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Contents

PAPER

Impact of the Credit Rating Revision
on the Eurozone Stock Markets

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Abstract The contagion generated by the US subprime crisis and the European sovereign debt crisis that hit the Eurozone stock markets is still a highly debated subject. In this paper, we try to analyze the revision effect of the credit ratings of the Eurozone countries.

To this end, we used a bivariate DCC-GARCH model to measure the extent of dynamic correlations between stock returns of our sample. Our results indicate that credit ratings revisions have a relatively limited effect on the dynamic correlations of the Eurozone stock markets.

Introduction

The turmoil that has characterized capital markets since the summer of 2007 and its intensification since mid-September 2008 have had a serious impact on the global economy. Although the US high-risk mortgage market is considered to be the immediate cause of this turmoil, in recent years Eurozone capital markets and financial institutions have taken their share of the extended credit cycle and have been hit hard by capital markets tensions (Trabelsi, 2012). After disclosing the Greek deficit, leading to an increase in sovereign risk perception, the Greek crisis has spread to the most fragile Eurozone member countries (Ehrmann and Fratzscher, 2016). As a result, uncertainties about the Eurozone markets and the unpredictable nature of the European debt crisis have seriously undermined investor sentiment.

On the other hand, the successive and the massive credit rating downgrading of several Eurozone countries, in particular the most fragile ones, led to markets over-reacting to the bad news (Arezki et al., 2011). In the wake of the crisis, the Eurozone stock markets experienced massive depreciations coupled with high stock market volatility. Taking into account these turbulences, it seems therefore necessary to determine the

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extent of interdependence between the Eurozone stock markets and to examine whether there is a contagion relationship between these markets during the crises periods.

Studying financial contagion effects across the Eurozone stock markets is very interesting because these markets are strongly integrated as suggested by several authors (Fratzscher, 2002, Bartram et al., 2007). Indeed, due to the factors relating countries trough trade and the banking sector, we should expect higher interdependence and contagion levels, both between and within the Eurozone markets and other countries' markets. Moreover, several authors like Savva (2009) and Connor and Suurlaht (2013) have pointed to an increasing correlation between European stock markets after introducing the Euro.

In this regard, in order to gather evidence about any contagion phenomenon across the Eurozone stock markets, we refer to the non-contingent crises theory where contagion is but a continuation of the interdependence process between markets (Forbes and Rigobon, 2002). We therefore study the impact of sovereign credit ratings revisions on co-movements between the markets in our sample. The aim is to see whether sovereign rating announcements news generates contagion effects across European stock market returns.

This paper is then structured as follows. Section 1 reviews the relevant theoretical and empirical literature. Section 2 presents our research methodology. Section 3 presents our econometric model and the main results. The final section discusses our findings.

1. Literature Review

Several theoretical and empirical studies have focused on contagion. Christiansen (2007) found evidence of contagion between US and European bond markets. He used a GARCH volatility spillover model to show contagion effects from the US bond market, to the European bond market. Billio and Caporin (2010) identified mean relations and variance spillover amongst American and Asian markets, through the simultaneous equation system with GARCH errors. Gallo and Otranto (2008) focused on the Asian stock markets of Hong Kong, South Korea, Malaysia, Singapore and Thailand, and found evidence of volatility spillover amongst the regional nations by making use of a Markov switching model. Baum et al. (2013) adopted an event-study methodology combined with an econometric GARCH model in order to estimate the impact of rating announcements by the three leading agencies (Standard & Poor's, Moody's, and Fitch). Authors used three different models but the same econometric methodology: an exchange rate model and two CAPM models to explain sovereign bond yields for selected countries. They found that downgrade events reduce the value of the Euro and significantly affect sovereign bond yields. Previously, Brooks, Faff, Hillier & Hillier (2004) reported that rating downgrades negatively affect stock market returns.

However, research on contagion during the European sovereign debt crisis using correlation analyses shows mixed results. Indeed, some studies found a significant increase in the correlation coefficients between the different financial markets returns during the European debt crisis (Claeys and Vasicek, 2014, Kalbaska and Gatkowski, 2012, Metiu 2012, Missio and Watzka, 2011, Andenmatten and Brill, 2011). Other researchers believe that correlations between financial markets did not show an upward trend during the same

period suggesting the presence of a simple interdependence rather than contagion (Caporin et al., 2013, Briere et al., 2012). Cappiello et al. (2006) developed this technique and proposed an asymmetric approach called Asymmetric Dynamic Conditional Correlation (ADCC) model. Important studies that used these methods both for developed and emerging stock markets, especially in the context of the recent financial crisis.

