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# Do local or global risk factors explain the size, value and momentum trading pay-offs on the Warsaw Stock Exchange?

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## Abstra

This arti ... ts beyond
the 1-m ... 2002–2011.
Size and ... time: size
prem ... al pricing
mode ... al
explana ... e of the buy
side of s ... t both
single- a ... portfolios.
Domesti ... APM
perform ... odels
perform ... e but mostly
insignificant loadings on European and global nonmarket risk factors that emerge from

the negative relationship between Polish, European and global currency-adjusted small minus big (SMB) and high minus low (HML). It is further shown that after adjustment for fluctuations between USD and PLN, the magnitude and correlation structure between local and global risk factors change significantly.

Keywords:

size and value effects | momentum trading | global risk factors | international asset pricing | Warsaw Stock Exchange

JEL Classification:

G12 | G11

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Funding

This stu… in Baltic States a… in Frankfurt (Oder).

# Notes

1 [1] See f…
internati… evidence.
Given th… shifted from
if to why… stock
returns exist. The most famous competing explanations are characteristic-based, risk-

based and behavioural approaches. Some other studies attach the patterns to the market microstructure, data snooping or data mining. van Dijk (2011) delivers a general overview of size effect interpretations. For the characteristic-based interpretation of size and value effects, see Daniel and Titman (1997). For the behavioral explanation of value effect, see Lakonishok et al. (1994). For the rational expectation-based interpretation of value effect, see Zhang (2005), Petkova and Zhang (2005) and Petkova (2006). The theoretical defence of momentum as a risk-related effect can be found in, e.g., Chordia and Shivakumar (2002). Also Kang et al. (2011) examine the momentum relation to macroeconomic variables. Data related arguments come from, e.g., Kothari et al. (1995).

2 [2] The list of stocks available for short selling on the WSE can be viewed at http://http:\\www.gpw.pl/papiery_wartosciowe_dopuszczone_do_krotkiej_sprzedazy. However, even if short selling is restricted, for the purpose of portfolio management the short portfolio can be used to underweight assets relative to the market index (De Groot et al., 2012). Size effect is shown to emerge from a tiny portion of microstocks, see Chan and Chen (1991), Fama and French (2007) and De Moor and Sercu (2013), among others. Regarding momentum trading, Hong et al. (2000), Grinblatt and Moskowitz (2004) and Lesmond et al. (2004) claim that profits yield from the short positions in small, illiquid stocks' related to higher transaction costs. The latter paper shows th ... ly stated and that ... owitz (2013) argue th ... was shown to be pa ... (2005), Fama an

3 [3]

http://ht ... kieta_2011.pdf an

http://... 2012.pdf.

4 [4] Along ... cks as risky accordin

5 [5] The f ... 2011. Howeve ... ristic that requires ... o guarantee

that each strategy pay-off is the return average of the same number of overlapping portfolios.

6 [6] www.infostrefa.pl.

7 [7] Around 70% of capitalization of the WSE is concentrated in 20 largest companies.

8 [8] Outperformance defined that way means that active stock selection is more profitable than passive investment in the market index, see also van der Hart et al. (2005). Lesmond et al. (2004) consider additionally the middle, nontraded portfolio, but the authors follow a different grouping technique.

9 [9] The public pension system reform in 1999 introduced the option to join the privately managed open-end pension funds that started to invest on the WSE.

10 [10] I use the value-weighted market returns for consistency with the CAPM assumption that the return to stocks measures the return to the aggregate wealth portfolio, Jagannathan Wang (1996). Further, available European and global market risk factors are value-weighted. See Hou et al. (2011) for the use of equal-weighted market return and Griffin (2002) for both.

11 [11] For the rationale behind small minus big (SMB) and high minus low (HML) factors,
see, e.g.
http://ht ... html. To
facilitate ... er studies
and prox

12 [12] htt

13 [13] Je ... um profit of
rough ... ults hold for
diffe

14 [14] Re ... ty, the
results f ... are not
presente

15 [15] Th ... factors is
0.69 (0. ... period

1990–2005 (1995–2011). Also Rouwenhorst (1999) shows low correlation between market risk premiums on emerging markets and the global index return.

16 [16] The correlation between European (global) market risk premium and USD/PLN exchange rate changes is strongly negative −0.72 (−0.62). Over the discussed sample period USD depreciates from 0.26 to 0.32 USD/PLN with mean of 0.33 and SD of 0.06.

17 [17] Fama and French (2012) argue that the sample is meant to cover the wide spectrum of international small stocks, but it can be biased towards larger ones even if controlling for 90% of relevant aggregated market capitalization. Fama and French (2008) note that microstocks make 3% of the market capitalization in the NYSE/Amex/Nasdaq environment but 60% of the total stocks in number.