Policy Briefing Series [PB/02/2013]

Official Reserve Adequacy in Ukraine

Recent Development, Assessment and Policy Implications

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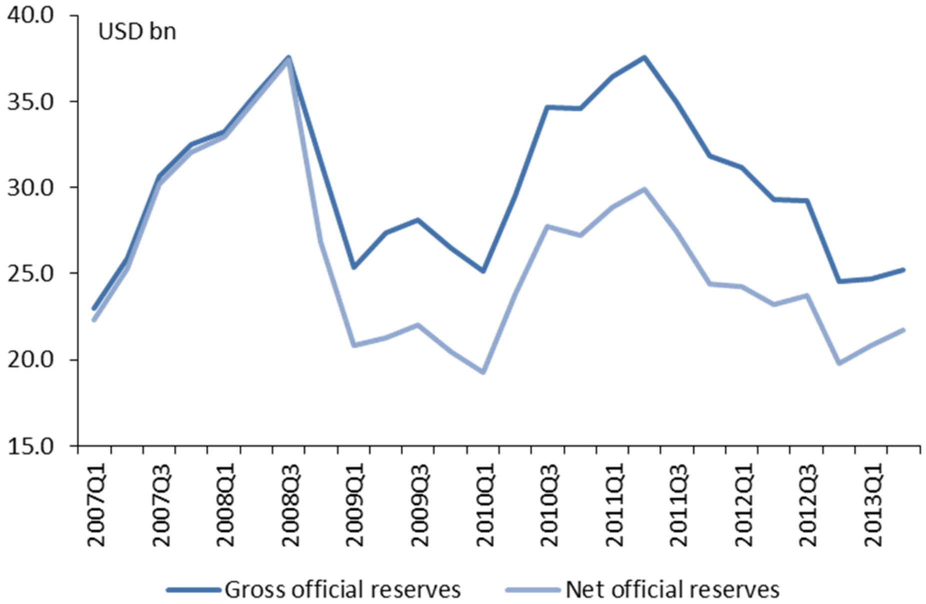
Structure

1. Introduction

- Central banks usually hold official foreign exchange reserves (“FX reserves”) as a precautionary liquidity buffer to decrease the adverse impact of negative external shocks in times of financial stress or crises
- A resulting question for the authorities is the appropriate level of such FX reserve holdings, as such holdings are usually associated with benefits and costs
- Theoretical and empirical research provide a number of quantitative assessment criteria that can be used to judge the adequacy of FX reserves
- Currently, Ukraine’s external accounts are again under pressure, which brings this question into the spotlight
- This briefing reviews the adequacy of Ukraine’s current FX reserves by applying the main assessment criteria

2. Recent Development



Source: NBU, own calculations

- As a rule, FX reserves are expected to increase over time in an emerging market economy
- However, Ukraine's gross official reserves showed a different pattern over the last years
- A significant decline during the global crisis 2008/09 was followed by a recovery from 2010 onwards
- Starting mid-2011, reserves declined once again, and recently stabilised at USD 25.2 bn (end-April 2013)
- Net reserves (excluding IMF financing) followed a similar path over the last years, and stand currently at USD 21.7 bn according to own calculations

