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AIMS AND SCOPE

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Using Words from Daily News Headlines to Predict the Movement of Stock Market Indices

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Stock market analysis is one of the biggest areas of interest for text mining. Many researchers proposed different approaches that use text information for predicting the movement of stock market indices. Many of these approaches focus either on maximising the predictive accuracy of the model or on devising alternative methods for model evaluation. In this paper, we propose a more descriptive approach focusing on the models themselves, trying to identify the individual words in the text that most affect the movement of stock market indices. We use data from two sources (for the past eight years): the daily data for the Dow Jones Industrial Average index ('open' and 'close' values for each trading day) and the headlines of the most voted 25 news on the Reddit WorldNews Channel for the previous 'trading days.' By applying machine learning algorithms on these data and analysing individual words that appear in the final predictive models, we find that the words *gay, propaganda* and *massacre* are typically associated with a daily increase of the stock index, while the word *iran* mostly coincide with its decrease. While this work presents a first step towards qualitative analysis of stock market models, there is still plenty of room for improvements.

Key Words: stock markets, text mining, machine learning, predictive modelling, natural language processing
JEL Classification: C38, C52
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Introduction

Predicting the movement of stock market indices is of great importance to entire industries. The investors determine stock prices by using publicly available information to predict how the stock market will react, where 'publicly available information' means mostly (financial) news. Nowadays, news come almost exclusively via web sources in the form of text. This is the reason why many researchers have proposed methods that use text information for analysing the stock market leading to the establishment of an entirely new sub-field of data mining called text mining

(Fawcett and Provost 1999; Permunetilleke and Wong 2002; Thomas and Sycara 2000; Wuthrich et al. 1998).

Recent research in predicting stock market from textual information incorporates knowledge from the fields of economy, statistics, data mining and natural language processing. There are a few main directions that the researchers tend to follow. Shynkevich et al. (2015) focus on improving the predictive power of generated models by carefully choosing the modelling algorithm while simultaneously increasing and diversifying the news sources. Gidófalvi (2001) concentrates on the time series nature of stock prices and uses a Naïve Bayes classifier to find the optimal 'window of influence' where the effect of news to the stock price is greatest. Fung, Yu, and Lu (2005) take this idea even further by introducing complex time series segmentation methods and incorporating advanced data mining and text mining techniques in the system architecture.

Ichinose and Shimada (2016) argue that 'it is unclear whether the improvement of a classifier, such as "raising" or "dropping" of a stock price of each day, contributes to the real trading.' They are doubtful whether small improvements in the classical evaluation metrics, such as prediction accuracy, recall and/or precision rate lead to the improvement of an actual return in trading. They propose a trading simulation system that can estimate the improvement of an actual return in trading and experimentally show its effectiveness. They show that by using their system they can easily understand the effectiveness of one-day classifiers in terms of the real trading situation.

The works of Bollen, Mao, and Zeng (2001) and Chowdhury, Routh, and Chakrabarti (2014) fall into the category of papers that describe the use of sentiment in text to predict the stock market. While Bollen, Mao and Zeng (2001) use sentiment analysis on tweets, Chowdhury, Routh and Chakrabarti, (2014) try to extract sentiment from news. Many other research papers had been written on the subject of 'predicting the stock market from news information' but they can all be categorised in one or more of the above-mentioned categories (predictive power improvement, time series segmentation, trading simulation evaluation and/or sentiment analysis).

Our approach, on the other hand, tries to analyse the models themselves by looking at the words that appear in them. We try to answer the following question: 'Does a word or combination of words (from news articles) exist, such that their presence or absence tells us something about stock price movement?' While our approach is not about sentiment analysis, time series segmentation or trading simulation evaluation, we still

care about the predictive power of our models. That is why we focus on choosing appropriate machine learning algorithms to construct predictive models. Moreover, since we are interested in learning descriptive models that can be analysed in terms of the words that they contain, not all state-of-the-art machine learning algorithms are suitable for the purpose. We still chose to retain both the 'descriptive' and some state-of-the-art 'predictive' algorithms to justify the predictive power of the 'descriptive' algorithms as those are the algorithms that are finally analysed for containing word combinations.

The rest of this paper is structured as follows. The second introduces the problem by describing the data – where was it collected and how was it pre-processed. In the third section, the methodology that was used to analyse the data is presented (all the algorithms that were used to model the data and their applications are listed here). The fourth section presents the results and provides a short discussion. Finally, the fifth concludes by summarising the most important findings and giving possible directions for further work.

Data

We used data from two independent sources:

- News data: historical news headlines from Reddit WorldNews Channel (see https://www.reddit.com). They are ranked by Reddit users' votes, and only the top 25 headlines are considered for a single date.
- Stock data: Dow Jones Industrial Average (DJIA) daily index values were used (see https://finance.yahoo.com/quote/%5EDJI/history?=%5EDJI). On each date, the 'open,' 'high,' 'low,' 'close' and 'volume' values are recorded.

Data for the past eight years was collected – from 8 August 2008 to 1 July 2016. Figure 1 shows how the 'open' value of the DJIA index was changing over this period.

News and stock data were merged into a single dataset by aligning the news headlines with the trading days of the stock data – for each of the 1989 trading days all the DJIA index values for that day together with the most voted 25 news headlines for the previous day were recorded (in a previous version the news data were aligned to the stock data on the same day, but experiments showed that predicting stock value form 'yesterday's news' gives higher predictive accuracy).

Since we were only interested in predicting if the stock goes 'up' or 'down' on a particular day, only the index values of 'open' and 'close' were

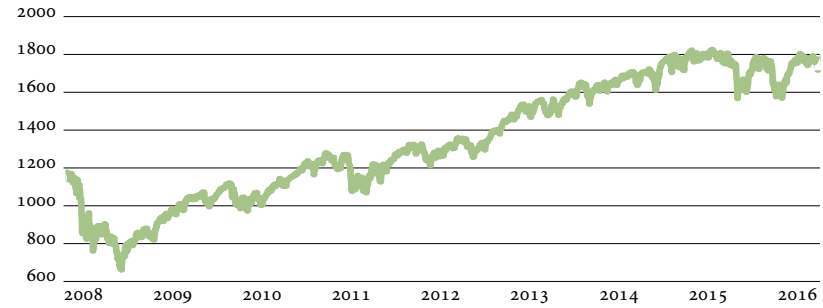

FIGURE 1 DJIA Index ('Open' Value) – Past Eight Years (8 August 2008 to 1 July 2016)

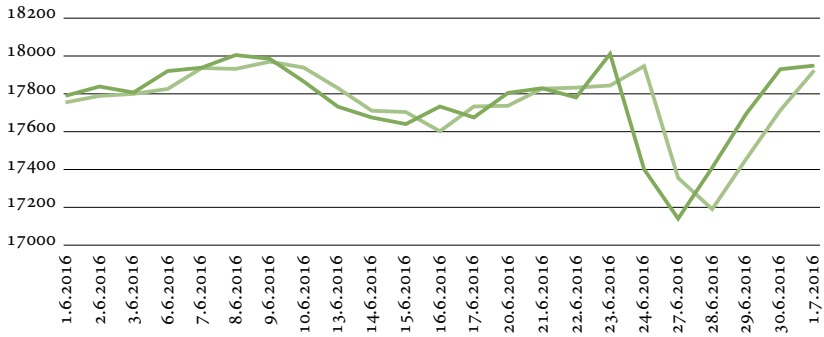

FIGURE 2 DJIA Index – Last Month (light – 'Open,' dark – 'Close' values; 1 June 2016 to 1 July 2016)

relevant. Figure 2 shows how the 'open' and 'close' values changed over the last month (of the collected data). For the sake of simplicity all the stock data was replaced by a 'label' feature in the dataset with value '0' if the DJIA index went down or stayed the same for that day (the 'close' value is the same or smaller than the 'open' value), and '1' if it went up (the 'close' value is bigger than the 'open' value). Figure 3 depicts a small subset of this transformed dataset – the first 10 trading days and just five of the 25 news headlines. The entire pre-processed dataset, shown partly on figure 3, consists of 1989 rows, representing the trading days, and 27 columns that represent the features of which 25 are the news headlines (as text), and 1 is the date of the trading day. Finally, the dependent feature 'label' reflects the rising or falling of the DJIA index.

Methodology

Our goal is to build a prediction model that will use the textual information from 'today's' Reddit top 25 news headlines to predict 'to-

	A	B	C	D	E	F	G
1	Date	Label	Top1	Top2	Top3	Top4	Top5
2	8.08.2008	0	Georgia downs two Russian warplanes as countries move to brink	BREAKING: Musharraf to be impeached.	Russia Today: Columns of troops roll into South Ossetia footage from	Russian tanks are moving towards the capital of South Ossetia, which	Afghan children raped with impunity, U.N. official says - this is sick, a three
3	11.08.2008	1	Why wont America and Nato help us? If they wont help us now, why	Bush puts foot down on Georgian conflict	Jewish Georgian minister: Thanks to Israeli training, were fending off	Georgian army flees in disarray as Russians advance - Gori abandoned	Olympic opening ceremony fireworks faked
4	12.08.2008	0	Remember that adorable 9-year-old who sang at the opening	Russia ends Georgia operation	If we had no sexual harassment we would have no children...	Al-Qaeda is losing support in Iraq because of a brutal crackdown on	Ceasefire in Georgia: Putin Outmaneuvers the West
5	13.08.2008	0	U.S. refuses Israel weapons to attack Iran: report	When the president ordered to attack Tskhinvali [the capital of South	Israel clears troops who killed Reuters cameraman	Britain\s policy of being tough on drugs is pointless, says a former civil	Body of 14 year old found in trunk Latest (ransom paid) kidnapping
6	14.08.2008	1	All the experts admit that we should legalise drugs	War in South Osetia - 89 pictures made by a Russian soldier.	Swedish wrestler Ara Abrahamian throws away medal in Olympic hissy	Russia exaggerated the death toll in South Ossetia. Now only 44 were	Missile That Killed 9 Inside Pakistan May Have Been Launched by the CIA
7	15.08.2008	1	Mom of missing gay man: Too bad hes not a 21-year-old cheerleader,	Russia: U.S. Poland Missile Deal Wont Go Unpunished	The government has been accused of creating laws that have a chilling	The Italian government has lashed out at an influential Catholic	Gorbachev: Georgia started conflict in S. Ossetia
8	18.08.2008	0	In an Afghan prison, the majority of female prisoners are serving 20-year	Little girl, youre not ugly they are	Pakistans Musharraf to Resign, Leave the Country	Tornado throws a bus in Poland, captured by one of the passengers	Britains terror laws have left me and my family shattered
9	19.08.2008	0	Man arrested and locked up for five hours after taking photo of police van	The US missile defence system is the magic pudding that will never run out	Schrder lambasted for blaming Russian conflict on Georgia	Officials: 10 French soldiers killed near Kabul	These ten laws make China a totalitarian wasteland
10	20.08.2008	1	Two elderly Chinese women have been sentenced to a year of re-	The Power of Islam: The Human Rights Council at the United Nations	We had 55 times more military soldiers in the first Gulf War than	I live here on less than a dollar a month – Obama\s brother, Kenya	Russia sends aircraft carrier to Syria.
11	21.08.2008	1	British resident held in Guantanamo Bay wins legal battle to force Foreign	Chinese may have killed 140 Tibetans this week: Dalai Lama	U.S. Navy Ships Head to Georgia	Hacker uncovers Chinese olympic fraud	If youve ever wondered what Kim Jong Il was like in grade school, here

FIGURE 3 Excerpt from the Pre-Processed Dataset Used for Further Analysis

morrow's' rise or fall of the DJIA index and to interpret this model in terms of (sets of) words that most affect the DJIA index change. We divided the work in four phases: Data transformation, Modelling technique selection, Quantitative evaluation and Qualitative evaluation. For the first three phases, we used the WEKA data mining workbench – an open-source collection of machine learning and data mining algorithms developed on the University of Waikato in New Zealand (see https://www.cs.waikato.ac.nz/ml/weka/).

DATA TRANSFORMATION PHASE

The pre-processed data in the tabular format (see table 3) is not yet suitable for further analysis, since we cannot directly link 'free text' to the categorical/binary variable 'label' (with values '0' and '1' – representing the fall and rise of the DJIA index, respectively). In order to extract valuable information from 'free text,' some natural language processing technique must be applied ('Natural Language Processing' 2017). The simplest (and often effective) such technique is the so-called Bag-of-Words model ('Bag-of-Words Model' 2017). It takes the text as input and produces a vector in which every element represents the number of appearances of some word in the text. In WEKA, the Bag-of-Words model is implemented as the StringToWordVector filter that has some additional capabilities such as converting all the words in lowercase letters and eliminating the 'stop-words' (words that typically do not carry any information and are mostly used as connecting words in a sentence). Moreover, the StringToWordVector filter does stemming (but no lemmatisation) on the text, transforming all the words in their stems (e.g. the word 'friendly' becomes 'friend'). The Lovins Stemmer (Lovins 1968) is used for this purpose. By applying this filter to our data, we transformed the 'free text'

portion of our data (the 25 text features) into 10,000 numerical features, representing the counts of the most frequent 10,000 words in our news headlines. We, furthermore, removed the 'date' feature, since our goal is not to explore the time series nature of the data, but rather to model the dependency of the DJIA index from information contained in the news headlines. Finally, we split the entire dataset in an 80% – 20% fashion, using 80% of the data to train the models (training set), and 20% to test the models in the quantitative evaluation phase (test set). Since the entire dataset is ordered in time, the 80% – 20% split must be done 'in sequence,' taking the first 80% of the examples (from 8 August 2008 to 31 December 2014; 1611 examples) for training and the last 20% of the examples (from 2 January 2015 to 1 July 2016; 378 examples) for testing. The 'sequential splitting' is important because we want to simulate the process of predicting 'new' (unknown) events from 'old' (already known) events.

MODELLING TECHNIQUE SELECTION PHASE

In this phase, we selected several machine learning algorithms implemented in WEKA to train the prediction models and compare their performance (in the quantitative evaluation phase). Particularly, we wanted to include algorithms that produce descriptive models that we can further examine in the qualitative evaluation phase. That is why we chose to include a decision tree learning algorithm – C4.5 (Quinlan 1993), and a decision rule learning algorithm – PART (Frank and Witten 1998). Nevertheless, we wanted to make sure that our chosen descriptive learning algorithms perform well, so we also included state-of-the-art machine learning algorithms to have a fair comparison. We chose the following algorithms for this purpose: Naïve Bayes (John and Langley 1995), Support Vector Machines – SVM (Hastie and Tibshirani 1998; Keerthi et al. 2001; Platt 1998), *k*-nearest neighbours – *k*NN (Aha and Kibler 1991) and random forests – RF (Breiman 2001). Finally, we included two more simple models that will serve as baseline for the comparisons – the majority class classifier that just outputs the majority value of the dependent variable, and the 'one-rule' classifier or OneR (Holte 1993) that finds the independent variable that is 'most correlated' with the 'label' variable.

QUANTITATIVE EVALUATION PHASE

In this phase, we run all the selected algorithms from the previous phase on the 80% training data. Then we test the generated models on both the same training data and on the separate 20% test set. By testing the

models on the same data, they were generated from, we verify the bias of our models. On the other hand, using a separate test set verifies the variance of the models. The metric we used to test our models is classification accuracy i.e. the percentage of correctly classified examples by the model, where 100% accuracy means a perfect model that makes no error and 50% accuracy means the model is randomly guessing the 'label.' Arguably, classification accuracy is not the most appropriate metric to measure the quality of prediction models for stock markets (Ichinose and Shimada 2016). Since prediction power of the models is not the main focus of this research, we assume that classification accuracy is a good enough measure to verify that the predictive power of selected descriptive models is comparable to the other state-of-the-art selected models. Thus, the descriptive models can be further analysed in the qualitative evaluation phase.

QUALITATIVE EVALUATION PHASE

After verifying that the prediction power of the descriptive models is high enough, this phase is used to 'look into' the models to identify the words (from news headlines) that alone or in combination with other words affect the rising or falling of the DJIA daily index. Both descriptive algorithms – PART and C4.5 – produce a model in the form of decision rules (the decision tree produced by the C4.5 algorithm can be decomposed into a set of decision rules). The decision rules are conditional clauses of the form:

$$\text{IF} < (word_1 \leq value) \,\&\, (word_2 > value) \,\&\, \ldots \\ \,\&\, (word_N \leq value) > \text{THEN} < label = 0, 1 >,$$

where the left-hand side contains the conjunction of word-values, and the right-hand side represents the decision (either label = '0,' meaning the DJIA index went down, or label = '1,' meaning the DJIA index went up – the values '0' and '1' were chosen completely arbitrarily). For example, the decision rule:

$$\text{IF } (\text{'}commander\text{'} \leq 0) \,\&\, (\text{'}mount\text{'} > 0) \text{ THEN } label = 0,$$

means that the absence of the word 'commander' and the presence of the word 'mount' (one or more times in the news headlines) is a strong indicator that the DJIA index will go down.

In this phase, we aim at identifying such strong indicative words by

TABLE 1 Quantitative Results of Prediction Model Evaluation on Training and Test Data

Algorithm	ACC-train (%)	ACC-test (%)	Learning time(s)	Description
Majority	54.19	50.79	0.95	majority = '1'
OneR	55.80	51.32	1.12	'run'
Naíve Bayes	76.35	60.79	1.11	
SVM	93.85	77.50	19.20	
*k*NN	72.01	61.41	0.66	
PART	97.70	71.21	19.27	65 rules
C4.5	96.52	70.73	12.69	209 rules
RF	100.00	79.11	27.43	100 trees

manually inspecting the decision rules generated by the description models.

Results

The results obtained in the quantitative evaluation phase are presented in table 1 (all algorithms were 'run' with default parameters). The column 'Algorithm' in this table contains the short names of the machine learning algorithms used to construct the predictive models (full names with references are presented in the third section). Columns 'ACC-train (%)' and 'ACC-test (%)' present the classification accuracies on the train and test sets (in percentage), respectively. The column 'Learning time(s)' shows the time (in seconds) taken to learn the models. The column 'Description' gives additional description where available.

It can be observed from table 1 that the learning data were evenly distributed between classes – in the training set 54.19% of the data had label '1' (the majority class); in the test set this percentage falls to 50.79.

The OneR ('one-rule') model predicted that the word 'run' has the 'highest correlation' with the label, but this model is practically useless, since its predictive accuracy doesn't really outperform the majority classifier.

Of the other six models, four had over 90% classification accuracy on the training set with Random Forests reaching the perfect 100% accuracy. This tells us that these models have very low or, in the case of Random Forests, even zero bias. On the other hand, the drop in predictive accuracy on the test set shows all our models are over-fitted to the training data, showing some amount of variance. Such behaviour of the classifi-

cation models is perfectly normal and typical in data mining. Since the task is to use the models to predict future data, the test set classification accuracies are the ones we should be looking at. Related work on predicting stock value from textual information shows us that classification accuracies of 70% and more on the test set are to be expected from 'good' prediction models (Paliyawan 2015). The algorithms SVM (Support Vector Machines), PART (decision rule learner), C4.5 (decision tree learner) and RF (Random Forests) all reached more than 70% accuracy, while Naïve Bayes and *k*NN (nearest neighbour) fell below this threshold.

The 'learning times' of the algorithms are proportional to their complexity and classification accuracy – the more complex the algorithm, higher is its accuracy and longer it takes to learn the model from data. SVN, PART, C4.5 and RT are all complex algorithms compared to Naïve Bayes, MNN and OneR.

The results in table 1 show us that our two 'descriptive' algorithms, namely, PART and C4.5 achieved a 'good' predictive accuracy compared to other state-of-the-art algorithms (SVN and RT) and to results from other researchers (Paliyawan 2015).

We now proceed to the qualitative analysis of the models learned by the algorithms PART and C4.5. PART is a decision rule learning algorithms that on our data learned a model consisting of 65 decision rules. C4.5 is a decision tree learner and (on our data) learned a decision tree with 209 leaves – that can be decomposed in 209 decision rules. To simplify the manual inspection of the generated rules we further 'pruned' the rule sets produced by both models by using a technique called post-pruning (Frank and Witten 1998; Quinlan 1993). The simplified (pruned) version of the PART rule set contained 28 rules, the C4.5 pruned tree had 15 leaves.

The use of pruning is common practice in machine learning and prevents overfitting of models to the training data and thus reduces the bias of the models.

By manually analysing all the decision rules produced by the pruned versions of PART and C4.5 we found out the following:

- The eight words that most appeared in the simplest rules generated by the two descriptive models are: *iran, gay, propaganda, map, low, massacre, web* and *reports;*
- The word *iran* alone when appearing more than three times (in the news headlines) 'tends to negatively affect' the DJIA index;

- The combination of words *propaganda* and *map* – when *map* appears, but *propaganda* doesn't appear in the text 'tends to negatively affect' the DJIA index;
- The combination of words *propaganda* and *low* – when *low* appears, but *propaganda* doesn't appear in the text 'tends to negatively affect' the DJIA index;
- The word *gay* alone when appearing more than one time 'tends to positively affect' the DJIA index;
- The word *propaganda* alone when appearing in the text 'tends to positively affect' the DJIA index;
- The word *massacre* alone when appearing in the text 'tends to positively affect' the DJIA index;
- The combination of words *web* and *reports* – when neither appears in the text 'tends to positively affect' the DJIA index;

The above findings list just the words that appeared in simple decision rules where the left-hand side consisted of only one or two conjuncts. There are many more words that appear in more complicated rules with more than two conjuncts on the left-hand side – all other words except *iran* in figure 4 are of this kind.

