to evaluate the performance of the policies set by the union central bank.
- **Support**: The quality of the support commitments remains the primary consideration, but is evaluated primarily with regard to the union central bank’s core shareholders.
- **Financial Strength**: DBRS seeks to evaluate the balance sheet and profitability of the central bank on a consolidated basis; if consolidated financial statements are not available, DBRS may also evaluate the largest national central banks and their impact on the union central bank to ensure that financial risks are fully taken into account.

National Central Banks Within a Currency Union

- **Independence**: Sovereigns usually have a very limited capacity to interfere in central bank operations without exiting the union, an action which is likely to have very damaging economic and financial repercussions. Central bank interactions with individual sovereigns are usually subject to specific rules established by international treaty. Consequently, independence is typically very strong. If DBRS has reason to believe a central government’s commitment to remaining within the union is weakening, independence may be reevaluated, with potentially adverse consequences for the central bank’s rating.
- **Performance**: DBRS uses national measures of inflation, unemployment, and financial intermediation to evaluate the performance of the policies set by the union central bank for the specific country in question. Thus, even if the union central bank’s performance is quite strong in most countries within the union, the national central bank in a small country forming part of the union whose macroeconomic performance deviates significantly from that of other members may be considered a relatively poor performer.
- **Support**: The quality of the support commitments remains the primary consideration, but the relationship with the union central bank – and by extension, its member states – is taken into consideration. If the union central bank and its core shareholders are rated higher than the sovereign in question, DBRS may treat support commitments more favorably to reflect the higher quality of the support.
- **Financial Strength**: DBRS evaluates the financial strength of the national central bank on a stand-alone basis, but may take into account the strength of other related institutions and their potential impact on the national central bank. DBRS may treat local currency liabilities appearing on the national central bank’s balance sheet as posing a higher risk for the institution, if the sovereign’s commitment to remaining inside the union is in question. If a country were to exit the currency union in the context of an economic or political crisis, this would entail the issuance of a new currency and could jeopardize the central bank’s ability to honor liability contracts payable in the currency belonging to the union.

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5 The European Central Bank (ECB) is somewhat unique, in that its shareholders include 17 national central banks of the euro area plus 11 non-euro area national central banks. Non-euro-area countries may nonetheless have strong interests in the success of the currency union and could be included among core shareholders. See http://www.ecb.int/ecb/orga/capital/html/index.en.html.
Definition of Default

Due to the unique nature of traditional central bank liabilities, it is essential to clearly define what actions would constitute a default by a central bank. While central banks typically act as agents for the sovereign in a variety of ways, DBRS does not automatically treat a default by the central government as a default by the central bank, provided that the central bank is sufficiently distinguishable (i.e., transparent and independent) from the central government. Though the central bank is often a major holder of government securities, these holdings do not count as net general government debt. In past episodes of sovereign restructurings, the sovereign has typically either excluded securities owned by the central bank or subsequently recapitalized the central bank in order to ensure its continued ability to function. Direct central bank liabilities are typically honored according to their original terms with little difficulty. In effect, fiscal operations (including debt restructuring) are normally left to the sovereign, allowing the central bank to focus on its critical monetary policy role.

In wielding specific regulatory authority granted by the central government, central banks may take a variety of actions that DBRS would not consider an act of default, but could nonetheless have deleterious effects on holders of its banknotes and other creditors. Such actions include inflationary policies, foreign exchange intervention, restrictions on convertibility, or modifications to the country’s exchange rate regime. These actions could lead directly or indirectly to a default by other debtors within the same country, but would not be considered an act of default by the central bank. These types of risks are incorporated into DBRS’s sovereign analysis and sovereign ratings. Specifically, the debt and liquidity section, the monetary policy and financial stability section, and the political environment section of sovereign rating reports discuss the risks of:

- nationalization or expropriation of assets located within the jurisdiction;
- intervention in financial flows;
- deposit freezes and other restrictions on bank withdrawals;
- transferability risk or intervention in the ability of an entity or financial transaction to transfer funds across a country’s borders;
- convertibility risk, or intervention in the ability to convert local currency into foreign currency or the inverse.

Specific actions that DBRS would treat as a default by a central bank include:

- **Missing a contractual payment on liabilities to private creditors.** Though many central bank liabilities are not callable, central banks may make explicit payment commitments through a wide variety of debt contracts, including bond issues, derivative contracts, and term repo operations. A default on these instruments remains highly unlikely, unless they are denominated in a currency that the central bank does not control, or they form a large proportion of the central bank’s balance sheet and become unmanageable. Although central banks play a key role as agents for the sovereign in dealings with the IMF and other international financial institutions, DBRS central bank ratings do not reflect the likelihood of a default to official institutions.

- **Confiscating private or foreign bank reserves.** Confiscation implies a transfer of ownership of the reserves and the imposition of a capital loss on counterparty institutions. In contrast, imposing legal mandatory reserve requirements that compel regulated financial institutions to maintain or increase their reserves on deposit with the central bank would not be treated as a default.