Samitas and Tsakalos (2013) examined the relationship between the Greek stock market and seven European stock markets using an asymmetric DCC model and copula functions to measure financial contagion. Their results point to the presence of a contagion phenomenon during the subprime crisis and reject the presence of this phenomenon during the European sovereign debt crisis. In his paper on financial contagion during the sovereign crisis, Horta (2012) suggests that the stock markets of the NYSE Euronext group, whose sovereign debt is not under market pressure, do not show contagion signs unlike at-risk countries, which showed the most serious debt problems with contagion signs. This result is similar to that reported by Kizys and Pierdzioch (2011).

Examining asymmetric conditional correlations between the US and European stock markets during the US subprime crisis and the European debt crisis, Kenourgios (2014) found contagion across these markets during both crises. Papavassiliou (2014) examined correlation between Greek sovereign stocks and bonds in order to study contagion of the Greek crisis. Using a DCC model, the author concluded that correlation between sovereign stocks and bonds returns increased significantly during the Greek debt crisis, pointing to the presence of a contagion effect cross the two markets. Similarly, Missio and Watzka (2011) used a DCC model to examine the dynamics of correlations between Greek sovereign returns and sovereign returns of Eurozone countries. The authors found financial contagion across the Belgian, Italian, Portuguese and Spanish sovereign debt markets. Afonso et al. (2012) examined whether sovereign returns and CDS spreads in a given country react to the sovereign ratings of other countries. They conclude to a contagion phenomenon, in particular from the lowest-rated countries to the highest-rated countries. In the same context, Ismailescu and Kazemi (2010), as well as Kang and Min (2016), found that only positive ratings changes had a significant effect on CDS's and this effect was also found to be significant to spillover effects. In contrast, Li et al. (2007) are finding where downgrades only have significant contagion effects on stocks and they are again highlighting that the nature of the asymmetric effect of contagion is unique to the financial instrument being evaluated.

These mixed results reported by contagion literature are typical, as they are not unique to the Eurozone debt crisis. Indeed, such controversies stem from the different definitions given to contagion, the used measurement methods and the choice of the crisis periods.

2. Methodology

In order to overcome the shortcomings of the CCC-GARCH model, Engle and Sheppard (2001), Engle (2002) and Tse and Tsui (2002) proposed the DCC-GARCH model, which is an original dynamic estimation of conditional correlations in Multivariate GARCH models. Their specification allows for a time varying matrix because the DCC-GARCH

introduces equations describing the evolution of correlation coefficients in time.

Therefore, in order to measure dynamic conditional correlations, we apply the DCC-GARCH model proposed by Engle (2002). The multivariate model is defined as follows:

$$X_t = \mu_t + \varepsilon_t \tag{1}$$

where

$X_t = (X_{1t}, X_{2t},\ldots\ldots, X_{Nt})$ is the vector of past observations;
$\mu_t = (\mu_{1t},\ldots, \mu_{Nt})$ is the vector of conditional returns;
$\varepsilon_t = (\varepsilon_{1t}, \varepsilon_{2t}, \ldots\ldots\ldots, \varepsilon_{Nt})$ is the vector of standardized residuals;

We define also the matrix $H_t = (\varepsilon_t \varepsilon_t^{'}) = D_t R_t D_t$ (2)

Where

$R_t = (diag(Q_t))^{-1/2} Q_t (diag(Q_t))^{-1/2}$ (is $N \times N$) a symmetric dynamic correlations matrix.
$D_t = diag(\sqrt{h_{11,t}}, \sqrt{h_{22,t}}, \ldots\ldots, \sqrt{h_{NN,t}})$ is a diagonal matrix of standards deviations for each of the returns series obtained from estimating a univariate GARCH process in equation (1) formulated by the following equation:

$$h_{ii,t} = \omega_i + \alpha_i \varepsilon_{i,t-1}^2 + \beta_i h_{t-1} \tag{3}$$

Where:

$h_{ii,t}$ represents conditional variance, which depends upon the mean volatility level ω_i, the news from previous period $\varepsilon_{i,t-1}$ and conditional variance from the previous period h_{t-1}. ω_i, α_i and β_i are unknown parameters to be estimated.

