DEVELOPMENT OF FOREIGN EXCHANGE MARKET AFTER THE COLLAPSE OF BRETON WOODS SYSTEM

Abstract
Decline of Bretton Woods system allowed for constituting a new multi-currency system. Since the beginning of the 1980s a spectacular growth in turnover on Forex international market of foreign exchange has been observed. According to data included in BISE reports, mean daily turnover on this market increased from USD 590 billion in 1989 to USD 5.345 billion in 2013.

Polish market of foreign exchange is also undergoing transformations. The fact that Poland can participate in transactions on Forex international market is a result of several successively occurring processes. Decreasing the distance that separated Polish market of foreign exchange from markets of highly developed economies is their result. Achievements of recent years caused significant transformations of quantitative character. Since the beginning of 1998 until 2013, activity on Polish market of foreign exchange grew from USD 2.7 billion to USD 7.6 billion.

The goal of the paper is to show evolution of foreign exchange market with special focus on changes occurring on Polish market of foreign exchange.

JEL Classification Codes: F31, F33, G15.

Keywords: Bretton Woods, Liberalization, Foreign Exchange Market, Currency Markets, Multi-currency system, Polish Forex Market.

Introduction
Mutual convertibility of currencies is really necessary. Firstly it contributes to development of international trade, enhancement of international labour division and effective use of possessed savings, while bringing benefits to the whole international community at the same time.
The goal of the paper is to comprehensively present the evolution of foreign exchange market and transformations that have occurred over several recent years on Polish exchange market that enabled its establishment and development.

The thesis is assumed in the paper that Polish exchange market has significantly evolved since 1970s and it is becoming increasingly more integrated with foreign exchange market.

Triennial Central Bank Survey of Foreign Exchange and Derivatives Market Activity („the triennial survey”), on which the analysis is based, is done every three years by the Bank of International Settlements (BIS) in cooperation with national Central Banks of each country. The survey concerns the rate of the development of the foreign exchange market. The BIS Triennial Central Bank Survey is the most comprehensive source of information on the size and structure of the global foreign exchange market (FX).

Central Banks and monetary authorities and other authorities in 53 jurisdictions participate in the survey. These institutions collected data from about 1.300 banks and other institutions active at the foreign exchange market. The latest survey of the turnover took place in April 2013.

1. Short characteristics of Bretton Woods system

Negative effects of the Great Depression of 1929 urged to look for new solutions also in the sphere of foreign exchange system. It was necessary to create a new monetary system that would determine formal grounds for international monetary cooperation, stimulate economic development and facilitate foreign exchange. Therefore, in July 1944 in Bretton Woods, 44 countries signed an agreement the aim of which was to organise international relationships in the sphere of foreign exchange. The third foreign exchange system was established. In the literature of the subject it is often referred to as Bretton Woods system or dollar-gold system (Oziewicz, 2006, p. 168).

The most important principles of Bretton Woods system included, among others:
1. Universal application of pegged exchange rates.
2. American dollar was the only currency convertible to gold at the rate of USD 35 an ounce (USD 1 = 0.888671 gram of pure gold). Other member states made exchange rates of their currencies against dollar pegged.
3. Federal reserve was obliged to buy dollars for gold at the request of central banks of the signatory states.
4. Deviation from monetary parity could amount to ±1%. Currency interventions were allowed for the purpose of its protection.
5. Change in monetary parity was exclusively allowed in the case of lack of balance of payment.
6. The so-called external currency convertibility that prohibited application of discriminating exchange practices was applied.

Together with the occurrence of Bretton Woods system, International Monetary Fund and Bank for Reconstruction and Development, currently referred to as World Bank were also established (Drabowski, 1979, p. 219). Bretton Woods system was the so-called three-part exchange system that is presented in figure 1.

![Three-part Bretton Woods monetary system]

*Figure 1. Three-part Bretton Woods monetary system*


In this system two types of money, e.g. gold and American dollar performed the role of global currency (Pera, 2006, p. 103). The value of the currency was defined by the relationship of particular currencies towards American dollar, and not to gold. Therefore success of Bretton Woods system was determined by the condition of American economy. Already in 1960s first disturbances in functioning of the system occurred (Laidi, 2009: 3). Consequently on 15th August 1971 the president of the USA, R. Nixon, suspended convertibility of dollar into gold (Bordo, 1993, p. 3; Lutkowski, 1998, p. 108–109). The major reasons for this decision included:
- considerable and long-term deficit in balance of payment;
- remarkable decrease in gold reserves;
- dynamic growth of liabilities of the United States.

