GROSS INTERNATIONAL RESERVES: QUALIFICATIONS AND QUANTITIES[1]

Building a stock of international reserve assets for precautionary purposes to cushion against balance of payments risks is especially important for a very open euroized economy. Moreover, Andorra does not have a lender of last resort for its large banking sector with sizeable nonresident deposits. Its reserve assets are currently limited to the reserve tranche position and the SDR holdings at the Fund, which amount to 2 percent of GDP. IMF staff estimate that the government's liquidity needs are €334 million, equivalent to 12 percent of GDP, assuming that the banks have enough high-quality liquid assets to cover their liquidity needs. The liquidity gap of the government is, thus, 10 percent of GDP, but could be larger if the banking sector has one.

Qualifications

1. Liquid assets held by the central government for precautionary purposes must meet certain conditions to qualify as reserves. Reserve assets are defined as those external assets, denominated in convertible currencies (including Euros and U.S. dollars), that are readily available to and controlled by monetary authorities for meeting balance of payments financing needs, for intervention in exchange markets to affect the currency exchange rate, and for other related purposes, such as maintaining confidence in the currency and the economy, and serving as a basis for foreign borrowing (paragraph 6.64 of the Sixth Edition of the IMF's Balance of Payments and International Investment Position Manual or BPM6). In the absence of a central bank, the reserve assets should be directly controlled by the central government; particularly, by the Ministry of Finance in the case of Andorra.

2. The management of the reserve assets could be entrusted to a commercial bank as an agent for the Andorran government with the following conditions (paragraphs 6.67 and 6.68 of the IMF's BPM6):

- the commercial bank can transact only in those claims with nonresidents on the terms specified by the central government or only with its express approval;
- the authorities have access on demand to these claims on nonresidents to meet balance of payments financing needs and other related purposes; and
- a prior law or an otherwise legally binding contractual arrangement confirms this agency role of the resident entity that is actual and definite in intent.

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3. With no external assets that currently meet the conditions for reserve assets, except for small holdings of the Special Drawing Rights (SDRs) and the reserve tranche position at the IMF, the Andorran government should follow several steps to build a stock of reserve assets. The first step is to have liquid assets, in euros and other convertible currencies, deposited with non-resident banks. As mentioned above, those deposits could be held by an Andorran commercial bank that would act as an agent for the Andorran government. The deposit accounts can also be used for settlements when Andorra starts investing these resources in other financial instruments, such as government securities issued by other European countries. To diversify the financial instruments in which the reserve assets are invested, the Andorran government needs to develop institutional arrangements (e.g., create a department within the Ministry of Finance that is responsible for reserve assets management), investment strategies (e.g., types of financial instruments and currencies to invest in as well as trading styles), and a risk management framework.

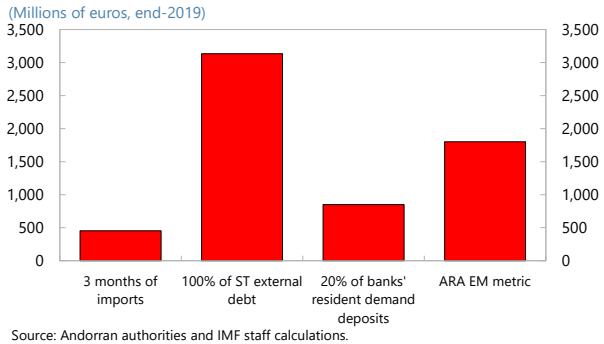
Quantity

4. With sizable current account surpluses projected in the medium term, Andorra is unlikely to face balance of payments financing risks. The authorities have started producing balance of payment statistics, which shows a current account surplus of 18 percent of GDP in 2019. While a full set of data is not available for 2017–2018, the balance on goods and services shows high surpluses for those years as well. Moreover, being fully euroized and integrated with the eurozone in trade and banking services, Andorra does not face the risk of exchange rate fluctuations and currency mismatches.

5. However, Andorra could still be subject to external shocks and should build precautionary reserve assets to cushion against possible liquidity shocks. A fully euroized economy without a lender of last resort suggests a need to build liquidity buffers, since the economy's high degree of openness exposes it to balance of payments-related shocks. For instance, on the current account side, Andorra relies heavily on goods imports, which are close to 50 percent of GDP. As witnessed during the pandemic last year, the government had to acquire medical supplies and equipment, while encountering a record fall in fiscal revenues mostly due to border closures by neighbors and a resulting sudden stop in tourism. On the financial account side, a large share of the funding for the banking sector—with assets over 500 percent of GDP—comes from nonresident deposits, which makes the Andorran banking sector vulnerable to liquidity shocks in the event of a capital flight. So, even though there is a positive net international investment position—estimated by staff from mirror data (see SIP: *Current Account Balance and External Competitiveness*)—other investment (currency and deposits) liabilities of banks are over 130 percent of GDP.