It should be stressed here that the phrase 'tend to negatively/positively affect' used in the above eight findings does not necessarily mean causality. It just reflects the (non)co-occurrence of specific words with either fall or rise of the DJIA index. For example, the news headline 'Iran tells Hezbollah to stop attacking Israel, turn attention to Saudi Arabia' is probably related to hostilities and indirectly to oil and those allegations could be a possible source for the fall of the DJIA index for that day.

Conclusions and Further Work

All research on the topic of 'predicting the stock market from news information' focus on either predictive power improvement, time series segmentation, trading simulation evaluation, sentiment analysis or a combination of those. Our approach, on the other hand, tries to exploit the descriptive power of the predictive models by analysing the (combination of) words that they contain and associate these to the movement of the stock price. By binarizing the stock price movement, we used the machine learning approach to learn models that are able to predict the stock rise or fall.

We have chosen six most popular machine learning algorithms (along with two base-line methods) and experimentally showed that four of

those are appropriate for prediction. We further narrowed our choice to the two descriptive algorithms – PART and C4.5 – that we analysed for 'interesting' words that 'directly' affect the stock price. By simplifying and manually inspecting the set of decision rules generated by both descriptive algorithms we found that the words *iran, gay, propaganda* and *massacre* have the biggest influence on the rising and falling of our DJIA stock market index. While the word *iran* is typically associated with DJIA falling, the other three words (*gay, propaganda* and *massacre*) are typically associated with DJIA rising. There are also other combinations of inclusion and exclusion of other words, but none as simple as the four mentioned words.

The main contribution of this work is showing that by using appropriate machine learning algorithms one can accurately predict individual words which almost always (or practically never) co-occur with the movement of a selected stock market index (DJIA in our case).

We regard this as a preliminary study of descriptive analysis of predictive models for stock markets using textual data. A first step has been done in this direction by showing that there is some relation between the words in the headlines of the daily news and the movement of the stock market price. This research concentrates on classification methods for building prediction models, which can predict only the sign of the stock movement (rise or fall). More formal ways should be studied to prove this relation and quantify its extent. A natural way to extend our approach would be to use regression instead of classification to quantify the change in stock price. In our research, we used manual inspection to identify the 'potentially interesting' (combinations of) words in decision rules. Methods for automatic extraction of such word combinations could be devised along with some corresponding evaluation measure. There is plenty of room for improvement in the natural language processing part of our study – other, more elaborate methods could be used instead of the simple Bag-of-Words for extracting word information from text. Ventura and Ferreira da Silva (2008) give an overview of the state-of-the-art methods that are in use nowadays.

Since this work presents the problem at hand (e.g. the prediction of the movement of stock market indices) mostly from a data mining perspective, there is significant room for improvement on the 'interpretation' side. As further work, we plan to show the results to a stock market expert to identify the true causes for the movement of stock market indices.

In this paper, the presented methodology is used to analyse the news headlines in English language. A natural extension of this work would be

to try to apply the methodology to other languages as well. It is however unclear if a direct approach would work better or would it be feasible to first translate the text in English and then apply our proposed methodology. There are some automatic translation systems that show promising results for similar languages (Vičič, Homola, and Kuboň 2016).

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Cultivating an Entrepreneurial Mind-Set through Transformational Leadership: A Focus on the Corporate Context

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Corporate leaders are increasingly embracing entrepreneurial activity as a potential source of achieving a competitive advantage. Leaders adopting an entrepreneurial orientation (EO) at the firm level must foster an entrepreneurial mind-set employees. This article aims to expand understanding on how an entrepreneurial mind-set as well as transformational leadership impact levels of EO at firms in an emerging market context, South Africa. Following a survey, partial least squares structural equation modelling (PLS-SEM) analysis is used to test the study hypotheses. Findings reveal positive and significant interrelationships between the study variables, where path analysis supports the study model and where both transformational leadership and an entrepreneurial mind-set amongst share a reciprocal causal relationship with higher levels of EO.

Key Words: entrepreneurial orientation, mind-set, transformational leadership, South Africa
JEL Classification: D8, J24
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Introduction

Firms in developed and emerging economies has evolved substantially in the new millennium and been disrupted by continuous change, which has added complexity to the commercial landscape. The global business environment is laden with hyper-competition, which requires businesses to navigate through uncertainty and complexity to survive (McGrath and MacMillian 2000).

Based on such a rapidly evolving business landscape, firms need to infuse and attract 'new forms of managerial thinking,' enabling them to deal with the constant flux of transformation, and competently navigate un-

certainty and ambiguity in the business environment (Urban 2016). Firms in the 21st century need to constantly evolve and embrace entrepreneurship to become robust and dynamic to keep abreast with technological innovation and hyper-competition, to ensure organisational survival and relevance (Hitt 2001; Phan et al. 2009).

Entrepreneurship pivots around a different paradigm of thinking and behaviour, which transform the internal workings of an organization to become forward thinking, innovative and competitively resilient (Brown, Davidsson, and Wiklund 2001). Moreover, entrepreneurship within organizations is a fundamental posture, instrumentally important to strategic innovation, particularly under shifting external environmental conditions (Hitt 2001). Research demonstrates that entrepreneurial behaviour by management and employees has been linked to a firm's competitive advantage and sustainability across different industries and contexts (Ireland, Hitt, and Sirmon 2003; Ireland, Covin, and Kuratko 2009).

Leaders are increasingly embracing entrepreneurial activity as a potential source of achieving a competitive advantage (Covin and Lumpkin 2011), where the concept of entrepreneurial orientation (EO) incorporates firm-level processes, practices and decision-making styles ensuring entrepreneurial behavioural patterns are recurring (Dess and Lumpkin 2005). Scholarly interest in EO has grown exponentially in the past decade (Covin and Lumpkin 2011), as organizations with a prevalence of EO possess the ability to discover and exploit new market opportunities, and tend to respond to potential threats effectively and prosper despite the demands of a competitive and dynamic environment (Dess and Lumpkin 2005).

However, a critical review of the literature indicates a gap in the literature insofar the role of the entrepreneurial mind-set as well as the impact that leadership may have on EO have not yet been fully accounted for in prior studies (Phan et al. 2009; Urban 2016). Although research indicates that EO includes cognitive and behavioural components (McGrath and MacMillan 2000), EO requires employees to act innovatively and adopt an entrepreneurial mind-set (Kuratko, Morris, and Covin 2011), and furthermore the alignment of the entrepreneurial strategy with EO must be decided upon by the organization's leaders (Ireland, Covin, and Kuratko 2009). Recognising the limited explanations of exactly how EO may be influenced by the role of such an entrepreneurial mind-set and leadership, this article aims to expand understanding of the impact that transformational leadership (TL) as well as an entrepreneurial mind-set (EM)

have on EO. Equally important, the study aims to bridge the knowledge gap with regard to the interrelationship between TL and the EM, which Boerner, Eisenbeiss, and Griesser (2007) maintain is an important area of research that has not been adequately addressed in the management literature. Subsequently the research question of the article becomes – 'What influence does TL have on the EM as well as on the relationship between the EM and EO?'

It is anticipated that this study will contribute to the theoretically enrichment of the leadership and entrepreneurship domains, by ascertaining the potential bidirectional properties of TL on EM and EO. Additionally, by localizing the impact that TL plays in influencing EO, an important theoretical and empirical context for the nexus between TL and the EM is analysed. Furthermore, the empirical findings from this study can assist business leaders and policy makers who need to reflect on leadership styles when trying to enact an EM in a corporate setting.

A further contribution of this study is that it takes place in an under-researched context, South Africa (SA). Most studies on entrepreneurship are predominantly western in nature, with very few if any reflecting on Africa (Urban and Hwindingwi 2016). This is surprising when considering that in SA, one of the primary goals of a firm is growth and this can be achieved by continuously innovating in the face of growing global challenges (Urban 2013). Consequently, by assessing the adequacy of the model variables in this different non-western setting, researchers may undertake replication and comparative studies.

The study starts by briefly reviewing past research on TL and the EM from an EO perspective. The research methodology is then delineated and the hypotheses statistically tested. The results are then discussed, managerial implications are drawn, and recommendations for future research are made.

Literature Review

ENTREPRENEURIAL ORIENTATION (EO)

A vast literature points to EO as an important element in organizational development where EO has been used extensively to describe organizations exhibiting an entrepreneurial strategic vision and entrepreneurial behaviour and processes (Covin and Slevin 1991). The theoretical basis of the EO construct lies in the assumption that all firms have an EO, even if levels of EO are very low (Dess and Lumpkin 2005). According

to Covin and Lumpkin (2011), EO is best operationalized as the concurrent exhibition of behaviours reflecting risk taking, innovativeness and pro-activeness. Innovativeness is the fundamental posture of an entrepreneurial organization in terms of developing new products or inventing new processes; risk taking is associated with the willingness to commit significant resources to opportunities and to take calculated business risks; and pro-activeness is perseverance in ensuring initiatives are implemented, and is concerned with adaptability and tolerance of failure.

The true value of EO as a concept lies in the extent to which it helps organizations create a sustainable competitive advantage. Leaders can enhance an organization's chance of remaining adaptive and innovative by increasing the number of entrepreneurship champions, encouraging innovation amongst employees and removing obstacles for innovations to take place. Most importantly, leaders help increase the perception that exploitation of opportunities is highly desirable (Phan et al. 2009).

However, adopting a firm level EO is difficult as a successful strategy goes beyond a simple decision and requires the alignment of the entrepreneurial strategy with the entrepreneurial actions of employees throughout the organisation (Ireland, Corvin, and Kuratko 2009). Researchers note that firms supportive of entrepreneurship must provide appropriate reward systems, top management support, explicit goals and appropriate organizational culture which signal to employees that entrepreneurial behaviour action is desirable (Ireland, Hiit, and Sirmon 2003; Ireland, Corvin, and Kuratko 2009).

ENTREPRENEURIAL MIND-SET

According to McGrath and MacMillian (2000, 4), the thinking framework required to unlock high business potential is an EM, which requires applying a set of 'finely honed skills that allows for the forging of opportunity from uncertainty to adaptive business execution.' The theoretical origins of the model for an EM lie within the broader cognitive science domain and more specifically within metacognitive theory (Haynie et al. 2010).

The EM has been conceptualized as 'metacognitive processing or thinking patterns, where the underpinnings of an EM are deep-seated in higher-order mental processing that enable the entrepreneur to think beyond or reorganize existing knowledge structures and heuristics, promoting adaptable cognitions in the face of novel and uncertain decision contexts' Haynie et al. (2010, 217). In relation to the working mechanisms of the

metacognitions influencing the EM, the underlying latent constructs are: (a) goal orientation, (b) metacognitive knowledge, (c) metacognitive experience, and (d) metacognitive choice, and (e) monitoring (Haynie and Shepherd 2009).

Although research theorizes that an EM as a higher-order cognitive process serves to organize what individuals know and recognize about themselves, tasks, situations, and their environments, little is known of how an EM promotes effective and adaptable cognitive functioning in a complex and dynamic corporate environment exemplified by an EO (Urban 2016). Such contextualization is important considering that calls have been made for corporates to re-orientate their values and behaviour towards EO (Covin and Lumpkin 2011; Kuratko, Morris, and Covin 2011). Consequently, it is expected that an individual level EM is collectively aggregated into organisational level, entrepreneurial thinking (Shepherd, Patzelt, and Haynie 2010), which will be positively related with higher levels of EO:

H1 *The prevalence of an entrepreneurial mind-set amongst individuals in a corporate context will be positively associated with higher levels of entrepreneurial orientation.*

TRANSFORMATIONAL LEADERSHIP

Transformational leaders help to build and shape the culture of a company, by creating empowering opportunities for employees, enabling in-house collaboration, encouraging shared values and allowing followers themselves to be leaders (Bass 1995; Sashkin 2004). TL are naturally entrepreneurial and are viewed in this light because they are able to transform organizations and followers to achieve ambitious goals, thus cementing themselves as change agents within an organization (Eyal and Kark 2004). The change readiness that is trickled through the organization enables employees to anticipate market trends, adapt to changes in the environment and to respond innovatively to opportunities, which collectively enriches a firms EO (Ling et al. 2008).

Research indicates that TL enhances innovation levels in an organization (Gumusluoğlu and Ilsev 2009), and is a predictor of firm performance through: (a) articulating a vision statement that calls to action innovative benefit, (b) encouraging the discovery of new opportunities, achieved through disruptive thinking, (c) supporting long-term benefit over short-term goals, (d) promoting innovative exploration, and (e) allocating resources, budget and time to the incubation of ideas within a

company (De Jong and Hartog 2007; Jung, Chow, and Wu 2003). Research indicates that TL dimensions can then be summarized as inspirational motivation, intellectual stimulation, and individualized consideration (Gumusluoğlu and Ilsev 2009).

Furthermore, Sarros, Cooper, and Santora (2008) find that TL indirectly influences EO by the role that transformational leaders play in framing the innovative culture of the company. However, Avolio, Bass, and Jung (1991) developed an additional leadership theory to add to the existing suite of 'new leadership' theories, which they terms as the full-range leadership theory (FRLT). The FRLT comprises of three types of leadership behavioural typologies, (a) transactional, (b) transformational, and (c) non-transactional or 'laissez-faire' leadership, which is reflected by the nine discrete constructs that underpin the FRLT. According to Bass et al. (2003), TL is a necessary organisational requirement, to manoeuvre ever-changing, uncertain business environments and enables firms to respond to challenges as a workforce collective. Based on the growing empirical evidence on TL, the second hypothesis is framed as:

H2 *The prevalence of transformational leadership in a corporate context will be positively associated with higher levels of entrepreneurial orientation.*

TRANSFORMATIONAL LEADERSHIP AND THE ENTREPRENEURIAL MIND-SET

Research has found that transformational leaders do not only impact levels of innovativeness and creativity of their followers but equally they influence the psychological empowerment of their followers, which serves as an alternative source of creativity (Gumusluoğlu and Ilsev 2009), hence influencing their EM. Transformational leaders, through their individualized consideration behaviour, build the self-confidence levels of their followers, which is then reinforced by developing follower strengthens and ultimately leads to employee empowerment. Employees that are empowered tend to exhibit increased creative qualities, as empowerment is symbolic of personal autonomy, which is a key trait of creative individuals with an EM (Gumusluoğlu and Ilsev 2009).

Transformational leaders are visionary and serve as inspirational motivators within organizations (Wang, Courtright, and Colbert 2011; Zhang and Peterson 2011). Consequently these leaders are able to derive higher levels of motivation, empowerment, shared commitment and perfor-

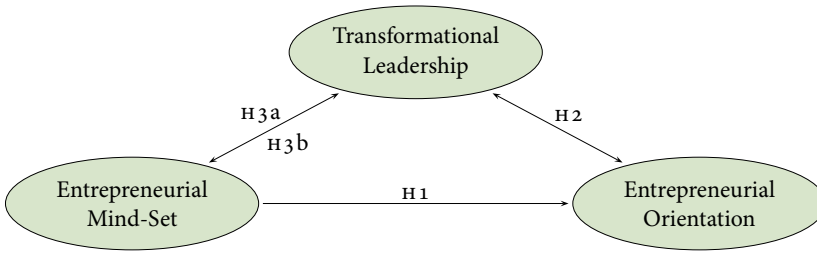

FIGURE 1 Model Formulated for Study

mance from employees (Mitchell et al. 2000), where TL is an important antecedent to employee motivation and towards fostering an EM. Consequently, a combination of both a TL and an EM is required for EO to be realized within an organization.

Considering the direct and indirect effects of TL on the EM, these two constructs could be mutually reinforcing and hence operate in a bidirectional, causal relationship. Just as the transformational traits of a manager shape an employee's mind-set to behave entrepreneurially, similarly, when followers are entrepreneurially minded, the role of the transformational leaders is made easier, hence enabling them to be more effective. Ireland, Hitt, and Sirmon (2003) advance a relationship of reciprocal causality between an EM and TL in a corporate context to substantiate the theoretical argument for a predicted bidirectional causal relationship between an EM and TL, which leads to the third hypothesis:

H3 *(a) There is a positive relationship between transformational leadership and an entrepreneurial mind-set; and (b) the prevalence of an entrepreneurial mind-set positively influences the prevalence of transformational leadership in a corporate context.*

Methodology

The research design was a cross-sectional, empirical analysis, utilizing primary data collected via structured questionnaires. The context of the study was the South African baking sector. SA, despite its developing market status, has a sophisticated financial banking sector, and compares favourably with those of industrialized countries (Schwab 2014). The rationale for selecting this sector is that the financial and services sector contributes 21.1 percent to the Gross Domestic Product (GDP) in SA (Young 2013), and is evolving at a rapid pace where change has become the norm (PWC 2015). The need for the banking sector to innovate and

inject entrepreneurship into its strategy has become prevalent, particularly with the move to technology enabled banking solutions and value added services that drive innovations (Thulo 2015). Consequently, this sector is relevant and an apt context to investigate EO.

Moreover, by focusing on a single industry sector, a greater homogeneity of context is achieved which addresses the concerns of broad applicability versus perfect suitability for narrower groups. Studies across industries often produce results that apply to all while they at the same time apply to none (Davidsson 2004), since they only capture a tiny fraction of each firm's manifestation of EO. Subsequently the focus is on a single industry. Moreover, the important issue about sampling, in general, is not statistical but theoretical representativeness, i.e., the elements in the sample represents the type of phenomenon that the theory makes statements about (Davidsson 2004).

Sampling and Data Collection

The population of the study was the South African banking sector, which consists of 19 registered banks, two old mutual banks, 13 local branches of foreign banks and 43 foreign banks with approved representative offices operating in SA (see http://www.sacci.org.za). Sampling frames were obtained from the Human Resource Department within each banking organization, where permission was sought to conduct a survey at the branch levels. To ensure sufficient variability and a high organisational representativeness, data was drawn from branches in each major South African region and province using random sampling. Respondents included junior, middle, senior and top management employees, as Kuratko, Morris, and Covin (2011) confirm that all levels of management influence EO, in varying degrees.

Two data collection mechanisms were utilized based on the physical location of the respondents, namely paper surveys and on-line surveys. Paper surveys were utilized for head-office employees based in Johannesburg, South Africa and on-line surveys were utilized for employees based at any of the other South African geographical locations of the respective bank. The respondent's rights and protections were preserved during the research process by firstly ensuring that the research participation was purely voluntary and no use of positional power was exercised during the process. At a minimum, the number of respondents selected to participate in the survey, was derived based on the '10 times rule' or heuristic used to determine minimum sampling sizes for partial

least squares structural equation modelling (PLS-SEM) analysis (Lowry and Gaskin 2014, 132). This procedure is based on achieving a fair representative sample, big enough to conduct, rigorous PLS-SEM.

The data collection phase was preceded by a pilot phase, during which 35 respondents were requested to comment on the questionnaire, allowing refinement of the instrument. The first mailing resulted in a response of 97 questionnaires and was followed by a second and third email request for filling out the on-line questionnaire, one week and three weeks later respectively. These efforts resulted in several additional responses. No patterns among undelivered surveys were noticed as undelivered surveys were distributed approximately evenly among different regions, resulting in 173 final questionnaires, serving as study sample. *T*-tests found no significant differences between early and late respondents in managerial level or and region. Due to the different role that each layer of management plays in shaping EO, and the degree of influence that each level exhibits at both individual level and organisational levels (Kuratko, Morris, and Covin 2011), a control variable relating to managerial seniority was surveyed. The respondent's characteristics revealed that 62 percent were junior management, while 26 percent were middle management, and 12 percent were senior or top management of the bank.

Instrument

The research instrument employed was a structured questionnaire, based on leveraging scales from past literature. Table 1 shows the constructs as independent and dependent variables (IV and DV), scale dimensions, literature sources and comments relating to reliability and validity issues addressed in previous studies.

DATA ANALYSIS TECHNIQUES

PLS-SEM is a statistical technique that can be used both for confirmatory and exploratory theory building, as opposed to covariance-based structural equation modelling (CB-SEM), which is recommended for confirmatory studies only (Lowry and Gaskin 2014). However, the choice of PLS-SEM over CB-SEM does pose some challenges to the integrated analysis of the study model. One of the distinctive disadvantages is that 'the requirement of recursivity in standard PLS-SEM inhibits investigating bidirectional effects' (Henseler and Fassott 2010, 2). This challenge was overcome by using linear regression analytics, to test the relationship, whereby TL was treated as the exogenous variable and EM as the

DV. A path model within the PLS-SEM domain consists of two models, namely the structural model, often referred to as the inner model, and the measurement model often referred to as the outer model (Henseler and Fassott 2010). PLS-SEM equally adopts two types of measurement models, a reflective model and a formative model. According to Gefen, Straub, and Boudreau (2000), a reflective measurement model, comprises latent variables that are all reflective and thus representative of unidimensional constructs that are correlated. Consequently, the empirical model as delineated in figure 1 is characterised as a reflective measurement model. In order to establish the consistency of the measurement model, a series of two battery tests were conducted, evaluating both the reliability and validity of the model (Hair, Ringle, and Sarstedt 2011).

MODEL RELIABILITY

The reliability of the model was measured using a bi-modal approach, thus both the internal consistency reliability and the indicator reliability of the model were tested (Hair, Ringle, and Sarstedt 2011). A series of two tests were used to test the internal reliability of the model, the Cronbach alpha test and the composite reliability test. The aim of the indicator reliability test was to determine whether the underlying manifest variables of transformational leadership (TL), EO and EM could be aggregated into singular latent variables respectively. The following Cronbach alpha scores and composite reliability scores were obtained respectively for each construct: EO = 0.890 and 0.915; TL = 0.901 and 0.938; EM = 0.886 and 0.9110. Both the Cronbach alpha scores and the composite reliability scores of the inner model variables, were all above > 0.80 (Nunnally 1978), indicating that the measurement model has internal consistency reliability.

