

## THE IMPORTANCE OF THE US AND POLISH MACROECONOMIC VARIABLES FOR INVESTORS ON THE WARSAW STOCK EXCHANGE

Grzegorz Paluszak<sup>\*</sup>, Magda Popławska<sup>\*\*</sup>

### ABSTRACT

This study investigates the impact of the scheduled US and Poland macroeconomic news releases on investment decisions on the Warsaw Stock Exchange (WSE). Our real time macroeconomic data cover the period between July 2006 and June 2009. The macroeconomic variables used include three groups of indexes: the general situation in the economy (GDP and unemployment rate for Poland, GDP and Nonfarm Payrolls for US), customers' situation (CPI and Retail Sales Dynamics for Poland and US) and situation in enterprises sector (PPI and Industrial Production Dynamics for Poland and US). We find evidence that to a larger extent the investment decisions on the WSE are driven by the US macroeconomic variables rather than the Polish ones. Specifically, we find significant effects of the general situation in the US economy on the investment decisions. Of the macroeconomic news releases, the US GDP has the largest impact on the WSE.

**Keywords:** *Stock Exchange, Macroeconomic Indicators, Stock Indices, Investment Decisions*

## EU THE IMPORTANCE OF THE US AND POLISH MACROECONOMIC VARIABLES FOR INVESTORS ON THE WARSAW STOCK EXCHANGE

### INTRODUCTION

Since the early 1990s, Poland has undergone important economic and political changes. The liberalization of the Polish economy has led to a rapid growth in market capitalization and trading value of stock markets as well as an increase of the importance of the European and international financial environment for the investors on the Warsaw Stock Exchange (WSE). It is

---

\* Poznan University of Economics, Poznan, Poland, E-mail: g.paluszak@ue.poznan.pl

\*\* Poznan University of Economics, Poznan, Poland, E-mail: poplawska.magda@gmail.com

therefore reasonable to expect that on investment decisions on the WSE will influence not only the Poland macroeconomic news releases, but also the US macroeconomic news releases<sup>1</sup>.

A large volume of literature uses revised macroeconomic data<sup>2</sup>. However, it is important to take account of the fact that macroeconomic data available to a researcher are typically different from the macroeconomic data available to an investor in real time. Researchers have access to macroeconomic data that have been revised many times. In sharp contrast, when making an investment decision in real time, an investor has access to preliminary first-releases of macroeconomic data. This study is also based on real time macroeconomic data<sup>3</sup>.

The aim of the research was to study to which type of data and from which source – the United States of North America (USA) or the domestic economy – the players of Polish stock exchange attach importance. In this research, a thesis that the stock exchange players in Poland take more interest in the chosen macroeconomic data rolling in from the USA than the Polish economy situation was put forward. With the aim of distinguishing the chosen macroeconomic ratios there was made a division of them into three groups: ratios illustrating the general situation in the economy, ratios illustrating customers' situation and ratios illustrating situation in enterprises sector. Data, that were included in the analysis, were published between July 2006 and June 2009. Each publication (total 465) was examined from the angle of its accordance with the previous market expectations and then there was analysed the reaction of investors on Warsaw Stock Exchange on the basis of moulding WIG index.

The reminder of the study is organized as follows. Section 1 presents and describes the scheduled US and Poland macroeconomic data releases for investors. Section 2 presents research method and its assumptions. Section 3 provides results and offers a short discussion. Section 4 concludes the paper.

## **DATA**

There is a number of macroeconomic indexes that examine the condition economy as a whole and also its individual elements (e.g. from consumer and producer point of view). By means of them, the stock players try to foresee at least a little of what kind of sentiments will obtain on stock

---

<sup>1</sup> More detailed discussion see (Łon, 2006).

<sup>2</sup> See (Abugri, 2008), (Åijö, 2007), (Dao & Wolters, 2008), (Gębka, 2007), (Meric et al., 2007), (Morelli, 2002), (Nikkinen & Sahlström, 2004) and (Verma & Verma, 2008).

<sup>3</sup> See (J.Döpke, D.Hartman & Ch.Pierdzioch, 2008).