Finally, Q_t is $(N \times N)$ variance-covariance matrix of standardized residuals ($u_t = \dfrac{\varepsilon_t}{\sqrt{h_t}}$) will be defined by:

$$Q_t = (1 - \theta_1 - \theta_2)\bar{Q} + \theta_1(u_{t-1}u_{t-1}^{'}) + \theta_2 Q_{t-1} \tag{4}$$

Where $\bar{Q} = E(u_t u_t^{'})$ is a $(N \times N)$ symmetric positively defined matrix of the unconditional variance covariance of the standardized residuals. θ_1 and θ_2 are unknown parameters to be estimated. The sum of these two coefficients must be less than 1 in order to ensure positivity of the matrix Q_t.

Consequently, for a pair of markets i and j, their conditional correlation at a time t is such that:

$$p_{ij,t} = \frac{(1 - \theta_1 - \theta_2)\overline{qij} + \theta_1 u_{i,t-1} u_{j,t-1} + \theta_2 q_{ij,t-1}}{\sqrt{((1 - \theta_1 - \theta_2)\overline{qii} + \theta_1 u_{i,t-1}^2 + \theta_2 q_{i1,t-1})((1 - \theta_1 - \theta_2)\overline{qjj} + \theta_1 u_{j,t-1}^2 + \theta_2 q_{j1,t-1})}} \tag{5}$$

Where q_{ij} is the element of the ith row and the jth column of the matrix Q_t.
The parameters of the DCC model are estimated using the maximum likelihood method introduced by Bollerslev and Wooldridge (1992). This allows to obtain for each variable, variance and conditional covariance. Under the Gaussian hypothesis, the likelihood function can be expressed as follows:

$$L(\theta) = -\frac{1}{2}\sum_{t=1}^{T}\left(n\log(2\pi) + 2\log|H_t| + \varepsilon_t' H_t^{-1}\varepsilon_t\right)$$

$$= -\frac{1}{2}\sum_{t=1}^{T}\left(n\log(2\pi) + 2\log|D_t R_t D_t| + \varepsilon_t' D_t^{-1} R_t^{-1} D_t^{-1}\varepsilon_t\right)$$

$$= -\frac{1}{2}\sum_{t=1}^{T}\left(n\log(2\pi) + 2\log|D_t| + \log|R_t| + u_t' R_t^{-1} u_t\right)$$
(6)

With $u_t = \frac{\varepsilon_t}{\sqrt{h_t}} = D_t^{-1}\varepsilon_t$

3. Empirical analysis

3.1. Data and descriptive statistics

In this study, we examine 7 Eurozone stock indices: Belgium (BEL20), Spain (IBEX35), France (CAC40), Greece (Athex Composite Index), Ireland (ISEQ overall price), Italy (FTSE MIB) and Portugal (PSI20). The study period stretches between 01/01/2004 and 12/31/2012 and includes 2348 daily observations for each index.

Table 1 reports the descriptive statistics of the daily stock returns series across the total period. The standard deviations present a measure of risk during the total study period. They indicate that the Greek market is the riskiest stock market of all the markets of the sample. Skewness is different from 0, indicating asymmetry for all the series. Moreover, all returns distributions show a statistically significant Kurtosis greater than 3, indicating that these distributions dispose of thicker tails than the normal distribution and that they are leptokurtic.

Table 1. Descriptive statistics of the returns series For the full period (1/1/2004 – 12/31/2012)

	ATHEX	BEL20	CAC40	FTSEMIB	IBEX35	ISEQ	PSI20
Mean	-0.038908	0.004183	0.000984	-0.021243	0.002045	-0.015786	-0.007107
Maximum	13.43108	9.221261	10.59459	10.87425	13.48364	9.733092	10.19592
Minimum	-10.21404	-8.319283	-9.471537	-8.599092	-9.585865	-13.96357	-10.37918
Std. Dev.	1.802965	1.299611	1.457688	1.538879	1.517968	1.564369	1.185156
Skewness	0.004875	-0.182445	0.050558	-0.031786	0.141330	-0.595134	-0.132319
Kurtosis	7.445010	9.735571	10.11370	9.173992	10.54170	10.77158	13.20373
Jarque-Bera	1933.011*	4451.520*	4951.825*	3729.624*	5572.309*	6047.482*	10192.89*
LB Q(24)	53.5*	49.2*	60.1*	66.76*	54.3*	82.1*	48.7*
LB (24)	1227.5*	3016.9*	2142.9*	2266*	1418*	2888.5*	1534.4*
ADF	-43.500***	-46.512***	-31.320***	-47.397***	-46.936***	-45.238***	-45.139***
PP	-43.450*	-46.474*	-50.475*	-47.398*	-47.034*	-45.147*	-45.116*