MODEL VALIDITY

Exploratory factor analysis was conducted where the Kaiser-Meyer-Olkin (KMO) measure of sampling adequacy and Bartlett's test for sphericity, measuring sampling adequacy for significance, revealed the following: EO = 0.852 ($p < 0.000$); TL = 0.876 ($p < 0.000$); EM = 0.946 ($p < 0.000$). All latent variables, demonstrated KMO scores of greater than 0.60 with significant values, thus indicating data adequacy and significance to conduct factor analysis. Factor loadings showed that the indicator variables (apart from EO = 0.67) showed item loadings greater than 0.7 (Hair, Ringle, and Sarstedt 2011). A decision was taken to retain EO consid-

TABLE 1 Study Research Instruments

Construct	Literature sources	Dimensions	Scale	Comment on Instrument
Entrepreneurial mind-set (IV)	Haynie and Shepherd (2009); Urban (2016).	(1) Goal orientation (2) Metacognitive knowledge (3) Metacognitive experience (4) Metacognitive choice (5) Monitoring	Seven-point Likert scale – 'Not very much like me' to 'Very much like me'	Exploratory factor analysis (EFA) was used to test validity, resulting in five factors (Urban 2016). Cronbach alpha of 0.885 across all five dimensions (Haynie and Shepherd 2009).
Entrepreneurial orientation (DV)	Covin and Slevin (1991); Miller and Friesen (1982); Zahra (1991); Zahra and Covin (1995).	(1) Innovation (2) Risk-taking (3) Proactiveness	Seven-point Likert scale – 'Very untrue' to 'Very true'	Widely used scale with established validity and reliability (Zahra 1991; Zahra and Covin 1995). Cronbach alpha of 0.75 (Zahra and Covin 1995).
Entrepreneurial leadership (IV)	Bass (1995); Jung, Chow, and Wu (2003)	(1) Inspirational motivation (2) Intellectual stimulation (3) Individualized consideration	Seven-point Likert scale – 'Never' to 'Every time'	Validated with three dimensions (Avolio, Bass, and Jung 1991). Cronbach alpha of 0.81 (Jung, Chow, and Wu 2003).

ering the remainder of the indicator variables in the measurement model demonstrated indicator reliability and validity.

The convergent validity of model was evaluated using criteria from Fornell and Larcker (1981) insofar the model attains convergent validity when the latent construct explains more than 50 percent of its indicators' variance (Afthanorhan 2013, 200). Similarly, Fornell and Larcker (1981) criteria was used to assess the discriminant validity of the model, by evaluating whether the value of the correlation of each construct is lower than the square root of the average variance extracted (AVE) value, and here the

results were: EO = 0.607; TL = 0.834; EM = 0.688, confirmed that they were above the suggested value of 0.50 (Afthanorhan 2013), and statistically significant ($p < 0.001$). Additionally, t-statistic values were greater than 2.58 thus demonstrating that the measurement model had satisfied the convergent validity test (Hair, Ringle, and Sarstedt 2011).

The cross-loading approach was used to determine whether the measurement model displayed discriminant validity and was unidimensional, and hence whether the scale manifest variables that were empirically observed had an acceptable factor loading on the respective first or second generation latent construct. Table 2 shows these results where the factor loaded significantly on the intended construct it was intended to measure. Factor loadings for all the variables were greater than 0.60, in line with the threshold for established scales (Afthanorhan 2013), thus the measurement model was deemed unidimensional. Equally, the cross loading with any of the other latent variables was significantly less than 0.10 of the factor loading on the intended latent variable (Lowry and Gaskin 2014). Therefore, discriminant validity was achieved in the measurement model using the cross-loading methodology.

Lastly, the heterotrait-monotrait (HTMT) ratio of correlations methodology was utilized to assess the discriminant validity of the measurement model over and above the Fornell and Larcker (1981) criteria and the cross-loading approach. Results obtained (EO = 0.074; TL = 0.330; EM = 0.287) indicated that the HTMT criterion value was well below the desired threshold of 0.9 (Gold, Malhorta, and Segars 2001) thus demonstrating that the measurement model has discriminant validity.

Results

DESCRIPTIVES AND CORRELATIONS

Descriptive statistics (means and standard deviations) revealed overall high mean scores for the main variables under study, where the means for all variables were above the midpoint average (3, 5) on the 1–7 Likert scales. No large standard deviation values were detected on any of the variables. Table 3 shows the Pearson correlations coefficients, which were all positively correlated. Moderate associations between the latent variables within the inner model, were detected which were statistically significant. Conversely, the first generation latent variables were very strongly correlated towards their respective second-generation latent variables, for instance the TL sub-dimensions.

TABLE 2 Factor Cross-Loadings of the Measures

Variables per dimension	EO	TL	EM
Entrepreneurial Orientation 1	0.638	0.103	0.280
Entrepreneurial Orientation 2	0.811	0.189	0.283
Entrepreneurial Orientation 3	0.829	0.188	0.218
Entrepreneurial Orientation 4	0.741	0.136	0.292
Entrepreneurial Orientation 5	0.860	0.273	0.207
Entrepreneurial Orientation 6	0.824	0.274	0.209
Entrepreneurial Orientation 7	0.725	0.246	0.107
Entrepreneurial mind-set 1	0.215	0.165	0.807
Entrepreneurial mind-set 2	0.268	0.074	0.829
Entrepreneurial mind-set 3	0.247	0.146	0.783
Entrepreneurial mind-set 4	0.263	0.135	0.860
Entrepreneurial mind-set 5	0.234	0.103	0.865
Transformational leadership 1	0.251	0.926	0.148
Transformational leadership 2	0.246	0.919	0.168
Transformational leadership 3	0.209	0.894	0.085

HYPOTHESIS TESTING

Following the PLS-SEM results, refer to figure 1, the hypotheses were interpreted in terms of this empirical evidence. The hypothesized path relationships between the EM and higher levels of EO (H1) was supported with a positive, moderate to weak linear association between an EM and EO, that was statistically significant ($p < 0.01$). In summary, a positive unit increase of the EM resulted in an equivalent 0.27 increase in EO levels. The outer loading of the EM dimensions of goal orientation (0.81), metacognitive knowledge (0.83), metacognitive experience (0.78), metacognitive choice (0.86), and monitoring (0.87), shows that these factors are strong predictors for the EM construct. These results are aligned with the theoretical assumptions of the EM as an antecedent and predictor of EO. Research is mounting which indicates that entrepreneurs utilize their cognitive frameworks that they have acquired through experience and prior knowledge to perceive and understand connections and to identify and create entrepreneurial opportunities (Haynie et al. 2010). A metacognitive aware individual will recognize and engage in the process of identifying alternative EO strategies that maximize the likelihood of achieving his/her goal (Urban 2016).

Similarly, a path relationship between TL and EO (H2) was supported in terms of the path modelling coefficients, revealing a positive, moderate to weak linear association (0.22) between TL and EO, which was statistically significant ($p < 0.01$). The outer loadings of the TL dimensions reveal that inspirational motivation (0.93), intellectual stimulation (0.92), and individualized consideration (0.89), are all strong predictors for the TL construct.

Integrating the results with past EO studies, highlights the importance of TL in supporting an entrepreneurial strategy and assisting in fostering entrepreneurial behaviour required of employees (Ireland, Kovin, and Kuratko 2009). The leadership traits of a transformational leader are interwoven with the entrepreneurial traits of an entrepreneur (Eyal and Kark 2004) and as such transformational leaders enrich a firms EO (Ling et al. 2008). Equally, TL positively enhances the EO of a firm by influencing levels of innovation, infusing a proactive disposition and encouraging the propensity for risk-taking within the firm (Ling et al. 2008).

For H3a and H3b to determine whether TL explains the statistical variance in the EM, and whether explains the EM explains statistical variance in TL, path modelling coefficients showed that there were positive, weak linear associations statistically significant between TL and EM (0.14; $p < 0.001$) as well as for EM and TL (0.15; $p < 0.05$). These results resonate with literature where TL has been theoretically linked to positively influence an individual's willingness (Zhang and Peterson 2011), their purpose (Bass 1985) and their cognitive ability (Mumford et al. 2002), thus positively influencing their overall EM. Additionally, the theoretical constructs of TL and the EM may be considered mutually reinforcing constructs (Ireland, Hitt, and Sirmon 2003). Both TL and an EM share a reciprocal causal relationship, where the employee's EM and management's TL capability work together within an organization. Hence, the effectiveness of TL within an organization increases with the presence of entrepreneurially minded employees and similarly, the effectiveness of entrepreneurially minded employees increases with the presence of TL within the organization (Mumford et al. 2002). A summary of the PLS-SEM statistically analysis is depicted in figure 1.

Study Implications

Several implications and practical insight arise from the study results. One crucial implication relates to management understanding and leveraging TL in a manner that influences employee's metacognitions in terms

TABLE 3 Correlation Matrix for Study Variables

	Variable	1	2	3	4	5	6	7	8	9	10	11	12	13	14
1	EO aggregate	1													
2	EO: Innovation	0.967***	1												
3	EO: Risk taking	0.921***	0.974***	1											
4	EO: Pro-activeness	0.903***	0.910***	0.923***	1										
5	Transformational leadership	0.267**	0.255**	0.284**	0.317**	1									
6	TL: Inspirational motivation	0.259**	0.221**	0.253**	0.289**	0.968***	1								
7	TL: Intellectual stimulation	0.250**	0.265**	0.301**	0.271**	0.867***	0.759***	1							
8	TL: Individual consideration	0.219**	0.218**	0.266**	0.213**	0.875***	0.764***	0.734***	1						
9	Entrepreneurial mind-set	0.293**	0.225**	0.252**	0.221**	0.141*	0.145*	0.162**	0.078	1					
10	EM: Goal orientation	0.208**	0.197*	0.199*	0.142*	0.154**	0.135**	0.182**	0.129*	0.786***	1				
11	EM: Metacognitive knowledge	0.263**	0.213**	0.226**	0.248**	0.073*	0.079*	0.094**	0.019	0.862**	0.557*	1			
12	EM: Metacognitive experience	0.245**	0.227**	0.297**	0.286**	0.148**	0.156**	0.139**	0.097*	0.770***	0.530*	0.541*	1		
13	EM: Metacognitive choice	0.261**	0.213**	0.273**	0.215**	0.145**	0.166*	0.136*	0.051*	0.847***	0.608***	0.657***	0.587***	1	
14	EM: Monitoring	0.225**	0.224**	0.227**	0.257**	0.090*	0.070*	0.145*	0.058*	0.871***	0.667***	0.685***	0.566***	0.689***	1

NOTES $^{*}p < 0.10$, $^{**}p < 0.05$, $^{***}p < 0.01$.

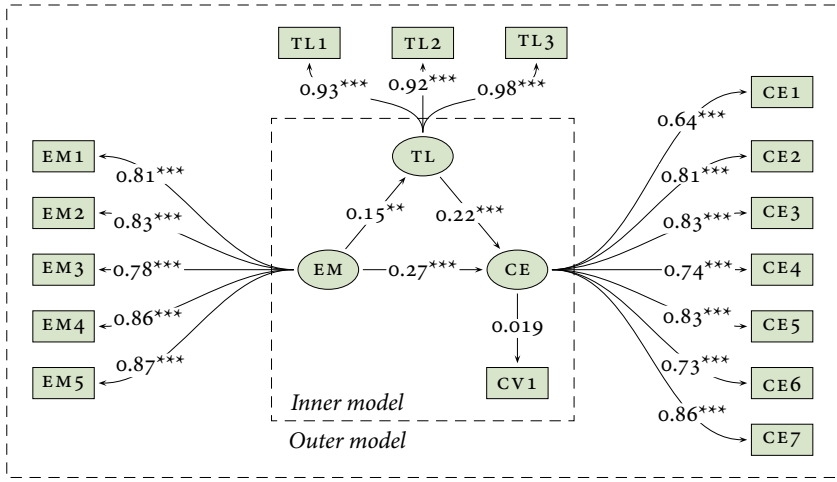

FIGURE 2 PLS-SEM Results for the Study Model (* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$, EM – entrepreneurial mind-set, TL – transformational leadership, CE – entrepreneurial orientation; CV – control variable)

of an EM. Fostering EO through TL and employee metacognitive thinking could take place through focused training programs that would allow employees to fully understand what stimulates an EM and ultimately how these metacognitions relate to the identification and exploitation of entrepreneurial opportunities to enhance overall levels of EO. Additionally, senior management must ensure that organisational environments are supportive of entrepreneurship and must provide appropriate TL which signal to employees that entrepreneurial behaviour action is desirably. Research is pervasive that leadership enacted through organisational cultural values and norms encourage entrepreneurial behaviour, specifically where there is incentive design allowing for mistakes and failure to occur at the workplace (Kuratko, Morris, and Covin 2011).

Limitations and Future Research

The study has limitations typical of a cross-sectional study, which precludes any conclusions to be drawn about a possible causal relationship between the variables under study and EO. A longitudinal study is required to provide further insights and causal inferences into the relationship between these factors. Moreover, the study is susceptible to common method bias which is problematic in behavioural research where measurement error and is attributable to the measurement method rather

than to the construct of interest (Podsakoff et al. 2003). In order to minimise common method bias the questionnaire featured a 'counterbalanced' question order, and the respondents were requested to be honest in their responses while assuring completely anonymous. Moreover, a consistent scale format was used, where scale items that have been tried and tested were incorporated into the survey and the scale included negative and positive statements. Additionally, signs of common method bias were evaluated by determining whether the measurement model attained construct validity (Bagozzi, Yi, and Phillips 1991), which it did. Furthermore, the study relies on perceptual data where responses may have been influenced by perceptual biases and social desirability. In order to reduce social desirability in reporting high levels across questions the survey instruction emphasized honesty for self-assessment. Notwithstanding these limitations, the findings provide a meaningful understanding of the nature of the relationships between TL, EM and EO. Researchers can apply the study findings in different contexts in the future and broaden the spectrum of antecedent factors influencing EO.

Conclusion

The study has made an important contribution to the management literature when considering the positive and significant results obtained for the study model highlighting interrelationships between TL, EM and EO. What these findings demonstrate is that entrepreneurship is not confined to the initial stages of an organizational set-up, in terms of only start-ups; rather, it is a dynamic process, where both TL and an EM both play a crucial part in affecting the development of EO in established organizations.

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Towards a Strategic Shift? On the Evolution of Poland's Position in the Global Economy in 2003–2012

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Poland, like other economies of the region of Central and Eastern Europe, embarked upon a process of radical economic transformation since 1989, leading to the introduction of a market-based economy. This process was accompanied and driven by a gradual opening of the economy to different forms of international economic activity, including notably a dynamic growth of foreign trade. The paper provides an analytical account on the increasing internationalisation of the Polish economy, pointing to the existence of a certain paradox. On the one hand, the process of catching up with advanced economies requires higher growth rates in terms of GDP. However, the said internationalisation also makes the economy more dependent on the economic situation in other countries. The analysis also indicates that a strategic shift in sectoral and geographic terms occurred in Polish exports. The paper concludes with recommendations for economic policy.

Key Words: internationalisation, foreign direct investment, exports, economic policy, economic transformation
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Introduction

One of the most salient features of the dramatic changes occurring in the Polish economy because of the transformation process initiated back in 1990 was its systematic integration into the global economic system. While the centrally planned economy imposed significant restrictions

both in the area of goods and services flows, and capital mobility, market economy was open for international cooperation. The basic symptoms for this opening were the dynamic changes in the Polish foreign trade and foreign direct investment (FDI) flows. The transformation process led to an explosion of entrepreneurial activity in the long run, including the start of foreign operations by Polish firms. The internationalisation of firms is a phenomenon which is particularly relevant for economic development due to its potential for enhancing demand for goods and services offered by domestic firms and, consequently, for increasing the employment level. This aspect plays a crucial role in small and/or mature economies with a relatively low potential for domestic market growth. The high dynamics of export may therefore serve as an indicator of enhanced competitiveness of an economy and of the firms' ability to fulfil foreign markets requirements (Gorynia and Kowalski 2008). Poland is an open and – in the case of most industries – a relatively mature market in which successful long-term firm operations require facing the rivalry from both domestic and international players. The progressing liberalisation of the flows of goods and services and the related increase of competition in the domestic market significantly afflicts development perspectives for firms that decide to confine their operations merely to the local market, for even such behaviour does not necessarily allow avoiding confrontation with foreign competitors. Thus, in many cases internationalisation poses a unique chance for improving competitiveness and becomes an inherent constituent of the strategy of Polish firms towards the expansion of foreign investors (Gorynia 2005; Gorynia et al. 2013).

Exports, imports and FDI are common modes of internationalisation amongst Polish firms, whereby the latter are still implemented relatively seldom in spite of a visible increase of interest in this expansion strategy in the recent years. Given the volume constraints of the present paper, as well as the impact of the said internationalisation modes on the economy, the main emphasis of further analysis will be placed upon international trade, including particularly export activity of firms located in Poland in the period between 2006 and 2012.

The present paper is based on the analysis of the changes, which occurred in the position of Poland's economy as opposed to the world and the European Union, in specific. The objective of this analysis is to seize relationships, which appeared in the investigated period. The paper also undertakes an attempt at verifying the information about a geographic and sectoral re-orientation of Polish exports, which started to appear in

publications at the beginning of 2014 (see e.g. Kowalczyk 2014; Kozłowski 2014; Siemiończyk 2014).

Export Reorientation: A Literature Review

As Central and Eastern European countries have been undergoing significant political and economic transformations, researchers have paid some attention to changes happening in the geographic structure of their exports (see i.e.: Lendesmann and Szekely 1995; Kamiński 1996; Kamiński, Wang and Winters 1996; Brenton and Gros 1997; Winiecki 2000a; Djankov and Freund 2002; Kandogan 2006). Such studies had been especially popular during the last decade of the 20th century, due to the necessary reorientation of Central and Eastern European countries' exports and the need to change their previous trade partners originating from the Council for Mutual Economic Assistance to those coming from market economies in general and neighbouring European Union countries in particular. It is often highlighted that these changes were, on the one hand, partially natural due to the geographic proximity of the mentioned countries and earlier industrial cooperation among them and, on the other hand, they were administratively facilitated by state treaties called association agreements. At the same time, the scope and speed of the fundamental economic changes that the CEE countries experienced were unprecedented.

The studies of the dramatic and fundamental reorientation of the CEE countries' exports can be divided into two groups. The first group is focused on the analyses of the mentioned phenomenon by the use of the gravity models (see Lendesmann and Szekely 1995; Kamiński 1996; Brenton and Gros 1997; Winiecki 2000a; Djankov and Freund 2002; Kandogan 2006). In particular, those studies tried to assess the export potential of the CEE countries to market economies, by taking into consideration for example: transportation costs, demand and supply conditions, GDP of partner countries, common language, etc. While doing so, researchers tried to answer if the export reorientation of the CEE countries was complete or not. The second group applied more descriptive approach (see Vanyai and Viszt 1992; Kamiński, Wang, and Winters 1996; Szalavetz and Lucke 1999; Hoekman and Djankov 1999; Winiecki 2000b) and tried to relate export reorientation to other aspects of CEE countries' functioning, as for example social and political changes, welfare state development, global re-integration etc.

Before focusing directly on the analysis of the more up-to-date export

position of Poland it may be useful to highlight the importance of involvement of CEE countries in general, and Poland in particular, into the trade with other market economies. First of all, all the member countries of the Council for Mutual Economic Assistance experienced severe decrease in foreign trade after the collapse of Soviet Union. This means, that the countries that were at that time extremely troubled with internal changes of political, social and economic nature, were additionally hit by a decrease in the external demand of their products. At least in the case of Poland, the market was unsaturated and ready to pull the extra amount of goods, however even this did not prevent it from massive bankruptcies of public companies, dramatic rise in unemployment rate, and as a result, relatively slower growth of GDP. The rapid trade reorientation and recovery played an important role as a driver of further economic growth. Secondly, the goods exported by transition economies at the beginning of the 90ties were very often of poor quality. The reorientation of export towards the market economies enforced qualitative changes in the commodity structure of exports. This required wider changes in terms of increasing the value-added content of products through R&D and capital-intensive technologies, privatisation and integration of businesses with global markets and giving more priority to more profitable exports. All those changes were important for securing a sustainable path of growth. Thirdly, the character of foreign trade has been changing from the inter-industry trade into the intra-industry trade, which allowed participation of firms originating from CEE countries in the global supply chains.

Analysis of the Polish Case

THE OVERALL CONTEXT OF FOREIGN TRADE REFORMS IN POLAND

During Poland's transformation process in the 1990s and 2000s, the country undertook different attempts at integrating itself into the global economy (Gorynia, Nowak, and Wolniak 2007). By increasing the linkages with the world economy, Poland aimed at fostering growth and closing the income gap to advanced economies of Western Europe. Up to the outset of economic changes in the CEE region in the 1990s, Poland had remained largely closed towards its external environment (Gorynia et al. 2014b). Hence, international business operations were not used for stimulating the economy, enhancing domestic productivity or exploiting the international allocation of labour. Interestingly, the structure of foreign

trade was distorted, since exports from Poland predominantly focused upon the member states of the Council for Mutual Economic Assistance (CMEA), while exports to countries of the Organisation for Economic Co-Operation and Development (OECD) were significantly lower than the it could be expected based on the overall economic performance of the country (Gorynia 2002b).