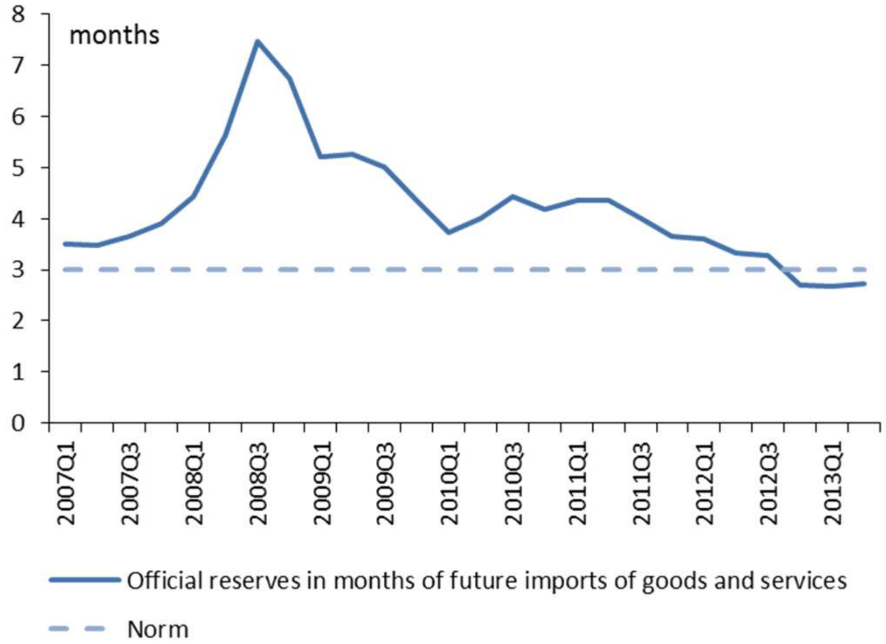
3. Overview of methods

- Economic literature: Many competing assessment procedures/methods
- Important for checking the validity of results: Use of different approaches and compare results
- In this quantitative assessment: 4 well-established approaches
  1. Import coverage criterion
  2. Guidotti-Greenspan criterion
  3. Wijnholds-Kapteyn criterion
  4. New composite criterion (IMF)

4.i. Import coverage

- The import coverage criterion is the oldest benchmark for assessing the adequacy of FX reserves
- According to this benchmark, a country should hold a minimum of 3 months of future imports of goods and services in FX reserves, in order to continue paying for imports when faced with a temporary stop in foreign currency inflows
- This criterion was developed at a time when trade flows (as opposed to capital flows) dominated external balances, since capital mobility was often restricted
- This limits to some extent its usefulness in today's world of globalized capital markets;
- Nevertheless it is used widely today, in particular in emerging and transition economies, which often restrict capital mobility to different degrees

4.i. Import coverage: Results



Source: Own calculations based on NBU data and IER projections

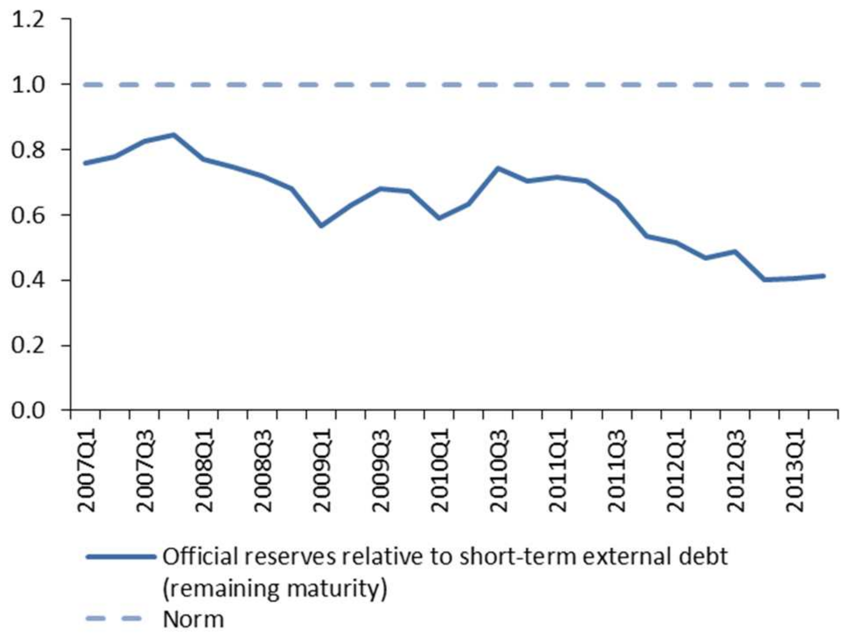
Interpretation of results:

- A relatively steady decline in import coverage can be observed already since mid-2008
- However, the critical value of 3 months import coverage has been crossed only by end-2012
- Currently, a value of only **2.7 months of imports** cannot be considered as being adequate

4.ii. Guidotti-Greenspan criterion

- Increasing international financial integration and financial crisis that concerned predominantly the capital account caused a shift away from trade/import-related criteria towards criteria related to the capital account
- Guidotti and Greenspan postulated a criterion that a country should be able to refrain from external borrowing for one year in case of a crisis
- Thus, FX reserves should cover at least all external debt maturing in the next 12 months (i.e. all short-term external debt by remaining maturity)