## **The Importance of the US and Polish Macroeconomic Variables for Investors on the Warsaw Stock Exchange**

market – optimistic or pessimistic and make decisions to purchase or sell shares in order to pursue the profit. It also should be emphasised that stock players do not take into consideration only data arriving from domestic economy. The dependence of the economies of individual countries on changes in the global economy has been growing more and more and the world of finances has focused invariably on impulses from the US since many years (Kiepas, Kwiecień & Śliwa, 2009). In this paper there was done a division of macroeconomic indexes into: the indexes of general economic situation, indexes of consumers' situation and indexes of situation of companies' sector.

Indexes of general economic situation characterise the state of economy as a whole<sup>4</sup>. The widest and most comprehensive of barometers of general economic situation of a country is Gross Domestic Product (GDP) (Yamarone, 2006). In Poland, the dynamics of GDP in relation to analogous quarter of previous year in average flat prices of previous year constitutes a basic form of data presentation (MacroNext.pl, 2009). In the USA, there is announce only quarterly growth rate in relation to previous quarter (Rp.pl, 2009). The very important indexes in this category are also indexes of the employment situation. In Poland, in this case the unemployment rate is the most often observed. In the USA – due to used methodology of measurement - the unemployment rate is less essential and the stock players' eyes are fixed on Non-Farm Employment Change - Nonfarm Payroll (EduInwest.pl, 2009).

An extraordinarily important index amongst the ones concerning consumers' situation is economic report, in which measurers of the retail sale value in a certain economy are presented. It constitutes the first serious signal of existing trends of consumers' expenses in a certain country that are driving force of the economy (NewTrader.pl, 2009). Data that relates to annual dynamics of retail sale (in case of Poland) and data that relates to the previous month (in case of USA) catch the players' attention. Consumer Price Index (CPI)<sup>5</sup>, that measures the consumer prices, that is the price of end client of goods or services, is also an essential index in this category (DM X-

---

<sup>4</sup> To this research there was chosen these macroeconomic indexes that are considered as the most comparable in the context of the frequency of their publications and the content information.

<sup>5</sup> It is worth to bear in mind that in the economies of most developed countries (e.g. in the USA) the CPI is "unseasoned" and the investors concentrates on changes month by month. It is different in Poland, where the market concentrates on change year by year, because data are not unseasoned (DM X-Trade Brokers SA, 2009).

## **Grzegorz Paluszak, Magda Popławska**

Trade Brokers SA, 2009). In the USA an auxiliary index involving all goods except from food and energy (so called core CPI) has particularly great importance (Yamarone, 2006).

The industrial production is the most important index illustrating the economic trend of manufacturing sector. Its dynamics determines in aggregated manner the growth of production level of physical good in manufacturing, mining and public utility sector (DM X-Trade Brokers SA, 2009). The market sentiments are driven by data of production that relates to annual dynamics (in case of Poland) and data that relates to previous month (in case of USA). Another important index in this indexes' category is Producer Price Index (PPI) that demonstrates the price trends from a salesman perspective that is from the supply side of the economy (Yamarone, 2006). The investors' attention is focused on published data in relation to analogous month of previous year (in the range of the Polish economy) and on changes month by month that characterise the American economy. Aside from that in the USA core PPI, that is the index that does not allow for changeable price of energy and food, plays a very important role in the report.

### **RESEARCH METHOD AND ITS ASSUMPTIONS**

In order to carry out the analysis the following assumptions were taken:








1. The stock exchange players react only to data that differs from the prognoses – it was assumed that all data compliant with previous market prognoses are already in share price,
2. The reactions of investors are examined just after the macroeconomic publication is announced – it is aimed at elimination of the influence of other information, that constantly arriving in the market place on a change of WIG index,
3. The 'reaction' is conceived as a change of the WIG index value for about at least 0,25% – on the basis of observed variability of WIG index it was assumed that at least such an index movement enables to eliminate share price randomness as a reason of the rate change,
4. The change is counted in the relation to the value WIG index had at the time of the announcement of the publication – the assumption that index value at the time of publishing information is a point of reference enables to eliminate the influence on WIG index of information and events, that were arriving in the market place till the time when the analysed publication was announced,
5. There is sometimes announced more than a piece of information at the given time. However in the analysis, the only examined publication's

### The Importance of the US and Polish Macroeconomic Variables for Investors on the Warsaw Stock Exchange

influence on the market was evaluated and whole decrease or increase of the index is attributed to it.