6. Based on the traditional metrics developed by the IMF, which account mostly for BoP-related risks, Andorra should hold reserve assets ranging between €452 million and €3,134 million (Figure 1).[2] The lower bound is given by the import coverage metric; while widely used, this measure ignores financial linkages, which might be important for an economy such as Andorra. The reserve metrics based on short-term external debt and on banks' resident demand deposits, which suggest a buildup of reserve assets of €3,134 and €850 million, respectively, account for debt rollover and resident capital flight risks.[3] The Fund's Assessment of Reserve Adequacy for Emerging Markets (ARA-EM) metric is a composite metric designed to better capture a range of capital outflow risks, including: (i) losses in export earnings; (ii) rollover risk of short-term debt obligations; (iii) portfolio outflows; and (iv) changes in broad money as a proxy for resident outflows. In the case of Andorra, the weights assigned to each component correspond to those of a fixed exchange rate economy.[4] This metric shows that the international reserves in Andorra should amount to €1,814 million to provide an adequate liquidity buffer.[5]

Figure 1. Reserve Metrics



Source: Andorran authorities and IMF staff calculations.
Note: The ARA EM metric is defined as 10% of exports of goods and services, 30% of short-term external debt, 20% of other liabilities to non-residents, and 10% of banks' resident demand deposits.

7. The traditional metrics seem to overestimate the reserve needs of Andorra. For instance, about half of the reserves implied by the ARA-EM metric correspond to banks' resident and nonresident demand deposits. Unless there is a liquidity gap in the banking system, the government does not need to accumulate reserves to cover for a foreign or a domestic deposit run against the banks (see further below). Furthermore, the ARA-EM metric includes other liabilities to nonresidents, which comprise medium- and long-term external debt and portfolio equity liabilities. Such instruments, with longer maturities, may not be relevant when assessing liquidity needs that are inherently short term.

[2] For details on the methodology, see IMF (2016).

[3] The metric traditionally used to capture resident capital flight risk is relative to broad money (usually M2). However, in the case of Andorra, unilateral euroization implies that there is no base money. Hence M2 is replaced with banks' resident demand deposits.

[4] The weights of the ARA-EM metric in the case of an economy with a fixed exchange rate system are 30 percent on short-term external debt, 20 percent on other external liabilities, 10 percent on broad money, and 10 percent on exports. For details see IMF (2016).

[5] The formula of the ARA-EM metric includes M2. However, in the case of Andorra, unilateral euroization implies that there is no base money. Hence M2 is replaced with banks' resident demand deposits.

8. Euroization and the absence of a lender of last resort call for a broader assessment of Andorra's reserve adequacy, beyond the BoP perspective. The government may wish to maintain additional fiscal savings to smooth unexpected fluctuations in revenue or spending, particularly at times when financing may become more difficult or costly.

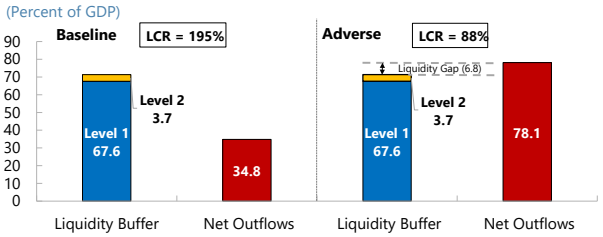
9. To supplement the traditional metrics, IMF staff constructed a measure of liquidity needs of the government. In the absence of a lender of last resort, the Andorran government is responsible for using reserve assets to cover for any liquidity shortages faced by the government itself, and any liquidity gap faced by the banks. The measure of 'liquidity needs' constructed by IMF staff accounts for: (i) the government's BoP-related needs; (ii) a fiscal buffer; and (iii) the banks' liquidity gap.

- **The BoP-related needs include 1 month of imports of goods and services and the short-term external public debt.** The rationale for including imports in a measure of the government's liquidity needs is that the government is the ultimately responsible for providing necessity goods to its population, including imported goods. For example, during the pandemic, the Andorran government imported medical supplies and equipment, including testing kits and vaccines. The inclusion of the short-term external public debt captures rollover risks.