4.ii. Guidotti-Greenspan criterion: Results



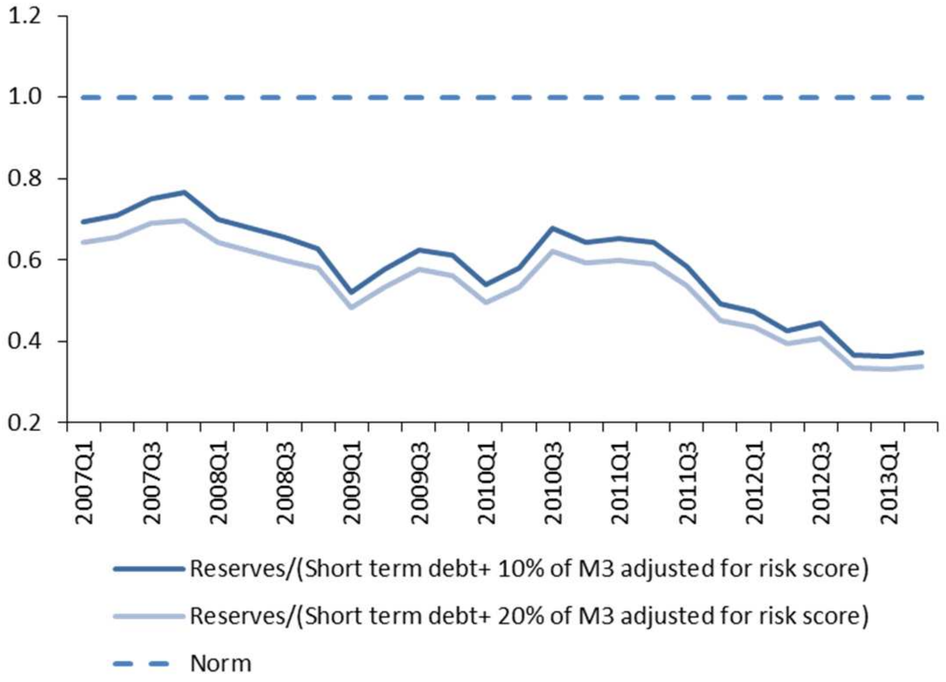
Source: Own calculations based on NBU data

- Over the sample period, Ukraine was never able to cover short-term external debt on a remaining maturity basis by reserves
- Furthermore, a steady decline in this indicator has been observed over the longer term
- The current value of **0.41** (i.e. only 41% of short-term debt is covered by reserves) is at a multi-year low and thus a negative sign
- However, it should be taken into account that a significant part of external debt (including short term debt) belongs to intra-group transactions with related parties (i.e. offshore-holdings), where a high roll-over rate can be assumed

4.iii. Wijnholds-Kapteyn criterion

- The Guidotti-Greenspan rules relates only to external debt, i.e. debt owed by residents to non-residents (“external drain”)
- In many emerging and transition countries, capital flight by residents (“internal drain”) is an additional drain on FX reserves
  - Specifically, residents try to exchange domestic currency assets into foreign currency assets
- Wijnholds-Kapteyn take this effect into account by adjusting the Guidotti-Greenspan by two effects
  - As a potential indicator for the volume of the internal drain, they use part of the broad money supply (10% and 20%)
  - In order to take the risk of such an internal drain actually happening into account, they use a country risk indicator