Firstly, each observation was analysed (including 465 macroeconomic data releases within period between July 2006 and June 2009) from viewpoint of its accordance with the previous market expectations. Secondly, the change of WIG index value after announcing a piece of information was analysed.

**Table 1: Theoretical Reactions on Stock Market to Publication of Each Index**

| indicator   | direction of change of WIG Index | reaction of WIG       |
|---|----------------------------------|-----------------------|
| <br><b>Gross Domestic Product</b>  |                                  | increase in WIG index |
|   |                                  | decrease in WIG index |
| <br><b>Unemployment Rate</b>       |                                  | decrease in WIG index |
|   |                                  | increase in WIG index |
| <br><b>Nonfarm Payroll</b>         |                                  | increase in WIG index |
|   |                                  | decrease in WIG index |
| <br><b>Retail Sales</b>            |                                  | increase in WIG index |
|   |                                  | decrease in WIG index |
| <br><b>Consumer Price Index</b>  |                                  | decrease in WIG index |
|   |                                  | increase in WIG index |
| <br><b>Industrial Production</b> |                                  | increase in WIG index |
|   |                                  | decrease in WIG index |
| <br><b>Producer Price Index</b>  |                                  | decrease in WIG index |
|   |                                  | increase in WIG index |

Source: Own elaboration

**Grzegorz Paluszak, Magda Popławska**

The publication of each index should theoretically carry some reaction on stock market. The Table 1 shows these relationships. Nevertheless, this does not happen in practice. The reason for this is the fact that before a certain macroeconomic index is published many prognoses and analyses, which concern the forming of its value, get to the market. Consequently, many pieces of information are discounted by jobbers and are included in share prices before they are published. Only data, that differs from prognoses, can produce the hum on the market.

**EMPIRICAL RESULTS AND DISCUSSION**

The summary empirical results for the Poland and USA were presented in Table 2 and 3. The biggest interest is aroused by Gross Domestic Product (GDP) data of both the US and Polish economy. However, this reaction on the USA macroeconomic data releases was much stronger, because the players reacted in 58.62% of cases (in Poland 41.67%). Relatively big interest aroused the second of indexes of the general economy situation too – namely the Non-Farm Employment Change (Nonfarm Payroll) in the US (44.83%), while data of unemployment rate in Poland has weaker effect on the Polish stock market (23.08%).

**Table 2: The Summary Results for Poland**

| Index                        | 1                          | 2                        | 3                        | 4                            | 5        |             | 7      |
|------------------------------|----------------------------|--------------------------|--------------------------|------------------------------|----------|-------------|--------|
|                              | The number of publications | Compliant with prognoses | Different from prognoses | Different from prognoses (%) | 6        |             |        |
|                              |                            |                          |                          |                              | reaction | no reaction |        |
| <b>GDP</b>                   | 12                         | 0                        | 12                       | 100,00%                      | 5        | 7           | 41,67% |
| <b>Unemployment rate</b>     | 35                         | 22                       | 13                       | 40,00%                       | 3        | 10          | 23,08% |
| <b>Retail sales</b>          | 35                         | 0                        | 35                       | 100,00%                      | 10       | 25          | 28,57% |
| <b>CPI</b>                   | 35                         | 10                       | 25                       | 71,43%                       | 2        | 23          | 8,00%  |
| <b>Industrial production</b> | 35                         | 2                        | 33                       | 94,29%                       | 7        | 26          | 21,21% |
| <b>PPI</b>                   | 35                         | 5                        | 30                       | 85,71%                       | 5        | 25          | 16,67% |

Source: Own calculations

## The Importance of the US and Polish Macroeconomic Variables for Investors on the Warsaw Stock Exchange

Emotions amongst stock players were also roused by the publications of indexes illustrating consumers' situation in the USA. It results from the fact, that the consumption – similarly as in the USA – represents in Poland the main constituent of GDP and it amounts to 60% (Gazeta Wyborcza, 2009). Because of this the investors reacted in 50.00% observations on retail sale dynamics that differs from previous expectations. However, it can be surprising that the market investors reacted so weakly on retail sales dynamics in Poland (28.57%).