- **Forcibly redenominating liabilities into another currency at a prejudicial exchange rate.** Similar in concept to a coercive debt exchange, such an “exchange” of central bank liabilities would be considered a default if DBRS determines that the central bank’s actions have imposed direct net present value (NPV) haircuts6 on its creditors. Thus, this action must go beyond simply fueling inflation or adopting a new currency. For example, the adoption of a currency belonging to another jurisdiction (such as the U.S. dollar) or formal entrance into a currency union (such as the euro area) would typically not be considered a default. Similarly, a central bank operating in an economy that has previously suffered from high inflation might adopt a new banknote to effect a redenomination of the currency (e.g., $1,000 in old banknotes becomes $1 in new

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6 NPV losses are calculated in reference to the exchange rate that was used to convert the liability to a new currency and the exchange rate prevailing at the maturity of the original liability contract. Thus, a central bank can only impose NPV losses on overnight liabilities if the currency conversion takes place at multiple exchange rates, if it simultaneously disallows the conversion of payments into the currency originally specified in the contract, or if the central bank fails to honor the interest rates specified in its overnight contracts. To remain current on term liabilities (such as bonds or term repo contracts), payments would need to be made at contractual interest rates and at the exchange rate prevailing on the date interest and principal payments are made.
banknotes). Even if the international value of the currency continues to decline, DBRS would not consider this action alone to be a default by the central bank, provided that there are no significant restrictions imposed on the exchange of old banknotes.

- **Repudiating the central bank’s own banknotes.** This implies ceasing to recognize the central bank’s own banknotes as legal tender, such that they no longer function as a medium of exchange and cannot be used to obtain new banknotes. This is an extremely unusual step typically only associated with civil war, the collapse of an economy or government, or the dissolution of the state. It must be acknowledged that the line between hyperinflation episodes and outright repudiation may be unclear (Zimbabwe is a recent example). DBRS would likely treat a hyperinflation episode that resulted in the abandonment of a currency as repudiation and hence a default.

This definition underscores the central role typically played by the sovereign in central bank defaults. In many cases the actions described above go beyond a central bank’s legal authority, implying that direct action by the central government will in most cases be the precipitate cause of a central bank default. As noted above, it is usually the case that a default by a central government does not trigger a default by the central bank. The reverse is not always true; if the central bank has the explicit and unconditional backing of the central government, a default by the central bank could be treated also as a sovereign default. Even if that explicit backing or guarantee does not exist, a central bank default resulting from direct sovereign intervention would reflect poorly on the sovereign’s ability or willingness to honor its direct obligations, likely resulting in a downgrade of the sovereign rating to ‘CCC’ or lower.
Lessons from Historical Experience

DBRS is unaware of any comprehensive studies on defaults by central banks, particularly one conforming to DBRS’ definition of default. Instead, central bank defaults are typically examined in the context of studies on sovereign defaults, with most studies making no meaningful distinction between the two. This is a perfectly sensible approach for the academic literature, since the sovereign typically makes the decisions that result in a default on direct central bank liabilities, and the degree of independence is sometimes very limited. However, this complicates a historical analysis of the incidence of defaults on the direct liabilities of central banks. For example, some studies make mention of the forced conversion of foreign currency deposits held at private banks into local currency, without specifically documenting whether the policy also applied to deposits held by financial institutions at the central bank. Still, several instances of central bank defaults can be detected in the broader literature on sovereign defaults.

Monetary reforms and currency conversions following World War II might have been considered central bank defaults in some instances. For example, several countries including Austria (1947) and Germany (1948) placed limits on the amount of old banknotes that could be exchanged for new banknotes by an individual, effectively repudiating a portion of the old stock of banknotes. In 1947, Russia imposed a 90% reduction on the value of privately held currency. Of course, Austria’s central bank (OeNB) had only resumed operations in 1945 (having been subsumed by the German Reich in 1938) and the events in Germany and Russia predate the formation of their modern central banks (the Bundesbank being formed in 1957 and the Central Bank of Russia in 1990).

Central bank defaults have occurred in the context of other recent monetary reforms as well: The Ghanaian Central Bank defaulted on its notes in the context of converting to a new currency (1982). The Reserve Bank of Zimbabwe (RBZ) abandoned the Zimbabwe dollar in 2009 following an episode of hyperinflation; the government had utilized the RBZ for quasi-fiscal operations reaching an estimated 24% of GDP in 2008. The RBZ had to be restructured due to extensive losses from these activities and statutory deposits of private banks at the RBZ were frozen.

Forced conversions of foreign currency bank deposits into local currency have in a few instances included deposits held at the central banks. In the midst of Argentina’s debt and currency crisis in 2002, the Argentine government forcibly converted foreign exchange deposits held at the central bank into pesos. While private bank foreign currency assets were converted into pesos at a rate of 1:1, all foreign exchange deposits were converted into pesos at a rate of 1.4:1, imposing a net loss on the banks. Several other Latin American countries engaged in similar U.S. dollar deposit conversions in the early 1980s, but direct central bank liabilities were sometimes unaffected.

In contrast, most recent sovereign debt defaults have not evidently resulted in defaults on central bank liabilities. Examples include: Cyprus (2013), Greece (2012), Belize (2012), Jamaica (2010), and Ecuador (2008).

Sources: Reinhart and Rogoff, 2009; IMF.