*Notes: ***and * denote statistical significance at the 1% and 10% respectively.*

The normality hypothesis of stock returns series is also rejected by the Jarque-Bera

test, whose coefficients exceed the critical values, rejecting thus the null hypothesis of normality for the returns series. The ADF and PP tests, applied to the returns series, are significant at the 1% level, allowing us to reject the null hypothesis of the presence of a unit root, against the alternative hypothesis of stationarity of all returns series. All Ljung-Box test statistics for the returns series and the squared returns series are significant at the 1% level. Such statistics indicate the presence of first and second order serial auto-correlation. The existence of the latter implies the presence of a linear dependence and a nonlinear dependence (heteroscedasticity) between returns. This reflects the imperfection of the studied stock markets and attests for the presence of a clustering volatility phenomenon.

3.2. Contagion test

In order to determine the presence of contagion effects generated by the subprime crisis and the European sovereign debt crisis, we follow Forbes and Rigobon (2002) who define contagion as a significant increase in the relationships between markets after a country shock. Moreover, in the absence of a significant trend of co-movements during crisis periods, the term interdependence is used to describe dynamics between markets. Let and be two stock returns series such that:

$$Y_t = \alpha + \beta X_t + \varepsilon_t \tag{7}$$

Where α and β are constants and ε_t represents the error terms.

According to Forbes and Rigobon (2002), the correlation coefficient ρ between X_t and Y_t is adjusted by the following:

$$\rho^* = \frac{\rho}{\sqrt{1 + \delta[1 - \rho^2]}} \tag{8}$$

With $\delta = \frac{\sigma_x^c}{\sigma_x^t} - 1$, where δ measures the relative increase in the volatility of x_t cross the two crises and stable periods and σ_x^c and σ_x^t are the conditional variances of the stochastic variable X_t respectively during the crisis period and the stable period.

The variable X_t represents the daily returns of the Greek stock index and the variable Y_t represents the daily returns of the other stock indexes of our sample. The following two alternative hypotheses are used to test the significance of the increase of the adjusted and unadjusted correlation coefficients: $\begin{cases} H_0 : \rho_c^* = \rho_t^* \\ H_1 : \rho_c^* > \rho_t^* \end{cases}$

Accepting the null hypothesis H_0 means that correlation between the two markets does not increase significantly across the two sub-periods. In this case, we conclude to a simple interdependence between markets and not a shift contagion. Accepting the alternative hypothesis H_1 means that correlation between the two markets increased significantly across the two sub-periods, proving the presence of a shift contagion. The t-Student test presented by Collins and Biekpe (2003) is used to examine these hypotheses.

The test is given by:

$$t = (\rho_c^* - \rho_t^*) \sqrt{\frac{n_c + n_{t-4}}{1 - (\rho_c^* - \rho_t^*)^2}} \qquad (9)$$

t is distributed with $(n_1 + n_2 - 4)$ degrees of freedom, n_c and n_t are respectively the number of observations during the crises periods and the stable period.

To this end, Trabelsi & Hmida (2018) used a bivariate Dynamic Conditional Correlation-Generalized Autoregressive Conditional Heteroscedasticity (DCC-GARCH) model to measure the extent of dynamic correlations between the Greek stock market and the Belgian, French, Portuguese, Irish, Italian and Spanish stock markets during both crises periods. The results point to the presence of a contagion effect between all market pairs during the subprime crisis and between the Greek and Portuguese stock markets during the European sovereign debt crisis

3.3. The effect of sovereign credit-rating revisions on correlation coefficients:

Sovereign rating is the continuous assessment of each country's creditworthiness and measures default probability over a specific period of time. Since the sovereign debt crisis in Europe, the Eurozone has been pressured by rating agencies and their downward rating warnings. Indeed, several Eurozone countries have been degraded leading to fears of default for some of them. In this section, we examine the effect of downward sovereign ratings of the Eurozone countries of our sample (by the Big Three; namely Fitch, Standard & Poor's and Moody's) on bivariate dynamic conditional correlations. The aim is to investigate whether news about sovereign rating changes in one country triggers contagion effects on other countries in the region.