**Table 3: The Summary Results for the USA**

| Index                        | 1                          | 2                        | 3                        | 4                            | 5        |             | 7      |
|------------------------------|----------------------------|--------------------------|--------------------------|------------------------------|----------|-------------|--------|
|                              | The number of publications | Compliant with prognoses | Different from prognoses | Different from prognoses (%) | 6        |             |        |
|                              |                            |                          |                          |                              | reaction | no reaction |        |
| <b>PKB</b>                   | 36                         | 7                        | 29                       | 80,56%                       | 17       | 12          | 58,62% |
| <b>Nonfarm Payroll</b>       | 34                         | 5                        | 29                       | 85,29%                       | 13       | 16          | 44,83% |
| <b>Retail sales</b>          | 35                         | 3                        | 32                       | 91,43%                       | 16       | 16          | 50,00% |
| <b>CPI</b>                   | 35                         | 9                        | 26                       | 73,53%                       | 10       | 16          | 38,46% |
| <b>core CPI</b>              | 35                         | 15                       | 20                       | 55,88%                       | 11       | 9           | 55,00% |
| <b>Industrial production</b> | 34                         | 4                        | 29                       | 88,24%                       | 12       | 16          | 41,38% |
| <b>PPI</b>                   | 35                         | 3                        | 32                       | 91,43%                       | 8        | 24          | 25,00% |
| <b>core PPI</b>              | 35                         | 8                        | 27                       | 79,41%                       | 7        | 20          | 25,93% |

**Source:** Own calculations

It should be emphasised that a little importance was attached to the CPI inflation index (38.46%) in the US by stock players.<sup>6</sup> Data of core CPI

<sup>6</sup> It has a direct connection with the fact that petroleum price that between 2006 and 2009 fluctuated a lot, has a great influence on this index. At the beginning of 2006 the price of a petroleum barrel was 60\$ (Uraziński, 2008), when in 2008 it rose to even 140\$ (Gazeta Prawna, 2009), and then in the middle of June it plummeted to even 60\$ (Jóźwik, 2009). Such big changes of petroleum price in such a short period had a strong influence on analytical value of the main CPI

provoked a bigger reaction of stock players (55.00%). In case of Poland it was only 8.00%.

In comparison with the reaction on the Polish industrial production, data from the USA also aroused more interest of stock players. On data concerning of industrial production in the USA the reaction was 41.38%, while on data concerning of industrial production in Poland - only 21.21%. However, data of PPI inflation concerning Poland and the USA, were rather omitted in decision-making by investors. The low reaction on both indexes illustrates the companies' situation in Poland and small interest of PPI inflation in USA. It indicates also that PPI inflation has little influence on GDP. Therefore PPI inflation is often disregarded by investors. So big disproportion of reaction on the Polish macroeconomic data in comparison with the US data we can doubtlessly explain partially with "the big financial crisis" – which is considered as the biggest crunch since the 1930s of last century<sup>7</sup>. The panic did not omit Polish stock exchange too.<sup>8</sup> One of the rules was confirmed – that stock exchange is governed in 80% by investors' sentiments and only in remaining 20% by investment strategies (Kuśnierz 2007).<sup>9</sup>

---

inflation index. That why investors paid much bigger attention on the core CPI index, which do not allow for food and energy prices.

<sup>7</sup> Generally, it is assumed that the crisis had revealed itself in July 2007 since the progressive decrease in property prices in the USA. The reason why the crisis appeared was a faulty manner of financing mortgages in the USA and incorrectly estimated risk of shares connected with real estate market. The American crisis on financial market spread in very short time on the whole world and during only a couple of months influenced share quotation on the whole world (Suchodolski, 2008).

