The analysis of the amount and structure of foreign exchange reserves in Poland in the years 1998–2014

Key words: foreign exchange reserves, accumulation of the international reserves, security and liquidity of the investment, international currencies, investment instruments

1. Introduction

Foreign exchange reserves are understood as foreign currency owned and controlled by a central bank. They are regarded in the majority of countries, especially developing countries, as the main part of reserve assets of a given country. Other components of such assets include gold and receivables from the International Monetary Fund (related to membership in this organization). Reserve assets of the country act as an external security of the financial solvency of a given economy; thus, they determine financial stability of the country and its credibility. That is why central banks actively manage the most fluid part of reserve assets in order to acquire high profitability with, at the same time, high level of security and fluidity of invested means.

Managing reserve assets in Poland, pursuant to Art. 3 paragraph 2 of the Act from the 29th of August, 1997 on NBP (the National Bank of Poland) is strictly in the power of the central bank (NBP). Actions in this respect are being specified currently by Długoterminowa strategia zarządzania rezerwami dewizowymi of NBP from October 2007 and its annual updates. Credibility and stability of Polish economy, as well as NBP’s profitability depend on efficiency of actions of the central bank in terms of currency structure, selecting financial instruments and contractors. Profits from investing reserve assets are a potentially dominant source of NBP’s income, as the market value of assets in foreign currency revolves around 96% of all NBP’s assets.

2. The value of reserve assets in Poland

Official reserve assets in Poland at the end of October 2014 were 79.7 billion EUR, which is around 1/5 of PKB (GDP – Gross Domestic Product); they were stated in dollars: 100.1 billion USD – table 1. At first

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1 Ustawa z dnia 29 sierpnia 1997 r. o Narodowym Banku Polskim (Dz. U. z 2005 r. Nr 1, poz. 2 z późn. zm.).


3 The situation at the end of 2013; the author’s own calculations on the basis of the Shortened financial statement of NBP (Narodowy Bank Polski, Sprawozdanie z działalności NBP w 2013 r., Warszawa 2014, p. 89).

glance, it is a huge amount of money. In developing countries, which must improve their credibility by even manifesting high level of reserve assets, they reach even over a dozen and sometimes even several dozen percent of PKB, while in stable, well-developed economies they oscillate around a few percent of PKB (even 3–4%).

Such high level of reserve assets is in Poland from the moment of intensive flow of EU funds. Pursuant to the resolution nr 16/1999 of the NBP’s Management Board, since the 7th of June 1999, the only entities which are entitled to currency transactions from NBP are non-bank entities possessing accounts in NBP, which consists of the Ministry of Finance and other trustees of budgetary means. That is the reason why, since the beginning of the 21st century, the main source of growth of foreign-exchange reserves in Poland has been the flow of funds from the EU, which were mainly exchanged by the Ministry of Finance into PLN, and in the lesser part the profit from monetary reserves. That is why, since the end of the 90’s of the 20th century, up to the moment of Poland’s joining the EU, foreign-exchange reserves of NBP were on a stable level of around 30 billion EUR; after that they started to systematically grow along with the flow of EU funds (table 1).

Table 1. The level and dynamics of reserve assets in Poland in the years 2000–2014.

<table>
<thead>
<tr>
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</tr>
</thead>
<tbody>
<tr>
<td>USD</td>
<td>27,5</td>
<td>36,8</td>
<td>93,5</td>
<td>108,9</td>
<td>106,2</td>
<td>100,1</td>
<td>287%</td>
<td>189%</td>
</tr>
<tr>
<td>EUR</td>
<td>29,5</td>
<td>27,0</td>
<td>70,0</td>
<td>82,6</td>
<td>77,1</td>
<td>79,7</td>
<td>161%</td>
<td>186%</td>
</tr>
<tr>
<td>PLN</td>
<td>113,8</td>
<td>110,0</td>
<td>277,2</td>
<td>337,6</td>
<td>319,9</td>
<td>335,0</td>
<td>181%</td>
<td>191%</td>
</tr>
<tr>
<td>% GDP</td>
<td>15,3</td>
<td>11,9</td>
<td>19,6</td>
<td>21,1</td>
<td>19,6</td>
<td>–</td>
<td>28%</td>
<td>64%</td>
</tr>
</tbody>
</table>


