



LAW AND ADMINISTRATION IN POST-SOVIET EUROPE

THE JOURNAL OF KOLEGIUM JAGIELLOŃSKIE TORUŃSKA SZKOŁA WYŻSZA
VOL. II: 34–41

DOI: 10.1515/lape-2015-0004

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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)¹ 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 updates². 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 assets³.

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 1⁴. At first

² Narodowy Bank Polski, *Długoterminowa strategia zarządzania rezerwami dewizowymi*, październik 2007.

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).

⁴ Narodowy Bank Polski, *Statystyka bilansu płatniczego. Oficjalne aktywa rezerwowe, Oficjalne aktywa rezerwowe*, monthly data, the situation at the end of October 2014 (accessed: 21.11.2014).

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

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%)⁵.

euro from the EU funds by the Ministry of Finance in NBP contributes to the emission of money and leads to generating higher and higher costs of the absorption of overflow. The attempt of limiting this phenomenon is found in reaching an agreement between the Ministry of Finance and the NBP's Director in May 2011 about

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

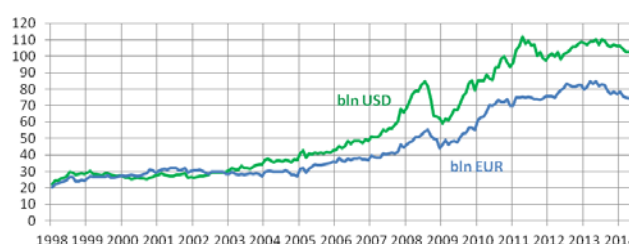
	XII 2000	XII 2004	XII 2010	XII 2012	XII 2013	X 2014	% change XII 2013/ /XII 2000	% change XII 2013/ /XII 2004
USD	27,5	36,8	93,5	108,9	106,2	100,1	287%	189%
EUR	29,5	27,0	70,0	82,6	77,1	79,7	161%	186%
PLN	113,8	110,0	277,2	337,6	319,9	335,0	181%	191%
% GDP	15,3	11,9	19,6	21,1	19,6	–	28%	64%

Source: self-reported data on the basis of Główny Urząd Statystyczny, *Polska – wskaźniki makroekonomiczne (PKD 2007)*. *Roczne wskaźniki makroekonomiczne. Rachunki narodowe*, last updated 19.09.2014 (accessed: 21.11.2014), Narodowy Bank Polski, *Statystyka bilansu płatniczego. Oficjalne aktywa rezerwowe*, monthly data, the situation at the end of October 2014 (accessed: 21.11.2014).

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 means⁶. 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 reserves⁷. 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). Exchange of

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 PLN⁸.

Chart 1. Reserve assets in Poland in the years 1998–2014 (in billions of EUR and USD).



Source: self-reported data on the basis of Narodowy Bank Polski, *Statystyka bilansu płatniczego. Oficjalne aktywa rezerwowe*, monthly data...

⁵ More about the level and geographic and currency structure of foreign exchange reserves in the world see: M. Redo, *Rezerwy dewizowe na świecie – analiza i ocena poziomu, dynamiki i struktury w latach 1995–2012*, "Zeszyty Naukowe Wyższej Szkoły Bankowej we Wrocławiu", Nr 6(44)/2014, pp. 171–190.

⁶ *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).

⁷ Najwyższa Izba Kontroli, *Zarządzanie przez Narodowy Bank Polski rezerwami dewizowymi. Informacja o wynikach kontroli*, 10 marca 2014 r., Nr ewid.14/2014/ P/13/041/ KBF, p. 8.

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

⁸ Ibidem, p. 14–15.

77.1 billions of EUR at the end of 2013, which means they increased for 161%⁹. 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 banks¹⁰.

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.

¹⁰ Najwyższa Izba Kontroli, *Zarządzanie przez Narodowy Bank Polski rezerwami dewizowymi...*, p. 8.

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 limitations¹¹.

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 organization¹²).

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 assets¹³ 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 ounces¹⁴; 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.