All the attempts to rescue the dollar-gold system did not bring expected results. As a result, before the end of 1972 the exchange rates of pound, franc, yen and lira were realised. In successive years a remarkable number of highly-industrialised countries also realised the exchange rates of their currencies. Consequently, Bretton Woods system collapsed.
2. „Forex” foreign exchange market and its development

It can be stated that the decline of Bretton Woods system brought deregulation of currency exchange rates (Zembura, 2010, p. 432–433). In this way this started the emergence of the fourth system of foreign exchange. Jamaica Agreement that was ratified in 1976 became the basis for a new foreign exchange order. The new monetary system was also referred to as contemporary system of foreign exchange or multi-currency system (Nosiadek, 1996, p. 170).

The most important principles of multi-currency system concerned:
1. Pegged currency rates ceased to be binding. All member states were completely free to choose the rules of currency exchange rates.
2. The role of gold was limited through abolishment of the obligation to determine monetary parity in gold.
3. Official price of gold was abolished and central banks were allowed to apply market price of gold.
4. The way in which financial and economic policy was pursued was to provide internal and external stability.
5. SDRs were considered to be the major component of exchange rate reserves (Jurek, 2005, p. 22–23; Budnikowski, 2003, p. 363).

Establishment of multi-currency system allowed for emergence and development of foreign exchange market. Introduction of the amendment to IMF Statute enabled legitimisation of floating exchange rates which resulted in successive realisation of mutual currency exchange rates by particular countries (Janicka, 2009, p. 177–178). Control over the flow of capital was also abolished in time, which facilitated access to foreign capital.

Foreign exchange market described with the notion of Forex (Foreign Exchange) is the largest financial market in the world that is distinguished by the greatest dynamics, liquidity and size of turnover (Zembura, 2011, p. 114). The main features of contemporary market of foreign exchange include the following among others:

- Foreign exchange market is the market of global range and is not geographically located. Monetary transactions are conducted in various world regions.
- The market is decentralised with respect to economic, technological and geographical characteristics.
- This market is the place where the so-called contracts of exchange rate differences, that is Contract for Difference constitute majority of transactions;
- The market is the OTC market, which represents a non-stock exchange market of the over-the-counter type (OTC-market);
- foreign exchange market operates 24 hours a day;
- foreign exchange market is the market that is not controlled by any international institution. Every country conducts individual control over functioning of the foreign exchange market in its own country. In Poland this control

Starting from the 1980s regular increase in the volume of turnover conducted on foreign exchange market can be observed (figure 2). The only decline in turnover that occurred in 2001 was associated with introduction of Euro currency on 1st January 1999.

![Figure 2](image-url)  
*Figure 2. Development of foreign exchange market between 1989 and 2013 in USD billion*  
*Source: BIS, 1996, p. 3; BIS, 2013, p. 3.*

Forex foreign exchange market has been developing all over the world. However the largest share currently falls to the European countries (figure 3).

![Figure 3](image-url)  
*Figure 3. Share of particular world regions in foreign exchange market between 1998 and 2013 in %*  
*Source: BIS, 2013, p. 14.*
Contemporary foreign exchange market has been developing also with respect to offered instruments. Nowadays it also offers the possibility to invest through such instruments as: Spot transactions (spot), outright forwards, foreign exchange swaps (fx swaps), cross-currency interest rate swap (CIRS, currency swaps) and currency options (fx options, options) (Bank For International Settlements – BIS, 2013, p. 18). Development of individual instruments is shown in figure 4.

![Figure 4](image)

**Figure 4.** Development of individual transaction instruments on Forex market between 1989 and 2013 in USD billion


Over the years the largest increase was reported by investments on swap transactions. They grew by over 1170%. On the other hand cash transactions reported increase by 645%. The percentage share of individual instruments is shown in figure 5.

The most important entities on foreign exchange market include:

1. Large commercial banks (e.g. Bank of America, Barclays, Credit Suisse, Goldman Sachs, HSBC, Société Générale, BNP Paribas, Getin Noble Bank, Raiffeisen Bank, JPMorgan, Citigroup, Deutsche Bank) (Chisholm, 2009, p. 89). In Poland 18 banks declare active participation in Forex market.
2. Central banks of particular countries.
3. Other financial institutions.
5. Speculators and arbitrageurs.