To examine changes in sovereign ratings, we began by calculating a complete credit rating measure through a standard linear transformation. Indeed, it is a question of assigning numerical values to the rating scales of the three agencies, which total 21 ratings on average. Therefore, a value of 20 is given to the highest rating AAA / Aaa issued by Fitch; S & P / Moody's respectively and a value of 0 to the lowest RD / SD / C rating, assessing a general default situation or selective default issued by Fitch / S & P / Moody's respectively. Then, we assign values to credit outlooks and watch changes. A negative outlook will add nothing to the value, while stable and positive outlooks add 1/3 and 2/3 to the rating values, respectively. Thus, a complete credit rating measure is obtained by summing the values of the first and second steps. Then, we define the following regression:

$$\rho_{ij,t} = \theta_0 + \theta_1 \rho_{ij,t-1} + \gamma_1 RC_{i,t}^T + \gamma_2 RC_{j,t}^T + \varepsilon_{ij,t} \ with \ RC_{i(j),t}^T = \Delta v \qquad (10)$$

With $\rho_{ij,t}$ the bivariate conditional correlations of the Greek stock market and the six European stock markets;
$RC_{i(j),t}^T$ is an indicator variable that captures the effects of sovereign credit rating changes of country i (Greece) and countries j (the other countries in the sample) at time t = T.

$$RC_{i(j),t}^T = \begin{cases} \Delta v \,, t = T \\ 0 \ \ ,t \neq T \end{cases}$$

The methodology of Chiang et al. (2007) consists in setting:

$\Delta v = 1$ for an upgrade revision of one notch,

$\Delta v = -2$ for a downgrade revision of two notches,

$\Delta v = -1/3$ the case of an outlook or a watch change from positive to stable or from stable to negative.

$\Delta v = -2/3$ the case of an outlook or a watch change from positive to negative.

Note that regressions are concluded with Newey-West Standard Errors.

The results are presented in Table 2. Ljung-Box and ARCH tests reject the presence of serial autocorrelation in the residuals and squared residuals issued from all regressions. These are considered adequate. Our results indicate that three correlation pairs of the six positively and significantly react to sovereign rating revisions. These are the dynamic conditional correlations of ATHEX-CAC40, ATHEX-IBEX35 and ATHEX-PSI20.

These three correlation pairs tend to increase following a change in the debt rating of one of the two countries. Indeed, co-movements between the Greek and Spanish stock market tend to rise following the revision of the Greek sovereign credit ratings as γ_1 is positive and significant at the 10% level. However, co-movements between the Greek and the French stock markets, or the Greek and Portuguese stock markets are positively affected by changes in the French and Portuguese debt ratings respectively. Moreover, coefficients of γ_2 are positive and significant at the 5% and 1% levels respectively. The significant and positive effect on dynamic conditional correlations suggests that the revisions of debt ratings generate a contagion effect across the stock markets of the studied countries. Determining these effects is important for several reasons. Indeed, countries negatively affected by other countries' rating should avoid issuing new stocks in the period following that downgrading as such news will put upward pressure on the required return on their own new issue. In addition, market participants in asset pricing and allocation, as well as risk management can use these results.

Table 2.   Effect of sovereign credit rating changes on stock return correlations

	γ_1	γ_2	LB Q(12)	ARCH Test	
				χ^2ARCH	P-value
ATHEX-BEL20	0.00067	-0.00223	13.399	0.0168	(0.8968)
ATHEX-CAC40	0.00186	**0.00100****	7.366	1.7999	(0.1797)
ATHEX-FTSEMIB	0.00117	-0.00102	3.391	0.0146	(0.9037)
ATHEX-IBEX35	**0.00129***	-0.00232	12.359	0.0669	(0.7958)
ATHEX-ISEQ	0.00367	-0.00338	4.824	0.0331	(0.8555)
ATHEX-PSI20	0.00108	**0.00227*****	14.157	0.0050	(0.8219)

*Notes: ***, **,* denote statistical significance at the 1%, 5% et 10% levels respectively.*

Importantly, with these results as a whole, we notice that most of the dummy variables are non-significant. These results indicate that the effect of sovereign credit ratings revisions

on Eurozone stock markets' co-movements is relatively limited. This is inconsistent with several studies, which pointed out that even if credit ratings do no generally impact stock markets, any downgrade sovereign rating systematically results in a decline in stock prices in the rated country (Iankova et al., 2009) and a regional contagion effect to neighboring countries through a wake-up call. Although our results point to significant dummy variables for three correlation pairs, we notice that these variables are poorly influenced by credit rating revisions. Our results suggest that investors in the Eurozone stock markets are generally not sensitive to sovereign rating revisions because they may consider them to be country-specific news.