<sup>8</sup> Since July peak (6.07.2007 WIG amounted to 67568.51 points) only the WIG index lost in reference to its February "all-time low" (17.02.2009 the value of WIG index at the end of session amounted to 21274.28 points) even 68.52% (the situation of small and middle companies, which led in growth of rates during bull market in 2003-2007, was even worse).

<sup>9</sup> It does not refer only to individual investors' behaviours but also to institutional investors (institutional investors have bigger stake in turnover of shares on Warsaw Stock Exchange than individual investors), who – as surveys show – act in the same way as the crowd by letting themselves fall into trap, which was set by the market. It appears that the most institutional investors act similarly as individual investors and both groups are subject to market psychology, sentiments or emotions to almost the same degree (Buczek, 2004). Then, the always-changing expectation on the market has an enormous influence on the scheduled share prices. The market that is oriented optimistically reacts only to "good" news and disregards "bad" ones. However the pessimistically-oriented market reacts mostly to "bad" news and disregards "good" ones (Sławiński, 2006). The last situation could appear on stock exchange within analysed period.



## The Importance of the US and Polish Macroeconomic Variables for Investors on the Warsaw Stock Exchange

As the economic situation in the USA was getting worse, the decreases on the stock exchanges all over the world were deepening. Worse and worse information considering the economy was arriving from the USA, which only worsened the expectations on the Warsaw Stock Exchange. In this situation the Polish stock players seemed not to care about the condition of Polish economic trend, which admittedly was slower, but in comparison with other countries the general situation of the Polish economy was still relatively good.<sup>10</sup> Because of that, even when data differs a little from prognoses, it still was relatively good and it is also way investor attention was focused on continually worse situation in the USA, from where most of data was arriving. We can assume the investors were afraid that constantly deepening crisis would also translate itself into the Polish economy and hence were stronger reactions on data pouring from US and weaker on data from Poland.<sup>11</sup>

Another cause of the strong interest in the data concerning USA can be the fact that USA economy has so called 'twin deficits', that is budget deficit and deficit of current account, which enforce its strong demand on capital from abroad.

The demand for capital of the American economy is satisfied mainly by foreign countries, not the domestic savings.<sup>12</sup> Moreover, the position of capital market in European Union is still weaker than the USA Stock Exchange, because capital market in Europe is greatly dispersed.

In the situation of the weaknesses of the capital market in Europe and at the same time the strong demand of the American economy and stock exchange for capital from abroad and growing debt of the USA economy, the

---

<sup>10</sup> GDP dynamics never fell beyond zero and unemployment rate in analysed period was successfully dropping from the level of 16.00% in June 2006 to 8.80% in October 2008. Then, true it rose to 11.20% in March 2009, but still it was not a big increase. It was similar to economic situation of other countries. E.g. the unemployment rate in Great Britain according to newest data rose to 7.8% - the highest since December 1996 and 2.44 million people remained without work - the highest value since 1995, that is for 14 years (Financial Times, 2009). Similarly the German economy is not in a good condition. GDP shrank 1.7% in the fourth quarter of 2008 which was the biggest decrease of GDP in 22 years (Forsa.pl, 2009).

<sup>11</sup> However, it still does not explain all aspects because retail sale or sold production was actually worse - and there was no reaction from stock players.

<sup>12</sup> The most important reasons for investing capital in USA are: still quite a strong position of American dollar (USD), high liquidity of American stock exchange, quite elastic market (especially work market) relatively weakly constrained with regulations (but the result of crisis may be bigger precaution regulations, especially in financial sector) and well developing ICT market of XX century.

investors in Poland try to monitor the USA macroeconomic data, which is the source of negative external effects in the world economy. Hence stock players in Poland made their decision on the WSE to a larger extent were using the USA macroeconomic variables rather than the Polish ones.

We find evidence that to a larger extent the investment decisions on the WSE are driven by the USA macroeconomic variables rather than the Polish ones. Specifically, we find significant effects of the general situation in the USA economy on the investment decisions. Of the macroeconomic news releases, the USA GDP has the largest impact on the WSE. A little interest was aroused by the PPI inflation and core CPI inflation in the low inflation environment.