Accordingly, after the beginning of the transformation process, the government was confronted with the challenge of enabling the advantages of globalisation by fostering reforms and growth (Gorynia et al. 2014b). It thus liberalised prices and market regimes, privatised most state-owned enterprises, redirected the country's trade from the former CMEA trading bloc towards the European Union, and opened up most of its industries to foreign direct investment (Ali, Nowak, and Pöschl 2001; Gorynia and Wolniak 2002). These integration processes intensified the interdependences of Poland with other countries and thus bringing a number of positive effects. In general, the increased participation in international trade and international investment supported the country in modernizing and restructuring its economy. The implementation of a more open foreign economic policy in most CEE countries at first (1990–1991) relied on the liberalisation of commodity prices, increase in subsidies, devaluation of Polish currency and introduction of its external convertibility, as well as significant import liberalisation (Gorynia 2002a). Subsequently, from early 1990 to August 1991, the liberalisation of commodity prices, increases in subsidies, devaluation of Polish currency and introduction of its external convertibility ensued, accompanied by significant import liberalisation. Further, from September 1991 to late 1993, adjustments within the process of gradual association with the European Union and the Central European Free Trade Area (CEFTA) led to further liberalisation in international trade. In specific, duties and customs quotas on raw materials were suspended. In addition, the transition agreement with the EU assumed the establishment of free trade zones for industrial goods. This led to a more active trade policy, restructuring of production and exports at the beginning of 1994, when the European Agreement defining the principles of Poland's association with the EU was implemented. One of the attempts at stimulating inflows of foreign direct investment was the introduction of investment incentives, including a partial deduction of investment outlays from taxable income. The years 1995–1998 brought about further liberalisation of goods import (resolutions of the Final Act of the Uruguay Round, European Agreement, agree-

ments with CEFTA and the European Free Trade Association), as well as a removal of compulsory reselling of hard currency to banks by exporters, liberalisation of capital outflows from Poland. It was at that time that first export supporting instruments (export credits and insurance of export credits) were being introduced, albeit at a limited scope.

These initial changes in foreign trade policy were further accelerated by Poland's accession to international organisations such as the OECD (1996) and the EU (2004). However, for the exporters, the elimination of a centralised regulation of trade immediately removed a source of subsidies and imposed the responsibility of securing self-financing (Gorynia et al. 2014b). At the same time, the dissolution of the CMEA in 1991 had the effect of stimulating the internationalisation of existing and newly established firms to new geographic markets, while a network of business ties established in the previous economic system could still be leveraged.

EVOLUTION OF THE POSITION OF POLAND'S ECONOMY IN THE WORLD AND IN THE EUROPEAN UNION

In order to analyse the effects of the transition process, and specifically the evolution of foreign trade policy, on the internationalisation of the Polish economy, the evolution of international trade deserves particular attention.[1] Its dynamic development has generated numerous advantages for the Polish economy. At the same time, however, it poses certain threats, which may potentially reduce the advantages arising from an open economy.

The analysis of GDP data relied on UNCTAD data for the period under study, including both absolute and per capita values. All figures were calculated according to official exchange rates. The analysis of dynamics required computing change indices, both year-to-year and with reference to year 2003 as the last year before Poland's accession to the European Union. In all cases, Poland was compared to both the European Union and the global economy. As far as Poland's exports are concerned, apart from the aforementioned indicators, the share of exports of goods and services in GDP value was calculated. Moreover, the Export Performance Index was calculated based on annual values of goods export. Finally, in order to account for the changes in the profile of Polish exports, detailed data from the Central Statistical Office of Poland (https://stat.gov.pl) were used to compute:

- the shares of the Eurozone and European Union in Poland's total export of goods in the years 2006–2012,

- the dynamics of Poland's export to the Eurozone and the European Union in the years 2006–2012 (year to year), and
- the shares in Poland's total export of goods and dynamics of Poland's export to the largest foreign trade partners in 2006–2012.

The data included in table 1 suggest that in the period 2003–2012 the GDP of Poland expressed in current prices increased more than twofold (by 225.9%), whilst in the case of global GDP the growth rate amounted to 189.7%. For the EU27 this indicator attained a level of 145.3%. In the case of Poland, this variable was twice (in 2009 and 2012) lower than 100% year-to-year, while in relation to the global economy the level of this indicator below 100% was observed only in one year (in 2009). For the EU27, this same indicator was lower than 100% in the years 2009, 2010, and 2012.

In regards to GDP per capita evolution, Poland experienced a similar growth rate for the period 2003–2012 as that of the entire GDP (224.2%). In the same period, the growth indicator of the global GDP per capita was 170.3%. For EU27 countries, this indicator amounted to 140.5%. In year-to-year terms, the value of this indicator for Poland was lower than 100% twice (in 2009 and 2012). For the world, the value of this indicator in year-to-year terms was lower than 100% only in 2009. In the EU27 countries, such situation occurred in 2009, 2010, and 2011.

In the investigated period, Poland occupied the highest position globally in 2008, which was 18th. The lowest 18th position was held in 2003–2005. As regards Poland's position in the EU27, Poland moved from the 10th position in 2003–2005 to 8th position in 2012. In 2008 Poland scored 7th in the same ranking, which was its highest result ever. In regards to the evolution of GDP per capita, Poland was on the 68th position in the world in 2003 and moved to 59th position in 2012. Poland's position in the EU27 was very stable and remained at the level of 23–25 throughout the entire investigated period.

As far as the so-called active internationalisation of the Polish economy vis-a-vis the economies of the world and of EU27 is concerned, only export will be analysed here. Comparative data referring to the exports of Poland, world and EU27 are included in table 3.[2] In the years 2003–2012, the indicator of export growth for Poland amounted to 306.7%, for the world – 243.1%, and for the EU27 – 184.7%. For Poland, the export value indicator in year-to-year terms achieved a value higher than 100% at two occasions (in 2009 and 2012). Such situation for the world exports occurred only once in 2009, and twice for the EU27 (2009 and 2012). As

TABLE 1 GDP in the period 2003–2012 (current prices and exchange rates)

Year	Region	(1)	(2)	(3)	(4)	(5)	(6)
2003	Poland	216801	100.0	–	5676	100.0	–
	EU25	10811815	100.0	100.0	28129	100.0	–
	EU27	11407970	100.0	100.0	23361	100.0	100.0
	World	37654430	100.0	–	5949	100.0	–
2004	Poland	252769	116.6	116.6	6621	116.7	116.7
	EU25	13070342	120.9	120.9	28365	100.8	100.8
	EU27	13171420	115.5	115.5	26857	115.0	115.0
	World	42371251	112.5	112.5	6614	111.2	111.2
2005	Poland	303912	140.2	120.2	7963	140.3	120.3
	EU25	13643917	126.2	104.4	29467	104.8	103.9
	EU27	13771984	120.7	104.6	27962	119.7	104.1
	World	45849262	121.8	108.2	7073	118.9	106.9
2006	Poland	341597	157.6	112.4	8949	157.7	112.4
	EU25	14527715	134.4	106.5	31227	111.0	106.0
	EU27	14683621	128.7	106.6	29686	127.1	106.2
	World	49698900	132.0	108.4	7576	127.4	107.1
2007	Poland	425129	196.1	124.5	11132	196.1	124.4
	EU25	16985806	157.1	116.9	34195	121.6	109.5
	EU27	16985806	148.9	115.7	34195	146.4	115.2
	World	55996876	148.7	112.7	8437	141.8	111.4
2008	Poland	529423	244.2	124.5	13853	244.1	124.4
	EU25	18271448	169.0	107.6	36634	130.2	107.1
	EU27	18271448	160.2	107.6	36634	156.8	107.1
	World	61380972	163.0	109.6	9141	153.7	108.3
2009	Poland	430912	198.8	81.4	11266	198.5	81.3
	EU25	16334168	151.1	89.4	32626	116.0	89.1
	EU27	16334168	143.2	89.4	32626	139.7	89.1
	World	58193951	154.5	94.8	8567	144.0	93.7

Continued on the next page

far as export dynamics of per capita values go, in the investigated period this indicator amounted to 306.0% for Poland, 219.0% for the world, and 178.6% for the EU27. In year-to-year terms, an indicator lower than 100% could be observed in 2009 and 2012 for Poland, the world and EU27 countries. It must be emphasised that significant changes of Poland's share in

TABLE 1 *Continued from the previous page*

Year	Region	(1)	(2)	(3)	(4)	(5)	(6)
2010	Poland	469799	216.7	109.0	12274	216.3	108.9
	EU25	16276284	150.5	99.6	32399	115.2	99.3
	EU27	16276284	142.7	99.6	32399	138.7	99.3
	World	63580799	168.9	109.3	9253	155.5	108.0
2011	Poland	514115	237.1	109.4	13424	236.5	109.4
	EU25	17596476	162.8	108.1	34925	124.2	107.8
	EU27	17596476	154.2	108.1	34925	149.5	107.8
	World	70201920	186.4	110.4	10068	169.2	108.8
2012	Poland	489 852	225.9	9453	12 820	225.9	95.5
	EU25	16573561	153.3	94.2	32812	116.6	93.9
	EU27	16573561	145.3	94.2	32812	140.5	93.9
	World	72 683 234	189.7	101.8	10 268	170.3	100.6

NOTES Column headings are as follows: (1) GDP (milion USD according to official exchange rate), (2) change (%, 2003 = 100), (3) change (%, previous year = 100), (4) GDP per capita (USD), (5) change (%, 2003 = 100), (6) change (%, previous year = 100). Calculations based on data from UNCTAD (http://unctadstat.unctad.org).

TABLE 2 Export of Goods (current prices and exchange rates)

Year	Region	(1)	(2)	(3)	(4)	(5)	(6)	(7)
2003	Poland	61007	100.0	–	1597	100.0	–	33.30
	EU25	2775767	100.0	–	7222	100.0	–	33.5
	EU27	3006826	100.0	–	6157	100.0	–	34.3
	World	7474601	100.0	100.0	1177	100.0	100.0	24.9
2004	Poland	81583	133.7	133.7	2137	133.8	133.8	37.55
	EU25	3555623	128.1	128.1	7716	106.9	106.9	35.5
	EU27	3589054	119.4	119.4	7318	118.9	118.9	35.6
	World	9083607	121.5	121.5	1413	120.1	120.1	26.9

Continued on the next page

world exports occurred. It increased systematically in the period 2003–2009, showing annual growth rates from 0.82% to 1.14% in six consecutive years, while the most recent three years witnessed a downward trend (decline to 1.03% in 2012). In regards to the level of Poland's export in relation to EU27 exports, a clear upward trend can be observed – from 2.03% in 2003 to 3.37% in 2012.

The share of goods and services in GDP grew dynamically and system-

TABLE 2 *Continued from the previous page*

Year	Region	(1)	(2)	(3)	(4)	(5)	(6)	(7)
2005	Poland	96514	158.2	118.3	2529	158.3	118.3	37.12
	EU25	3846671	138.6	108.2	8308	115.0	107.7	36.9
	EU27	3886130	129.2	108.3	7890	128.1	107.8	36.9
	World	10373128	138.8	114.2	1594	135.5	112.8	28.2
2006	Poland	117238	192.2	121.5	3071	192.3	121.5	40.33
	EU25	4369835	157.4	113.6	9393	130.1	113.1	39.2
	EU27	4417478	146.9	113.7	8931	145.0	113.2	39.2
	World	11995325	160.5	115.6	1822	154.9	114.3	30.0
2007	Poland	144739	237.2	123.5	3790	237.3	123.4	40.79
	EU25	5132510	184.9	117.5	10333	143.1	110.0	39.8
	EU27	5132510	170.7	116.2	10333	167.8	115.7	39.8
	World	13883426	185.7	115.7	2084	177.1	114.4	31.0
2008	Poland	176321	289.0	121.8	4613	288.9	121.7	39.96
	EU25	5668288	204.2	110.4	11365	157.4	110.0	40.9
	EU27	5668288	188.5	110.4	11365	184.6	110.0	40.9
	World	15953617	213.4	114.9	2367	201.2	113.6	32.4
2009	Poland	141078	231.2	80.0	3688	230.9	79.9	39.39
	EU25	4404220	158.7	77.7	8797	121.8	77.4	37.0
	EU27	4404220	146.5	77.7	8797	142.9	77.4	37.0
	World	12415110	166.1	77.8	1821	154.8	76.9	27.5
2010	Poland	165599	271.4	117.4	4326	270.9	117.3	42.22
	EU25	4953887	178.5	112.5	9861	136.6	112.1	40.8
	EU27	4953887	164.8	112.5	9861	160.2	112.1	40.8
	World	15127757	202.4	121.8	2194	186.5	120.5	30.0

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atically in Poland – it reached 33.3% in 2003, while it was at the level of already 46.2% in 2012. For the world, this indicator reached 24.9% in 2003 and 31.6% in 2012. For the EU27 group of countries, these values were 34.3% and 44.6%, respectively.

A synthetic measure reflecting the changes of a given country's position in exports are its positions occupied in rankings. In 2003, Poland took the 30th position in the world in terms of the value of goods and services, and specifically 32th in goods export and 34th in services ex-

TABLE 2 *Continued from the previous page*

Year	Region	(1)	(2)	(3)	(4)	(5)	(6)	(7)
2011	Poland	193740	317.6	117.0	5059	316.7	116.9	44.99
	EU25	5809377	209.3	117.3	11530	159.7	116.9	43.8
	EU27	5809377	193.2	117.3	11530	187.3	116.9	43.8
	World	18145522	242.8	119.9	2602	221.2	118.6	32.0
2012	Poland	187238	306.9	96.6	4887	306.0	96.6	46.19
	EU25	5553366	200.1	95.6	10994	152.2	95.4	44.6
	EU27	5553366	184.7	95.6	10994	178.6	95.4	44.6
	World	18170388	243.1	100.1	2577	219.0	99.0	31.7

NOTES Column headings are as follows: (1) GDP (milion USD according to official exchange rate), (2) change (%, 2003 = 100), (3) change (%, previous year = 100), (4) GDP per capita (USD), (5) change (%, 2003 = 100), (6) change (%, previous year = 100), (7) share of exports of goods and services in GDP (%). Calculations based on data from UNCTAD (http://unctadstat.unctad.org).

TABLE 3 Export of Goods in 2003–2012: Poland's Share (current prices and exchange rates)

(1)	(2)	(3)	(4)	(1)	(2)	(3)	(4)
2003	0.82	2.20	2.03	2008	1.11	3.11	3.11
2004	0.90	2.29	2.27	2009	1.14	3.20	3.20
2005	0.93	2.51	2.48	2010	1.09	3.34	3.34
2006	0.98	2.68	2.65	2011	1.07	3.33	3.33
2007	1.04	2.82	2.82	2012	1.03	3.37	3.37

NOTES Column headings are as follows: (1) year, (2) share in the world (%), (3) share in EU25 in (%), (4) share in EU27 (%).

port. In 2012, Poland ranked 28th, 26th and 30th, respectively. In relation to EU27 countries in 2003 Poland ranked 12th, 12th and 16th, respectively, in order to move to 10th, 8th and 13th position in 2012. For exports per capita, Poland's position in the world in 2003 in the three categories concerned was the following: 72th, 60th and 80th. The respective positions for 2012 are 54th, 54th and 68th. In relation to the EU27, Poland was on 25th, 22th and 26th position in 2003, while in 2012 it ranked 24th, 23rd and 25th, respectively.

Another parameter describing the evolution of Poland's role as an exporter is the so-called Export Performance Index (table 4). This indicator is computed as the ratio of the relation of export to GDP for Poland and

TABLE 4 Export Performance Index in 2003–2012

(1)	(2)	(3)	(1)	(2)	(3)
2003	Poland–EU25	1.096	2008	Poland –EU25	1.074
	Poland–EU27	1.068		Poland–EU27	1.074
	Poland–world	1.418		Poland–world	1.281
2004	Poland–EU25	1.186	2009	Poland–EU25	1.214
	Poland–EU27	1.184		Poland–EU27	1.214
	Poland–world	1.506		Poland–world	1.535
2005	Poland–EU25	1.126	2010	Poland–EU25	1.158
	Poland–EU27	1.125		Poland–EU27	1.158
	Poland–world	1.404		Poland–world	1.481
2006	Poland–EU25	1.141	2011	Poland–EU25	1.141
	Poland–EU27	1.141		Poland–EU27	1.141
	Poland–world	1.422		Poland–world	1.458
2007	Poland–EU25	1.127	2012	Poland–EU25	1.146
	Poland–EU27	1.127		Poland–EU27	1.146
	Poland–world	1.373		Poland–world	1.510

NOTES Column headings are as follows: (1) year, (2) relation, (3) export performance index (indicators calculated based on annual values of goods export).

the relation of world export to world GDP. In other words, it measures the relative intensity of a given economy's exports, relating it to the intensity of world export. In 2003–2012 this indicator was at the level between 1.281 (2008) and 1.535 (2009). In general, a slight upward trend can be noted, accordingly. The evolution of this indicator shows an above average (as compared to the world) and gently increasing export intensity of Poland's exports. As regards the changes of the Export Performance Index for the relation Poland–EU27, it is possible to note its limited growth from 1.068 (2003) to 1.214 (2009).

It is also interesting to analyse the findings for export. As mentioned before, for the period 2003–2012 the export growth indicator for Poland amounted to 306.7%, for the world – 243.1%, and for the EU27 – 184.7%. As for the growth of export per capita values, in the investigated period it amounted to 306.0% for Poland, for the world – 219.0%, and for the EU27 – 178.6%.

Also favourable for Poland are the figures related to the change of Poland's export share in world export and EU27 export. It must be stressed

that the dynamics of Poland's export share changes was significantly higher in relation to the EU27 than to the world. The share of goods and services export in GDP for Poland was higher throughout the investigated period than for the world, while a comparison with EU27 indicates similar findings for Poland and the European Union.

Another indicator reflecting the change in Poland's significance in export are the positions occupied in rankings of major exporters. Poland significantly improved its position both in the world and in the European Union. An improvement of Poland's rank in export per capita values also took place, whereby this increase was higher as compared to the world than to the European Union. With regard to the Export Performance Index, Poland's position in the world improved marginally, while the indicator stabilised in relation to EU27.

CHANGES IN THE GEOGRAPHIC STRUCTURE OF POLISH EXPORT

As it was mentioned before, the value of Polish export of goods has been intensively growing. The most recent information concerning foreign exchange of goods for the year 2013 also indicates 7% growth rate of Polish exports value (Kozłowski 2014). Additionally, according to the latest data, during the first five months of the year 2014 the value of Polish export exceeded the value of its import (Narodowy Bank Polski 2014). This situation is partly explained because of the economic slowdown, which decreased consumption and investment, and therefore reduced Polish demand for imports. However, many economists claim that such situation also results from a lesser dependence of Poland on foreign capital. At the same time, it is often highlighted that the most recent increase in the value of Polish export was recorded not because of Polish currency depreciation or other extraordinary events, but it is rather an outcome of the improving capability of Polish firms to compete successfully in highly demanding foreign markets (Kozłowski 2014). Moreover, it is frequently emphasised that firms located in Poland increasingly embark upon expansion into foreign markets outside of the Eurozone or the European Union, in general. Thanks to those new directions of growth, Polish export has kept growing despite the recent economic slowdown (Kowalczyk 2014).