4.iii. Wijnholds-Kapteyn criterion: Results



Source: Own calculations based on NBU and EIU data

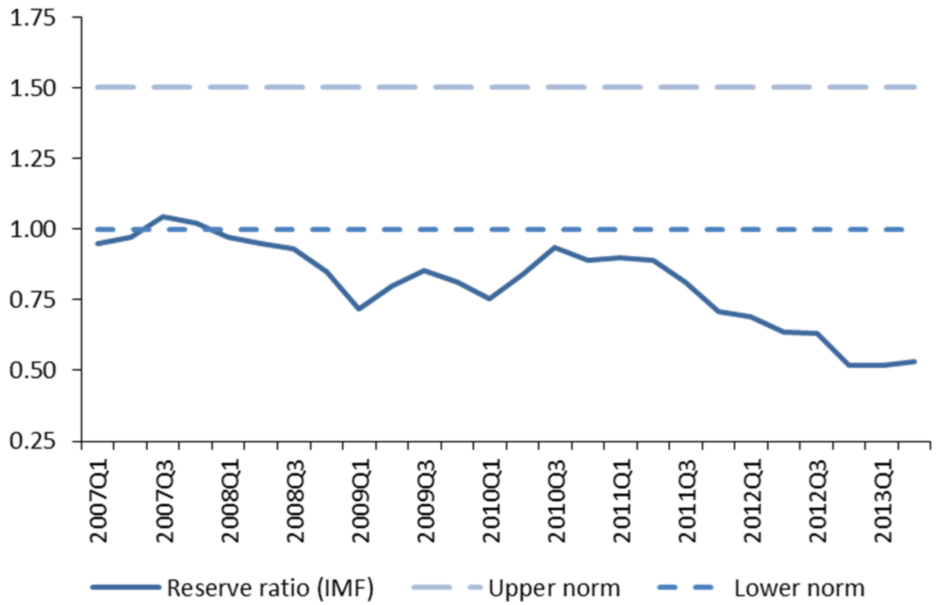
- Since this criterion is an extension of the previously discussed Guidotti-Greenspan-rule, its dynamics are similar
- Currently, values of **0.37** (10% M3) and **0.34** (20% M3) form multi-year lows, after a steady deterioration has been observed
- This implies that current reserves cover only 37% (34%) of the amount deemed necessary

4.iv. New composite criterion (IMF)

- All single criteria previously discussed lack a common framework, as they narrowly concentrate on selected sources of FX reserve drain
- While the have relevance, and are simple to use, they are to some extent arbitrary and focus only on particular vulnerabilities
- Recent empirical research by the IMF has tried to fill this gap, and develops a comprehensive risk-weighted measure of potential drains on FX reserves via different channels (current and capital account, including also domestic capital flight)
- This measure serves also as a better predictor of currency crisis than standard criteria
- For emerging markets operating de-facto fixed exchange rates (like Ukraine), the measure is equal to

  10% of exports + 30% of short-term external debt + 10% of broad money + 10% of other portfolio liabilities
- Countries should cover 100% – 150% of the proposed measure in actual FX reserve holdings

4.iv. New composite criterion: Results



Source: Own calculations based on NBU data

- Similar to all indicators discussed previously, the value of new criterion has been steadily declining over the sample period
- It was within the band considered adequate only for a brief period in 2007
- The current value of 0.53 implied that just over 50% of minimum FX reserves needed as a according to this criterion are actually kept

4.v. Summary of results

Overview of quantitative results:

Adequacy criterion	Current value	Minimum value	Implied reserve level	Gap to current reserves (USD 25.2 bn in April)
Import coverage	2.7 months	3 months	USD 27.9 bn	- USD 2.7 bn
Guidotti-Greenspan	0.41	1	USD 60.9 bn	- USD 35.7 bn
Wijnholds-Kapteyn*	0.37	1	USD 67.8 bn	- USD 42.6 bn
IMF composite	0.53	1	USD 47.6 bn	- USD 22.4 bn

*based on 10% of M3

- All four criteria show that Ukraine‘s **FX reserve level** is currently **suboptimal** and needs to be strengthened significantly
- The **continuous deterioration** in all criteria to multi-year lows is another **worrying trend**, which needs to be countered

5. Policy implications

- The criteria reviewed signal unanimously that Ukraine is very vulnerable to both current account and capital account shocks; a squeeze in external finance could not be countered adequately due to insufficient FX reserve holdings
- It is worth noting that the inadequate level of FX reserves happened despite the introduction of various administrative measures to limit the demand for foreign currency - otherwise, the gap would be even bigger
- While it should be clear for policymakers to accumulate more FX reserves, key questions in this respect are:
    1. How much FX reserves?
    2. In what time perspective should the accumulation take place?
    3. What instruments should be used?