- **The fiscal buffer is proxied by one month of total public spending, based on the analysis by IMF (2013) for Kosovo.** Given the fiscal discipline imposed by the fiscal rule, the government of Andorra has not had the need to build large fiscal buffers in the past (see Annex II in the Staff Report (IMF, 2021)). However, the challenges posed by the pandemic highlighted the importance of having large enough fiscal buffers in the event of a crisis.

- **The assessment of the banks' liquidity gap is based on Basel III's Liquidity Coverage Ratio (LCR).** The LCR is defined as the ratio between high-quality liquid assets and net liquidity outflows over a 30-day stress period, which needs to be at least 100 percent since January 2021 (BIS, 2013).[6] In the baseline scenario, under outflow assumptions that are consistent with the LCR regulation and more pessimistic than those experienced in comparable countries, the liquidity buffer exceeds the net outflows. The LCR of the

Figure 2. Banking System Liquidity Coverage, 2020



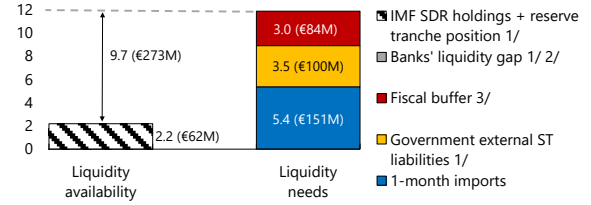
Source: Data from authorities (non-audited, preliminary) and IMF staff estimates.
Note: The banks' liquidity gap is the difference between the banks' liquidity buffer and the net liquidity outflows in a 30-day stress period. The latter are calculated by subtracting haircut-adjusted liquidity inflows from liquidity outflows. The outflows correspond to the available stock of funding sources multiplied by their corresponding outflow rates in a 30-day stress period. The baseline scenario assumes that the eligibility of liquid assets for the buffer, the haircuts on 30-day inflows and the 30-day outflow rates are consistent with the LCR regulation. In such scenario, the liquidity buffer exceeds the net outflows and there is no liquidity gap; the resulting LCR is 195 percent. In a more adverse scenario, the assumed outflow rates are more pessimistic, up to three times those in the baseline. Under such circumstances, the net outflows exceed the liquidity buffer, resulting in a liquidity gap of 6.8 percent of GDP and an LCR of 88 percent.

[6] The LCR requirement was adopted by Andorra in 2018, by transposition of EU CRDIV/CRR regulation. This adoption was done in phases, requiring banks to have an LCR of at least 60 percent by January 2019, of at least 80 percent by January 2020 and of at least 100 percent starting from January 2021.

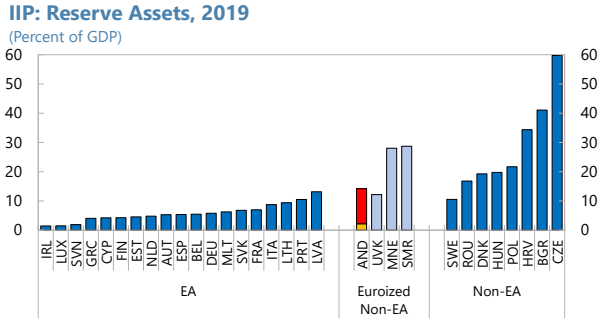
system is 195 percent as of end-2020, well above the 100 percent requirement.[7] Thus, there is no liquidity gap in the banking system that needs to be taken into account as part of the international reserves calculation (Figure 2). However, if we consider an extremely adverse scenario—with outflow rates three times those in the baseline—then net outflows exceed the liquidity buffer and the LCR falls below 100 percent requirement, resulting in a liquidity gap of 6.8 percent of GDP in the banking system. The impact on individual banks in such an adverse scenario would differ based on their funding structures. Those banks that display sharp declines in the LCR tend to rely more on funding from retail deposits (particularly those less stable), on unsecured funding from nonfinancial corporates and sovereigns not covered by deposit insurance, or on undrawn but committed credit facilities to retail and other nonfinancial customers. While it is admissible for the banks' LCR to fall below 100 percent under stress, the existing regulation requires banks to build plans in coordination with AFA to quickly re-build their buffers.

10. Liquidity needs of the government are estimated to be €334 million, equivalent to 12 percent of GDP (Figure 3, left), provided the banking system liquidity risk is well-supervised. Almost 75 percent of the liquidity needs correspond to BOP-related needs. The fiscal buffer adds to the remaining 25 percent. The banks' liquidity gap is zero in the baseline, in compliance with the LCR regulation. However, this may not necessarily be the case if the outflow rates in a more adverse scenario turn out to be larger than those assumed in our baseline calculation. In the illustrative adverse scenario considered previously, with outflow rates up to three times those of the baseline scenario, and in the absence of a lender of last resort, liquidity needs of the government could go up to 18.7 percent of GDP if the banking sector has a liquidity gap of 6.8 percent of GDP.