Development of foreign exchange market would not be possible without several successively occurring processes including:
   - decline of Bretton Woods system,
Figure 5. Share of individual instruments in transactions on Forex market in percent.
Source: BIS, 2013, p. 9.

- signing Jamaica Agreement,
- approval of the 2nd amendment to IMF,
- facilitated access to the latest technologies, mainly to tele-information technologies,
- dynamic development and universal access to the Internet that allows for making investments from any place in the world;
- omnipresent computerisation of societies.

3. Polish Forex market and its development

Before 1989 turnover on the foreign exchange market had still been dominated by the practice of state monopoly. Transformations on Polish market of foreign exchange started after 1989. At that time the most important events aiming at liberalisation of Polish law on foreign exchange, and at the same time constituting the foundation stone for development of Polish market of foreign exchange included:

1. Ensuring internal convertibility to Polish zloty (January 1990).
2. Introduction of partial convertibility of Polish zloty according to the standards of International Monetary Fund (June 1995).
3. Ensuring external convertibility to Polish zloty (January 1999).
5. Adjustment of Polish law on foreign exchange to OECD standards (before January 2000).
The possibility of establishment of Polish market of foreign exchange was also determined by transformations of Polish system of exchange rate. It is presented in table 1.

**Table 1. Transformations of the Polish system of exchange rate mechanism between 1990 and 2002**

<table>
<thead>
<tr>
<th>Time</th>
<th>Exchange rate system</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.01.1990 – 14.10.1991</td>
<td><strong>Fixed exchange rate system</strong></td>
</tr>
<tr>
<td></td>
<td>– devaluation of exchange rate of Polish zloty by 31.6%</td>
</tr>
<tr>
<td></td>
<td>– exchange rate towards American dollar was 0.95 for USD 1</td>
</tr>
<tr>
<td></td>
<td>– devaluation of exchange rate of Polish zloty by 16.8%</td>
</tr>
<tr>
<td></td>
<td>– fixed exchange rate towards the basket of five currencies: American dollar</td>
</tr>
<tr>
<td></td>
<td>constituted 45% of this basket, German mark 35%, pound sterling 10% and</td>
</tr>
<tr>
<td></td>
<td>French franc and Swiss franc, 5% each</td>
</tr>
<tr>
<td>15.10.1991 – 15.05.1995</td>
<td><strong>Crawling peg exchange rate system</strong></td>
</tr>
<tr>
<td></td>
<td>– devaluation of the exchange rate of Polish zloty by 8%</td>
</tr>
<tr>
<td></td>
<td>– monthly rate of devaluation was decreased to 1.2%</td>
</tr>
<tr>
<td></td>
<td>– the band of permissible fluctuations in exchange rate was extended to ±2%</td>
</tr>
<tr>
<td>16.05.1995 – 11.04.2000</td>
<td><strong>Crawling band system</strong></td>
</tr>
<tr>
<td></td>
<td>– a new basket of currencies was determined: euro constituted 55% of this basket</td>
</tr>
<tr>
<td></td>
<td>and American dollar constituted 45%,</td>
</tr>
<tr>
<td></td>
<td>– monthly rate of devaluation was decreased to 0.3%,</td>
</tr>
<tr>
<td></td>
<td>– permissible fluctuations in the exchange rate of Polish zloty increased to ±15%,</td>
</tr>
<tr>
<td>Since 12.04.2000</td>
<td><strong>System of independent floating exchange rate</strong></td>
</tr>
<tr>
<td>Since 1.01.2002</td>
<td>– complete deregulation of Polish zloty and adoption of floating exchange rate</td>
</tr>
<tr>
<td></td>
<td>since then exchange rate of Polish zloty is shaped under the influence of demand</td>
</tr>
<tr>
<td></td>
<td>and supply on currency market</td>
</tr>
<tr>
<td></td>
<td>– Polish zloty became a fully convertible currency with members of the EU,</td>
</tr>
<tr>
<td></td>
<td>EEA and OECD</td>
</tr>
</tbody>
</table>


Emergence and development of Polish market of currency was the consequence of events described before. Establishment of appropriate institutions, application of regulations existing in market economy and also deregulation of market mechanisms allowed for inclusion of Polish market of foreign exchange in the group of already developed currency markets.