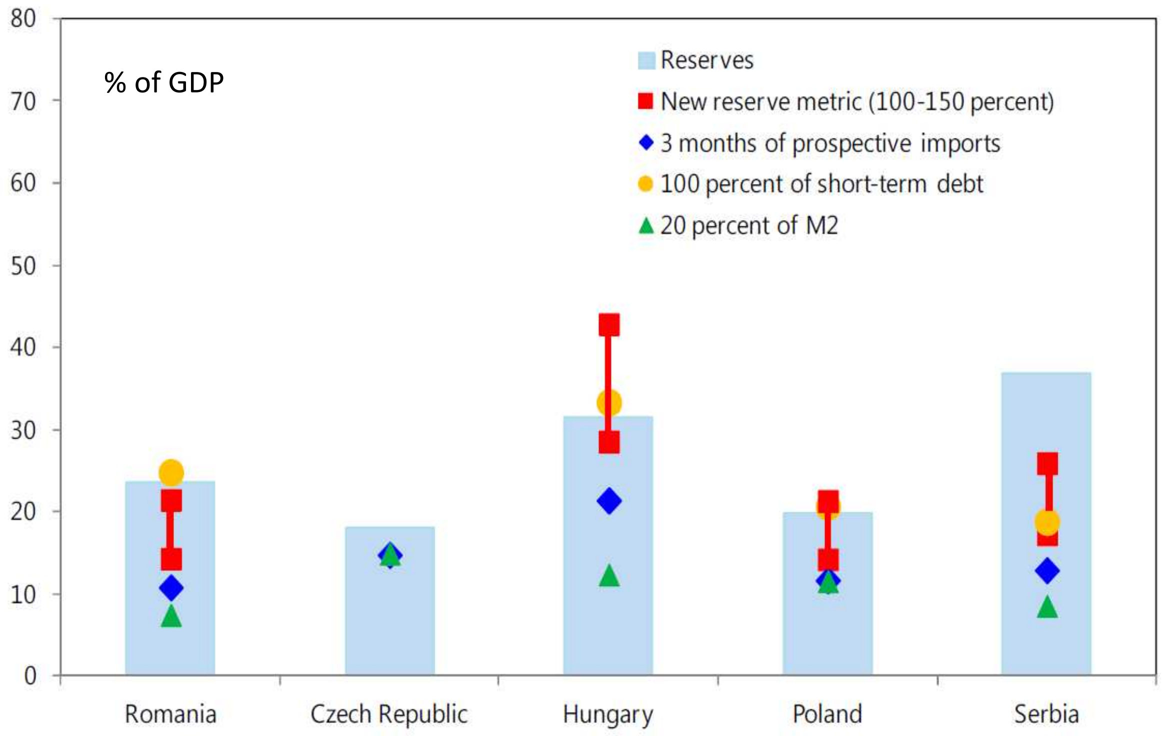
5. Policy implications

1. The lower bound of the new IMF reserve metric (**USD 47.6 bn**) seems to be a realistic numerical target value, as it is based on a common framework that includes all possible drains on FX reserves
2. It is obvious that such target cannot be achieved in the short term, as the gap to the current level of reserves is quite significant. Thus, this should serve as a **medium-term target**
3. A new **IMF program** would be the preferably way to increase FX reserves in the near term, coupled with a move to a **more flexible FX system**. In the medium to long term, structural policies to **attract foreign capital** and boost FX reserves should be followed, including export facilitation, FDI attraction as well as transparent privatisation

Appendix

Reserves adequacy: Regional comparison (1)