Figure 3. International Reserves



Sources: Andorran authorities and IMF staff calculations.
1/ As of end-2020.
2/ The banks' liquidity gap is the difference between the banks' liquidity buffer and the net liquidity outflows in a 30-day stress period under a more adverse scenario. The net outflows are calculated by subtracting haircut-adjusted liquidity inflows from gross liquidity outflows. The gross outflows correspond to the available stock of funding sources multiplied by their corresponding outflow rates in a 30-day stress period. The baseline scenario assumes that the eligibility of liquid assets for the buffer, the haircuts on 30-day inflows and the 30-day outflow rates are consistent with the LCR regulation. In such scenario, the liquidity buffer exceeds the net outflows and there is no liquidity gap.
3/ The fiscal buffer is equivalent to one month of total government spending.



Sources: IMF Balance of Payments Statistics, World Economic Outlook, and IMF staff calculations.
Note: For Andorra, the bar represents the level of reserves implied by the 'liquidity needs' metric. The yellow portion is the available reserve assets and the red portion is the liquidity gap.

[7] The LCR of 195 percent computed by staff is close to the official estimate of 187 percent produced by the Andorran Financial Authority (AFA). The small difference is stemming from the higher level of granularity of the data used by AFA, which allows it to apply differential assumptions to specific items.

11. The amount of reserves implied by the 'liquidity needs' metric for Andorra in the baseline scenario is consistent with the levels of international reserves observed in some euroized economies. With reserve needs amounting to 12 percent of GDP, Andorra would be within the levels of international reserves observed in other euroized economies, such as Kosovo, whose reserve assets amount to 12.2 percent of GDP (Figure 3, right). Other euroized countries have larger levels of reserve assets; for instance, in the case of San Marino, the large need to compensate for liquidity gaps in a large banking sector. Countries that are not euroized need to build a reserve buffer to also cope with exchange rate fluctuations and currency mismatches. Euro Area (EA) countries do not face these risks and also have access to the lender of last resort facility of the eurosystem; therefore, they tend to have relatively lower levels of reserve assets (5.8 percent of GDP, on average).

12. The available liquidity is enough to only cover 18 percent of the reserve needs of the government, in the baseline scenario. In the absence of a central bank and with the government only holding relatively small deposits in domestic banks, the only reserve assets of the country at the moment correspond to the reserve tranche position and the SDR holdings at the Fund, which amount to €62 million or 2 percent of GDP.[8] The government does not own any other external assets. As a result, a gap between the government's reserve needs and liquidity availability of €273 million (10 percent of GDP) remains and should be closed over time. This gap could be larger if the banks have a liquidity shortage.

13. The government should gradually build up a stock of reserve assets. The country's exposure to liquidity risks makes it necessary to start building the stock of reserve assets as early as in 2021, to the extent allowed by the recovery from the pandemic. Staff have suggested different options to the authorities to accumulate the needed reserves. First, to make contributions to the compensation account (Annex II in the Staff Report (IMF, 2021)) in a way that they qualify as reserve assets (e.g., by depositing them in a bank account abroad). With the fivefold increase of the compensation account contributions to 0.5 percent of the central and local governments total expenditure, which was approved in 2020, the government would be able to accumulate 0.8 percent of GDP in 2021–26. If the contribution rate to the compensation account is further increased from 0.5 percent to 5 percent, then the government would be able to accumulate reserves for 7.5 percent of GDP in 2021–26. Second, to save all future fiscal surpluses, which are projected to materialize starting from 2023. The cumulative fiscal surpluses in 2023–26 are projected to be 2.9 percent of GDP. Third, to issue additional €100 million (equivalent to about 3 percent of GDP) of debt and save the proceeds in a way that they qualify as reserve assets. While this option would have an associated interest cost, it would not harm debt sustainability and would allow for a faster accumulation of reserves.

[8] A possible SDR allocation of US$650 billion to boost reserves and help global recovery from COVID-19 is currently under discussion (https://www.imf.org/en/News/Articles/2021/03/23/pr2177-imf-execdir-discuss-new-sdr-allocation-us-650b-boost-reserves-help-global-recovery-covid19). If approved, it would increase Andorra's available reserves and result in a lower liquidity gap, but the quantities are still uncertain.

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