

Book of Abstracts

CEST2013

Book of Abstracts: CEST2013

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Welcome

The International Colloquium

on Current Economic and Social Topics CEST'2013

focused on Gender Disparities and Financial Markets Analysis

organized by Research-Team granted by National Science Centre

NCN Project No 2011/01/B/HS4/06346

The aim of the conference is to discuss current economic and social problems concerning gender disparities and financial markets. Both issues seem to be the most important problems in terms of current economic situation in globalized world.

Gender equality is a policy objective of basically universal acceptance and it becomes a subject of interest in many national governments, international organizations, research institutes and political pressure groups. The Strategy for equality between women and men (2010-2015) was adopted by European Commission on 21 September 2010. Also The United Nations Millennium Declaration promulgates the pursuit of gender equality as one of the eight Millennium Development Goals to be reached by 2015. Problems of women's participation in labor market became one of the main issues in current discussion because of the financial – economic crisis and ageing of the societies in developed countries.

The current economic and financial crisis, also known as the global financial crisis, is considered to be the worst financial crisis since the Great Depression in 1930s. The danger of this crisis, that has been lasting since 2007 and there is no reliable prediction when it ends, is accelerated by globalization of the world economy. The general situation at financial markets has been additionally complicated by introduction of new financial products and another mode of operations. Global financial market seem to be playing different function in economy and it has been working due to new regulations. Introduction of new trade platforms, on-line access to information, integration and globalization of the market may cause revision of finance theories.

The Colloquium is organized in frame and with financial support of National Science Centre project No 2011/01/B/HS4/06346, by the Research Team from Department of Econometrics and Statistics, Faculty of Applied Informatics and Mathematics, Warsaw University of Life Sciences, Poland (<http://www.wzim.sggw.pl/>).

The conference is organized under auspices of Professor Barbara Kudrycka, Ministry of Science and Higher Education, National Science Centre with support of Colloquium Partners: Warsaw Stock Exchange, National Depository for Securities and National Bank of Poland.

The Organizers of CEST'2013 thank Honorary Patrons of the Colloquium: HE Rector of Warsaw University of Life Sciences, HE

Dean of Faculty of Applied Informatics and Mathematics Warsaw University of Life Sciences, HE Dean of Faculty of Economics and Management, University of Szczecin, HE Dean of Computer Science and Information-technology, West Pomeranian University of Technology and HE Dean of Faculty of Economics and Management, Nicolaus Copernicus University.

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- Prof. Joanicjusz Nazarko, Białystok Technical University (Poland)
- Prof. Yochanan Shachmurove, The City College, The Graduate School and University Center of The City University of New York (USA)

Seminar on Current Social Topics - Gender Disparities

- Prof. Stephan Klasen, Georg-August-University, Gottingen (Germany) - the Chair
- Prof. Robert W. Dimand, Brock University (Canada)
- Prof. Gema Fernández-Avilés, University of Castilla-La Mancha, at Toledo (Spain)
- Prof. Beata Gruszczyńska, Warsaw University (Poland)
- Prof. Barbara Liberda, Warsaw University (Poland)
- Prof. Janina Sawicka, Warsaw University of Life Sciences (Poland)

Seminar on Current Economic Topics - Financial Markets Analysis

- Prof. Jose Maria Montero Lorenzo,
University of Castilla - La Mancha (Spain) - the Chair
- Prof. Nicholas Apergis, University of Piraeus (Greece)
- Prof. Jennifer Foo, Stetson University (USA)
- Prof. Marek Gruszczyński,
Warsaw School of Economics (Poland)
- Prof. Rolof Makken, Brock University (Canada)
- Prof. Magdalena Osińska,
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SGGW w WARSZAWIE

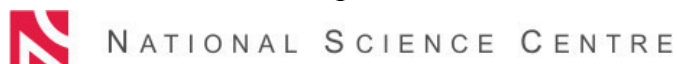
PATRONS and PARTNERS

STATE PATRONAGE



Professor Barbara Kudrycka

1



HE Rector SGGW
Professor Alojzy Szymański



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and Mathematics**



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HE Dean of Faculty of Economics and Management
Nicolaus Copernicus University
Professor Józef Stawicki

NBP

Narodowy Bank Polski

PARTNERS

Frame programme

Thursday 23.05.2013

12:00 – 16:00 Registration

13:00 – 14:00 Lunch (for registered conference participants only)

14:00 – 14:15 Colloquium opening

Chair: Professor Dorota Witkowska

14:20 – 16:00 **Plenary Session I:**

Current Economic & Social Topics

16:00 – 16:15 Coffee break

16:15 – 18:00 Panel discussion and Poster Session

18:00 Transfer to the Rector's Palace

19:00 – Ceremonial Dinner - HE Rector's Palace, 166 Nowoursynowska St.

Friday 24.05.2013

8:00 – 12:00 Registration

9:00 – 10:30 Concurrent Sessions

10:30 – 10:40 Coffee break

10:40 – 12:05 Concurrent Sessions

12:05 – 12:20 Coffee break

12:20 – 13:50 **Plenary Session II:**

Current Economic & Social Topics

13:50 – 14:00 Colloquium closing

Chair: Professor Yochanan Shachmurove

14:00 – Lunch

Programme

Thursday, 23 May

LUNCH

Thursday afternoon, 23 May, 13:00
NewConnect Trading Room

Colloquium opening

Colloquium opening
Thursday afternoon, 23 May, 14:00
NewConnect Trading Room
Chair: Professor Dorota Witkowska

Plenary Session I

Current Economic and Social Topics
Thursday afternoon, 23 May, 14:20
NewConnect Trading Room
Chair: Professor Marek Gruszczyński

14:20 Invited oral

Gender inequality in employment in transition countries

Stephan Klasen

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Gender inequality in labor force participation rates has been rising in transition countries since the start of the transition process. There is a substantial literature that demonstrates that gender inequality in employment is associated with reduced economic growth and worse other development outcomes. This talk will review this literature, assess current trends and determinants of gender gaps in employment and suggest policy options that might reduce gender gaps in employment

14:50 Invited oral

Life cycle income of married and cohabiting women and men

Barbara Z. Liberda

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15:20

Invited oral

Financial inclusion indicators in Poland - payment system perspective

Eugeniusz Gatnar

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Financial inclusion is defined by institutions such as the United Nations as a state in which all people have access to a full suite of quality financial services, provided at affordable prices, in convenient manner, and with dignity for the clients.

In this presentation we will introduce several indicators that show the level of financial inclusion in Poland. The indicators are calculated using the data collected and compiled by the payment system statistics and balance of payments statistics of the National Bank of Poland. We will also compare the value of the indicators for Poland to those of the other Member States of the European Union.

COFFEE

Thursday afternoon, 23 May, 16:00
NewConnect Trading Room

CONCURRENT SYMPOSIA

Thursday afternoon, 23 May, 16:15
NewConnect Trading Room / Nautilus Room

Break for transfer to SGGW

Thursday evening, 23 May, 18:00

CEREMONIAL DINNER

Thursday evening, 23 May, 19:00
HE Rector's Palace, 166 Nowoursynowska St.

Friday, 24 May

REGISTRATION

Friday morning, 24 May, 8:00
NewConnect Trading Room

CONCURRENT SYMPOSIA

Friday morning, 24 May, 9:00
Catalyst Trading Room /NewConnect Trading Room

COFFEE

Friday morning, 24 May, 10:30
NewConnect Trading Room

CONCURRENT SYMPOSIA

Friday morning, 24 May, 10:40
atalyst Trading Room /NewConnect Trading Room

COFFEE

Friday afternoon, 24 May, 12:05

Plenary Session II

Current Economic and Social Topics

Friday afternoon, 24 May, 12:20

NewConnect Trading Room

Chair: Lidia Adamska, PhD

12:20 Invited oral

The Monetary Policy Regimes, The Transmission Mechanism, and the Responsiveness of Fixed Investment: a VAR Approach

Roelof G. Makken

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12:50 Invited oral

Euro? Euro!