This part of the paper aims at verifying the assumptions presented above concerning the geographic reorientation of Polish export. The analysis is based on data published by the Central Statistical Office within

TABLE 5 The Shares of the Eurozone and European Union in Poland's Total Export of Goods in the Years 2006–2012 (%)

	2006		2007		2008		2009		2010		2011		2012	
	(a)	(b)	(a)	(b)	(a)	(b)	(a)	(b)	(a)	(b)	(a)	(b)	(a)	(b)
Total	52.77	77.42	52.16	78.86	51.06	77.65	56.05	79.49	55.22	79.03	53.88	77.68	51.72	76.64
(1)	59.53	85.00	59.03	85.77	56.76	83.40	58.52	84.83	55.59	80.59	53.54	76.62	53.60	77.01
(2)	49.87	76.73	52.57	79.58	50.38	80.03	52.61	72.09	52.33	72.26	50.99	71.85	48.91	71.07
(3)	75.07	97.55	72.83	91.15	51.21	95.46	73.96	98.99	63.83	98.34	51.39	96.46	47.66	90.68
(4)	34.20	69.22	37.48	75.39	40.41	77.53	46.64	79.38	48.70	80.17	49.13	80.98	48.98	77.45
(5)	39.23	84.79	40.19	89.02	40.00	81.05	44.74	83.43	47.77	85.00	47.93	82.49	45.86	78.20
(6)	33.55	63.15	35.54	66.26	37.30	68.83	39.30	66.46	42.64	69.06	45.31	70.59	42.72	69.80
(7)	53.61	76.82	52.68	78.27	51.98	79.53	58.25	80.97	58.40	81.20	59.27	80.84	58.15	80.67
(8)	69.98	89.08	66.19	86.82	62.93	85.23	63.84	88.25	59.45	83.09	52.84	78.17	52.00	76.54
(9)	56.12	80.98	54.45	84.78	52.28	84.05	58.48	87.16	57.92	86.38	56.62	86.61	55.13	86.30
(10)	40.59	67.36	42.95	68.69	42.90	67.30	48.72	70.85	49.75	72.20	50.11	73.13	54.80	76.87
(11)	61.90	84.00	59.96	84.08	60.24	85.65	66.56	86.10	66.70	85.68	67.70	85.47	64.20	84.34
(12)	38.07	58.23	34.28	61.34	39.02	63.57	50.04	69.62	44.28	62.90	44.07	59.98	39.07	59.20
(13)	38.82	68.84	38.23	73.29	39.32	73.63	47.37	78.15	46.66	76.88	46.89	76.44	45.26	76.26
(14)	52.80	87.92	50.48	89.30	48.05	87.14	32.11	89.89	28.24	81.04	24.14	77.28	37.67	96.10
(15)	54.41	77.43	53.05	78.50	52.09	78.25	54.55	76.41	55.34	79.56	55.71	80.72	53.63	78.46
(16)	55.60	79.77	55.39	81.30	53.72	78.92	56.07	80.76	55.33	80.06	53.96	78.21	50.46	75.62
(17)	58.60	75.09	56.14	74.37	54.12	73.09	64.54	79.12	60.75	75.70	54.98	71.20	52.82	71.84
(18)	51.92	75.84	53.26	76.46	50.42	74.20	50.88	73.10	52.54	76.44	47.50	74.42	47.99	65.62
(19)	1.51	9.39	1.23	2.36	9.00	9.29	1.27	6.62	9.65	45.26	15.13	43.13	12.76	26.64
(20)	60.50	84.68	50.01	77.04	57.72	85.21	64.26	86.64	64.42	85.39	64.24	84.62	59.13	82.74
(21)	24.16	24.16	23.39	23.39	24.48	24.81	27.20	27.97	23.10	23.90	18.40	18.40	1.71	1.71

NOTES Column/row headings are as follows: (a) Eurozone, (b) EU, (1) live animals, animal products, (2) vegetable products, (3) fats and oils, (4) prepared foodstuffs, (5) mineral products, (6) products of the chemical industry, (7) plastics and rubber and articles thereof, (8) raw hides and skins, articles thereof, (9) wood and articles of wood, (10) pulp of wood, paper, paperboard and articles thereof, (11) textiles and textile articles, (12) footwear, headgear and articles thereof, (13) articles of stone, ceramic products, glass, (14) pearls, precious stones, metals and articles thereof, (15) base metals and articles thereof, (16) machinery and mechanical appliances, electrical and electrotechnical equipment, (17) transport equipment, (18) optical, photographic, measuring, checking instruments and apparatus thereof, (19) arms and ammunition, (20) miscellaneous manufactured articles, (21) works of art, collectors' pieces and antiques. Data concerning countries listed as the most important receivers of Polish export. Calculations based data from the Central Statistical Office of Poland (https://stat.gov.pl).

TABLE 6 Dynamics of Poland's Export to the Eurozone and the European Union in the Years 2007–2012 (%)

	2007		2008		2009		2010		2011		2012	
	(a)	(b)	(a)	(b)	(a)	(b)	(a)	(b)	(a)	(b)	(a)	(b)
Total	14.48	17.94	11.74	11.58	−7.25	−12.70	20.74	21.60	10.80	11.39	0.74	1.97
(1)	12.61	14.55	9.91	10.71	−8.01	−8.83	17.93	17.82	10.56	9.08	12.74	12.01
(2)	33.53	30.96	5.77	10.89	13.57	−2.08	4.31	5.17	4.29	6.90	29.52	29.68
(3)	40.14	51.45	−13.18	12.64	21.70	−0.16	8.47	4.58	−7.28	12.71	2.96	3.68
(4)	27.22	26.47	28.55	21.91	17.78	4.89	23.26	19.17	14.38	14.72	14.58	8.35
(5)	0.61	5.94	25.68	8.17	−31.93	−32.08	72.01	60.40	34.26	27.42	1.63	−0.35
(6)	27.47	26.34	34.16	31.48	−9.25	−16.00	44.99	38.43	25.10	20.11	1.27	3.85
(7)	16.23	20.31	8.61	11.22	−5.65	−13.35	32.34	32.07	24.46	21.62	3.30	3.13
(8)	3.09	6.00	−2.96	0.05	−17.26	−15.15	39.84	40.99	−1.04	4.70	1.13	−0.34
(9)	8.95	17.21	−5.82	−3.18	−10.12	−15.83	19.94	19.57	4.84	7.43	0.46	2.24
(10)	23.74	18.85	10.96	8.11	6.53	−0.45	23.32	22.77	13.19	12.98	−3.78	−7.74
(11)	5.20	8.83	11.97	12.98	−1.42	−9.60	16.44	15.43	12.31	10.02	−5.07	−2.59
(12)	−2.84	13.69	22.45	11.21	14.67	−1.28	20.66	22.81	15.98	11.22	6.41	16.19
(13)	14.70	23.84	4.43	1.60	−4.18	−15.05	18.77	18.56	15.21	13.79	0.26	2.90
(14)	−3.29	2.73	0.64	3.14	−36.07	−1.02	22.05	25.96	51.26	68.30	106.78	63.66
(15)	14.48	18.76	9.47	9.70	−29.95	−33.35	35.67	38.65	21.06	21.36	−0.29	−0.29
(16)	20.73	23.41	9.69	9.38	−7.83	−9.14	22.04	22.22	−0.05	0.16	−1.05	0.75
(17)	8.20	12.00	15.17	16.60	4.99	−4.23	0.70	2.51	3.93	7.51	−10.03	−6.47
(18)	13.41	11.69	15.51	17.65	−9.59	−11.20	30.46	31.95	11.86	20.28	9.96	−5.47
(19)	234.25	−2.75	346.45	154.84	−82.64	−15.00	229.21	206.19	76.36	9.77	−1.62	−29.89
(20)	−7.35	1.90	23.64	17.81	−6.37	−13.78	15.77	13.79	13.75	12.95	4.27	8.22
(21)	2.08	2.08	39.52	41.37	−8.12	−6.77	34.28	35.13	23.02	18.89	−88.66	−88.66

NOTES Column/row headings are as follows: (a) Eurozone, (b) EU, (1) live animals, animal products, (2) vegetable products, (3) fats and oils, (4) prepared foodstuffs, (5) mineral products, (6) products of the chemical industry, (7) plastics and rubber and articles thereof, (8) raw hides and skins, articles thereof, (9) wood and articles of wood, (10) pulp of wood, paper, paperboard and articles thereof, (11) textiles and textile articles, (12) footwear, headgear and articles thereof, (13) articles of stone, ceramic products, glass, (14) pearls, precious stones, metals and articles thereof, (15) base metals and articles thereof, (16) machinery and mechanical appliances, electrical and electrotechnical equipment, (17) transport equipment, (18) optical, photographic, measuring, checking instruments and apparatus thereof, (19) arms and ammunition, (20) miscellaneous manufactured articles, (21) works of art, collectors' pieces and antiques. Data concerning countries listed as the most important receivers of Polish export. Calculations based data from the Central Statistical Office of Poland (https://stat.gov.pl).

TABLE 7 Shares in Poland's Total Export of Goods and Dynamics of Poland's Export to the Largest Foreign Trade Partners in 2006–2012 (%)

Country		2006	2007	2008	2009	2010	2011	2012
Germany	(a)	27.15	25.89	25.05	26.15	26.11	26.09	25.13
	(b)		10.48	10.44	−11.81	22.35	13.48	1.10
Italy	(a)	6.54	6.60	5.97	6.84	5.93	5.34	4.85
	(b)		16.92	3.25	−3.18	6.24	2.14	−4.69
France	(a)	6.24	6.09	6.20	6.95	6.78	6.12	5.86
	(b)		13.07	16.24	−5.33	19.48	2.64	0.40
Netherlands	(a)	3.84	3.83	4.02	4.22	4.39	4.37	4.48
	(b)		15.27	19.96	−11.41	27.47	13.07	7.68
United Kingdom	(a)	5.71	5.94	5.76	6.41	6.28	6.44	6.77
	(b)		20.50	10.74	−5.97	19.96	16.51	10.25
Czech Republic	(a)	5.54	5.54	5.70	5.85	5.98	6.24	6.32
	(b)		15.79	17.53	−13.35	25.36	18.49	6.24
Russian Federation	(a)	4.28	4.62	5.20	3.66	4.18	4.49	5.35
	(b)		25.16	28.53	−40.57	39.94	22.00	25.08

NOTES Row headings are a follows: (a) share of export, (b) growth rate (year by year). Calculations based data from the Central Statistical Office of Poland (https://stat.gov.pl).

Yearbooks of Foreign Trade Statistics of Poland in the years 2007–2013. The focus of the analysis is on export activity of Poland during years 2006–2012 according to major countries and activity sections. During the analysed period, the list of Poland's key trade partners consisted of 50 countries, for which data could be obtained.

As indicated in the preceding sections, during the years 2006–2007 and 2010–2011 the values of Polish export grew at a two-digit pace. This growth rate decreased during 2011–2012, however it remained at satisfactory levels. The decrease of the value of Polish export experienced in 2009 can be attributed to the global economic crisis. However, taking into consideration that the value of world export in 2009 diminished by approximately 22%, while the same value for Poland fell down only by about 15%, this can still be regarded as a relatively favourable situation. At the same time, during the analysed period the structure of Polish export according to sectors did not change significantly. Both the biggest decreases and increases of particular section shares, when comparing year 2006 to 2011 and 2006 to 2012[3] amounted to around 1%. The biggest decreases

took place in the case of base metals and the related goods. At the same time, the biggest increases were related to such sections as products of the chemical industry and prepared foods.

Data presented in table 5 highlights to what extent Polish export is dependent on the European Union and Eurozone members. During the investigated period, around 77% of Polish export of goods was directed to Poland's biggest foreign trade partners from the European Union, while a bit more than 50% was absorbed by Eurozone member states. Starting from 2009, the share of the European Union in this regard has been decreasing very slowly. In case of Eurozone, this trend was slightly stronger. Table 6 presents the dynamics of Poland's export to the Eurozone and the European Union during years 2006–2012.

Germany, Italy, France, Netherlands, the United Kingdom, the Czech Republic and Russia were the largest receivers of Polish export during the years 2006–2012.[4] Table 7 presents data concerning the share of export and dynamics of export for the mentioned countries. The average total share of export to those countries amounted to approximately 59%. However, the majority thereof (about 42%) concentrated within the Eurozone. It is worth highlighting that the total share of export to the biggest partners originating from the Eurozone increased between the years 2006–2009, while afterwards it started decreasing. In this case, the total share of export decreased during years 2009–2012 from about 44% to 40%. This decrease is not a result of smaller values of export to the biggest countries, but rather of a slower increase in those values as compared to the total value of Polish export. Nevertheless, fluctuations of foreign currency exchange rates might have also exerted their influence. In the case of Netherlands, the United Kingdom, the Czech Republic and Russian Federation their shares of export have been increasing during the investigated period, which was accomplished by a higher dynamics of export growth. During the investigated period, apart from the already mentioned countries, the only non-European Union member state with a relative high and rising share of Polish export were the USA. Its share of export rose between the years 2008 and 2012 from the value of 1.45% up to 1.95%.

Extremely high dynamics of growth during the analysed period characterised values of Polish exports to such countries as: Panama (the average growth rate for the years 2006–2012 amounted to ca. 44%), Luxembourg (ca. 36%), Mexico (ca. 35%), Singapore (ca. 35%), Indonesia (ca. 31%), Brazil (ca. 29%), India (ca. 26%) and Japan (ca. 22%). At the same time, the share of exports directed to those countries in the total exports

of Poland amounted to 0.97% in the year 2006 and by the year 2012 it increased to 1.70%. It means that although the speed of growth of exports to those countries is significantly higher than the speed of growth of Polish exports in general, the changes are barely visible in the geographic structure of Polish exports. What is interesting is that the companies operating in a country with relatively short history of market economy and limited experience regarding internationalisation process (Poland), are more focused on competition in the mature and more developed markets (i.e. Germany, France, Italy, Netherlands, the United Kingdom) that face higher rivalry pressure, than in emerging markets (like i.e. Panama, Mexico, Singapore, Indonesia, Brazil and India) with seemingly less fierce competition. This constitutes a paradox that may be partially explained by geographic proximity, the accessibility of mature markets at the beginning of Poland's transition process and global supply chains coordination mechanisms; however, without deeper studies of Polish companies' motivation and decision making process regarding their internationalisation one can only speculate the reasoning behind this phenomenon.

Conclusions and Policy Implications

To summarise the above considerations, Poland developed faster than the world and faster than EU27 countries.[5] The differences in growth rates indicate that there was a larger positive difference in the growth rate of Poland in relation to the EU27 than in relation to the world. In other words, the process of catching up in terms of economic development was faster in relation to the European Union than to the world. The observed tendencies identified for the period 2003–2012 are characterised by a limited usability for the purpose of prediction of future events. The overlap of a large number of variables concerning particular national economies and specific types of economic policy makes the construction of growth scenarios burdened by a high risk of error. Should similar growth trends sustain in the future (which appears to be confirmed by most predictions), then attention should be paid to further intensification of economic ties with the outside world, since the latter develops faster and it is therefore more promising from the development point of view. The above recommendation is further supported by the so-called Hausner Report in which it was noted that a high concentration of Poland's export to the markets of the European Union is one of the factors causing that from 2009 the export growth rate of Poland was lower than the growth rate of world import (Hausner 2013). It seems, therefore, that the above

observations constitute a justification for the postulate of increasing the geographic diversification degree of Polish export with shifting emphasis to growth on those markets which will develop at a pace significantly above world average;

The recommendation expressed in the previous point should not be treated in a mechanical, unambiguous and unconditional manner. A withdrawal from efforts to locate more exports in the markets of the European Union would be unwise, particularly in the few industries in which Polish firms score successes resulting from competition based on differentiation, since the market of the European Union creates impulses for further improvement of the quality of goods. Thus, it might be advisable that European markets continue to play the role of a laboratory for further competitiveness enhancement and an outpost for expanding to further countries.

In the years 1990–2012 Poland attained significant economic successes, of which the most important evidence was the attained economic growth rate. The background of this success is related to both internal changes, as well as the opening of the economy for cooperation with foreign partners. Despite the ambiguous economic evaluations of the outcomes of the transformation process, it must be underlined that in comparison to other countries undergoing the same process, Poland performed relatively well. In addition, regardless of frequent opinions that this performance could have been even better, an overall assessment of the process is favourable especially in the foreign economic environment, whereby Poland is frequently regarded as a benchmark for transformation performance.

The changes of the position of the Polish economy in relation to the world and the European Union, presented in the second section of this paper, do convey a generally positive message. However, they cannot obscure the most salient development problems, related particularly to the quality side of the economy. The following weaknesses desire the most acute attention:

- Poland perceived from the perspective of its competitiveness will continue to remain a country of 'peripheral' capitalism, not a country of 'leading technologies' (Blusz and Świeboda 2013, pp. 28–29);
- The Polish economy benefits from efficiency-driven advantages, not from innovation-driven advantages (Blusz and Świeboda 2013, pp. 28–29);

- Poland's technological advancement is low; it exports cheap labour, shows rather low dialogue capabilities, it constitutes a weakness for its own entrepreneurs, while FDI is weakly related to the domestic production capacity (Hausner and Szymczak 2013).

The mentioned ambiguity of evaluations does not change the fact that the process of closing the development gap between Poland and highly developed market economies has not been accomplished and will arguably last for a period measured in decades. If the declared development aspirations of Poland were to be fulfilled (one of such frequently discussed minimum objectives is the attainment of the average GDP per capita level of the European Union), then Poland can be expected to experience economic growth significantly above the average level of the European Union. Otherwise, the process of catching up would last forever. The intensity of economic ties of Poland with the European Union gives rise to an interesting paradox: in order to catch up with the average GDP per capita level of the European Union (currently, the Polish GDP per capita level amount to about 60% of the European Union's GDP per capita level), Poland should develop at a higher rate than the average of the European Union. The higher the differences, which will occur in the two rates, the faster Poland, will close the development gap.

However, Poland's fast growth depends on the growth rate of the European Union, *inter alia* because it is Poland's largest export market. Thus, from this perspective it can be concluded that the ability to reduce the development gap between Poland and the European Union should be derived from areas not included in the said paradox. In other words, by catching up with the European Union, Poland should rely on growth factors, which are not exclusively dependent on the economic situation in the European Union. This recommendation mainly refers but is not limited to export expansion of the Polish economy. The present analysis reflects the increase of countries from beyond the European Union in Poland's internationalisation, although this trend was relatively weak in the investigated period, which may indicate that it remains at a nascent stage.

The above arguments have to find their support in specific policy measures. Currently, in terms of state support for firm internationalisation, the Polish system of incentives for firm internationalisation still remains limited in its scope and dispersed over a range of institutions (Gorynia et al. 2014a). While the Export Credit Insurance Corporation KUKE has ex-

isted since 1991, its scope of activities has remained relatively limited. The same can be said of the Bank of National Economy (BGK), which had existed in the previous political and economic system, but only introduced export credits and loan guarantees or subsidies and loans for foreign direct investment. In 2000, the Polish Agency for Enterprise Development (PARP) was established to foster SME development, including their overseas promotion and matchmaking. Furthermore, grants for export promotion, or the Polish export promotion portal featuring information on foreign markets and a database of foreign business inquiries and tenders, are offered by the Ministry of Economy. At the same time, Trade and Investment Promotion Sections of Polish Embassies deal with the promotion of Polish business in other countries, information on foreign markets, matchmaking or assistance in organisation of economic missions (Gorynia et al. 2014a). Clearly, the spectrum of instruments dedicated to fostering Polish exports and their geographic diversification is not narrow, however the responsibilities are dispersed between different institutions, which results in overlaps and increased transaction costs for the firms in search of support.

Apart from the deficiencies in the support system, which should be addressed by policy makers, a more fundamental issue is related to creating a supportive business environment, which may be instrumental in fostering international firm competitiveness (Buckley et al. 2010; Globerman and Chen 2010). Poland's Ministry of Economy has already launched such initiatives, including financial support for export projects, the creation of the Network of Investor and Exporter Assistance Centres, or general promotion of the Polish economy abroad. In January 2013, the Polish government adopted the Strategy of Innovativeness and Effectiveness 'Dynamic Poland 2020,' whose main objectives are to improve the regulative and financial environment, increase the effectiveness of labour, knowledge or of the usage of natural resources. Thus, an increased diversification of Polish export should be regarded in a broader context of an economic policy framework, which can be supported by a rising number of entrepreneurship-oriented programs co-financed by the European Union.

Notes

1 The discussion is based on UNCTAD data. In relation to the European Union, data were presented for EU25 and EU27 countries. The analysis is based only on data for EU27 countries. Thus, there is an underlying as-

sumption that the European Union comprised 27 members in the investigated period.

2 All percentage values in the ensuing sections are indices (see tables for details).

3 Such a comparison should exclude analysing industries for which a significant change would be a one-off event.

4 The biggest trade partners were those countries that had an average share of export higher than 4% during the investigated period.

5 At this juncture attention is confined to issues directly related to the internationalisation of the Polish economy. A broader array of recommendations addressed at Polish public policy were included in Hausner et al. (2013, 22–136). Also compare Gorynia (2006).

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Economic Freedom and Economic Growth in South Africa

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The economic growth and economic freedom nexus is studied in this article and applied to South Africa in an empirical study. Economic freedom is founded on the free or private market economy, based on competition, where voluntary exchange occurs and a legislative framework ensures the safety of market agents and private property. As part of the literature study, the Index of Economic Freedom, the Economic Freedom of the World Index and the Freedom in the World Index were studied and applied to South Africa. An empirical analysis was conducted, cross-correlation functions were estimated, and Granger causality functions, regression analysis and finally a vector auto-regression model (VAR) were constructed and estimated. The research findings from South Africa support the literature, suggesting that there are indeed some indications that greater levels of economic freedom support higher rates of economic growth in a country.

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Introduction

The economic freedom and growth nexus has been studied and debated by economists since the seminal work of Adam Smith *An Inquiry into the Nature and Causes of the Wealth of Nations,* published in 1776 (1986). Generally, it has been contended and debated that free economies will be more productive and innovative. Economic freedom is considered the ultimate incentive for the optimal utilisation of scarce resources, by developing a favourable economic and political environment for sound competitiveness and incentivising, and empowering human creativity and innovation. A free private market bestows upon individuals the freedom of choice in terms of what to produce, to consume and to give. The invisible

hand incentivises and empowers individuals to follow their own interests and cooperate with others on a non-coercive (voluntary) basis (quoted in Gwartney and Lawson 2002).

The large disparities in the economic performance and level of progress between countries are widely accepted and acknowledged. With this in mind, there seems to be a comprehensive body of literature that identifies a number of factors that, as a collective, illustrate why some countries' employment and income growth experiences or records are better than others are. Economies differ with regard to their level of technological development, focus of competitive advantage, development funding from abroad, the stock of human capital, and the levels of political corruption and uncertainty. Recent literature explores the contribution of institutions to economic development. There is evidence suggesting that where levels of economic freedom are higher, countries enjoy increasing economic growth and development.

A country's levels of prosperity and progress depend on its measure of freedom in its economic endeavours (Gwartney and Lawson 2002). The authors found that economic freedom generates economic prosperity, which raise the income of everyone, especially the poor. Dutz and Hayri (2000) therefore also found a mutually inclusive long-run relationship between a country's competitive policies and its economic development. The results suggest that key measures related to intensity of economic wide competition are positively associated with unexplained growth. The relationship between economic freedom and how it affects a county's economic growth is investigated in this paper given the seemingly wide spread view that economic freedom supports and 'incentivise' economic growth. This view is based on a sound theoretical foundation and draws on research done on economic freedom and growth, as reported in existing academic literature.