The macroeconomic indexes play a major role both in the whole economy and just on stock market. They are the source of information for politicians, economists, investors and jobbers too. The last ones use them primarily to define the best moment to entry and leave the market. You should still bear in mind indexes have their disadvantages. One of them is the burdening with "base effect". This effect occurred in case of data about Polish industrial production in 2008. Within six months, as from March, the dynamic of changes of monthly production was upset by holidays and long weekends, which in 2007 occurred in different months. When you managed to go through this period and to compare the values in September it was a surprise to know that the economy restrained faster than expected (Cymcyk, 2009).

It is also worth to emphasize the fact that when investors are governed by emotions then the meaning of macroeconomic indexes is practically marginalized. Such situations occur mainly in the pick of bull and bear market (Cymcyk, 2009). Then the moods (respectively optimistic or pessimistic) first and foremost govern the stock exchange and most of fundamental factors is pushed aside.

## **CONCLUSIONS**

This paper investigates the influence of the scheduled USA and Poland macroeconomic news releases on investment decisions on the WSE in the period between July 2006 and June 2009. Investors reacted more often on the USA macroeconomic index than on its equivalent index that characterizes the Polish economy. The results reveal that investors regard the general situation in the USA economy as highly significant for the investment decisions on the WSE as hypothesized. The results highlight the greatest effect of the USA GDP on the investment decisions on the WSE.

## The Importance of the US and Polish Macroeconomic Variables for Investors on the Warsaw Stock Exchange

### REFERENCES

- Abugri, B.A. (2008). Empirical relationship between macroeconomic volatility and stock returns: Evidence from Latin American markets. *International Review of Financial Review*, 17, 396-410.
- Äijö, J. (2007). Impact of US and UK macroeconomic news announcements on the retrun distribution implied by FTSE-100 index options. *International Review of Financial Review*, 17, 242-258.
- Buczek, S. (2004, November). (Nie)profesjonalne zachowania inwestorów profesjonalnych, *Rynek Kapitałowy*, 11, 87-90.
- Cymcyk, P. (2009, September). Wskaźniki makroekonomiczne, *Przegląd Finansowy Bankier.pl*, 33 (97), 1-24.
- Dao, Ch.-M., & Wolters, J. (2008). Common stochastic volatility trends in international stock returns. *International Review of Financial Review*, 17, 431-445.
- Daytrading.com.pl. (2009, August 20). Metody gry na giełdzie, from the World Wide Web: <http://www.daytrading.com.pl/metody-gry-na-gieldzie/>.
- DM X-Trade Brokers SA. (2009, July 30). Wskaźniki makroekonomiczne, from World Wide Web: <http://www.xtb.pl/strona.php?p=435>.
- Döpke, J., Hartman, D., & Pierdzioch, Ch. (2008). Real-time macroeconomic data and ex ante stock return predictability. *International Review of Financial Review*, 17, 274-290.
- EduInwest.pl. (2009, July 31). Bezrobocie, from World Wide Web: <http://www.eduinvest.pl/fundamentalna/publikacje/bezrobocie>.
- Financial Times. (2009, August 26), Jobless level highest since 1995, from World Wide Web: <http://www.ft.com/cms/s/0/b0c09ab6-871c-11de-9280-00144feabdc0.html>.
- Forsa.pl (2009, August 26). PKB Niemiec najniższe od 22 lat, from World Wide Web: [http://forsa.pl/artykuly/115736,pkb\\_niemiec\\_najnizsze\\_od\\_22\\_lat.html](http://forsa.pl/artykuly/115736,pkb_niemiec_najnizsze_od_22_lat.html).
- Gazeta Prawna. (2009, August 26). USA: Cena ropy naftowej pobiła rekord wszechczasów sięgając prawie 140\$, [http://biznes.gazetaprawna.pl/artykuly/20966,usa\\_cena\\_ropy\\_naftowej\\_pobila\\_rekord\\_wszechczasow\\_siegajac\\_prawie\\_140.html](http://biznes.gazetaprawna.pl/artykuly/20966,usa_cena_ropy_naftowej_pobila_rekord_wszechczasow_siegajac_prawie_140.html)
- Gazeta Wyborcza. (2009, August 26). Polska może wzmocnić swoje znaczenie gospodarcze, from World Wide Web: [http://wyborcza.pl/1,76842,6842736,\\_FTD\\_\\_\\_Polska\\_moze\\_wzmocnic\\_swe\\_znaczenie\\_gospodarcze.html](http://wyborcza.pl/1,76842,6842736,_FTD___Polska_moze_wzmocnic_swe_znaczenie_gospodarcze.html).
- Gębka, B. (2007). Volume- and size-related lead-lag effects in stock returns and volatility: An empirical investigation of the Warsaw Stock Exchange. *International Review of Financial Review*, 17, 134-155.
- Graham, B. (2007). *Inteligentny Inwestor*. Warszawa: Wydawnictwo Studio EMKA.