¹³ More about the foreign exchange reserves management in Poland see: M. Redo, *Prawne i finansowe aspekty zarządzania rezerwami dewizowymi w Polsce* "Athenaeum. Polskie Studia Politologiczne", vol. 42/2014, pp. 195–208.

¹⁴ Na podstawie Narodowy Bank Polski, *Statystyka bilansu płatniczego. Płynne aktywa i pasywa w walutach obcych, 2000–2013* (accessed: 21.11.2014).

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. Structure¹⁵ of Polish official reserve assets – the condition at the end of October 2014.

	mln EUR	mln USD	%
official reserve assets	79 680	100123	100
I. foreign exchange	74 536	93 659	93,5%
1. securities	64 361	80 873	80,8%
2. currency and deposits	5 612	7 052	7,0%
3. other reserve assets	4 563	5 733	5,7%
II. gold	3 090	3 883	3,9%
III. SDRs	1 160	1 458	1,5%
IV. reserve position in the IMF	894	1 124	1,1%

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.



Source: GoldPrice.org, *Spot Gold Price, 15 Year Gold Price in USD/oz*, November 21, 2014 (<http://www.goldprice.org/spot-gold.html> – accessed: 21.11.2014).

NBP resigned in 2010 from the possibility of locating exchange gold in financial institutions and, at the same time, from having profit in this regard. It was a consequence of limiting by the NBP's Board the range of contractors only up to IMF and the World Bank and shortening the investment scope up to 12 months. 98 tons of gold is, because of that, stored in the Bank of England, and the rest – 4.9 tons in NBP's treasury house¹⁶.

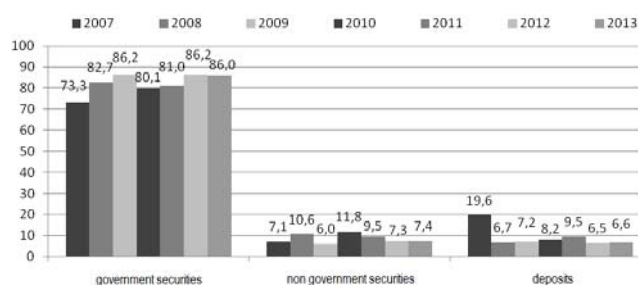
¹⁵ International Monetary Fund, *Balance of Payments and International Investment Position Manual, Sixth Edition (BPM6)*, Washington 2009, § 6.76.

¹⁶ Najwyższa Izba Kontroli, *Zarządzanie przez Narodowy Bank Polski rezerwami dewizowymi...*, pp. 23–24.

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 securities¹⁷. 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 securities¹⁸ – 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 securities¹⁹. 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 2011²⁰.

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-

¹⁷ Narodowy Bank Polski, *Raport Roczny 2011*, Warszawa 2012, p. 63.

¹⁸ Narodowy Bank Polski, *Raport Roczny 2012*, Warszawa 2013, p. 60.

¹⁹ Narodowy Bank Polski, *Raport Roczny 2013*, Warszawa 2014, pp. 59–60.

²⁰ Najwyższa Izba Kontroli, *Zarządzanie przez Narodowy Bank Polski rezerwami dewizowymi...*, p. 18.

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%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 agencies²². 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 risk²³. For example, in 2012 NBP started investing in corporation bonds in USD²⁴.

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 securities²⁵. 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 dollar²⁶; 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)²⁷.

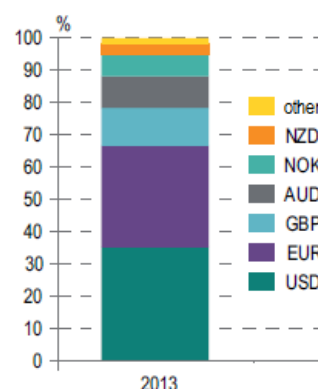
As the chart 3 presents, the dominant part of Polish foreign-exchange reserves – at the end of 2013 up to 93.5% – is being kept in the safest way, meaning in securities of the most credible entities – mainly governments (86%) and on a small scale international institutions and government agencies (7.4%). Even smaller is the share of deposit transactions – only 6.6%. This is the effect of the decrease in trust towards financial in-

stitutions 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%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 kroner and New Zealand dollars (chart 4).