An exchange of EU funds to the country’s currency on the inter-bank market, which in a very fast way slowed down the growth of foreign-exchange reserves of NBP. Due to the continuation of very low interest rates in the world because of the crisis, especially in international currencies, and with result of low profitability of monetary reserves (table 6), in April 2013 NBP suggested to the Ministry of Finance the increase in selling euro on the inter-bank market and the purchase of foreign currency in NBP instead of emitting treasury bonds on foreign markets, which was made dependent by the Ministry from the situation of lack of pressure in strengthening PLN.

Since the end of the 90’s of the 20th century, reserve assets in Poland which were expressed in euro increased from 29.5 billions of EUR at the end of 2000 and to...
77.1 billions of EUR at the end of 2013, which means they increased for 161%. They oscillated on the level under 30 billions of EUR up until the end of 2004 and their dynamic increase started in 2005 – chart 1. Reserve assets of Poland increased for 206% in the period of December 2004–December 2012 (from 27 billion of EUR to 82.6 billion of EUR). Apart from their nominal increase, the increase in the context of relation to PKB also appeared. At the end of 2004, foreign-exchange reserves of Poland constituted only 11.9% of PKB (at the end of 2000 it was 15.3% of PKB), which presents their relative increase of 78% in 9 years – up to the level of 21.2% of PKB at the end of 2012 (table 1).

Before that, especially in the first half of the 90’s of the 20th century, the source of strong increase in foreign exchange reserves in Poland was to be found in Poland’s conscious exchange-rate policy, which was used by NBP to tone down appreciation pressure for PLN through repurchase of foreign currency from commercial banks. It needs to be remembered that the amount of foreign exchange reserves is influenced by changes in exchange, pricing of financial assets, NBP’s transactions for up-to-date management of flow of reserve assets and operations of funding the account of the European Commission in NBP and operations of the Ministry of Finance. A lot weaker dollar than in, for example, 2000, inflated by the crisis the price of gold (three times higher than 6 years ago), NBP’s intervention from April 2010 which weakened PLN, or strengthening of PLN in December 2010 by the Ministry of Finance (through selling means from the EU funds on the market by BGK) are only a few examples causing crucial changes on the level and in pricing of the value of reserve assets at this moment.

3. The structure of NBP’s reserve assets

Reserve assets, due to their key role for credibility and stability of an economy, are sustained in a fluent and safe way. That is also the order in which strategies of managing foreign-exchange reserves are defined:
1) liquidity,
2) safety,
3) and as the third – profitability.

9 Within the dollar context they increased for 287%; however, it must be noted that American dollar significantly decreased in its value in the years 2002–2008.

NBP also accepted that the aim of the long-term strategy of managing foreign-exchange reserves in Poland is to maximize profitability of foreign-exchange reserves of NBP in the long term, within the frame of an accepted level of financial risk and established limitations.

Considering the aforementioned, gross foreign-exchange reserves in the world are kept:
• in treasury securities of the most stable and credible economies (mainly American, Japanese, British, German, French),
• in securities of well-known international institutions or government agencies,
• in deposits in prestigious banks,
• in gold,
• in SDR (meaning the settlement unit of the International Monetary Fund and in the form of reserve positions in IMF (required on demand in case of any problems regarding the balance of payment from IMF, which is an equivalent of paid international currencies to IMF due to the payment for shareholdings in this organization).

At the end of October 2014, almost 81% of Polish reserve assets were located in securities (80.8%), 7.0% in a form of investment transactions, 3.9% in gold and its 2.6% was a receivable from IMF (1.5% in the form of SDR and 1.1% in the form of reserve positions) – table 2.