## Grzegorz Paluszak, Magda Popławska

- Jóźwik, T. (2009, August). Regulatorzy cen ropy, *Forbes*, 8, 104-105.
- Kancelaria Prawna Skarbiec.Biz. (2009, August 20). Krótka sprzedaż, from World Wide Web: <http://www.skarbiec.biz/krotka-sprzedaz.htm>.
- Kiepas, M., Kwiecień, P., & Śliwa, P. (2009 April-June). Dane w pracy inwestora – wiedza i podejście praktyczne (3), *Akcjonariusz*, 2, 38-41.
- Kuśnierz, B. (2007, October). Najpierw boom, a potem buuum, *Rynek Kapitałowy*, 10, 58.
- Łon, E. (2006). Makroekonomiczne uwarunkowania koniunktury na polskim rynku akcji w świetle doświadczeń międzynarodowych, Poznań: AE.
- MacroNext.pl. (2009, July 29). Produkt Krajowy Brutto, from World Wide Web: <http://pl.macronext.com/strona.php?p=6&w=166>.
- Meric, I., Ratner, M., & Meric, G. (2007). Co-movements of sector index returns in the world's major stock markets in bull and bear markets: Portfolio diversification implications. *International Review of Financial Review*, 17, 156-177.
- Morelli, D. (2002). The relationship between conditional stock market volatility and conditional macroeconomic volatility. Empirical evidence based on UK data. *International Review of Financial Review*, 11, 101-110.
- Murphy, J.J. (2008). *Analiza techniczne rynków finansowych*. Warszawa: Wydawnictwo Finansowe WIG-Press.
- New Trader.pl. (2009, July 30). Sprzedaż detaliczna, from World Wide Web: [http://www.newtrader.pl/economics\\_3,40.php](http://www.newtrader.pl/economics_3,40.php).
- Nikkinen, J., & Sahlström, P. (2004). Impact of the federal open market committee's meetings and scheduled macroeconomic news on stock market uncertainty. *International Review of Financial Review*, 13, 1-12.
- Parode, J. (2007). Jak to robi Warren Buffet? 24 genialne strategie największego na świecie inwestora giełdowego. Warszawa: Wydawnictwo Studio EMKA.
- Ritchie, J.C. (1997). *Analiza fundamentalna*. Warszawa: Wydawnictwo Finansowe WIG-Press.
- Rp.pl (2009, July 29). Zamieszanie wokół PKB, from World Wide Web: [http://www.rp.pl/arttykul/132584,321103\\_Zamieszanie\\_wokol\\_PKB\\_.html](http://www.rp.pl/arttykul/132584,321103_Zamieszanie_wokol_PKB_.html).
- Sławiński, A. (2006). *Rynki finansowe*. Warszawa: Polskie Wydawnictwo Ekonomiczne.
- Suchodolski, I. (2008). Globalna „amerykańska zaraza”, *Rynek Kapitałowy*, 11, 18-20.
- Uraziński, G. (2008, September). Rozdęta baryłka, *Forbes*, 09, 14-16.
- Verma, R., & Verma, P. (2008). Are survey forecasts o individual and institutional investor sentiment rational? *International Review of Financial Review*, 17, 1139-1155.
- Yamarone, R. (2006). *Wskaźniki ekonomiczne – przewodnik dla inwestora*. Gliwice: Wydawnictwo Helion.