Alojzy Z. Nowak¹, Yochanan Shachmurove²

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The European Union (EU) faces deep and persistent fiscal problems. This has led to a financial crisis that compromises the future of the Eurozone. This paper studies the effects of institutions on the official currency of the Eurozone. In order to depict and explain the role of Europe in the world economy, this study examines Eurozone trade with the world. It assesses the institutional structure of the Eurozone as it relates to the financial crisis and argues that the crisis is the result of fiscal mismanagement and the absence of an effective fiscal regulatory institution. The paper offers potential solutions to the financial crisis of the European Union and scrutinizes the advantages and disadvantages of a common currency, emphasizing the important role of political, legal and economic institutions. The best solution to the crisis will include the establishment of such an institution.

Originally formed under economic and political pressures, the European Union traces its origins to the European Coal and Steel Community, the European Economic Community, and the European Atomic Energy Community, which were formed in 1951, 1956, and 1958, respectively. These institutions grew from the political need to prevent conflicts and the economic necessity for reconstruction following the devastation of the two World Wars. The advent of the Eurozone in 1999 completely changed the environment for the European financial institutions. The Eurozone, which includes 17 of the EU's 27 members, is now bound together under one common currency with its monetary policy administered by the European Central Bank (ECB).

JEL Classification: D02, E02, E63, F00, F01, F33, F44, F55, G01, G38

13:20 Invited oral

What Do We Know and What Do We Not Know about Specified Purpose Acquisition Companies (SPACs)?

Yochanan Shachmurove¹, Milan Lakicevic², Milos Vulanovic³

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Colloquium closing

Colloquium closing

Friday afternoon, 24 May, 13:50

NewConnect Trading Room

Chair: Professor Yochanan Shachmurove

LUNCH

Friday afternoon, 24 May, 14:00

NewConnect Trading Room

Symposia

Symposium on Gender Disparities

Programme

Thursday, 23 May

Panel Discussion

Panel discussion on gender disparities

Thursday afternoon, 23 May, 16:15

NewConnect Trading Room

Chair: Lidia Adamska, PhD

16:15

Oral

Gender Disparities in the Management of Judicial Systems in Europe

Beata Gruszczyńska

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Implementation of European standards and improving the justice systems in all member states is the crucial goal for the European Commission for the Efficiency of Justice (CEPEJ) in the Council of Europe. Following the adoption of a Declaration “Making equality between women and men a reality in practice” expert group for evaluation of judicial systems decided to include gender equality indicators to the systematic self-report Scheme survey.

In last Scheme conducted in 2012 we asked about gender distribution among professional judges sitting in the first, second instance and in the supreme courts and also within professional prosecution staff. Moreover, all member states of European Council answered on the question about gender distribution among court presidents and within heads of the prosecution offices. Results show that on average 52% men and 48% of women are working as a professional judges in the courts in European states but in cross-countries analysis variety in gender equality is clearly visible. The percentage of females within judges is from less than 25 in Azerbaijan, Armenia UK (Scotland), UK (England and Wales) and Ireland to about 80 in Slovenia Latvia, Romania, in Poland is equal about 65.

From the perspective of persons, who manage the courts and prosecutor offices balance of gender is even more disturbed. Women chair the jurisdiction evidently less often than a men and it is especially true in judicial hierarchy. Among 26 states, who provided information only 8 had a woman as a president of Supreme Court and similar situation is observed in the highest Prosecutor Offices in European countries. Paper elaborates more details related to the topic above.

16:30

Oral

Women in science and technology in Poland – statistical perspective

Dominik A. Rozkrut

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The Europe 2020 strategy aims to make the EU a smart, sustainable and inclusive economy by delivering employment, increasing productivity and securing social cohesion. The Innovation Union – one of the seven flagship initiatives of the Europe 2020 strategy – aims at supporting activities undertaken to reach goals included in the strategy Europe 2020, mainly through improving access to funding scientific research and innovations in Europe. The importance of the planned initiatives relating to strengthen European innovation is reflected in an ambitious budget of new research and innovation funding programme for the years 2014-2020 - Horizon 2020 – which has been set on a level of €80 billion. One of the supporting measures for achieving the goals of the strategy is increasing the human resources employed in science and technology and making better use of the resources and the qualifications of highly-skilled women in science and technological innovation.

Analyses on the European level prove that EU is far from gender equality in R&D activities. The prevailing imbalances are observed in the number and seniority in respective professions. The closer look at the European data reveals however, that Poland is clearly distinctive in that matter, as shares of women and man are more balanced or in some cases in favor of the former. All 6 regions (NUTS 1 level) of Poland are on the EU top 20 list of regions according to the employment of women resources in science and technology in terms of occupation. The paper investigates closer the current situation in Poland and tries to offer a wider perspective by means of international comparisons. The systematization of data sources useful in the analyses, as well as concepts, methods and definitions used is also offered. The statistics presented come from the collection and processing the data on R&D personnel and human resources in science and technology. The former are produced according to the Frascati Manual, the latter are based on the Canberra Manual.

16:40

Oral

Influence of motherhood on research activity of women on the example of Warsaw University of Life Sciences

Urszula Grzybowska¹, Luiza Ochnio²

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Women were allowed to enter universities merely 100 years ago. Nowadays they constitute a considerable part of scientific community, hold posts of professors and quit often as recognized researcher. Women are strongly present in all areas of life and science, but at the same time in Europe, and especially in Poland, birthrate is reduced. It is caused by the fact that in Poland, women are afraid of their position in the work and it is difficult to reconcile professional

life and rearing children. In the paper we compare number of women and men working at Warsaw University of Life Science – SGGW having or not having children. We also tried to check if women becoming mothers have the power to work as creatively as before the childbirth. The question that we have posed is whether motherhood has influence on scientific performance of woman

16:45

Oral

Gender disparities in European Union countries parliaments

Grzegorz Koszela², [Luiza Ochnio](mailto:luiza_ochnio@sggw.pl)¹

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In parliaments of European Union countries there are some percentage differences of women as MP's. Some countries try to regulate the number of female members by determining quotas of women on the electoral lists, but in some cases the percentage of women elected is high without any regulations in that field. There are also differences in the citizens standards of life depending on the state. The aim of the paper was to compare women participation in the lower house of parliament in 27 countries belonging to UE (plus Croatia which will join UE soon). Besides the structural estimation of fraction the comparison of Human Development Index (HDI) was accomplished in regard of women presence in country government.

16:50

Oral

Is it the labor market that undervalues women or women themselves? Evidence from Poland

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The differences in the distribution of observable characteristics of men and women have been found to be irrelevant for explaining the gender wage gap for Poland (Mysíková, 2012). Female's lower wages are thus attributed to women's lower valuation at the labor market. In this paper I take a novel approach and test the hypothesis whether women themselves value their skills lower than men. If this is a case then women's lower wages may be a result of self-undervaluation and not necessarily labor market discrimination. To test this hypothesis I analyze the gender gap in the minimum wages that unemployed persons, who are entering the labor market for the first time, declare they would agree to work for. Based on the data from 2010 Polish Labor Force Survey I focus on unemployed individuals who are looking for a first job and are between 25 and 30 years old. I find that on average unemployed women would agree to work for the net monthly wage of 1380PLN, whereas men for app. 1550PLN. With the use of nonparametric decomposition method developed by Nōpo (2008) I further decompose the observed gap of 12.5% and assess whether the gap may be explained by women's lower human capital attainment. I find that the differences in the

level and type of education acquired by men and women are not all sufficient to explain the difference in the average minimum wages they are willing to work for. Moreover, the explained component of the gap is found to be negative, which means that if men's characteristics followed the distribution of women's then the observed gap would actually increase. This means that the gap in wages that cannot be explained by the differences in the educational attainment between men and women occurs even before entering the labor market. Consequently, the high unexplained gender wage gap may stem from women's lower self-valuation - or alternatively men's higher self-assessment - and not necessarily women's labor market discrimination.