The subjects of active management of NBP’s reserve assets are only foreign reserve assets, meaning securities, bank deposits or so-called other reserve assets (table 2), which are 93.5% of the total amount of NBP’s reserve assets. Gold, SDR and reserve position in IMF, due to their specific character, are a relatively stable element of reserve assets.

NBP’s gold resources are, from 2000, on an exceptionally stable level of around 3.306–3.309 billion ounces; however, due to an exceptional increase in

11 Narodowy Bank Polski, Długoterminowa strategia zarządzania rezerwami..., p. 3.
12 More about the role of international reserve assets in economy see: M. Redo, Istota i znaczenie oficjalnych aktywów rezerwowych w gospodarkach rozwijających się (in:) Zeszyty Naukowe Wyższej Szkoły Bankowej we Wrocławiu Nr 5(37)/2013, pp. 200–203.
prices of gold on international market in the past decade (chart 2), its value, as expressed in dollars or euro (despite a significant price reduction in 2013) is several times higher than over a dozen years ago.

Table 2. Structure\textsuperscript{15} of Polish official reserve assets – the condition at the end of October 2014.

<table>
<thead>
<tr>
<th>official reserve assets</th>
<th>mln EUR</th>
<th>mln USD</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>I. foreign exchange</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1. securities</td>
<td>74 536</td>
<td>93 659</td>
<td>93.5%</td>
</tr>
<tr>
<td>2. currency and deposits</td>
<td>5 612</td>
<td>7 052</td>
<td>7.0%</td>
</tr>
<tr>
<td>3. other reserve assets</td>
<td>4 563</td>
<td>5 733</td>
<td>5.7%</td>
</tr>
<tr>
<td>II. gold</td>
<td>3 090</td>
<td>3 883</td>
<td>3.9%</td>
</tr>
<tr>
<td>III. SDRs</td>
<td>1 160</td>
<td>1 458</td>
<td>1.5%</td>
</tr>
<tr>
<td>IV. reserve position in the IMF</td>
<td>894</td>
<td>1 124</td>
<td>1.1%</td>
</tr>
</tbody>
</table>

Source: self-reported data on the basis of Narodowy Bank Polski, Statystyka bilansu płatniczego. Płynne aktywa i pasywa w walutach obcych, the situation at the end of October 2014 (accessed: 21.11.2014) oraz Narodowy Bank Polski, Statystyka bilansu płatniczego. Oficjalne aktywa rezerwowe, monthly data...

Chart 2. 15 year gold price history in USD per ounce.


4. NBP’s investment instruments

NBP invests foreign-exchange reserves in typical instruments used by other central banks. The main part of foreign-exchange reserves (more than 80% – chart 3) is stored in government securities of the most credible economies – with high rating, characterized with the highest level of safety and fluidity. The dominating economies are, for example: American, German, British, French and Australian treasury securities\textsuperscript{17}. However, since 2012, NBP has started, on a small scale, investing in instruments of countries with lower ratings, not covered with strategic benchmarking, mainly Brazilian and Mexican government securities\textsuperscript{18} – due to an exceptionally low profitability of treasury securities of the most credible economies and, at the same time, along with the idea of continuing the process of diversification of reserves. In 2013, NBP slightly increased engagement in securities of developing countries and started investing in New Zealand’s government securities\textsuperscript{19}. Before the crisis of 2008, part of the reserves was invested in government securities of Ireland and Spain; NBP resigned from them before the crisis became stronger in the second half of 2011\textsuperscript{20}.

Chart 3. Share of investment instruments in foreign-exchange reserves of NBP in the years 2007–2013 (in %).

Source: self-reported data on the basis of Annual Reports of Narodowy Bank Polski from the years 2007–2013.

The investment structure of foreign-exchange reserves of NBP is, currently, about a high and stable share of investment with the highest level of fluidity, meaning short-term government securities with the highest rating. In 2013, the share of government securities of ma-


\textsuperscript{16} Najwyższa Izba Kontroli, \textit{Zarządzanie przez Narodowy Bank Polski rezerwami dewizowymi…}, pp. 23–24.
turity up to 1 year in strategic benchmarking increased up to 36%, and the share of securities of maturity up to 3 years increased up to 55%\textsuperscript{21}.