Such a possible connection and relationship will be tested empirically within the South African (SA) context employing regression and vector auto regression methodologies after a clear explanation of the data, data sources, and the time period of the data, study methodology and hypotheses. The empirical findings tentatively support the hypothesis suggesting that economic freedom is indeed an important variable in the SA growth context for example the results also indicate that economic growth is affected by the lagged period 1 and period 2 of economic freedom using the Freedom in the World measure of Freedom House (see https://freedomhouse.org).

A Conceptual Framework

Nobel laureate, Fredrick von Hayek, developed and conceptualised his notion of freedom (economic freedom) in 'The Constitution of Liberty.' Hayek (1960) posited that a proper legislative framework forms a primary element that ensures the freedom of economic agents. The concept of economic freedom refers to individual role-players and their behaviour, implying methodological individualism. Hayek (1960) further stated that economic freedom should be understood not as the absence of government behaviour, but as freedom under or within governmental law. Economic freedom is, therefore, a relative term in the relevant economic environment.

Hayek (1960) stated that the use of force (coercion) is an important concept to the understanding of economic freedom and that governmental behaviour can be classified between coercive and non-coercive behaviour. Hayek (1960) further stated that some measure of enforcement is to the advantage of economic role-players. Appropriate coercive behaviour is that which is consistent with economic freedom and, therefore, by definition, does not hurt economic freedom. Hayek (1960) does, however, warn that government has the power of enforcement and to that extent is therefore the greatest danger to freedom in the market place. The only acceptable means of government coercion is by enforcing rules. It is the therefore the type rather than the size or quantity of government behaviour that is of relevance to the concept of economic freedom. The focus should therefore rather be on the possible coercive and not on the non-coercive government activities (Kapás and Czeglédi 2007).

The meaning of freedom should, however, be more narrow or specific (Barzel 2000). In most cases, it is defined as the absence or lack of force, i.e. coercion, except for government force, to impose rules that are known and accepted, such as the protection of individuals from public or private coercion. With the monopoly governments have over power, they are able to manipulate people's economic and entrepreneurial behaviour. The legislative power of government allows people to realise their own economic objectives, free of any unnecessary interference or confiscation by others. This allows people to develop their productive capacity and create their own wealth in the manner they regard as optimal. If government ownership of force goes beyond these absolutes, economic freedom is negatively affected (Hayek 1960). Government force and specifically the manner in which it exercises its monopoly power must therefore be con-

tained and limited through the implementation of normative constraints.

Kapás and Czeglédi (2007) argue that the legal principle that law should govern provides a criterion against which freedom can be evaluated. This ideal of freedom is best portrayed as reconciliation between governmental force and free economic behaviour, where the rules of the game are openly known to all (Bastiat 1850; Hayek 1960; Kapás and Czeglédi 2007). In other words, the legal principle that law should govern is a doctrine or blueprint of the ideal situation. Hayek (1960) states: 'The rule of law is therefore not a rule of the law per se, but rather a rule concerning what the law ought or should to be, a meta-legal doctrine or a political ideal.' The legal principle that law should govern limits or constrains government in its coercive behaviour and is critical to ensure freedom. Individual liberty and the rule of law are therefore synonymous (Voigt 1998).

Kapás and Czeglédi (2007) integrated economic freedom as part of economic growth and entrepreneurial theory in a logical manner. They realised that innovation and free market participation enable people to reach their objectives in the market place. Holcombe (1998; 2003a; 2003b) highlights the process by which entrepreneurship leads to and supports economic growth. This view is supported by several empirical studies, such as the work of Ovaska and Sobel (2005) and Kreft and Sobel (2005).

There exists a link between economic growth and innovation because entrepreneurial behaviour creates undiscovered profit opportunities for other entrepreneurs. The bottom line is that entrepreneurial activity develops opportunities for other entrepreneurs (Holcombe 1998; 2003a; 2003b). The concept of economic freedom therefore underlies and supports economic growth.

Does Economic Freedom Matter? A Literature Review

The extent to which economic freedom leads to economic progress was researched by Panahi, Assadzadeh and Refaei (2014). They investigated the economic freedom and economic growth connection using data from a selection of 13 Middle Eastern and North African (MENA) countries from 2000 to 2009. The study makes use of two models: firstly, they estimated a model that determines an index that shows the total level of economic freedom, which utilised a number of control variables (variables that stay constant) that would not be affected by national growth; and secondly, the freedom index was divided into sub-categories that constituted the index.

The standard control variables include government and investment share of GDP, population growth and primary school enrolment per country. The random (RE) and fixed (FE) effects models were estimated, taking the panel characteristics of the dataset into account. The fixed effect model was found to be superior to the random effect model in all the estimates. Irrespective of the model used, the study revealed a significant positive association between economic freedom and the economic growth rate a country experiences.

Wulandari (2015) studied the economic freedom and economic growth connection of Indonesia over the period 2004 to 2014. The study used a positivist approach because of the need to test the data quantitatively. The vector auto-regression (VAR) model applied follows the research conducted by Lee (1992). The VAR estimation indicated a positive relationship between economic freedom and a country's economic growth rate and vice versa. This supports previous studies that stated that economic freedom leads to growth. Wulandari (2015) suggests that, in a country that is concerned with economic growth and social welfare, market liberalisation is a necessary institutional reform.

Justesen (2006) used panel data from 1970 to 2000 of several countries and utilised Granger causality tests to determine to what extend the variation in economic freedom as a whole, as well as its sub-divisions, can explain the variation in the economic growth rate of these countries.

Justesen concluded that the relationship between economic freedom and growth is much more complex than usually assumed. The connection between these variables does exist, as does the relationships with the sub-divisions of freedom. Taking the latter into regard was found to be very important. The study found that, in general, overall economic freedom seems to cause economic growth, both with regard to the level and the rate of change. The causality appears to run both ways between the growth and freedom variables. Their research results suggested that property rights might have a causal effect on growth. Changes in property rights, on the other hand, seem to not Granger-cause economic growth. The sub-division variables on labour, credit and regulation of business were the only part of economic freedom that wielded a definite unidirectional Granger-causal effect on economic growth, irrespective of the model specification (Justesen 2006).

The connection between economic freedom and the growth in state employment in America (USA) was investigated by Garrett and Rhine (2010). They found that besides the clear-cut factors that determine

growth, such as human capital and economic industrial diversity, economic freedom is a major cause of growth. They did, however, find that this relationship does fluctuate with regard to the period under review.

The relationships between the advancement of economic freedom and changes in national production and income per capita were studied by Gurgul and Lach (2011). They studied countries in the European Union (EU) that underwent transition between the years 2000 and 2009 and the connection between rising economic freedom and income growth and development are positive, both on theoretical and empirical grounds. They applied the Granger and Huang (1997) method of evaluating panel datasets. They focused on the forecasting abilities of the models instead of significance tests.

Gurgul and Lach (2011) tested for Granger causality using two forecast-based methods. They estimated out-of-sample forecasts to determine any difference between the augmented model and the restricted models. They confirmed that, in all the countries investigated, economic freedom Granger caused higher economic growth, particularly when utilising the Fraser overall index. Gurgul and Lach (2011) state that the results of the causality analysis provide a solid basis to assert that the higher a country's level of economic freedom, the better the prospects of growth. This is especially the case in less developed EU economies.

The connection between economic freedom in the SADC region and the economic growth in those countries were studied by Gorlach and Le Roux (2013), both on an aggregate and individual component basis. The empirical research of Gorlach and Le Roux (2013) confirmed the link between economic freedom in SADC countries (Southern Africa Development Community) and their per capita GDP growth. They established a positive relationship and also confirmed that economic freedom Granger causes economic growth; therefore, increasing levels of economic freedom implies a higher creation of wealth in SADC countries.

Based on the Granger-causality test using the individual components, the significant connections on a 1% level of significance were free international trade, which caused better legislation of business, property rights, labour and credit, with some feedback effect. Mutual causes were established between the size of government and its ability to secure loans, while international free trade also Granger-causes better regulations, at a significance level of 5% (Gorlach and Le Roux 2013).

Regions with a higher degree of economic freedom receive more foreign direct investment, which enhance their economic progress (Ajide

and Eregha 2015). It was also found that indices of economic freedom measures are positively related to constant and stochastic factors. A 10% rise in economic freedom raises national income and production by 5.7%. This emphasises the economic freedom as a determinant supporting economic progress and development.

South Africa's Ranking with regard to Economic Freedom

The three most comprehensive studies on the measure economic freedom are the Heritage Foundation's Index of Economic Freedom (http://www.heritage.org), the Fraser Institute's Economic Freedom of the World Index (https://www.fraserinstitute.org), and the Freedom in the World Index published by Freedom House (Puddington and Roylance 2016).

The Heritage Foundation publishes an Index of Economic Freedom (IEF) of 186 countries on an annual basis in collaboration with the Wall Street Journal. The Index of Economic Freedom of the Heritage Foundation uses ten qualitative and quantitative factors, which includes the legislative framework that protects private ownership, and opposes corruption. It considers the size of government expenditure and the efficiency to regulate exchange labour freedoms, as well as the accessibility to markets, funds and financial freedom of a country.

The Index of Economic Freedom ranks countries between no freedom at 0 and 100 at total freedom. On this index, South Africa's level of economic freedom has risen from a score of approximately 60 in 1994 to approximately 62 during 2016. This score rose to some extent by the turn of the millennium to approximately 64, but declined again by 2016 to where it originally was. The Index of Economic Freedom ranks South Africa currently in 80th place, out of 186 countries in 2016. South Africa is ranked as 'moderately free.' South Africa is ranked 6th in Sub-Saharan Africa (46 countries). The trend suggests a steady regression of economic freedom, especially post-2005.

Countries and regions that enjoy the most economic freedom in order of merit are Switzerland, the United Kingdom, Canada, Ireland, New Zealand, Singapore, the United Arab Emirates, Chile, Jordan, and Hong Kong, Mauritius (see https://www.fraserinstitute.org). During 2000 the United States was second, but now only ranks 16th in the world. Countries with the worst economic freedom record are Angola, Zimbabwe, Algeria, the Central African Republic, Chad, Republic of Congo, Syria, Libya, Venezuela and Argentina.

The Economic Freedom of the World (EFW) report is published by the

Fraser Institute (https://www.fraserinstitute.org). They also define economic freedom as people's right to act in the market place without intervention by the authorities. The Economic Freedom of the World Index (EFW) of the Fraser Institute includes 21 components. It utilises a varied set of objective variables that regard the size of government, openness and freedom to international trade, availability of credit and funds, as well as capital market regulations. It also considers the legislative framework that guarantees the ownership of private property, and regulates the supply of credit, human resources and free exchange. Unfortunately, it excludes some important variables because of data constraints and measurement issues (Gwartney and Lawson 2002).

The Fraser Institute scores countries between 0 and 10 with 0 the least free and 10 representing the freest (EFW). The Economic Freedom of the World measure of the Fraser Institute ranked South Africa 96th out of 175 countries on government size, receiving the lowest ranking of 121, while the legal system and property rights received the highest ranking of 61 out of 175. South Africa's rating experienced a progressive regression since 2005. The rankings of some other major countries are: the United States (16th), Germany (30th), Japan (40th), South Korea (42nd), France (57th), Italy (69th), Mexico (88th), Russia (102nd), India (112th), China (113th) and Brazil (124th).

Freedom House acknowledges South Africa's freedom status according to their Freedom in the World Index (FWI), but also indicates regression since 2005 (Puddington and Roylance 2016). The Freedom House scores countries between 1 and 7 with 1 representing the freest and 7 the least free (FW). South Africa (during 2016) is classified as 'free' with an aggregate score of 79 where a larger score indicates a greater level of freedom. This compares to Brazil, Russia, China and India at 81, 22, 16 and 77, respectively.

Data Used

The study makes use of a secondary dataset that contains annual data on South Africa's real economic growth rate (GI) from 1995 to 2016. The South African Reserve Bank's (SARB) economic growth estimate for 2016 was used, whereas the data from 1995 to 2015 was obtained from Statistics South Africa. Economic freedom data for South Africa (for the same period) was collected from the Heritage Foundation, Fraser Institute and the Freedom House.

Both the Heritage Foundation and the Frasier Institute's economic

freedom scores increase from 0 to 100 and 0 to 10, while the Freedom House economic freedom scores decrease from 0 to 7.

In this study, two models are used, i.e. a multivariate ordinary least square (OLS) regression model and a vector autoregressive regression (VAR) model. The VAR is included to control for the possible endogeneity of the variables that is especially important when doing time series analysis involving causal processes.

The multivariate OLS regression model includes two control variables, i.e. the annual percentage change of per capita gross national income (y_i) and the annual change of gross fixed capital formation (NV_i). Both datasets were obtained from the SARB. The inclusion of the control variables are in line with the study by Panahi, Assadzadeh and Refaei (2014). The primary reason to include control variables is to exclude alternative explanations while testing the hypotheses with the explanatory variables.

The relationship between Economic Freedom and Economic Growth in South Africa was investigated in the current study, which tested the hypothesis that a statistically significant association exists between economic freedom in South Africa and economic growth.

Empirical Analysis: Economic Freedom and Economic Growth Nexus in South Africa

An empirical analysis of the data was applied to South Africa by the authors and we report our research results in this section. The descriptive statistics of the country's total income and production (GDP), the Index of Economic Freedom (IEF), Economic Freedom of the World Index (EFW) and the Freedom in the World Index (FWI), in relation to South Africa, are presented in table 1. The statistics suggest that these variables are normally distributed ($p > 0.05$), with the exception of the IEF and EFW. Non-normality may increase the chance of a false positive result when using a test that assumes normality. However the model makes no assumptions about normality and therefore these is no need for the independent variables to be normally distributed. None the less, the effect of the variations of the independent variables is important to investigate to determine the major outliers or concentrated values.

The analysis found economic freedom started decreasing post-2005 and this is also evident when applying the polynomial (2nd order) function and a three-period moving average function.

Stationarity of the variables were assessed using the Augmented Dickey-

TABLE 1 Descriptive Statistics of the Indicators

Item	GDP	IEF	EFW	FWI
Mean	2.87	63.33	6.89	1.73
Median	2.95	63.25	6.90	1.50
Maximum	5.60	67.10	7.85	2.00
Minimum	−1.50	60.70	6.30	1.50
Std. Dev.	1.72	1.37	0.36	0.25
Skewness	−0.49	1.03	1.14	0.18
Kurtosis	3.27	4.77	4.44	1.03
Jarque-Bera	0.94	6.72	6.62	3.67
Probability	0.62	0.03	0.04	0.16
Sum Sq. Dev.	62.02	39.66	2.73	1.36
Observations	22	22	22	22

NOTES Authors' own analysis using data from Statistics South Africa, the Heritage Foundation, Fraser Institute and the Freedom House.

TABLE 2 Economic Freedom vs. Economic Growth

Period	GDP	IEF	EFW	FWI
Average: 1995 to 2004	3.10	63.89	7.03	1.60
Average: 2005 to 2016	2.68	62.86	6.84	1.90

NOTES Authors' own analysis using data from Statistics South Africa, the Heritage Foundation, Fraser Institute and the Freedom House.

Fuller test as a unit root test. The results revealed that the GDP variable and the three economic freedom variables are indeed non-stationary in the level form and integrated in order 1. This suggests the presence of a structural break in each of the three economic freedom variables, indicating an unexpected shift estimated around 2005 (the complete results of stationarity analysis are available upon request).

Table 2 displays the average annual economic growth rate for the periods 1995 to 2004 and 2005 to 2016. The results suggest that the economy performed better during the period of relative economic freedom (1995 to 2004) vis-à-vis the period of decreasing economic freedom (2005 to 2016).

A statistical analysis using cross-correlation functions (variables integrated in order 1) was then conducted. Cross-correlation is a measure of the similarity of two series as a function of the lag of one variable relative to the other variable. Table 3 suggests a lagged correlation and delayed

TABLE 3 Cross-Correlation Results (integrated in order 1)

Lag	IEF(−1)	IEF(+1)	EFW(−1)	EFW(+1)	FWI(−1)	FWI(+1)
1	−0.3107	−0.3107	0.0788	0.0788	−0.0115	−0.0115
2	0.0400	0.0952	0.353	−0.2542	−0.2461	0.0479
3	0.0913	0.0680	−0.2232	−0.1602	−0.558	0.0952
4	0.1227	−0.0664	0.1505	0.2951	0.5443	0.2128
5	0.5595	0.3814	−0.0331	−0.1603	0.0353	−0.0892
6	−0.4618	−0.3582	0.1688	−0.0479	−0.099	0.1235
7	−0.3596	−0.3265	−0.331	−0.0398	0.014	−0.1774

NOTES Authors' own analysis using data from Statistics South Africa, the Heritage Foundation, Fraser Institute and the Freedom House.

response between the economic freedom of a region and its economic growth of approximately two to five years. There did, however, seem to be no or very little lagged correlation between a country or region's rate of growth in the economy and economic freedom.

The second statistical analysis applied is the Granger causality function (null hypothesis = no Granger causality). This function examines whether one variable leads to variation in another and to what extent its present values can be explained by historical data of the two variables, and then determines whether a time lag in the independent variable could enhance the accuracy of the estimation. An independent variable Granger-caused another variable if it can enhance its ability to forecast accurately. This will be the case if the regression results indicate that by lagging a variable, it improves the forecast and the coefficients are statistically significant.

The estimated results of the Granger causality tests, with the variables integrated in order 1, are displayed in table 4. The estimated figures in the table suggest that economic freedom can Granger-cause the economic growth rate of a country and not the other way around.

Thirdly, the effect of economic freedom on economic growth was analysed using the three measures of overall economic freedom using regression analysis:

$$g_i = \alpha + \beta_1 y_i + \beta_2 \text{INV}_i + \delta \text{EF}_i + \varepsilon_i, \quad (1)$$

where g_i is annual economic growth rate (percentage), y_i is the annual percentage change of gross national income per capita, and INV_i is the annual percentage change in gross fixed capital formation. These variables are often significant in growth and are almost standard in this type

TABLE 4 Pairwise Granger Causality Results (integrated in order 1)

d(variable) 4 lags	*F*-statistic	Prob.
IEF does not Granger-cause GDP	8.66	0.005*
GDPpc does not Granger-cause IEF	0.69	0.620
EFW does not Granger-cause GDP	0.63	0.650
GDPpc does not Granger-cause EFW	0.59	0.680
FWI does not Granger-cause GDP	7.07	0.009*
GDP does not Granger-cause FWI	0.33	0.850

NOTES Authors' own analysis using data from Statistics South Africa, the Heritage Foundation, Fraser Institute and the Freedom House.

TABLE 5 Regression Result Estimations Using the Three Indicators of Economic Freedom: GDP Growth (integrated in order 1)

d(variable)	IEF		EFW		FWI	
	C	*p*	C	*p*	C	*p*
Y	0.70*	0.00	0.76*	0.00	0.84*	0.00
INV	0.07*	0.04	0.08*	0.02	0.05	0.14
EF	−0.33	0.07	1.27*	0.03	1.49	0.14
Constant	0.01	0.99	−0.02	0.91	0.00	1.00
R^2	0.78		0.80		0.78	
F-statistic	22.63*	0.00	25.46*	0.00	20.64*	0.00
Sum squared residuals	12.95		11.78		13.96	

NOTES C – coefficient, *p* – *p*-value. * Statistically significant. Authors' own analysis using data from Statistics South Africa, the Heritage Foundation, Fraser Institute and the Freedom House.

of model, according to Carlson and Lundström (2002). EF_i is the economic freedom index values for the period 1995 to 2016. The stochastic error term is ε. Since the variables are non-stationary in level form, the 1st difference values (order I(1)) were used, i.e. $d(g_i)$ etc.

The results of the regression estimation are indicated in table 5. They suggest that income per capita and investment are highly significant. Economic freedom is only found to be significant when figures from the Economic Freedom of the World Index of the Fraser Institute are used.

Sometimes, the process of estimation and inference becomes more complicated because of the presence of endogenous variables on both sides of the equation, implying variable endogeneity in both the dependent and independent variables. When the results of the regression anal-

ysis are studied, it may be suggested that economic freedom may be endogenous to economic growth, making ordinary least square (OLS) an inappropriate estimator. The results of the Granger causality tests (table 5) suggest that economic freedom consistently predetermines the growth rate of an economy. Economic freedom could, however, be endogenous, making the statistical findings on economic growth and economic freedom spurious.

A vector auto-regression model (VAR) was then estimated, based on a simple bivariate function and displayed below. Sims (1980) was the first to propose a VAR model, since there is no need to be concerned about endogeneity and exogenous variables, as all variables are considered as endogenous variables. The time path of the {*gt*} is dependent on realisations of the economic freedom {*eft*} history, current and past. Similarly, the time path of the {*eft*} sequence is affected by current and past events of the {*gt*} sequence. The VAR of order I(1) is given as:

$$g_t = a_{10} + a_{11}g_{t-n} + a_{12}ef_{t-n} + e_{gt}, \tag{2}$$

$$ef_t = a_{20} + a_{21}g_{t-n} + a_{22}ef_{t-n} + e_{eft}, \tag{3}$$

where g_t is annual economic growth rate 1995 to 2016 (%), ef_t is economic freedom index 1995 to 2016 and n is the number of lags. Luetkepohl (2011) argues that traditionally VAR models are constructed for stationary variables without time trends. Since the variables are non-stationary in level format, the I(1) variables were used.