Friday, 24 May

Concurrent Session

Gender Disparities II

Friday morning, 24 May, 9:00

Catalyst Trading Room

Chair: Professor Mariola Pilatowska

9:00

Oral

Determinants of Wages in Poland

[Dorota Witkowska](mailto:dorota_witkowska@sggw.pl)

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There are many factors influencing wages that are either connected with the individual attributes of employees or describe the general situation at the labor market and characterize the particular place (– institution or enterprise) of employment. The former may be the subject of potential wage disparities. Inequalities at the labor market concern different aspects and social relations such as [Cain 1986, p. 693]: gender, sexual orientation, age, race, disabilities, religion, etc. Labor market discrimination by gender, race, and ethnicity is the world-wide problem and estimation of these types of discriminations has become routine [Neuman & Oaxaca 2003].

“Equal pay for equal work” is one of the fundamental principles of the European Union. However, the Structure of Earnings Survey (SES) reports that in 2006 in all 27 EU countries the gender wage gap (GPG) was 18.4% on average, while in Poland it was 7.4%. In fact among 27 European Union member states situation at the labor market essentially differs since the smallest GPG is observed in Italy – 4.4%, and the biggest in Estonia – 30.3% [Witkowska & Matuszewska-Janica 2012].

The aim of our research is to identify determinants that affect earnings in Poland in selected periods (i.e. years from 2001 to 2011), and to find out if wages obtained by men and women depend on the same factors. Investigation is provided applying ordered multinomial logit models, that are estimated by Maximum Likelihood method [Boes & Winkelmann 2009, Gruszczyński 2010] employing individual data from the Polish Labor Force Survey (PLFS).

In our research we construct models for all respondents and models

estimated separately for men and women that simplifies gender wage gap analysis. Such approach was proposed by Juhn, Murphy and Pierce (1991), and is often used in gender disparities analysis [Grajek 2001, Blau & Kahn 2006, Newell & Reilly 2001].

Explanatory variables, that are selected arbitrarily for the model construction, are often used in the research concerning wages, for instance [Newell & Socha 2007]. These variables describe respondents' characteristics and employees' firm characteristics.

9:20 Oral

Labour force participation of men and women in the EU – what role do family policies play?

Agnieszka Gehringer

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The participation gender gap continues to persist. We empirically assess the determinants of labour force participation with a specific focus made on family policies. We perform the analysis separately for men and women in the EU in the recent years. Given, moreover, differences in the labour force participation levels and patterns observable between age groups and country groups, we take this heterogeneity into account. Among the determinants, we include the standard factors usually included in the past literature, but the main focus is on the differences in the impact coming from the family policy measures in determining men's and women's labour force participation. Our main findings suggest that generally the family policies were relevant for the first and the last age groups (15-24 and 40-59) in determining their labour force participation, whereas were less influential for the middle age group (25-39). Nevertheless, significant differences in the sign and the magnitude of the influence exist between specific policy instruments and across the EU.

9:40 Oral

Gender Pay Gap in the micro level – case of Poland

Maciej Ryzkowski, Dominik Śliwicki

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Official statistics publish Gender Pay Gap (GPG) on the basis of Structure of Earnings Survey which is carried out in Poland every two years. Calculated values are presented by Eurostat in separate tables for six age classes, private and public ownership, for full and part timers and for economic activities used in statistical classification according to NACE Rev. 2. Gender Pay Gap calculated for such aggregations may be misleading and gives poor insight into possible salary discrimination. For instance in particular sections sexes may be polarized in different occupations. Aggregated GPG cannot also explain the influence of additional factors such as job experience and education level. As a result it is difficult to assess whether GPG is significant in the micro level. The paper analyzes the size of the GPG in enterprises located in Poland. For this purpose a linear model is constructed for separate cases that allows to distinguish the in-

fluence of sex, occupation and education in individual companies on the earnings. That allows to explain the size of income discrepancies caused by external, objective factors and assess the magnitude of sex discrimination.

10:00 Oral

Reforming family benefits and child tax credits to improve work incentives for inactive mothers in Poland

Anna Kurowska

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Abstract:

In Poland, the employment rates of single men and woman in the re-productive age group are very similar. For couples with very young children the picture is completely different: the employment rate for fathers is almost two times higher than the employment rate for mothers. We propose several policy reform scenarios, that could be easily implemented in the Polish system of financial support for families with children, with the objective to improve work incentives for inactive mothers. We build these scenarios by combining reforms of family benefits taper levels, withdrawal rates of these benefits, child tax credit amounts and eligibility criteria for these benefits and tax credits. We evaluate these scenarios not only on the way they improve incentives for work (how they change family budget constraints and income replacement rates) but also on the distribution of the gains from the reforms between the income groups of families and the cost these reforms create for the country budget. In order to do so, we use SIMPL – the tax-benefit microsimulation model for Poland.

Concurrent Session

Gender Disparities III

Friday morning, 24 May, 10:40

Catalyst Trading Room

Chair: Professor Kesra Nermend

10:40 Oral

Labour market in Poland for women and men at 50+

Jan B. Gajda, Justyna Wiktorowicz

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Population ageing is one of the major challenges of modern Europe. This is the effect of both shrinking and ageing of potential labour resources as well as the fact that professional competences of older employees are becoming increasingly outdated. Another thing is that due to the improvement of quality of living, people tend to live longer. Health of the citizens is improving regardless of their age, also at the threshold of becoming old. These processes should be ac-

accompanied by extending the period of working activity. In this context, very low economic activity of Poles (especially women) nearing retirement is a huge challenge faced by the Polish economy.

In the paper will take place the comparison of the situation of women and men aged 50+ and its selected factors. In the area of interest are primarily people aged 50-59/64, which are at this stage of life in which – in accordance with the Act on promotion of employment and labour market institutions – the situation on the labour market is particularly difficult. This will allow to refer the results of our analysis to the discussion concerning on this group in the context of active labour market policies (ALMP).

Paper was prepared on the basis of the unpublished data developed within the project “*Equalisation of Opportunities in the Labour Market for People Aged 50+*”, conducted by the Human Resource Development Centre partnered by the University of Lodz, initiated by the Ministry of Labour and Social Policy (Poland), co-financed by the European Union within the European Social Fund. Additionally, Eurostat data are used.

The analysis was conducted with the application of basic descriptive statistics, as well as chi-squared test. Comparing income of women and men aged 50+, t-Student test and median test for independent samples, and two-way factors analysis of variance were used.

10:55

Oral

Wages inequalities between men and women: Eurostat SES metadata analysis applying econometric models

Aleksandra Matuszewska-Janica

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Eurostat estimated that in 2011 in the EU women earned on average 16.2% less than men. This rate (GPG – Gender Pay Gap) varies e.g. among EU countries, economic sectors. We can also observe that at the GPG rate affect age, education, job seniority of employees and size of enterprise among other. The wage differences between men and women are largely explained on the basis of human capital theory (see e.g. Haager 2000, Polachek 2004) and the discrimination theory (see e.g. Becker 1971). This phenomenon has a social dimension as well as economic importance (see discussion presented in Klasen 1999, Seguino 2000, Blecker and Seguino 2002, Löfström 2009, Sinha, Raju i Morrison 2007). Situation of women in the labor market is subject to European Union policy. Prevention of discrimination against women has been included in Strategy for equality between women and men 2010-2015.

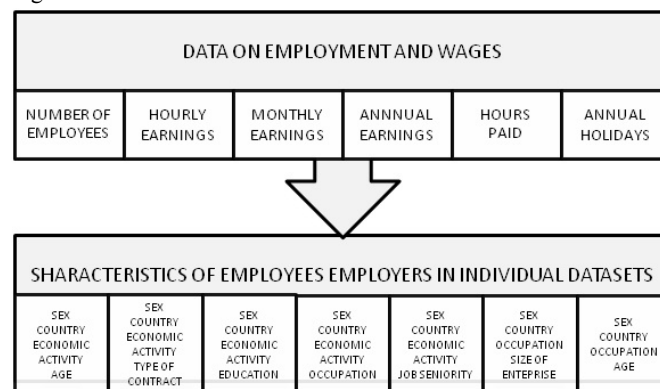
The aim of the study was to estimate the impact of various factors on the level of the wages inequality between men and women. In the analysis there were used one equation econometric models.