The rest of the NBP's foreign-exchange reserves is invested in non-governmental securities of the capital market and instruments of the monetary market (both at around 7%). Among the non-governmental institutions the dominating position have international institutions as well as American and European government agencies\textsuperscript{22}. Also in this area there are intensive works on developing the acceptable spectrum of non-governmental emissions; however, it occurs in a slow and limited way due to the maintained level of credit risk\textsuperscript{23}. For example, in 2012 NBP started investing in corporation bonds in USD\textsuperscript{24}.

NBP's foreign-exchange reserves are invested in the third group of instruments – instruments of the money market, meaning short-term discount securities, deposits and transactions with the promise of repurchasing securities\textsuperscript{25}. All of the aforementioned short-term investments are made in prestigious financial institutions with high credit credibility, mainly in private banks, but also in central banks (for example in the European Central Bank), the Bank for International Settlement and in the International Monetary Fund. Within the diversification of reserves in 2007, NBP made first Interbank deposits in the Australian dollar\textsuperscript{26}; in 2008 also on the Norwegian and Japanese market. However, due to the financial crisis, benchmarking for deposits in reserves was significantly reduced in 2009 to 5.95% (from 21.25% in 2008)\textsuperscript{27}.

As the chart 3 presents, the dominant part of Polish foreign-exchange reserves – at the end of 2013 up to 93.5% – is being kept in the safest way, meaning in securities of the most credible entities – mainly governments (86%) and on a small scale international institutions and government agencies (7.4%). Even smaller is the share of deposit transactions – only 6.6%. This is the effect of the decrease in trust towards financial institutions from the crisis of 2008. Before that, the share of deposits in the foreign-exchange reserves of NBP was kept on the level of around 20% (since 2001) and in the second half of the 90's of the 20th century of even 40–50\%\textsuperscript{28}.

5. The monetary structure of the foreign-exchange reserves of NBP

Since 2008, Polish foreign-exchange reserves have been kept in 6 international currencies – mainly in American dollar and in euro, but also in British pounds, Australian dollars, Norwegian krones and New Zealand dollars (chart 4).

Chart 4. Monetary structure of NBP's reserves in 2013

Due to dominance of the US dollar as an international currency, and also due to strong trading-financial connections in Europe, dollar and euro are the primary reserve currencies in Poland, but also around the world (chart 5).

Chart 5. Monetary structure of the foreign-exchange reserves in the world (in %, the status at the end of 2013)

\begin{table}[h]
\centering
\begin{tabular}{|c|c|}
\hline
Currency & Share (in %) \\
\hline
USD & 61.2 \\
EUR & 24.4 \\
GBP & 4.0 \\
JPY & 3.5 \\
CHF & 0.2 \\
Other currencies & 6.2 \\
\hline
\end{tabular}
\caption{Monetary structure of foreign-exchange reserves in the world (at the end of 2013).}
\end{table}

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\textsuperscript{21} Najwyższa Izba Kontroli, \textit{Zarządzanie przez Narodowy Bank Polski rezerwami dewizowymi}..., pp. 16–17.

\textsuperscript{22} Narodowy Bank Polski, \textit{Raport Roczny 2007}, Warszawa 2008, p. 64.


\textsuperscript{24} Narodowy Bank Polski, \textit{Raport Roczny 2012}..., p. 60.

\textsuperscript{25} Narodowy Bank Polski, \textit{Raport Roczny 2005}, Warszawa 2006, p. 64.

\textsuperscript{26} Narodowy Bank Polski, \textit{Raport Roczny 2007}..., p. 70.

\textsuperscript{27} Najwyższa Izba Kontroli, \textit{Zarządzanie przez Narodowy Bank Polski rezerwami dewizowymi}..., p. 19.