It is assumed that g_t and *eft* are stationary; eg_t and e_{eft} are white-noise disturbances with standard deviations of σg and σef respectively; and the error terms are uncorrelated. The amount of lag in the VAR model is determined from the information criteria recommended by the final prediction error (FPE), Aike information criterion (AIC), Schwarz criterion (SC) or Hannan-Quinn (HQ). The system incorporates feedback in its structure since gt and eft are allowed to affect each other. The estimated results of the VAR estimation are given in table 6.

The research results given in table 6 together with the results given in table 5 implies that economic growth is affected by economic freedom using the three different Indices of Economic Freedom; the Heritage Foundation, Fraser Institute and the Freedom House. In the case of the Economic Freedom Index the inverse relationship is to be expected since 1 indicates the highest level of freedom while 7 is the lowest. This is in line with the findings of Panahi, Assadzadeh and Refaei (2014), Wu-

TABLE 6 VAR Result Estimations Using the Three Measures of Economic Freedom: GDP Growth (integrated in order 1)

d(GDP), *d*(IEF), *d*(EFW), *d*(FWI)	IEF (4 lags)		EFW (4 lags)		FWI (4 lags)	
	C	*t*	C	*t*	C	*t*
Economic growth (–1)	–0.53*	–2.92	–0.39	–0.99	–0.42*	–2.67
Economic growth (–2)	–0.34*	–2.15	–0.44	–1.19	–0.39*	–2.59
Economic growth (–3)	–0.21	–1.15	–0.25	–0.65		
Economic growth (–4)	0.03	0.12	–0.27	–0.77		
Economic freedom (–1)	0.05	0.16	1.94	1.03	–4.84	–1.87
Economic freedom (–2)	0.63*	2.37	0.56	0.02	–11.89*	–4.51
Economic freedom (–3)	0.36	1.20	1.54	0.75		
Economic freedom (–4)	1.27*	5.02	1.04	0.53		
R-squared	0.70		–0.21		0.59	
F-statistic	5.66		0.65		7.51	
Sum squared residuals	8.91		36.05		21.42	

NOTES C – coefficient, *t* – *t*-statistics. * Statistically significant ($p < 0.05$). Authors' own analysis using data from Statistics South Africa, the Heritage Foundation, Fraser Institute and the Freedom House.

landari (2015), Justesen (2006), Gurgul and Lach (2011) among others as discussed in the third section.

The result suggest that, in general, overall economic freedom seems to cause or at least be conducive for economic growth, i.e., periods with higher levels of economic freedom leads to higher economic growth rates. The causality is also from economic freedom in the direction of economic growth, and not the other way around as some studies have found. It is therefore possible to argue that part of the economic decline post 2016 is due to the fall in the overall economic freedom levels in South Africa.

The results also indicate that economic freedom causes or supports economic growth only after two to four years. There is therefore a time delay (lagged relationship) between higher (lower) levels of economic freedom and economic progress (decline).

The empirical results of the current study confirms Ajide and Eregha (2015) who found that economic freedom is a key driver supporting economic growth. South Africa should therefore focus on the individual components of overall economic freedom in order to achieve higher levels of economic freedom to support economic growth. The focus should be on 'more' economic freedom and not 'less' economic freedom.

Conclusions

Numerous studies suggest that economic freedom is important in promoting economic growth. The current study tested this relationship empirically and the empirical results confirmed that increasing levels of economic freedom causes or supports higher levels of economic prosperity.

This paper studied the relationships between economic freedom and economic growth in South Africa drawing from various empirical studies. Using regression and vector auto regression techniques, the impact of economic freedom on economic growth in South Africa, over the period 1995 to 2016, was investigated in this study.

The economic freedom index in this study was not decomposed in into the various categories however. The total levels of economic freedom produced by the Heritage Foundation, the Fraser Institute and Freedom House were used. The research findings suggested that a significant and positive relationship exit between the level of economic progress in South Africa and the country's economic growth rate. When the levels of freedom decreased, growth declined.

The results therefore provide a solid basis to claim that improvement in economic freedom is a prerequisite of growth. Economic freedom therefore needs to be recognised as potentially important for economic growth. South Africa should therefore put economic freedom on its growth agenda and not ignore it. To support economic growth South Africa should undertake economic freedom reforms in general.

In further research on this topic, an effort should be made to investigate the defining of economic freedom in more detail and providing the study field with a more rigorous theoretical framework on which the study could be based. Some of our empirical results also indicated some negative connections between the two variables and this deserves special attention in further research. The distinction between politics, institutions and economic role-players, and which institutions enhance economic freedom most, also deserve special attention.

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A Relationship between Stakeholder Management and Business Performance in the Czech Republic

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The quality of a relationship with stakeholders is often perceived as a way to a competitive advantage of a company. In other words, many authors have defended a hypothesis that the application of stakeholder management leads to a higher business performance. However, empirical verification of such a hypothesis is not trivial. In the first place, the operationalization of the stakeholder management, quality of the relationship towards stakeholders or the importance of stakeholders is a challenge by itself. This article therefore aims to review empirical research of the relationship between stakeholder management and performance of companies located in the Czech Republic. Unfortunately, the authors conclude that studies with factual results from the Czech Republic are almost none. Only two studies explicitly examine the relationship between stakeholder management and business performance. On top of that, both of these studies suffer from an inadequate research design.

Key Words: stakeholder management, stakeholder relationship, stakeholder importance, business performance, empirical research
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Introduction

In short, the stakeholder approach is a way of viewing an organization as the point of conflict between the relationships and interests of the organization's stakeholders, with the assumption that the organization has to maximize the benefits for all of the stakeholders, and that maximizing the benefits for all of the stakeholders will also maximize the organization's performance (here we touch the normative and instrumental approach).

For example, Post, Preston, and Sachs (2002a, 3) argue that the stakeholder 'view' of an organization is a 'basis for analysing and managing the

numerous and diverse relationships that arise within this setting.' Freeman's (1984) acknowledged definition of the stakeholder approach states that it is 'about groups and individuals who can affect an organization and about managers´ actions taken in response to these groups and individuals.'

In any case, in the literature we can find many statements justifying the stakeholder approach. For example Preston and Donaldson (1999) claim that 'conscientious stakeholder management can enhance organizational wealth,' Mitchell, Agle, and Wood (1997, 878) argue, in their seminal paper, that, among other, 'failure to identify dangerous stakeholders would result in missed opportunities for mitigating the dangers and in lower levels of preparedness, where no accommodation is possible.' and according to Turnbull (1997), co-operation between stakeholders in a company's informational and management structure is a strength and a competitive advantage.

This is why the application of the stakeholder approach is not inconsistent with long-term benefit for the owners, but rather leads to greater efficiency within the organization, which benefits all groups of stakeholders. In Turnbull´s view, the explanation for this is that the more relationships a company has, the greater the number of information channels the company has at its disposal, and therefore the more feedback the company receives.

The article aims to examine current research on the relationship between stakeholder management and performance of companies in the Czech Republic. The open question is how the application of stakeholder management can be operationalized when examining the relationship of this application towards company performance. Therefore, the article is structured as follows: in the first place, the stakeholder approach is defined, in contrast to the shareholder approach. Subsequently, the two basic forms of the stakeholder approach are presented, based on Berman et al. (1999), and the operationalization of the stakeholder approach concept is completed with the function of stakeholder utility. Discussion about the static and dynamic effects opens up the review of empirical studies of the relationship with stakeholders on performance, which continues with other studies focusing on the specific forms of the application of the stakeholder approach and their impact on performance. The conclusion summarizes the findings on the state of research on Czech companies. Several parts of this article are based on Ondřej Částek's doctoral thesis (2010).

Operationalization of the Stakeholder Approach

STAKEHOLDER AND SHAREHOLDER APPROACH

The shareholder approach stresses the responsibility that managers have towards the company's owners. This responsibility is placed above all others. When pursuing this approach, the objective of managers is therefore to maximize the company's profit in such a way as to maximize the benefits for the owners. The word shareholder (sometimes also stockholder) can refer to a person owning shares. However, the shareholder approach looks at company owners in general, irrespective of the form of ownership (Částek 2010).

The shareholder approach is sometimes placed in direct opposition to the stakeholder approach in the sense of maximizing the value for the owners versus maximizing the value for all stakeholders. Nevertheless, the shareholder approach can also be understood as a 'subset' or special interpretation of the stakeholder approach (Jones, Wicks, and Freeman 2002, 26).

STAKEHOLDER APPROACH MODELS

The application of the stakeholder approach is not necessarily unambiguous in practice. The two most common forms are the model of strategic stakeholder management and the model of intrinsic stakeholder commitment (Berman et al. 1999, 488). In the first of these, the character and scope of the managers' interest in individual stakeholders is determined solely by the potential of the specific interest (concrete action) to improve the company's financial performance. In the second model, there is the assumption that businesses feel a certain internal commitment towards their stakeholders, this commitment helps to shape their strategy and this is reflected in the financial performance of the company.

Berman et al. (1999, 491–2) further divide the first of these models into two forms: direct and moderated. In the direct effects model they assume that the strategy and relationships to stakeholders have a direct and separate effect on the firm's financial performance. In the moderated model, they assume that the direct relationship between corporate strategy and the firm's financial performance is affected by the relationships with stakeholders.

A model of intrinsic stakeholder commitment is given below. Here it is assumed that the relationships with stakeholders are reflected in the corporate strategy, which is then reflected in financial performance.

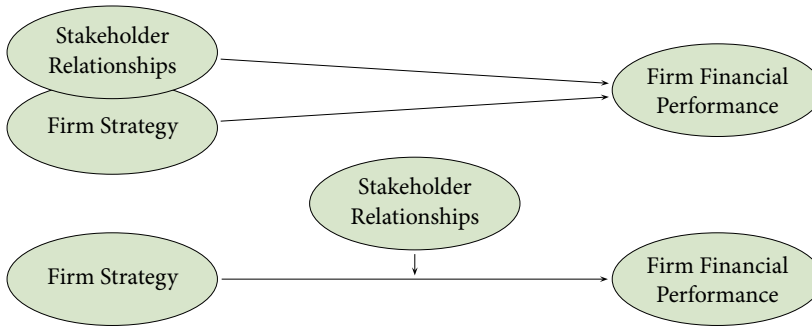

FIGURE 1 Models of Strategic Stakeholder Management (adapted from Berman et al. 1999, 493)

FIGURE 2 Model of Intrinsic Stakeholder Commitment (adapted from Berman et al. 1999, 494)

Berman et al. (1999, 502) tested the validity of these models using empirical data. Both models of strategic stakeholder management were verified, but the model of intrinsic stakeholder commitment was not. In the sample that was studied, the relationships with the stakeholders did not influence strategy.

STAKEHOLDER UTILITY

In their article, Harrison and Wicks (2013, 97–124) examine the value that a company represents for its stakeholders. They break down this value in terms of four perspectives and design – at least for selected generic groups of stakeholders – specific metrics, which managers or researchers may use to measure the fulfilment of stakeholders' expectations. However, these metrics can also be used to express the level and specific mode of stakeholder management in a particular company, and consequently to examine the correlation between stakeholder management and company performance.

Based on their study, Harrison and Wicks (2013) admit that searching for the function of stakeholder utility is a complex and complicated problem, which relates to more than just a value that can be described economically. Companies that provide their stakeholders with

more utilities are better able to maintain their participation and support.

The view by Harrison and Wicks (2013) focuses on four factors that are extracted from the focus on stakeholders and values that are searched for from a relationship with the company. They are not only financial or tangible quantities, but they also include the consideration of the process and distribution of this value in accordance with the approach by Harrison, Bosse, and Phillips (2010, 58–74). The factors are defined in terms of the perceived utility for stakeholders from their relationship with the company, which is in line with the idea by Barney (2011) that the perception of a utility affects the utility itself. Thus, the resulting factors by Harrison and Wicks (2013, 97–124) take the following forms:

- Stakeholder utility connected with products and services.
- Stakeholder utility connected with organizational justice.
- Stakeholder utility arising from their affiliation to the company.
- Stakeholder utility connected with perceived opportunity costs.

This naturally does not negate the importance of financial metrics, which are in Barney's opinion (2011) incomplete themselves and bring the threat of oversimplifying the utility received by stakeholders who are variously involved in the success of the company. Efforts to create approaches providing guidance on understanding the creation of values from the perspective of stakeholders are certainly essential to ensure the success of companies and their own viability in the future.

Should subcategories of the utility be concretized, then Harrison, Bosse, and Phillips (2010, 57–74) defined the individual performance measures in terms of stakeholder utility from different perspectives of the parties involved. It is a set of non-financial metrics specific to given stakeholder groups with the expression of a specific utility. In addition to the definition of possible categories used to measure performance, potential proxies are designed for each of them too.

The question is, though, what is actually measured. Instead of using standard performance measures in financial terms, the entity 'happiness/well-being' is used. Although the financial benefit may promote achieving the state of well-being, it does not represent the main goal of a stakeholder. Individual categories are thus relatively wide.

In terms of employees it is not only financial measures (e.g. wage, the value of benefits) that are applied, but also aspects of fairness in decision-making, respect for employees, the nature of career policy, company attitudes towards social issues, environmental friendliness, or consistent ac-

TABLE 1 Examples of Performance Measures from Multiple Stakeholder Perspectives

Category	Potential categories for measuring happiness/well-being	Potential proxies for researchers
Employees	Various components of employment contract (i.e., pay, benefits, perquisites). Perceived fairness of decision making processes. Perceived treatment (i.e., respect, inclusiveness). Perceived authenticity (i.e., what firm says, it does). Consistency between stated vs. realized firm values (i.e., honesty). Promotion policies/upward mobility. Firm´s environmental performance. Firm´s position/performance on other societal issues. Also, objective measures such as turnover, legal actions.	Compensation and benefits. Workplace benefits (i.e., fitness centre, child care). Legal actions or, if unionized, grievances. Productivity measures. Inclusion on list of best companies to work for. Internal promotions to top management. Turnover. KLD Health and Safety Concern or Strength. KLD Workforce Reductions. KLD Pension/Benefits Concern or Strength. KLD Cash Profit Sharing.
Customers	Product/service features. Perceived treatment during transactions (i.e., respect, fairness). Perceived authenticity (i.e., what firm says, it does). Firm´s environmental performance. Firm´s position/performance on other societal issues. Also, objective measures such as repeat business, legal actions.	Growth in sales. Consumer reports on products/services. Reputation rankings. KLD Product Safety concern. KLD Marketing or Contracting Controversy. KLD Quality Ranking of Products. KLD R&D/Innovation Ranking.
Suppliers	Perceived treatment during transactions (i.e., respect, fairness). Firm´s environmental performance. Firm´s position/performance on other societal issues. Nature of payments (i.e., size, speed). Also, objective measures such as longevity, availability of supplies.	Days payable (from accounting statements). Longevity of supplier relationships (available in 10-K for some firms). Legal actions.

NOTES Adapted from Harrison, Bosse, and Phillips (2010, 58–74).

tion in the context of values declared by a company as opposed to those that are actually applied.

These categories can be examined even indirectly, through the provided compensation and benefits, employment benefits, position of the

company towards the labour unions, productivity measurement, position in the list of best employers, promotion system, and employee care. As for other stakeholder groups, potential categories for measuring happiness/well-being and potential proxies for researchers are established by analogy.

Review of Empirical Studies

PERFORMANCE AS THE MAIN MOTIVATION FOR THE STAKEHOLDER APPROACH

Some authors comment on the issue of the relationship between stakeholder corporate management and performance from a somewhat different perspective as they automatically anticipate the outlined effect and they consider exerting influence on the financial performance of a company the major element of implementing the stakeholder approach.

The results of the study by Raise and Goedegebuure (2009, 62–75) show a strong motivation of management to using the stakeholder approach mainly due to effects on the financial performance and not because perceiving a certain commitment to stakeholders or because of their ethical standpoint. Thus, behaviour of managers determines the requirement to maximize profits. The survey was conducted on the research sample of 101 manufacturing companies in Indonesia, using a questionnaire as a tool for data collection.

Conclusions adopted by Raise and Goedegebuure (2009, 62–75) are also supported by the evidence from previously completed studies (Berman et al. 1999, 488–506; Post, Preston, and Sachs 2002a; 2002b). According to the Raise and Goedegebuure´s study results, a constant contact with key stakeholders enables managers to gain a better position to assess the organizational objectives and to the subsequent use of mutually beneficial opportunities. In addition, the constant contact with key stakeholders allows averting potential conflicts before reaching a critical phase. Better information and proximity to stakeholders is thus used designedly for profit purposes.

STATIC AND DYNAMIC IMPACT ON PERFORMANCE

In the literature is often presented (and sometimes well-justified) general view that good relations with stakeholders have a positive effect on financial performance (Orlitzky, Schmidt, and Rynes 2003, 403–41; Roman, Hayibor, and Agle 1999, 109–25).

Choi and Wang (2009, 895–907) examined the decomposition of the relationship between stakeholder management and financial performance on two levels, i.e. a dynamic basis (effects of the relationships on the growth in company performance) and a static one (effects of the relationships on maintaining company performance). Highly rated (well-built) relationships with stakeholders help well-performing companies to maintain high profits; they also help companies with poor performance to recover faster from their unfavourable position. The study also underlines the important role of company relationships with key stakeholders in creating and maintaining the economic annuity. If the financially measured performance declines, the stakeholders provide the potential to remedy the situation.

Choi and Wang (2009, 895–907) confirmed the idea by analysing a series of first-order autoregression models. The obtained results indicated that the influence of good relationships with stakeholders on maintaining excellent financial performance is not as strong as the influence of other corporate resources (e.g. technological expertise), but it was defined as the only one that holds the promise to help the company revive its performance. The importance of positive relationships is thus more critical for performance recovery than it is for its actual maintaining.

The Relationship between Stakeholder Management and a Firm's Performance

Berman et al. (1999) set themselves the task of verifying the validity of the aforementioned models of strategic stakeholder management and intrinsic stakeholder commitment. They used a sample of companies from the top one hundred on the Fortune 500 list (for 1996), for which complete financial data for the years 1991–1996 was available. In total, they selected 81 companies from various industries. Financial performance as a dependent variable was measured using ROA (operating profit to total assets). The stakeholder approach as an independent variable was expressed through the companies' attitudes towards five defined 'stakeholder groups.' These were relationships with employees, diversity, local communities, the natural environment and product quality and safety.

The KLD database tracks the companies from the Standard and Poor's 500 indexes and the Domini Social Index (150 companies). A large amount of data is available for these companies, for example on educational activities, recycling programmes, sponsorship, lawsuits, etc. (see below for more information). These individual items are then evaluated

on a five-point Linkert scale, where –2 means negative activity and +2 positive activity. Berman et al. selected the data relating to the individual stakeholder groups chosen by them based on research into the literature. Here we will use the 'diversity' group as an example, providing some information about it at the same time (Berman et al. 1999, 505):

1. *Areas of concern:* the payment of fines as the result of controversial actions, no directors or senior management from traditionally under-represented groups.
2. *Areas of strength:* career advancement for women and people of different races, the participation of women, people of different races and/or mentally or physically disabled people on the board of directors, addressing employees' family problems related to their job, employing mentally or physically disabled people and progressive policies towards homosexual employees.

When using the traditional concept of generic stakeholder groups, the diversity group would fall within the communities group, as would the natural environment group. In terms of its content, the product quality and safety group corresponds with the group normally termed employees. More information about the composition of the other groups used by Berman et al. can be found in an appendix to their report (Berman et al. 1999, 505).

Berman et al. (1999) research confirmed the direct effect of the variables classified as employees and product quality and safety on the corporate financial performance. No such influence was observed for the other three variables, despite the fact that it had been suggested by previous research (Robinson and Dechant 1997; Waddock and Graves 1997). Berman et al. offer the explanation that the variables for communities and diversity, which are mainly important from a normative perspective, on their own do not have a direct effect on financial performance. The effect of the natural environment variable could have been limited by the fact that the companies under research were from many industries in which the importance of the environment and the way of protecting it might take different forms and have different impacts on financial performance. Another limiting factor could have been the location of the companies, which was not controlled for.

While a direct effect was only discovered for two variables, all five variables affected the relationship between strategy and financial performance in the Berman´s et al. (1999) moderated model of strategic

stakeholder management. This indicates that the dependency between relationships with stakeholders and financial performance is much more complex and cannot be reduced to the level of the dependency between relationship to one specific stakeholder and financial performance.

Unlike the models for strategic stakeholder management, the model for intrinsic stakeholder commitment was not verified by this research. Therefore, it was not the case that the companies' relationships with stakeholders influenced the creation of strategy for normative reasons, which is consistent with Rais and Goedegebuure (2009) result (see above). Here Berman et al. (1999) suggest including managers' values and motivations in the model in further research.

For our purposes, the important conclusion is that the dependence of financial performance on relationships with specific stakeholders was demonstrated, and more importantly, that this dependence cannot be fully explained when these relationships are isolated, but that it is necessary to examine them as being interrelated. It was also shown that the specific industry has an important effect.

PRO-EMPLOYMENT ORIENTATION AND ITS IMPACT ON PERFORMANCE

De Bussy and Suprawan (2012) investigated in their paper two research questions, which should be of our interest: (RQ1) 'What is the impact of adopting employee orientation on corporate financial performance?' and (RQ2) 'How does the impact of employee orientation on corporate financial performance differ from that of orientation towards other primary stakeholder groups?' Based on more than 400 observations, they arrived to a conclusion that employee orientation matters, it matters a lot and its effect on corporate financial performance is stronger than the effect of orientation towards any other individual generic stakeholder group.