Analysis was provided upon the European Union Structure of Earnings Survey (SES) data collected in 2006. There were used aggregated data, that Eurostat calls Metadata. SES is a survey conducted in accordance with the Council Regulation No. 530/1999 and the Commission Regulation No. 1916/2000 as amended by Commission Regulation No. 1738/2005. The SES for 2006 is the second of a series of four yearly. The SES is a survey providing information on relationships between the level of remuneration, individual charac-

teristics of employees and their employer. Set of characteristics of employees included sex, age, occupation, job seniority, educational level, type of employment (full-time or part-time). Data on their employers are as follows: economic activity, size and location of the enterprise. The statistics of the SES refer to the enterprises with at least 10 employees.

Data on employment and wages are encompassed in the database that contain different characteristics, as presented in Figure 1.

Figure 1. Structure of SES database



To measure income inequality is often used GPG (Gender Pay Gap) indicator. GPG represents the difference between average gross hourly earnings of male paid employees (GHEM) and of female paid employees (GHEF) as a percentage of average gross hourly earnings of male paid employees.

$$GPG = (1 - GHEM/GHEF) \times 100 \quad (1)$$

where $(GHEM/GHEF) \times 100 = HE_FPCM$ is publicised by Eurostat.

In the analysis there were estimated one equation econometric models where dependent variable was GPG. In each model there were four types of independent variables: Activity, Wages, Fem and dummy variables.

Activity(i) – activity rate in the i-th country defined as labor force divided by population in working age in age group 20-64 (see strategy Europe 2020).

Wages(i,j) – wages rate calculated as:

$$Wages(i,j) = GHE(i,j)/GHE(i) \quad (2)$$

Where $GHE(i,j)$ – average hourly earnings of employees in i-th country and j-th group of employees, $GHE(i)$ – average hourly earnings of employees in i-th country.

Fem(i,j) – feminization rate calculated as:

$$FEM(i,j) = EF(i,j)/(EF(i,j) + EM(i,j)) \quad (3)$$

Where $EF(i,j)$ – number of employment women in i-th country and j-th group of employees, $EM(i,j)$ – number of employment men in i-th country and j-th group of employees.

Dummy variables represent impact on the wage inequality such factors as: economic sector, level of education, type of employment contract, occupation, group of age, group of job seniority, size of enterprise.

The results indicated that both the feminization rate and activity of women are significantly associated with the GPG. Also such factors as economic sector, level of education, occupation, group of age differentiate wages between men and women.

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11:10 Oral

Gender differences in exit rates from unemployment in Poland

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Men and women behave differently in the labour market. Traditionally men have closer attachment to the labour market and women have a higher family responsibilities. In the paper we analyse the exit rates from unemployment for each sex separately and find that the effects of the expanatory variables in estimated duration models depend upon gender. We begin our study with a single risk hazard model. These estimations are extended to a competing risks model with two destinations: employment and non-participation. The empirical investigation is based on data from the Labour Force Survey in Poland (BAEL). The results achieved show that drawing conclusion when gender differences are not considered can lead to misperceptions.

11:25 Oral

Who wants a second child? Microeconomic analysis of individual children demand in Poland

Olga Zajkowska, Aleksander S. Strasburger

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One of the most important economic problems in Poland is low fertility, much below the replacement rate. In the next 20-25 years the working to retired ratio will drop significantly. Therefore an important issue is to support female decisions of having second (and subsequent) child. We use sequential logit model to show that different individual characteristics are significant for the decision of first and second child. We show that well educated, white collar workers, who decided to give first birth later are more willing to have more children.

11:40 Oral

Gender, dissimilitude and space in childcare activities. The Spanish case.

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The paper examines the distribution of the time dedicated by mothers and fathers to childcare activities, since according to the literature, it is recommended that both the mother and the father participate in them together. The study focuses on the Spanish case due to the great debate currently existing in Spain about the low participation of fathers in childcare. We use a dissimilarity index, which fits this type of research on collaboration or specialization perfectly, and also analyze whether or not participation is spatially correlated across the Spanish provinces and whether patterns of father participation can be found. As far as we know, this is the first time a study on the topic has used statistical measures of spatial correlation. The data were provided by the Time-Use Survey conducted by the Spanish Statistics Office in 2009-2010 and the final database consists of 1,878 heterosexual households with children. Results indicate that (i) male participation in childcare is still far from female participation, (ii) the way both men and women distribute their childcare time among childcare activities is certainly similar and (iii) in general, there is no spatial autocorrelation either in the time men spend on childcare or on the index of dissimilarity.

Symposium on Financial Market Analysis

Programme

Thursday, 23 May

POSTER

Thursday afternoon, 23 May, 14:00

Concurrent Session

Financial Markets Analysis I

Thursday afternoon, 23 May, 16:15

Nautilus Room

Chair: Professor Jerzy Gajdka

16:15

Oral

Analysis of tail-dependence structure in global financial markets. Extreme value theory approach

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Dependencies between financial asset-returns have significantly increased during recent time periods in almost all international markets. This phenomenon is a direct consequence of globalization and relaxed market regulation in finance and insurance industry. Especially during bear markets many empirical surveys like Karolyi and Stulz (1996), Longin and Solnik (2001), Campbell, Koedijk and Kofman (2002) show evidence of increasing dependencies between financial asset-returns. When investors and/or risk managers would have a better knowledge of the dependence during crises periods, they are able to make better allocation decisions and they can get a clearer view of the risks they are bearing. Estimating dependence between risky asset returns is the cornerstone of portfolio theory and many other finance applications. Common dependence measures such as Pearson's correlation coefficient are not always suited for a proper understanding of dependencies in financial markets (Embrechts et al., 2002). In particular, dependencies between extreme events such as extreme negative stock returns or large portfolio losses cause the need for alternative dependence measures.

Several empirical surveys such as Ané, Kharoubi (2003) and Mallevigne, Sornette (2004) exhibited that the concept of *tail dependence* is a useful tool to describe the dependence between extremal data. Tail dependence is described via the *tail-dependence coefficient* introduced by Sibuya (1960).

Investigating stock markets is relevant, because institutional investors (for example pension funds) often allocate more than 50% of their portfolios to stocks. So correct understanding of the dependence of asset process is important for proper risk measurement and portfolio diversification.

Motivated by these considerations in this paper our empirical results demonstrate different tail dependence structures underlying various global financial markets. Extreme dependence is defined as the dependence between extremely large returns. We concern on the structure of dependence. Structure refers to dependence as symmetric or asymmetric, tail-dependent or tail-independent.

The paper is organized as follows. Section 1 describes briefly the most important properties of stock returns. Section 2 discusses tail dependence concept and outlines the estimation method. Section 3 describe concept of tail dependence. Section 4 discusses the empirical results.

16:30

Oral

Imprecise return rates on the Warsaw Stock Exchange Abstract

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The return rate in imprecision risk may be described as a fuzzy probabilistic set (Piasecki, 2011a). Properties of this return are considered in (Piasecki, 2011b) for any probability distribution of future value. On the other side, in (Piasecki, Tomasik, 2013) is shown that the Normal Inverse Gaussian distribution (NIG distribution) is the best matching probability distribution of logarithmic returns on Warsaw Stock Exchange. There will be presented the basic properties if imprecise return with NIG distribution of future value logarithm. The existence of expected return rate and basis risk characteristic will be discussed.

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16:45

Oral

If I Knew How to Forecast Volatility, I Would Be A Rich Man

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The volatility of an asset price is a measure of how uncertain one is about future asset price movements. It is a key parameter to calculate Value at Risk, to optimize portfolio and to value derivatives. Volatility is one of the factors that determines option price. The premiums of both call and put options increase as volatility increases. Therefore, overestimated volatility values produce overestimated option premiums. Moreover, volatility is the only input used in the Black-Scholes model that cannot be observed in the market or a priori determined in a contract. Thus, properly calculating volatility becomes extremely important. There are two basic ways to estimate volatility. The first method uses historical prices, while the second technique, known as implied volatility, employs option prices to find the option's market estimate of the underlying asset standard deviation.

This paper explores the impact of volatility estimation methods on theoretical option values based upon the Black-Scholes-Merton (BSM) model. Iterative techniques are applied, based on daily S&P index options. Additionally, using option data on S&P 500 Index listed on the Chicago Board of Options Exchange, historical volatility can be estimated. Generally, the method used for computing implied volatility works as follows. First, a rough guess is made as to what the implied volatility could be. This guess is used along with other input parameters to compute the Black-Scholes value. Then, the guess is modified to produce a new guess of volatility, and a new Black-Scholes value that is closer to the market price.