\textsuperscript{28} On the basis of Annual Reports of Narodowy Bank Polski from the years 1998–2007.
Current, relatively rich monetary structure of foreign-exchange reserves in Poland is an effect of economic swirls around the world in the past decade. In 1999, as a result of introducing euro, a decision was made, along with global trends, to significantly narrow the monetary structure of reserves in Poland to three currencies: American dollar, euro and British pound. Before that, (from the 4th quarter of 1991 to the end of 1998), the structure of reserves consisted not only of the dollar (55%) and the British pound (5%), but also of the German mark (30%), French franc (5%) and Swiss franc (5%) (30%)\(^\text{29}\). However, huge losses, which were caused by a decreasing American dollar in the past decade, forced investors around the world to seek investment alternatives; as a result, interest in currencies such as the Australian dollar, Norwegian krone or the Canadian dollar increased, whereas the interest in the American dollar decreased. As it is present in chart 5, the share of American dollar in the structure of the foreign-exchange reserves around the world is now calculated only at 61.9%, whereas at the end of 2001 it was 71.5%\(^\text{30}\) – about 15.5% more than now. That is why, in 2006, NBP lowered the share of the American dollar in its foreign-exchange reserves up to 45% by, at the same time, increasing the share of the British pound (table 3).

Table 3. Monetary structure of NBP’s benchmarking in the years (expressed in %).

<table>
<thead>
<tr>
<th>Year</th>
<th>USD</th>
<th>EUR</th>
<th>GBP</th>
<th>AUD</th>
<th>NOK</th>
<th>NZD</th>
</tr>
</thead>
<tbody>
<tr>
<td>2001</td>
<td>50</td>
<td>40</td>
<td>10</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>2002</td>
<td>50</td>
<td>40</td>
<td>10</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>2003</td>
<td>50</td>
<td>40</td>
<td>10</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>2004</td>
<td>50</td>
<td>40</td>
<td>10</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>2005</td>
<td>50</td>
<td>40</td>
<td>10</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>2006</td>
<td>45</td>
<td>40</td>
<td>15</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>2007</td>
<td>40</td>
<td>40</td>
<td>15</td>
<td>5</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>2008</td>
<td>40</td>
<td>35</td>
<td>15</td>
<td>5</td>
<td>5</td>
<td>0</td>
</tr>
<tr>
<td>2009</td>
<td>40</td>
<td>35</td>
<td>15</td>
<td>5</td>
<td>5</td>
<td>0</td>
</tr>
<tr>
<td>2010</td>
<td>38</td>
<td>35</td>
<td>13</td>
<td>8</td>
<td>6</td>
<td>0</td>
</tr>
<tr>
<td>2011</td>
<td>36</td>
<td>32</td>
<td>15</td>
<td>10</td>
<td>7</td>
<td>0</td>
</tr>
<tr>
<td>2012</td>
<td>36</td>
<td>32</td>
<td>15</td>
<td>10</td>
<td>7</td>
<td>0</td>
</tr>
<tr>
<td>2013</td>
<td>36</td>
<td>32</td>
<td>12</td>
<td>10</td>
<td>7</td>
<td>3</td>
</tr>
</tbody>
</table>

Source: self-reported data on the basis of Annual Reports of Narodowy Bank Polski from the years 2005–2013 and Długoterminowa strategia zarządzania rezerwami dewizowymi Narodowego Banku Polskiego z października 2007 r.

Conclusions

After the period of accumulating foreign exchange reserves in Poland in the 90’s of the 20th century, and after they stabilized on the level of around 30 billion USD, questions about the effectiveness of investing such huge means appeared. The next decade brought the increase in credibility of Polish economy, the flow of the foreign investment assets and EU funds\(^\text{33}\); as an effect, it also brought the increase of reserves – the importance of questions about the profitability of the foreign exchange reserves has grown. 2–3% of annual profitability for potential profitability of instruments is not an exceptional result (chart 6). It is also worth mentioning that the amount at stake is 100 billion of USD,

\(^{29}\) On the basis of information acquired from the employee of the Department of Managing Financial Risk at NBP in 2013.

\(^{30}\) International Monetary Fund, Annual Report 2007. Making the global economy work for all, Washington 2007, Appendix Table 1.2.