International reserves relative to adequacy metrics

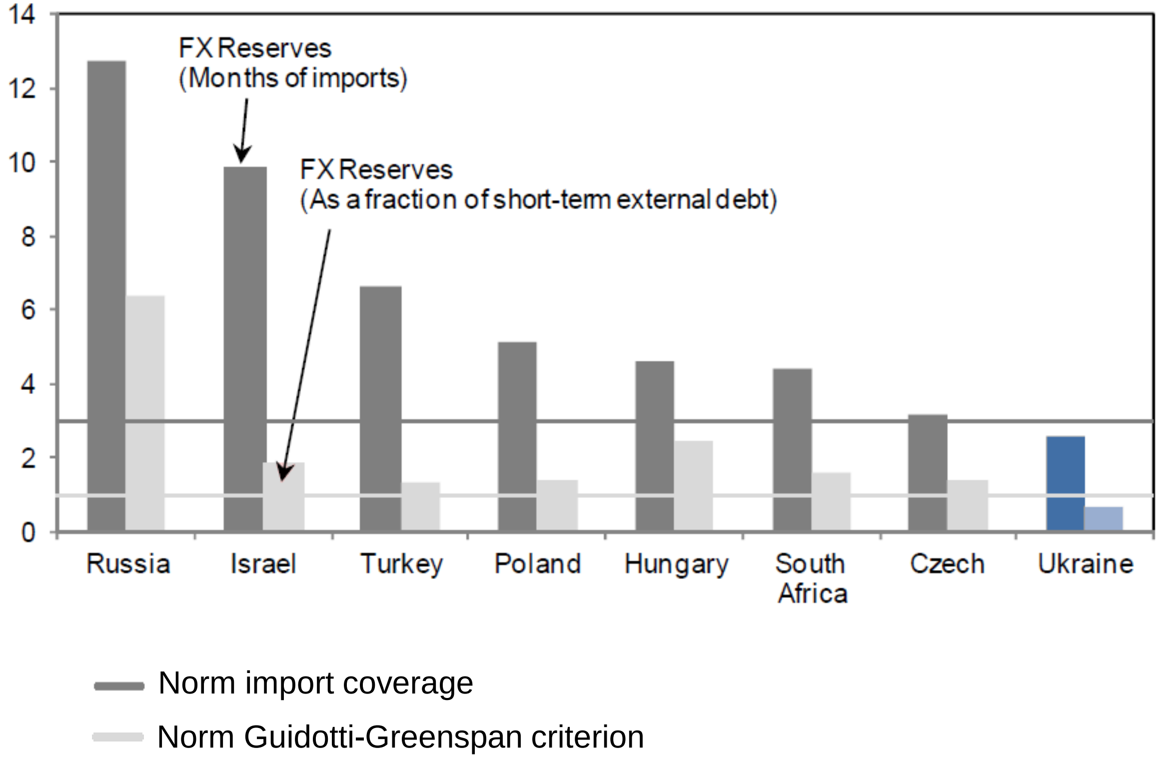


Source: WEO; International Financial Statistics; and IMF staff calculations
Note: Reserves are as of July 2012, while all other variables are as of 2011, except for prospective imports (for 2012)

- The figure on the left-hand side shows reserve adequacy for a selected sample of peer countries in terms of
  - Import coverage
  - Short-term external debt coverage
  - New IMF-metric
- In general, **FX reserves equal or exceed the respective criteria**, only Hungary misses the upper bound of the new IMF metric

Reserves adequacy: Regional comparison (2)

FX reserves relative to short-term debt and import coverage

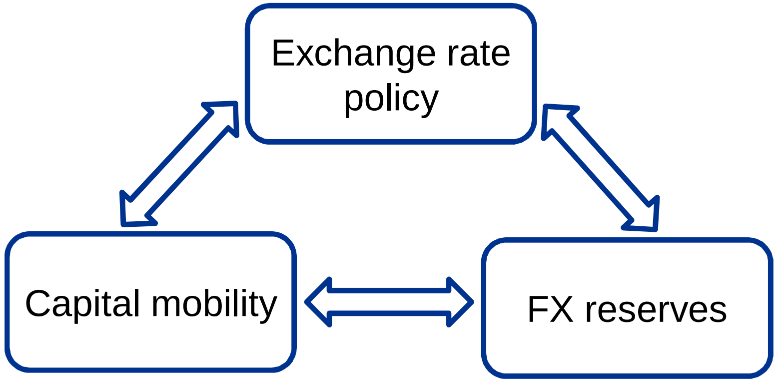


Source: GS Global ECS Research, Haver Analytics, 2013

- Similar to the previous slide, all peer countries in the region fulfill both the import coverage and the Guidotti-Greenspan criteria
- Ukraine is a laggard in this respect, as neither criterion is currently fulfilled

Reserve adequacy in a wider policy framework

- FX reserves are intrinsically related to exchange rate policy and capital mobility



- It should be noted that suboptimal (and declining) FX reserves happened <u>despite</u> limiting capital mobility by administrative measures recently
  - Recent changes in trade policy (e.g. tariff surcharges) seem to follow a similar pattern
- A continuation of this policy appears not to be a sustainable strategy, as it puts an increasing burden on the economy
- We favour a gradual flexibilisation of the exchange rate, which would resolve the dilemma described above

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