JEL Classifications: C0, C01, C2, C58, D53, G0, G13, G17

17:00

Oral

The logistics approach to management of enterprises' financial flows

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The financial resources of enterprises is the source of forming material, labor and informational resources, that's why management process of enterprises' financial resources should be considered in a complex with other types of resources, which is possible only if there is production logistation. Financial, material, information and service flows of the enterprise are in interaction and unity, and effective management of such correlated flow processes is possible only with the use of logistic approach.

Any transfer of financial resources inside and outside logistic system refers to the financial flows, that are needed to ensure the efficient movement of all other flows of enterprise' production-economic system. The task of financial flows' management in logistic systems is full and timely provision of financial resources by volumes, terms and by sources of their funding, which must meet the requirements of minimum price.

Enterprise financial flows are classified according to different characteristics (direction of movement, method of calculation, purpose, frequency of emergence, level of adequacy, its scale, type of economic activity, currency of denomination, importance, method of evaluation in time, form of payments).

While managing the movement of financial flows it is necessary to aspire to saving money for the logistic processes' realization and maximization of the final result. The most appropriate management decisions are those that simultaneously are changing their various parameters of financial flows. The task of optimization of financial flows can be solved through the use of Newton's method, which is based on the principles of simple iteration and includes finding a solution by constructing successive approximations.

Thus, financial flows, associated with the movement of material and information flows of the enterprise, form so-called triad, logistic management of triad under present conditions need to taking into account necessity of service accompaniment and use of economic-mathematical methods and models.

17:15

Oral

On exchange-rate model with stock indices as additional regressors

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The content of this study is the following. The analysis is based on daily data for the USDPLN bilateral exchange rate, and for the Standard and Poors 500 and WIG20 stock indices, covering period since the beginning of the year 2000 until mid-May 2013.

In previous research [Syczewska, 2009, 2010] we compared behavior of exchange rates models before and just after the global financial crisis. We applied the ARMA and GARCH models to volatility and returns of the series, and also ARMAX or GARCH with additional variables, namely stock indices of the corresponding countries (SP500 and WIG20), following example of Bauwens, Rime and Succarat (2008).

Earlier research, performed with use of data up to the end of April 2009, has shown that although the volatility and risk of exchange rates substantially increased during the crisis (hence had negative effect on accuracy of forecasts both of volatility and of exchange rate returns), but since the beginning of 2009 the time series in question seemed to stabilize slightly, thus giving hope for improvement of forecasting quality of the models.

Here we extend the data set until the latest available observations (from the *stoq.pl*), partly repeat the previous comparisons for

longer data series, and extend the analysis to the question of possible cointegration between the USDPLN, SP500 and WIG20.

All three variables are nonstationary with stationary logarithmic returns. Their volatility (measured as in Brooks (2008)) seems to decrease with time, as shown by means and standard deviations for subsamples.

The Johansen test statistic for the whole range of data clearly rejects cointegration of the variables. Hence we estimated an ADL(2) model, and compute a tentative long-run equilibrium equation based on its parameter estimates.

We check whether this linear combination is stationary. For the ADF test we use exact critical values for our sample size (over 3000 observations), according to MacKinnon (2010) response surface equation. The ADF test shows that the null of non-stationarity has to be rejected (the computed ADF = -2,87 is smaller than the 1% and 5% critical values).

At the same time, the Engle-Granger cointegration tests give ADF=-2.827 for error terms, while the appropriate critical value for our sample is -3,783 at 5% and -3,454 at 10%.

The Granger causality test for the whole sample does not reject the null of lack of causality for WIG20 and the USDPLN rate; clearly rejects the null for the pair of USDPLN and the SP500 index. This is in agreement with the Granger causality tests for subsample before the crisis. In contrast to that, for a sample covering period of crisis, the returns of the domestic stock index seem to influence the exchange rate.

In building the GARCH model for the USDPLN log returns we follow exactly the specification from previous study: GARCH(1,1) for conditional variance and AR(1) equation with log returns of the stock indices as additional variables. We estimate both models (with and without additional regressors) for the sample up to the end of April 2009 and compare the dynamic forecasts for the rest of sample.

As expected, the model with additional regressors performs slightly better: has lower values of the Akaike and Schwarz criteria, and RMSE and MSE decreased by 4%, and MAE by 8%.

When the GARCH(1,1) is estimated for the whole sample, information criteria are lower for the version with additional variables (which prove to be significant).

To summarize: Behavior of the three series in question seems to stabilize with time, in comparison to the crisis year 2007-8;

- for longer data series the quality of bilateral exchange rate returns models improves due to use of corresponding pair of stock indices as additional variables;

- Cointegration for the three original closing values series is rejected for the whole sample by the Johansen and the Engle-Granger test, although the linear combination for equilibrium values, based on the ADL(2) model for the three variables seems to be stationary.

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17:30

Oral

A Comparison of Global Stock Market before and after the 2007-2009 Global Financial Crisis

Dorota Witkowska¹, Jennifer P. Foo²

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The Financial Crisis of 2007-2009 plunged countries into the Great Recession and brought global stock markets into focus. The global contagion has a major impact on global stock markets, with the U.S. DJIA falling to 6,547.05 on March 9, 2009 from a highest of 14,164.53 on October 9, 2007, a loss of more than 54%. Other global stock markets also had precipitous drop in the aftermath of the financial crisis. However, some global markets have recovered while others have not. This paper looks at how global markets compared in their recovery.

In our study we apply statistical inference to verify the hypotheses that the recovery of stock markets at selected diverse stock exchanges around the world are disproportionate. We can describe the conditions of the stock market recovery in our study as represented by the main stock indexes, statistically significant changes of returns (measured by logarithmic rates of return), and risk (measured by variance). We employ time series of stock indexes from national capital markets as well as emerging and developing countries separately to compare stock market recovery in both markets.

Therefore we distinguish the pre-crisis period as the one before Lehman Brothers Holdings Inc. declared bankruptcy - up to September 15, 2008. We considered different lengths of analyzed periods: the first one from January, 1, 2005 to May, 31, 2012 and in this sample period with September 15, 2008 as the dividing date into two equal-length sub-periods, and the second one containing more present observations until the end of the whole period of March, 31, 2013.

Pause for transfer to SGGW WULS)

Thursday evening, 23 May, 18:00

Friday, 24 May**Concurrent Session***Financial Markets Analysis II*

Friday morning, 24 May, 9:00

NewConnect Trading Room

Chair: Professor Tadeusz Kufel

9:00 Oral

Intervaling effect on estimating beta parameter for the largest companies on the WSEWiesław A. Dębski, Ewa Feder-Sempach, Bartosz Świdorski*e-mail: wdebski@vizja.pl*

In modern portfolio theory investment risk plays a crucial role. It is the subject of numerous studies and publications, in particular in relation to the management of investment portfolios. Commonly used measure of investment management in equities is a beta parameter, which is used to estimate individual stock risk and portfolio risk. In particular, numerous studies are subject to the beta parameter properties such as stability in the context of the stock market cycle phases, intervaling effect, length estimation sample etc.

The main objective of this paper is to investigate the intervaling effect on beta parameter. The empirical analysis is carried out for the 38 largest companies of the Warsaw Stock Exchange (WSE) on a sample from the years 2005 to 2012 on the basis of daily, weekly and monthly rates of return. Statistical verification of the hypothesis of the importance of the frequency measuring return of shares will be based on the single-index Sharpe's model.

9:10 Oral

Recent developments in financial econometricsMagdalena Osińska*Uniwersytet Mikołaja Kopernika w Toruniu (UMK), Gagarina 13A, Toruń 87-100, Poland**e-mail: emo@umk.pl*

For over 30 years financial econometrics became one of the most dynamically developing areas in econometrics. That is a reason why many researchers are interested in the models and other analytical tools that have been developed recently. It gives hope for finding solutions for consecutive financial problems arising almost every day. The financial crisis of the years 2007-2009 caused that econometric models were subject of doubt in their effectiveness in empirical finance. As a consequence the researchers' attention was directed onto motivations and attitudes analyzed using behavioral models and methods. They influenced development of the theory, particularly applied in microstructure analysis. Another branch of development of contemporary financial econometrics is related with risk

transfer across different markets and new risk measures as well.