Transformations that have taken place over the recent years brought significant changes of quantitative and qualitative nature. From the beginning of 1998 until 2013 the volume of turnover on Polish market of foreign exchange increased from 2799 USD million to 7564 USD million. It was a growth by over 280% (figure 6).
Dynamic growth of turnover on Polish market of foreign exchange was reported in 2001. This increase was mainly caused by:

– the possibility of legal functioning of foreign financial institutions such as banks and insurance companies in Poland (since 1999);
– high interest rates that encouraged foreign investors to invest in Poland.

Decline in turnover on Polish market of foreign exchange observed between 2007 and 2013 should not be really surprising. It ought to be remembered that between 2007 and 2009 majority of economies, especially American and European, faced the global financial crisis and then they had to face its consequences both in financial and real spheres.

Over the analysed years majority of transactions on Polish market of foreign exchange were concluded with financial entities (table 2).

More transactions were concluded through financial entities with non-residents than with residents, whereas through non-financial entities more transactions were concluded with residents than non-residents (table 3).

### Table 2. Subjective structure of transactions on Polish market of foreign exchange between 2004 and 2013 (in USD million)

<table>
<thead>
<tr>
<th>Counterparty</th>
<th>2004</th>
<th>2007</th>
<th>2010</th>
<th>2013</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Amount</td>
<td>%</td>
<td>Amount</td>
<td>%</td>
</tr>
<tr>
<td>with financial institutions</td>
<td>5 707</td>
<td>90</td>
<td>7 793</td>
<td>88</td>
</tr>
<tr>
<td>with non-financial customers</td>
<td>647</td>
<td>10</td>
<td>1 020</td>
<td>12</td>
</tr>
<tr>
<td><strong>TOTAL</strong></td>
<td><strong>6 354</strong></td>
<td><strong>100</strong></td>
<td><strong>8 813</strong></td>
<td><strong>100</strong></td>
</tr>
</tbody>
</table>

Table 3. Value of transactions concluded with residents and non-residents on Polish market of foreign exchange between 2004 and 2013 (in USD million)

<table>
<thead>
<tr>
<th>Years</th>
<th>with financial institutions</th>
<th>with non-financial customers</th>
<th>TOTAL</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Resident</td>
<td>Non-resident</td>
<td>Resident</td>
</tr>
<tr>
<td>2004</td>
<td>737</td>
<td>4,970</td>
<td>6,37</td>
</tr>
<tr>
<td>2007</td>
<td>914</td>
<td>6,879</td>
<td>997</td>
</tr>
<tr>
<td>2010</td>
<td>1,350</td>
<td>5,726</td>
<td>760</td>
</tr>
<tr>
<td>2013</td>
<td>1,182</td>
<td>5,322</td>
<td>1,048</td>
</tr>
</tbody>
</table>


In general, the share of transactions with non-residents is significantly higher than with residents (figure 7).

![Figure 7. Share of transactions with residents and non-residents on Polish market of foreign exchange between 2004 and 2013 in %](image)


Qualitative development of Polish market of foreign exchange is noticed while analysing its individual instruments. Specific development of Polish market of foreign exchange, with available instruments taken into consideration, is shown in figure 8. Figure 9 presents the share of individual instruments in transactions in total in percent.

The largest development was reported by swap transactions, with 60% share in market. Significant interest in this type of instruments mainly results from various possibilities of their application. Foreign banks applied foreign exchange swaps to manage liquidity in Polish zloty, or to purchase government bonds denominated in Polish currency (NBP, 2013, p. 10).
Figure 8. Development of particular transaction instruments on Polish market of foreign exchange between 2004 and 2013 (in USD million)

Figure 9. Share of particular instruments in transactions on Polish market of foreign exchange in %
Option transactions are the least popular. Regular decrease of their value can be clearly observed. After negative experiences with option transactions between 2008 and 2009, investors still distrustfully approach option transactions as a tool of minimisation of exchange rate risk.

Table 4 shows how turnover on Polish market of foreign exchange was shaped between 2004 and 2013. The entity in transaction and particular instruments are taken into consideration.