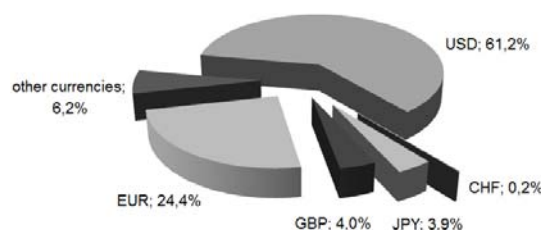
Chart 4. Monetary structure of NBP's reserves in 2013



Source: Narodowy Bank Polski, *Raport Roczny 2013*, Warszawa 2014, p. 59.

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).



Source: International Monetary Fund, *Annual Report 2014. From Stabilization to Sustainable Growth*, October 2014, Appendix Table I.2.

²⁸ On the basis of *Annual Reports* of Narodowy Bank Polski from the years 1998–2007.

²¹ Najwyższa Izba Kontroli, *Zarządzanie przez Narodowy Bank Polski rezerwami dewizowymi...*, pp. 16–17.

²² Narodowy Bank Polski, *Raport Roczny 2007*, Warszawa 2008, p. 64.

²³ Narodowy Bank Polski, *Raport Roczny 2009*, Warszawa 2010, pp. 65–66.

²⁴ Narodowy Bank Polski, *Raport Roczny 2012...*, p. 60.

²⁵ Narodowy Bank Polski, *Raport Roczny 2005*, Warszawa 2006, p. 64.

²⁶ Narodowy Bank Polski, *Raport Roczny 2007...*, p. 70.

²⁷ Najwyższa Izba Kontroli, *Zarządzanie przez Narodowy Bank Polski rezerwami dewizowymi...*, p. 19.

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%)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%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 %).

	USD	EUR	GBP	AUD	NOK	NZD
2001	50	40	10	0	0	0
2002	50	40	10	0	0	0
2003	50	40	10	0	0	0
2004	50	40	10	0	0	0
2005	50	40	10	0	0	0
2006	45	40	15	0	0	0
2007	40	40	15	5	0	0
2008	40	35	15	5	5	0
2009	40	35	15	5	5	0
2010	38	35	13	8	6	0
2011	36	32	15	10	7	0
2012	36	32	15	10	7	0
2013	36	32	12	10	7	3

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.

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 I.2.

In the following years of reducing engagement of the American dollar, there was also an enlarging of the monetary structure of the Australian dollar from 2007 and the Norwegian krone from 2008. Due to the expected further appreciation of the Japanese yen, the NBP's Board accepted in 2008 the possibility of starting an investment in this currency by establishing an acceptable engagement on the level of 2% of reserves³¹. With the same limit, it was also decided to invest reserves in the Swedish krona; however, both of these investments had a transitional character³². The financial crisis of 2008 that began on the American market of mortgage loans and, as a result, the fiscal crisis in the euro zone, contributed to the increasing diversification of the foreign-exchange reserves; as a result, the share of the British pound in the NBP's foreign-exchange reserves increased to 15%, Australian dollar to 10% and the Norwegian krone to 7%. In 2013, it was decided to continue the enlargement of the currency wallet of reserves for the New Zealand's dollar; at the same time, the engagement of the British pound was lowered for 3% (table 3). The share of investments on the markets of developing markets was also increased; however, its scale is still small (chart 4).

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 funds³³; 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,

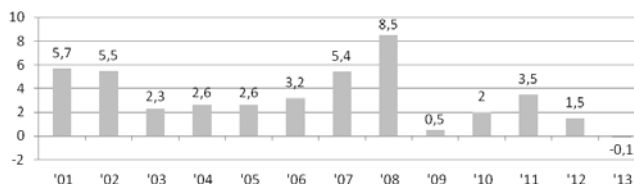
³¹ Narodowy Bank Polski, *Raport Roczny 2008*, Warszawa 2009, p. 63.

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 38/2013, 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.

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