The paper focuses on survey of the methods developed in the last years and their effectiveness in empirical research.

9:30 Oral

The components of bid-ask spreads at the Warsaw Stock ExchangePaweł Miłobędzki*Uniwersytet Gdański Wydział Zarządzania (WZR), Armii Krajowej 101, Sopot 81-824, Poland**e-mail: milobedp@wzr.ug.edu.pl*

This paper applies a bid-ask spread decomposition model of McGroarty, Gwilym and Thomas (Journal of Business Finance and Accounting, 2007, 34 (9-10), pp. 1635-1650) to the Warsaw Stock Exchange (WSE). A proportion of price change that is due to private information, temporary buy-sell imbalances and price clustering is estimated on the intra-day data on stocks included in the WSE index WIG20. The data covers the period November 17, 2000-April 26, 2013. In doing so the generalized method of moments (GMM) is employed. When information on trade is rounded to the nearest second it is found that the price changes are almost wholly driven by the order imbalances. Rounding information to the nearest 1, 5 minutes and quarter of an hour yields that private information plays a moderate role in the price setting. The impact of price clustering is found negligible regardless the way information on trade is rounded.

JEL Classification Codes: C58

9:50 Oral

Volatility index for Warsaw Stock Exchange. Rules and propertiesTomasz K. Wisniewski*Gielda Papierow Wartosciowych (GPW), Ksiazeca 4, Warszawa 00-498, Poland**e-mail: tomasz.wisniewski@gpw.pl*

The Warsaw Stock Exchange was founded in 1991 as a joint stock company held solely by the State Treasury. The WSE conducts trading in financial instruments on four markets: The Main List (in operation since beginning, supervised by the Polish FSA and notified to the European Commission as a regulated market), NewConnect (organized and maintained by the WSE as alternative trading system), Catalyst (debt instrument market founded on September 30, 2009) and Energy Market (transaction platform for energy deals and energy-related futures). From November 9, 2010 Warsaw bourse is a public company with shares listed on Main List.

At the end of 2012 The Warsaw Stock Exchange was the largest and most dynamically growing market of Central and Eastern Europe (CEE) with more than 800 listed companies, futures contracts, option, ETFs, certificates and structured products.

The Warsaw Stock Exchange calculate and publish 28 indices: markets (WIG, NCIndex), size (WIG20, mWIG40, sWIG80), national (WIG-CEE, WIG-Poland, WIG-Ukraine), thematic (WIGdiv, RE-

SPECT), industry and other (bonds, IF).

Main role of indices is describing the market and comparing the return on different type of investment. From 1896, first publication of DJIA, first exchange index, the aim of indices is still changes. Indices are not market indicators or benchmark. There are source of portfolio management (passive investment fund or ETFs) and underlying for derivatives (futures contract, option).

Due to latest waves the Warsaw Stock Exchange is going to launch volatility index. The volatility index is the benchmark for stock market volatility and measure market expectations of near term volatility conveyed by stock index option prices. First volatility index was VIX, which is calculated based on S&P100 option prices from 1993, however now is calculated based on options on S&P500. The hypothetical Warsaw Stock Exchange volatility index was constructed for option on WIG20 index (VWIG). Decision process was supported by particular analysis of options

10:10 Oral

Evaluation of the effectiveness of portfolio analysis on the WSE for years 2001-2013

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The portfolio analysis is considered one of the advanced investment methods on the capital market. The idea arises from the diversification of the risk of investing in securities. In the classic approach, the assumption is that increasing the number of shares in a portfolio leads to reduction of portfolio risk measured by the portfolio's variance. In earlier works, the terms vertical risk diversification and horizontal risk diversification were introduced. The former is a classic method of diversification risk. In the latter, the main idea involves an adequate selection of stock companies (based on the evaluation of their economic/financial condition) for which portfolios are to be created.

The article presents research results of the effectiveness of various approaches which use multidimensional comparative analysis methods (particularly the *TMAI* [taxonomic measure of investment attractiveness] synthetic measure of development) as well as classic approaches on the Polish capital market. The subjects of research were all stock companies listed on the Warsaw Stock Exchange continuous trading quotations from 2000 to 2013. The basic aim was the comparison of the classic approach with an approach combining fundamental analysis with portfolio analysis. Moreover, an evaluation of the validity of such a combination within the conditions of the Polish capital market was made.

In the study were used data from the Warsaw Stock Exchange. In the case of a proposal for joins fundamental and portfolio analysis additionally for researched companies were used economic and financial data from database *Notoria Servis*. The annual rates of return calculated on the end of each year investment duration and on the day of 14.03.2013 were used to evaluate the effectiveness of the proposed portfolios.

JEL (C10, G12)

10:20 Oral

Earnings Management and Financial Crisis in EU countries

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The paper presents results of the study which aims to investigate the existence of „earnings management” (EM) phenomenon among the companies listed on the Polish stock market and to compare it to that phenomenon in EU market. The distribution of earnings per share (EPS) for stocks around the thresholds value of “zero” and the thresholds of “recent performance” was analyzed in the period of 1997-2010. Moreover, the changes of earnings for the stocks, which are suspected to manipulate their earnings, were also investigated.

On that ground we applied the measure for the scope of EM in EU countries. The paper examines differences in EU in that regard. We propose an explanation for these differences in the context of the size of financial crisis in particular EU countries.

Concurrent Session

Financial Markets Analysis III

Friday morning, 24 May, 10:40

NewConnect Trading Room

Chair: Professor Magdalena Osińska

10:40 Oral

Hidden order submission strategies in the order driven market

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We seek to investigate different liquidity- or information-oriented factors that exert an impact on the submissions of hidden (i.e. iceberg) orders. In the empirical market microstructure study, we evidence that the decision whether to hide a part of the order is significantly influenced by the size of that limit order as well as by the time of a day, previously observed returns and some other measures of the order book shape. When having taken into account all trading characteristics that may be either visible or invisible to market participants, the prediction accuracy of our endogeneity-corrected probit model for the decision whether to hide an order is very high.

10:55

Oral

Conditional performance evaluation of the CAPM on the WSE market

Ewa Majerowska

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One of the most popular models that allows to price portfolios or assets is the CAPM model. During the last five decades appeared many modifications of the model such as zero-beta CAPM, consumption CAPM, etc. Economists try to adapt the model taking into account particular problems. Obtained results still confirm necessity of application of the CAPM, because it measures the level of the systematic risk that is needed for example in pricing enterprises (the cost of capital).

As first the conditional approach in estimation of the CAPM model proposed Ferson, Schadt [1996] and Ferson, Warther [1996]. In their papers conditional performance evaluation (CPE) was displayed as a method more appropriate for modelling expected return. The methodology assumes that portfolios structural parameters change over time.

The paper concentrates on portfolios created for assets traded on the WSE. Standard approach of the CPE assumes using the lagged macroeconomic variables as instruments in estimation process. The author of the paper suggests to employ as an instrument variability of returns of assets. The results confirm that the CPE method provides more effective estimates than traditional CAPM.

11:10

Oral

The diversification of risk of a fundamental portfolio based on semi-variance

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Risk diversification in the fundamental portfolio with the minimum semi-variance is the subject of consideration. Risk in existing models of fundamental portfolio is measured by variance. One of the drawbacks of variance as a measure of risk is that negative and positive deviations from the expected rate of return are treated in the same manner. In fact, negative deviations are undesirable, while positive ones create an opportunity for a higher profit. Determination of effective fundamental portfolios for semi-variance is more complicated than for variance, because the parameters in target function for semi-variance depends of portfolio composition. The paper aims at proposing and presenting the empirical verification of iterative algorithm for risk diversification in the fundamental portfolio with the minimum semi-variance.