**Table 4. Subjective structure of transactions on Polish market of foreign exchange between 2004 and 2013 (in USD million)**

<table>
<thead>
<tr>
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<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Spot transactions</td>
<td>624</td>
<td>1306</td>
<td>806</td>
<td>1599</td>
<td>755</td>
<td>1200</td>
<td>1086</td>
<td>1238</td>
</tr>
<tr>
<td>with financial institutions</td>
<td>314</td>
<td>1300</td>
<td>309</td>
<td>1586</td>
<td>296</td>
<td>1197</td>
<td>398</td>
<td>1227</td>
</tr>
<tr>
<td>with non-financial customers</td>
<td>310</td>
<td>6</td>
<td>497</td>
<td>13</td>
<td>459</td>
<td>3</td>
<td>688</td>
<td>11</td>
</tr>
<tr>
<td>Outright forwards</td>
<td>300</td>
<td>29</td>
<td>440</td>
<td>87</td>
<td>293</td>
<td>25</td>
<td>451</td>
<td>13</td>
</tr>
<tr>
<td>with financial institutions</td>
<td>12</td>
<td>25</td>
<td>21</td>
<td>86</td>
<td>72</td>
<td>24</td>
<td>157</td>
<td>12</td>
</tr>
<tr>
<td>with non-financial customers</td>
<td>288</td>
<td>4</td>
<td>419</td>
<td>1</td>
<td>221</td>
<td>1</td>
<td>294</td>
<td>1</td>
</tr>
<tr>
<td>FX swaps</td>
<td>450</td>
<td>3645</td>
<td>665</td>
<td>5216</td>
<td>998</td>
<td>4370</td>
<td>666</td>
<td>3915</td>
</tr>
<tr>
<td>with financial institutions</td>
<td>411</td>
<td>3645</td>
<td>584</td>
<td>5270</td>
<td>970</td>
<td>4362</td>
<td>621</td>
<td>3914</td>
</tr>
<tr>
<td>with non-financial customers</td>
<td>39</td>
<td>0</td>
<td>81</td>
<td>9</td>
<td>28</td>
<td>8</td>
<td>45</td>
<td>1</td>
</tr>
<tr>
<td>CIRS</td>
<td>1</td>
<td>2</td>
<td>43</td>
<td>25</td>
<td>2</td>
<td>77</td>
<td>0</td>
<td>125</td>
</tr>
<tr>
<td>with financial institutions</td>
<td>0</td>
<td>2</td>
<td>28</td>
<td>25</td>
<td>2</td>
<td>77</td>
<td>0</td>
<td>125</td>
</tr>
<tr>
<td>with non-financial customers</td>
<td>1</td>
<td>0</td>
<td>15</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Options</td>
<td>59</td>
<td>118</td>
<td>228</td>
<td>115</td>
<td>62</td>
<td>66</td>
<td>26</td>
<td>44</td>
</tr>
<tr>
<td>with financial institutions</td>
<td>4</td>
<td>116</td>
<td>16</td>
<td>111</td>
<td>10</td>
<td>66</td>
<td>6</td>
<td>44</td>
</tr>
<tr>
<td>with non-financial customers</td>
<td>55</td>
<td>2</td>
<td>212</td>
<td>4</td>
<td>52</td>
<td>0</td>
<td>20</td>
<td>0</td>
</tr>
</tbody>
</table>


Apart from segment development, observed qualitative transformations also included:
- limiting the position of central bank on Polish market of foreign exchange;
- growing awareness of investors towards exchange rate risk they are exposed to:
– regular growth of customer segment.

The factors affecting development of Polish market of foreign exchange include:

– ensuring complete convertibility for Polish zloty;
– transformations towards liberalisation of exchange rate policy;
– amending Polish Foreign Exchange Law;
– accession of Poland to European Union.

**Conclusions**

On the basis of the presented analysis the following conclusions can be formulated:

– Since the beginning of transformation, Polish market of foreign exchange has been developing smoothly and dynamically.

– Large share of transactions with non-residents is a characteristic feature of Polish market of foreign exchange. This proves that Polish market of foreign exchange is gaining increasingly more qualities typical of exterritorial market. This means that fluctuations of exchange rate are really correlated with changes in financial parameters that occur on international market of foreign exchange.

– Polish market of foreign exchange is becoming more and more mature which enables its closer relations with international market of foreign exchange (Matkowska, 2013, p. 354–355; Bilski, Janicka, Konarski, 2013, p. 29).

It ought to be explicitly acknowledged that emergence and development of Polish market of foreign exchange has been determined by transformations occurring in recent years. Decreasing the distance between Polish market of foreign exchange and markets of highly-developed economies will be the consequence of these changes.

**References**


Bank for International Settlements. (2002), *Foreign Exchange and Derivatives Mar-


NBP. (2013). Wyniki badania obrotów w kwietniu 2013 r. na rynku walutowym i rynku pozagiełdowych instrumentów pochodnych w Polsce, Warszawa.