\(^{32}\) Najwyższa Izba Kontroli, Zarządzanie przez Narodowy Bank Polski rezerwami dewizowymi…. p. 17.

\(^{33}\) More about the sources of foreign exchange in Poland see: M. Redo, Źródła pochodzenia rezerw walutowych – analiza przepływów międzynarodowych w Polsce pod kątem akumulacji aktywów rezerwowych „Zeszyty Naukowe Wyższej Szkoły Bankowej we Wrocławiu”, Nr 138/2013, p. 249–266.
where 1 percentage point of additional profitability means a billion USD of additional income; the amount should be taken into consideration especially due to a difficult situation of public finances in Poland and the method of investing foreign exchange reserves by NBP should be, at least, overviewed.

Chart 6. Profitability of foreign exchange reserves in Poland (expressed in %, in the currency of instruments, without taking into consideration the influence of changes in exchange rates).

Source: self-reported data on the basis of Annual Reports of Narodowy Bank Polski from the years 2001–2013.

Potential need for foreign exchange reserves is high in Poland – it may be exemplified by the events of autumn 2008 when the value of NBP’s reserve assets decreased in 6 months (from July 2008 to January 2009) for 25.7 billion of USD – that is 30% (the decrease expressed in euro resulted in, accordingly, 9.2 billions of EUR, meaning 16.6% in the period of August 2008–January 2009) – chart 1. To great extent, it justifies the cautiousness in policies of managing NBP’s reserves, especially if the crisis from 2008 significantly increased the level of aversion towards risk around the world. However, it does not change the fact that current financial markets offer a number of possibilities of securing financial transactions which helps in engaging in more profitable investments and appreciating currencies with still high level of safety. It would be a good idea to, at the beginning, start investing the small part of reserves in a less standard way, especially in the situation where for 6 years there have been significantly low interest rates around the world, historically low profitability of the most popular securities and the fact that Poland pays the annually renewed Flexible Credit Line in the International Monetary Fund for the amount of around 33.7 billion of USD which serves as an additional, strong safety measure of our economy’s credibility and financial solvency.

References

LEGAL SOURCES


Uchwała nr 16/1999 Zarządu Narodowego Banku Polskiego z 7 maja 1999 r. uchylająca uchwałę w sprawie wprowadzenia „Regulaminu zakupu walut obcych przez banki w Narodowym Banku Polskim”, Dz. Urz. NBP Nr 11 z 26 maja 1999 r. poz. 16, [Resolution No. 16/1999 of the National Bank of Poland of 7 May 1999 repealing a resolution on the introduction of „Regulations on purchase of foreign currency by banks at the National Bank of Poland , (J.L. Office. NBP No. 11 of 26 May 1999, item. 16).

LITERATURE


International Monetary Fund, Annual Report 2014. From Stabilization to Sustainable Growth, October 2014.


Narodowy Bank Polski, Długoterminowa strategia zarządzania rezerwami dewizowymi, październik 2007 [National Bank of Poland, Long-term foreign exchange reserves management strategy, October 2007].


Narodowy Bank Polski, Sprawozdanie z działalności NBP w 2013 r., Warszawa 2014. [National Bank of Poland]..


Redo M., Istota i znaczenie oficjalnych aktywów rezerwowych w gospodarkach rozwijających się, “Zeszyty Naukowe Wyższej Szkoły Bankowej we Wrocławiu” No. 5(37)/2013, p. 200–203 [The essence and significance of official reserve assets in developing economies].

Magdalena Redo: The analysis of the amount and structure of foreign exchange reserves


Redo M., Źródła pochodzenia rezerw walutowych – analiza przepływów międzynarodowych w Polsce pod kątem akumulacji aktywów rezerwowych,”Zeszyty Naukowe Wyższej Szkoły Bankowej we Wrocławiu”, No. 38/2013, p. 249–266 [The source of the foreign exchange reserves – the international flow analysis in Poland in terms of accumulation of reserve assets].