More importantly for us, de Bussy and Suprawan succeeded in operationalization of the stakeholder orientation using STAKOR – a scale measuring stakeholder orientation based on dialogue (de Bussy 2010). The rationalization of this decision follows. In the field of human resources practices, variables such as rewards, opportunities for promotion, participation, etc. are typically expected to explain employee satisfaction, motivation, retention and loyalty, which is further linked to overall firm performance, measured most often as profit, market share or customer satisfaction. However, the de Bussy and Suprawan´s literature review led them to a strong opinion that none of these is synonymous with em-

ployee orientation. Based on de Bussy (2010), they conclude that conceptualized stakeholder orientation is dialogue operationalized into dimensions of listening, positive regard and willingness to change. De Bussy and Suprawan then describe the employee orientation as an organization´s inclination to engage in dialogic communication with its employees. The Bussy (2010) suggests, within the STAKOR framework, operationalization of the dialogic communication with employees into five-item scale. One example of such item, measured with 7-point Likert scale, is 'Managers in this organization are prepared to listen to ideas from employees.' Also, de Bussy and Suprawan (2012) propose second conceptualization and operationalization, which can be complementary or substitutive to the concept of dialogue and which is employee-focused: employee concern, measured again with 7-point Likert scales on items such as 'Achieving work/life balance for employees is of central importance to our organization.'

STUDIES CONDUCTED IN THE CZECH REPUBLIC

The relationship between stakeholder management and company performance may differ throughout countries. Differences may result from several reasons: in the first place, it should be noted that the stakeholder approach was developed mainly in the US, i.e. in the conditions of the Anglo-Saxon way of company management. One of the reasons for the differences may be a different model of management bodies. The same effect can also have a different state of the economies, or the state of trading in stocks when the stock market price accurately reflects the economic development of only a handful of companies. Another source of differences will certainly represent legal systems and related practices in trade relations (Částek 2010).

The last factor is then represented by national and corporate cultures, manifesting themselves for example in the level of trust or cohesion at different levels. High trust means lower transaction costs in the economy and a better platform for improved relationships between economic entities, including stakeholders. Regarding cohesion, M. Bohatá (1998) states that 'National cultures exhibit both elements of cohesion and incohesion. On one side of the spectrum are African countries where loyalty to family and tribe makes cooperative economic behaviour of the capitalist model very difficult. On the other side of this spectrum we can point at Japan mentioned earlier and its collectivist ethos.'

For these reasons, the nature of the stakeholder approach in the Czech

Republic may differ from the stakeholder approach in other countries. The optimal form of the stakeholder approach in relation to the corporate competitiveness in the Czech Republic may also be different. However, there are not many studies from the Czech environment. Although the stakeholder approach as such is used by many authors in their studies, e.g. Slabá, Starchon, and Ják (2014) use some procedures of stakeholder analysis to analyse marketing communication of universities, exploring the connections between stakeholder management and corporate performance is very rare. Below are presented studies that are closest to our research topic in more details.

Here, we briefly summarize papers that relate to the topic more freely. For example, Dohnalová (2007) as if turned the chosen perspective and examined what is important for the individual stakeholders in relation to the companies. However, in the end it is precisely the items identified by her what the companies must pay their attention to when managing relationships with stakeholders.

Šimberová and Pollard (2008) admit that 'selected aspects of stakeholder relationship management' can contribute 'to the enhancement of the value of the company's offer.' Nevertheless, it is not the goal of their work to test such a relationship. Petrovičová and Kašparová (2009) researched the attitudes of Czech and Slovak companies towards their stakeholders, again without examining the link to company performance. Based on thirteen case studies, Šmakalová (2012) identified 'key groups which the most influence the development and performance of the companies.' Furthermore, she suggested appropriate strategies for dealing with particular generic stakeholders. Dohnalová and Zimola (2015) concluded their paper with a claim that 'A Stakeholder Approach to business can be a factor which can significantly support the highest goals of a business.' Unfortunately, such a claim lacked support in the empirical part of their paper. We shall now have a closer look at several studies more related to our goal.

Czech-Austrian Research AKTION

A research entitled 'Comparative Analysis of Corporate Social Responsibility in Austria and Czech Republic' conducted between 2002 and 2003 focused on corporate social responsibility. The Czech team was represented by Milan Malý, Michal Theodor, and Jaromír Peklo (for only part of the project), all of whom work at the University of Economics in Prague. Among other things, the authors addressed the issues of cor-

porate governance and the stakeholder model where they suggested indicators for measuring stakeholder satisfaction. They assumed that an organization could achieve its goals by satisfying its stakeholders' interests (Theodor 2004, 32). It is this measuring of satisfying stakeholders' interests that should testify about the success of an organization's management. The proposed indicators are presented in the book *Řízení a správa společností* (Corporate Governance) (Malý et al. 2002, 82–9).

They verified their hypotheses on a sample of 40 companies; however, for most of them, they managed to get only about half of the necessary data (Theodor 2004, 35). The authors defined eight stakeholder groups for their research, which were expected to lead to sufficient coverage, and be operationalised for practical use. These groups included Owners, Senior Management, Other Employees, Creditors, Suppliers, Customers, State, and Society.

Stakeholder Relationship Management in Industrial Markets in the Context of Current Marketing Concepts

The objective of the research conducted by Šimberová (2008, 5) was 'to develop a methodology of coordination and interconnection of marketing and business activities using the tools of stakeholder relationship management, based on the processing of the latest theoretical and empirical knowledge.'

Šimberová (2008) concluded that relationships with stakeholders are managed separately in companies, while integrated stakeholder relationship management would bring synergies and higher value especially for customers and owners. Specifically, she states that 'creating and building long-term relationships and functioning networks of relationships with key stakeholders while respecting selected key principles of current marketing concepts is a potential for increasing the value of a complex market supply consisting of products and services.' However, she fails to prove these findings empirically; nevertheless, she at least examined the degree of stakeholder significance for market success (N = 160, response rate = 32%). The results are included in table 2; the range used is 1 – minimal impact to 10 – crucial impact on the success of a company.

Communication with Stakeholders as a Company Competitiveness1Factor

Research conducted by Michal Medek (2006, 69) as part of his doctoral thesis aimed to 'point out the influence of internal, external and crisis

TABLE 2 The Degree of Stakeholder Significance for a Company's Market Success

Stakeholders	M	SD	Stakeholders	M	SD
Customers	9.7	0.9	Academic centres	5.8	3.4
Employees	9.1	1.2	Local authorities	5.4	2.8
Management	8.8	1.6	Government authorities	5.3	3.0
Owners	8.3	2.4	Consultancies	4.8	3.1
Suppliers	7.9	2.1	Citizens	4.7	2.3
Financial institutions	5.9	3.0	Chamber of Commerce	4.5	2.4
Rivals	5.8	2.3	Innovation centres	3.0	–

NOTES Adapted from Šimberová (2008, 17).

communications on company stability in the long term perspective, including their interdependence.' To meet this goal, he established a sub-objective consisting in 'defining interest groups that are affected by corporate activities or that affect these activities through their behaviour, and dividing them into groups according to their effects and significance' (Medek 2006, 69).

Medek (2006) approached 178 enterprises, the response rate of the questionnaires accounted for 23%. Results of the investigation were analysed separately through categories depending on company size (table 3).

Certain trends in the relation between company size and the significance of certain groups can be traced for the following groups:

- A growth in significance with a growth in company size: employees, authorities and public institutions, labour unions, schools and universities, financial analysts.
- A decline in significance with growth in company size: suppliers, shareholders, investors, rivals, employees' family members, consumer unions.

For the underlined groups the trend is more distinctive; the groups are ranked according to the overall significance of communication with them. Although the significance for communication should not be confused with the importance of these groups for company performance, it can suggest some implications.

Relationships of Small and Medium-Sized Companies with Stakeholders in the South Moravian Region

Kašparová and Klapalová examined 'motivations and expectations of the management of micro and small companies in relation to building and

TABLE 3 Significance of Communication with Different Stakeholder Groups for Companies

Stakeholder group	Number of employees*				
	≤ 100 (2)	101–500 (18)	501–1000 (5)	≥ 1001 (16)	Total
Customers	1–3	1	1–3	2	1
Employees	4–7	2	1–3	1	2
Suppliers	1–3	3	1–3	5–6	3
Shareholders	1–3	4	4	7	4
Trade press	4–7	6	6–7	5–6	5
Authorities and public institutions	8–10	7	6–7	4	6
Other media	8–10	5	5	10	7
Investors	4–7	8	11	9	8
Labour unions	16–17	11	8	3	9
Schools and universities	11–15	9	8–10	8	10
Rivals	4–7	10	8–10	14	11
Former employees	8–10	15	14	11	12
Financial analysts	16–17	14	15	12	13
Political groups	11–15	17	12	15	14
Interest associations from the vicinity	11–15	16	17	13	15
Employees' family members	11–15	13	16	16	16
Consumer unions	11–15	12	13	17	17

NOTES * Number of companies in the brackets. Adapted from Medek (2006, 85–93).

maintaining relationships with company stakeholders' on a sample of 20 small and medium-sized companies (Kašparová and Klapalová 2007, 717). It was part of an international research conclusion and the data presented are only a partial evaluation. For our purposes, the most interesting part is the evaluation of the significance of the individual stakeholders (or their groups), as well as the perceived benefits of these relationships. Respondents generally included members of the top management of the companies surveyed.

Table 4 shows the significance of the individual stakeholder groups; table 5 should provide the reasons for this significance – Kašparová and Klapalová asked the question 'Where do you see the benefits of these relationships.'

TABLE 4 Mean Evaluations of the Significance of Each Stakeholder on a Scale of 1 to 10

Stakeholder	M	Stakeholder	M
Company management	9.86	Local authorities	4.46
Customers	9.65	Financial institutions	4.00
Employees	8.90	Consultancies	4.00
Owners	7.86	Universities	4.00
Rivals	6.43	Government authorities	3.72
Suppliers	6.35	Chamber of Commerce	3.25
Citizens	4.80		

NOTES Adapted from Kašparová and Klapalová (2007, 723).

TABLE 5 Potential Benefits of Relationships with Different Stakeholder Types

Stakeholders	Benefits
Customers	Customer loyalty (16), getting new customers (5), securing stability and creditworthiness (4), risk minimization (4), a must to maintain business (4), building reputation and gaining prestige (4), easier communication (3).
Suppliers	Getting non-financial benefits (13), better conditions – cost-cutting (6), securing stability (5), a must to maintain business (4), risk minimization (3).
Employees	Staff motivation and loyalty (12), getting non-financial benefits (7), cost-cutting (6).
Financial institutions	A must to maintain business (7), getting non-financial benefits (6), cost-cutting (3).
Government authorities	A must to maintain business (9), problem-free business (7).
Local authorities	Getting non-financial benefits (4), loyalty of authorities as company clients (3), a must to maintain business (3).
Consultancies	Getting non-financial benefits (3).
Other companies, rivals	Getting new customers (6).
Universities	Getting quality workforce (3).

NOTES Adapted from Kašparová and Klapalová (2007, 725). Response rates in the brackets include only reasons with a frequency at least 3.

Kašparová and Klapalová (2007) concluded their report by stating that the surveyed companies build relationships especially with their primary stakeholders. The companies find the benefits of long-term relationships primarily in the non-financial benefits, such as trust in a partner.

The Significance of the Individual Groups in Relation to Performance in the Czech Republic

Blažek and Částek (2009) tested the following hypothesis: 'the higher the significance of a particular stakeholder group is, the higher is financial performance of the company.' Within the empirical survey of the Centre for the Competitiveness of the Czech Economy, they took advantage of a selected sample of 432 companies, which accounted for 15.33% of the population.

The questionnaire asked a question about identifying the significance of a relevant stakeholder group for the company on a scale from 1 (an unimportant stakeholder) to 5 (a very important stakeholder).

The relationship between the perceived significance of the interest groups and the achieved financial results was confirmed, but in general, the individual isolated relationships were weak. In many cases, these relationships were affected by moderating variables. For example, the significance of owners in the processing industry was found to be negatively associated to the corporate financial performance (Goodman-Kruskal's Gamma = –0.2 at α = 0.005), whereas in the construction industry it was found positive (although not statistically significant: G = +0.2 at α = 0.18). This is consistent with the findings of Berman et al. (1999) that the dependency between stakeholder management and corporate performance cannot be examined at the level of a relationship to individual stakeholder groups.

Conclusion

The current level of development of the stakeholder theory makes it possible to apply it as a justification for the very existence of a company as well as a determinant of its performance, the latter being the object of our interest. For this paper, we set a goal to review empirical research of the relationship between stakeholder management and performance of companies. Empirical verification of such a relationship is not trivial, though. In the first place, the concept of stakeholder approach had to be defined and operationalized. For a review study such as this one, operationalization of the key concepts is important as it enables us to evaluate the reviewed studies. Thus, the first part of our study dealt with the operationalization of the stakeholder approach. The other important variable, i.e. business performance, was not addressed in such a detail; although one could argue that a partial overlap of the stakeholder theory into the

field of business ethics opens the space to a discussion over the use of financial indicators as an appropriate measure, the reality of empirical studies is exceptionally unanimous here.

After taking these necessary steps, the actual review of the empirical studies starts with an examination of the static and dynamic effects of relationships to stakeholders on business performance, proceeds with two other studies to present the appropriate methodology, and after a brief justification of differentiating between 'Czech' and foreign studies begins the survey of 'Czech studies.'

The result of our review is rather unflattering. In general, several authors, regardless of whether they applied financial or non-financial measures of performance, empirically confirmed the positive relationship between the application of the stakeholder approach and company performance. The significance of positive relationships with stakeholders seems to be more critical for performance recovery than for its actual maintaining. However, the studies conducted on the companies based in the Czech Republic do not bring the same result. In fact, they do not bring any conclusive result. None of them researched the relationship in question in a sufficiently sophisticated way. Most of the studies assumed the existence of a positive relationship between the stakeholder approach and performance of Czech companies without any verification. If this topic was examined at all, it was done only at the level of isolated relationships towards the individual stakeholder groups. Moreover, the level of the relationship towards these groups was not measured adequately. For example, the significance or satisfaction of a stakeholder group should be measured using a set of multiple factors, as is apparent e.g. from the work by Harrison and Wicks (2013). However, no study of Czech companies proceeds in this way. It is therefore obvious that there is still a lot of work that needs to be done in this field.

In accordance with these facts and the studies and research presented above, it is possible to consider the application of stakeholder management justified in terms of performance. The growth in the level of expertise in this area, however, opens the space for answering new and more challenging questions that conform to the perspective of stakeholders in the context of their involvement in company performance that is diverse and conditioned with the complexity of real-world business conditions.

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Uporaba besed iz naslovov dnevnih novic za predvidevanje gibanja indeksov borznega trga

Branko Kavšek

Analiza borze je eno največjih področij, ki se zanimajo za rudarjenje besedil. Mnogi raziskovalci so predlagali različne pristope, ki uporabljajo besedilne informacije za napoved gibanja borznih indeksov. Mnogi od teh pristopov se osredotočajo bodisi na maksimiranje modela napovedne natančnosti bodisi na oblikovanje modela alternativnih metod za vrednotenje. V članku predlagamo opisnejši pristop tako, da se osredotočimo na modela sama in poskušamo identificirati posamezne besede v besedilu, ki najbolj vplivajo na gibanje borznih indeksov. Uporabimo podatke iz dveh virov (v zadnjih osmih letih): dnevne podatke za Dow Jones Industrial Average index (»odprte« in »zaprte« vrednosti za vsak trgovalni dan) in naslove 25 najbolj priljubljenih novic na Redditovem kanalu WorldNews za prejšnje »trgovalne dneve«. Z uporabo algoritmov strojnega učenja za te podatke in analiziranjem posameznih besed, ki se pojavljajo v končnih modelih napovedi, ugotavljamo, da so besede gej, propaganda in masakri običajno povezane z dnevnim povečanjem indeksa delnic, medtem ko beseda Iran večinoma sovpada z zmanjšanjem. To delo je le prvi korak h kvalitativni analizi modelov borznega trga, obstaja še veliko prostora za izboljšave.

Ključne besede: borze, rudarjenje tekstov, strojno učenje, modeli napovedovanja, obdelava naravnega jezika
Klasifikacija JEL: C38, C52
Managing Global Transitions 15 (2): 109–121

Razvijanje podjetniškega načina razmišljanja skozi transformacijsko vodstvo: poudarek na korporativnem kontekstu

Boris Urban in Thanusha Govender

Vodje podjetij vedno bolj sprejemajo podjetniško dejavnost kot potencialni vir doseganja konkurenčne prednosti. Voditelji, ki sprejemajo podjetniško usmeritev (EO) na ravni podjetja, morajo spodbujati zaposlene s podjetniškim načinom razmišljanja. Namen članka je razširiti razumevanje o tem, kako podjetniški način razmišljanja in transformacijsko vodenje vplivata na ravni EO v podjetjih v nastajajočem tržnem kontekstu v Južni Afriki. Po raziskavi se za testiranje hipotez študije uporablja

struktura modeliranja strukturnih enačb (PLS-SEM). Ugotovitve razkrivajo pozitivne in pomembne medsebojne povezave med spremenljivkami študije, kjer analiza poti podpira model študije in kjer si tako transformacijsko vodstvo kot podjetniški način razmišljanja delita vzajemno vzročno razmerje z višjimi vrednostmi EO.

Ključne besede: podjetniška usmerjenost, način razmišljanja, transformacijsko vodstvo, Južna Afrika
Klasifikacija JEL: D8, J24
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Na poti k strateškemu premiku? O evoluciji položaja Poljske v svetovnem gospodarstvu v obdobju od 2003 do 2012

Marlena Dzikowska, Marian Gorynia in Piotr Trąpczyński

Poljska je, tako kot druga gospodarstva v regiji srednje in vzhodne Evrope, od leta 1989 dalje začela z radikalnimi gospodarskimi spremembami, kar je pripeljalo do uvedbe tržnega gospodarstva. Ta proces je spremljalo postopno odpiranje gospodarstva za različne oblike mednarodne gospodarske dejavnosti, predvsem pa dinamično rast zunanje trgovine. Prispevek predstavlja analitičen pogled o naraščajoči internacionalizaciji poljskega gospodarstva, kar kaže na obstoj določenega paradoksa. Po eni strani proces sledenja naprednim gospodarstvom zahteva višje stopnje rasti v smislu BDP-ja. Vendar pa je omenjena internacionalizacija hkrati tudi gospodarsko odvisnejša od gospodarskih razmer v drugih državah. Analiza nakazuje tudi, da se je v poljskem izvozu pojavil strateški premik v sektorskem in geografskem smislu. Prispevek se zaključuje s predlogi za ekonomsko politiko.

Ključne besede: internacionalizacija, neposredne tuje naložbe, izvoz, ekonomska politika, ekonomska preobrazba
Klasifikacija JEL: P27, F41
Managing Global Transitions 15 (2): 145–168

Gospodarska svoboda in gospodarska rast v Južni Afriki

Clive E. Coetzee in Ewert P. J. Kleynhans

V članku preučujemo gospodarsko rast in povezavo z gospodarsko svobodo v Južni Afriki, pri čemer uporabimo empirično študijo. Gospodarska svoboda temelji na prostem ali zasebnem tržnem gospodarstvu, ki temelji na konkurenci, kjer pride do prostovoljne izmenjave, in v zakonodajnem okviru zagotavlja varnost tržnih agentov ter zasebne lastnine. V okviru študije so bile raziskane literature indeksa ekonomske

svobode, indeksa ekonomske svobode sveta in indeksa svobode v svetu za Južno Afriko. Izvedli smo empirično analizo, ocenili medsebojne korelacijske funkcije, Grangerjeve funkcije vzročnosti, regresijsko analizo in končno vektorski model avtoregresije (VAR). Ugotovitve raziskave iz Južne Afrike podpirajo literaturo, ki kaže na to, da dejansko obstajajo nekateri znaki, da višje stopnje gospodarske svobode podpirajo višje stopnje gospodarske rasti v državi.

Ključne besede: gospodarska svoboda, privilegij, regulacija, monopol, gospodarska rast
Klasifikacija JEL: L12, H1, P5, D72, O40
Managing Global Transitions 15 (2): 169–185

Razmerje med upravljanjem nosilcev deležev in poslovno uspešnostjo na Češkem

Ondřej Částek in Martin Cenek

Kakovost odnosa z nosilci deležev pogosto dojemamo kot način za konkurenčno prednost podjetja. Z drugimi besedami, mnogi avtorji zagovarjajo hipotezo, da uporaba upravljanja nosilcev deležev vodi v večjo poslovno uspešnost. Vendar pa empirična verifikacija take hipoteze ni trivialna. Prvič, operacija upravljanja nosilcev deležev, kakovost odnosa z nosilci deležev ali pomen nosilcev deležev so izziv že sami po sebi. Namen članka je torej pregledati empirične raziskave razmerja med upravljanjem nosilcev deležev in uspešnostjo podjetij na Češkem. Na žalost avtorji sklepajo, da študije z dejanskimi tozadevnimi rezultati za Češke republike skoraj ni. Samo dve študiji izrecno preučujeta razmerje med upravljanjem nosilcev deležev in uspešnostjo poslovanja. Poleg tega imata obe študiji neustrezno raziskovalno oblikovanje.

Ključne besede: upravljanje z nosilci deležev, odnos z nosilci deležev, pomembnost nosilcev deležev, uspešnost podjetja, empirične raziskave
Klasifikacija JEL: L21, M21
Managing Global Transitions 15 (2): 187–207