The considerations are based on the taxonomic measure of attractiveness of investment – TMAI, which was first used for portfolio constructions by Tarczyński (O pewnym sposobie wyznaczania

składu portfela papierów wartościowych in Przegląd Statystyczny 1/1995, p. 91-106). Such approach enables to present the economic and financial situation of a company with just one index.

In recent year the Tarczyński model has been used modified by introducing for example the measure of the risk into the target function and taking into account the connections between the profitability of shares (Rutkowska - Ziarko, Alternatywna metoda budowy fundamentalnego portfela papierów wartościowych in Taksonomia 18 p. 551-559).

Due to possible correlation among diagnostic Financial variables, the Mahalanobis distance has been used to determine TMAI (Rutkowska – Ziarko, Fundamenta portfolio construction based on Mahalanobis in Distance in Studies in Classification Data Analysis, and Knowledge Organization, ed. Laesen, Springer 2013, in press). In addition in the present article as the measure of risk the semi-variance is used as an alternative of variance. It is observed that in comparison to the approaches used so far in the literature the proposed algorithm leads to safer portfolios in the context of downside risk.

11:25

Oral

Influence of robust estimation on volatility forecast

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The research concerns modelling of several financial time series. Due to presence of different type of outliers in the data the robust estimation of ARMA-GARCH-type models is required. A Monte Carlo simulation is used to measure sensitivity of volatility forecast on different fraction of outliers in the time series. For comparison purposes the QML estimation results were used as a benchmark. The analysis is based on several type of instruments from FX, capital, and commodity market. To illustrate the behavior of robust estimate, the VaR forecast is simulated, and for comparison purposes we use tests based on the decision-making aspect, i.e. Binary Loss, Regulatory Loss, Firm Loss and the Expected Shortfall.

11:40

Oral

Statistical analysis of fundamental power in companies listed on WSE

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The analysis of securities with usefulness of information about its fundamental power can be an essential element of investment. Investment is a complex and, very frequently, long-lasting process. The assumptions being long-term investment, more useful are methods of fundamental analysis (particularly indicator analysis). Additionally, more frequently within securities' analyses taxonomic methods are used, some of them allows for the evaluation of the securities' quality through the prism of level of synthetic measure (e.g. linear ranking methods). A similar opportunity to evaluate securities

gives fundamental power index (FPI), which construction not uses taxonomic methods. (It must be say that in some linear ranking methods the size of synthetic measure is treated as a level of fundamental strength of the company.) Both approaches used to assess the companies' fundamental strength different kind of information (quantitative, qualitative factors and its combination) which came directly from the companies or/and which appear outside of them, but could have influence on their prosperity. Qualitative factors in contrast to the quantitative factors are discussable in assessment and their clear identification is difficult. So, it is easier to use quantitative information in assessment tools like fundamental power index regardless of the methodology of its construction. Especially quantitative factors are based on the economic and financial indicators, which came directly from the company. These indicators define in a numerical manner the relations between economic and financial values, for conclusions on the condition of the examined economic entities. Financial and economic condition is equivalent to fundamental power of the companies. Information about fundamental strength can be used not only in investment process. It gives possibility to get to know many elements, like:

- level of development of the companies on the capital market or its part,
- the market or its part level of development (through the prism of the companies level of development),
- differences between companies or sectors from its fundamental strength point of view.

Besides of that, there appear a few crucial questions:

- how do the economic and financial indicators rule on the stock market?
- what is their level, do they maintain the norms?
- what is the quality of data on the basis of which securities' analyses are carried out?

The answer to these issues is possible through the use some of statistical methods. The main goal of the paper is analysis of fundamental power of the companies listed on Warsaw Stock Exchange (WSE) by using fundamental power index (FPI) and information which create them (in space and time). The research refers to period 2007–2012.

- **JEL C10, JEL G10**

11:50 Oral

Effects of the Warsaw Stock Exchange trading sessions extension

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On January, 3, 2011 the Warsaw Stock Exchange (WSE) extended the length of trading sessions at all markets. Thus trading sessions lasted from 8.30 a.m. to 5.35 p.m., and they are longer by an hour in

comparison to the previous period. This change was introduced to make WSE better recognized by foreign investors and to increase its attractiveness for investors and issuers at international market. However this change caused a lot of controversy, especially among stock-brokers who claimed that such decision caused the extension of their working hours and increasing of operational cost of their activity. In consequences, after consultation procedure, and dialogue with market participants the Warsaw Stock Exchange shortened the length of the sessions by half an hour for limited period of time from April, 15, 2013 to the end of the year.

It is worth mentioning that there are only limited number of research concerning the manipulation of the length of the trading sessions at stock exchanges since there are only 2 such cases (when Stock Exchange in Athens is excluded). These cases are bourses in Oslo (trading hours extended +1hrs at 01 Sep 2008 and cut -1hrs at 06 Aug 2012) and in Warsaw (trading hours extended +1hrs at 03 Jan 2011 and cut -0.5hrs at 15 Apr 2013). Oslo's experiment illustrates the tension between those who say bourses should be open for longer to enable investors to react to news, while others argue that shorter hours lead to more committed trading, from long-term institutional investors???. In some research conducted by the Warsaw Scholl of Economics the hypothesis that the trading hours extension do not influence the volume was not rejected. However in our opinion the provided study was not sufficient to derive such conclusion. Therefore it is necessary to conduct further research on that subject.

The aim of our research is to fill the gap in previous investigation by profound analysis of the influence of the session extension on rates of return from main stock indexes and changes in mutual relations among selected stock indexes. The investigation is provided applying statistical methods and econometric models.

[www.ft.com/cms/s/0/5e44fd34-c208-11e1-bffa-00144feabdc0.htm#axzz2TjhqsQqJ](http://www.ft.com/cms/s/0/5e44fd34-c208-11e1-bffa-00144feabdc0.htm?ml#axzz2TjhqsQqJ)

Posters

Thursday, 23 May

POSTER

Thursday afternoon, 23 May, 14:00

14:00	Poster	1
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Analysis of the effectiveness of selected Polish investment funds from February 2009 to February 2013

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The decision to choose the right investment fund involves the analysis of the investment policy of each institution by evaluating their effectiveness. It is important to study the effectiveness of the investment both from the point of view of the investor (it allows to evaluate the potential of the fund) and top management (it allows to assess whether the adopted investment policy is appropriate and cost-

effective). The quality of the investment fund is defined on the basis of the results of selected funds. For this purpose, the historical rates of return on an investment fund are compared with the results calculated for the reference point called benchmark. The fund is effective if its performance in a given period exceeds the results obtained from the benchmark.

The paper presents an analysis of the effectiveness of eighteen open-ended equities for the period February 2009 - February 2013. Research period covers two economic turning points of Stock Exchange (bull market and bear market). Data for analyses was obtained from the following websites: www.bossa.pl, www.money.pl. The main aim of this study is to evaluate the effectiveness of joint-stock investment funds and assess the management of these financial instruments during the boom and bust in the capital market. We analyzed the daily trading value of the shares of selected mutual funds in the period from 17 February 2009 to 17 February 2013. The study was conducted for three series: P1 (17.02.2009 - 11.12.2010), P2 (11.12.2010 - 17.02.2013) and P3 (17.02.2009-17.02.2013). Evaluation of the effectiveness of investment in various funds was carried out using three indicators: Sharpe, Treynor and Jensen. Sharpe and Treynor indicators calculated for eighteen funds were compared with WIG20 values. Based on the results, a ranking of funds was built in terms of their efficiency, as well as connection between their quotations and the capital market where they invest.

14:00	Poster	2
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Application of migration matrices to risk evaluation and their effect on portfolio value

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Migration matrices are widely used in risk management. In credit risk management a loan is assigned to one of a few rating categories and the probability of future rating is determined by a migration matrix. Portfolio's value depends on the rating and on market states. To find an optimal portfolio one should consider migration matrices and the dynamics of market changes. On an exemplary portfolio we will show that differences in migration matrices that result both from the state of economy as well as the estimation method effect considerably the VaR figures

14:00	Poster	3
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The Influence of Pension Funds on Polish Capital Market

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Open pension funds have existed on the Polish financial market since 1999. There are institutions which create this market by investing part of their members' superannuation. So, it is difficult to overestimate their significance from a social point of view. A very important feature of pension funds is the fact that the amount of money

which is invested successively increases. That's why the market share of pension funds become bigger and bigger and has a very important influence on the financial market. Authors have presented results of quantitative investigations of the share of pension funds in this market from 2001 to 2012. Main attention is concentrated on WSE because pension funds invest in stocks and bonds listed on the Polish exchange and these securities are the main components of their portfolios. It occurs that pension funds have an important influence on WSE creating its position as a leading exchange in emerging markets. Presentation omits the problem of an effectiveness of pension funds which is the subject of scientific interest of authors as well. Instead authors present the dynamic of changes of influence these funds have on the Polish capital market.

14:00	Poster	4
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Gender and labour characteristics on income inequality

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Identification of the possible origins of gender pay gap is a widely discussed issue in recent years, being it defined as the gap between men and women hourly wage, expressed as a percentage of men hourly wage. Nevertheless, in addition to this grave reality, on gender research the attention should also be directed to the gender income inequality, understood as the inequality among levels of income. It is important to identify those activity sectors, occupations or workers or firms' characteristics where the wage sharing is less equitable among the set of employees, among women and men as different sets, or even among men and women with each other. And it is also important to find to what extent the inequality is caused by gender inequality (between subgroups) or by inequality among men or women themselves (within subgroups).

Gini ratio is the most commonly used income inequality tool, being the E-Index its adaptation when dealing with non-unitary frequencies. The theoretical decomposition of such indexes allows identifying the contribution of within men and women inequality and of gender inequality to the total index. Moreover, the latter can also be decomposed in the net extended inequality between subpopulations and the intensity of transvariation between them.

In particular, this paper deals with the income inequality decomposition in a Spanish region, Castile-La Mancha, using the micro-data available in the Spanish Structure of Earnings Survey carried out by the Spanish Statistical Institute in 2010. This analysis identifies those subgroups with similar labour characteristics and grave general and gender income inequality. Results show a slightly lower inequality level in the region compared with the whole nation, Spain, with the within subgroups and gender inequality indexes being responsible in equal parts for the total inequality. Women present a greater degree of inequality among them than men do and gender inequality is higher in the region than in Spain.

14:00 Poster 5

Factors affecting the works of art prices on the auction market in Poland

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Turbulences characterizing contemporary financial markets lead to exploration of assets providing diversification of the portfolio. Hence the increased interest in alternative investments such as art. Successful investment in art requires extensive knowledge of factors affecting price value of art. One of them relate to the work of art and include its features, eg.: the subject of the painting (abstract painting, figures, portraits, self-portraits, nude portraits, genre painting, still life, marines, landscapes, cityscapes, nocturnes, historic/religious/battle painting), art movements (Romanticism, Positivism and Historicism, Modernism, Ecole de Paris, Modern and Contemporary Art), the size of painting, auction house that traded the painting and age – productivity profile). Factors related to the artist include reputation (the number of paintings sold and maximum price) and date of birth. There is a broad discussion in the world literature concerning various aspects of art as an investment. The aim of this article is the attempt to fill the gap as far as Polish art market is concerned. Using transaction data from art auctions for the works of 47 most significant (in terms of number and value of paintings sold in Polish auction houses in the years 2007 – 2010) polish artists the paper discusses the relationship between the price of a painting and factors mentioned above. The study proved that – among others – there are some factors statistically important for the price of painting: reputation of the artist, size, age – productivity profile and the subject i.e. self-portrait.

14:00 Poster 6

Crisis in Private Equity Industry in Europe and Poland: Is It the End of It?

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Abstract

The current economic and financial crisis has touched all segments of economic life including private equity industry. At the beginning of this global financial crisis the unknown was only its duration, depth and which sectors of the financial market would be affected the most. The main goal of this paper is to analyse the influence of crisis on private equity industry in Europe and Poland paying special attention to the level of its influence on raising funds, investments, exits and portfolios' growth. General outline of the nearest prospects for the private equity industry is included. The author made also an attempt to find similarities and differences between Polish and European shape of development of the private equity industry in the period of 2000-2011.

14:00 Poster 7

A new look at variance estimation based on values of minimum, maximum, finish and the drift - preliminary results.

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The joint probability density function of random variables minimum, maximum and finish values returns of the arithmetic Brownian motion is presented in the paper. The application of this density allowed to analytically evaluate main properties of the most popular estimators of the variance constructed on the basis of low, high and closing prices of the arithmetic Brownian motion. In particular, the unbiasedness of the Parkinson and Garman-Klass estimators for the process with a zero drift and of the Rogers-Satchell estimator for any drift is proved. Thus the main results from the papers of the mentioned authors are confirmed. Moreover the expected values of the Parkinson and Garman-Klass estimators for the arithmetic Brownian motion with a non-zero drift are derived. The mean square errors of the Parkinson, Garman-Klass and Rogers-Satchell estimators for the process with a non-zero drift are also formulated. According to our knowledge those characteristics have not been published yet. Moreover, new volatility estimators, more efficient in the majority of financial applications than the Rogers-Satchell estimator, are proposed. The considered estimators are applied to the estimation of the volatility of the Polish stock index WIG20. It is shown that volatility estimates based on low, high and closing prices are more accurate than ones formulated on the basis of the GARCH model. The estimators based on low, high and closing prices can be applied in the future to the construction of the GARCH models, so that it will be possible to obtain even more accurate volatility estimates.

14:00 Poster 8

Risk Analysis on POLPX and EEX

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The Polish Power Exchange (POLPX) was started in July 2000. Investors on POLPX may participate in the Day Ahead Market (DAM, spot market), the Commodity Derivatives Market (CDM, future market), the Electricity Auctions, the Property Right Market, the Emission Allowances Market (CO₂ spot) and the Intraday Market. All these markets differ with respect to an investment horizon length and the traded commodity.

The result of the merger of the two German power exchanges in Leipzig and Frankfurt was the establishment in 2002 the European

Energy Exchange AG (EEX) in Leipzig. This is one of the European trading and clearing platforms for energy and energy-related products, such as natural gas, CO₂ emission allowances and coal. The EEX consists of three sub-markets (EEX Spot Markets, EEX Power Derivatives and EEX Derivatives Markets) and one Joint Venture (EPEX Spot Market). Moreover, EEX is trying to become the leader among European Energy Exchanges assuming an active role in the development and integration process of the European market.

The aim of this paper is a comparative analysis of risk on electric energy at spot markets. In this paper we propose portfolios on electric energy spot markets based on linear daily rates of return of prices and indexes noted on POLPX and EEX from 1st January 2009 to 24th October 2012. We compare risk on these portfolios built independently on two markets and the portfolios of contracts from POLPX and EEX together. The analyzed portfolios are constructed based on two criteria: minimization of the Conditional Value at Risk (CVaR) with the confidence level 0.95 and maximization of the portfolio rates of return.

14:00	Poster	9
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Portfolio performance based on the multihorizon Sharpe ratio - wavelet analysis approach

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One of the oldest and the most popular measure of the performance of a portfolio in assets allocation is the Sharpe ratio. This ratio is sensitive for window of the selected sample. A common approach in portfolio evaluation is calculation one-period investment Sharpe ratio [Levy, 1072, s. 647]. It is suggested in the literature that for n-period investment scaling factor should be taken into account, but in empirical analysis researchers and experts usually calculate only the one-period Sharpe ratio [Kim, In, 2005, s. 106]. The portfolio managers make decisions over different time periods and especially they concentrate on the performance at the end of the clearing period. So the problem is how to create the performance measure resist from above restrictions.

The starting point in applied methodology is the classical Sharpe ratio, defined as the level of the expected excess return of portfolio per unit of risk associated with portfolio. Then wavelet analysis is suggested, in terms of wavelet and scaling filters. Such approach allows to decompose the unconditional variance into different time scale, which means different sample windows. The advantage of the approach is possibility of analysis of the non-normally distributed portfolio returns and non-stationary series [Bruzda, 2003, s. 232].

The results of the empirical analysis of mutual fund portfolios, operated on the polish financial market, support that the application of the wavelet analysis in multihorizon evaluation of performance enable managers to provide more useful information about behavior of portfolios.

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