4. Conclusion

Contagion across the Eurozone stock markets is attracting the growing interest of analysts and researchers. Our study examined the relationship between the Greek stock market and six Eurozone stock markets. We applied the bivariate DCC-GARCH model to test this relationship over the 2004-2012 period.

During the European debt crisis period, the relationship between the Greek market and the Eurozone stock markets is described as a simple interdependence, an exception is the Portuguese market. However, the results indicate that the dynamic correlations of the Greek and Portuguese markets changed during the second crisis period, suggesting the presence of a contagion effect between these two markets Trabelsi & Hmida (2018). Indeed, weakened by its public debt as well as by a decrease of its rating, Portugal was considered the second "weak link" in the Eurozone. Since then, the country went through a wave of fear that Portugal was increasingly being contaminated by the Greek crisis. Portugal then underwent a speculation transfer phenomenon in its market (Costa et al., 2016). However, our results point to a shift contagion across the Greek and Portuguese stock markets during this period. In this paper, we examined contagion, focusing on the effect of sovereign credit rating revisions of the studied countries on the dynamic correlations of the stock markets.

Our results show that the revisions of the Greek, French and Portuguese credit ratings had a significant effect on the dynamic correlations between the Greek market and the Spanish, French and Portuguese markets respectively. The identification of a shift contagion phenomenon between Greek and Portuguese markets during both periods of crisis and the significant effect of the Portuguese debt rating on conditional correlations reveal that both investors and rating agencies play significant roles in shaping the structure of dynamic correlations between these two markets. It is important to note that the effect of sovereign ratings revisions on the co-movement of Eurozone stock market returns is relatively limited.

The obtained results are useful for investors, in particular for their portfolio diversification strategies. They are also useful for the monetary and financial authorities in their efforts to absorb shocks resulting from crises. Indeed, a good understanding of contagion effects is an important step towards designing portfolios trading, hedging and optimization strategies. Moreover, authorities' efforts during a financial crisis in a

given country will only be effective if the relationships between the two countries are significantly different before and after the crisis. If, however, no contagion is determined, the efforts will have very limited effects since financing problems in this case result mainly from the country's fundamental economic and budgetary problems.

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PAPER

The Delegitimisation of Smoking in Denmark and the US

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Abstract Tobacco smoke continues to be one of the largest causes of premature deaths on a global level. Denmark and the United States of America (US), however, represent two examples of successful transition, where the number of daily smokers has decreased significantly throughout the past 70 years. In this paper, we point out key institutional and moral entrepreneurs that paved the way for transition of the Danish and US smoking regimes. The paper investigates proponents as well as opponents of (progressive) anti-smoking legislation. We apply the theory of institutional and moral entrepreneurs to select important events and actors. In the two countries that we study in detail, Denmark and the US, we find different drivers of change: the court system in the US and institutional and moral entrepreneurs in Danish civil society. In both countries, however, the Parliament in Denmark and the Congress in the US played significant roles in maintaining and supporting the smoking regimes.

Keywords: Transition; Destabilisation; Institutional entrepreneur; Smoking

JEL Classification: I12; I18; K32

Introduction

Tobacco smoke continues to be one of the largest causes of premature deaths on a global level. It accounts for more than 7 million premature deaths worldwide annually, and while more than 6 million deaths are the result of direct usage, around 890,000 non-smokers die because they are exposed to second-hand smoke (WHO Tobacco Factsheet 2018). According to the World Health Organization (WHO), an estimated one billion people will die of tobacco-related diseases during the 21st century unless governments around the world get serious about preventing smoking consumption (Cropley 2007). In recent years, however, the worldwide consumption of tobacco smoking has declined slightly, but this development differs widely from low-income to middle-and high-income countries. Some high-income countries such as the United Kingdom (UK), Denmark and Australia have implemented a variety of advanced anti-tobacco smoking laws. But the decrease in consumption in high-income countries

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is almost entirely offset by the large increase of smokers in low- and middle-income countries. Most smokers now live in low- and middle-income countries and account for about 80 percent of the now more than one billion smokers worldwide. In other words, the majority of tobacco-related illnesses has moved to developing countries, which have more lax tobacco policies that enable the big tobacco companies to expand their market reach to these countries. Currently only 18 percent of the world's population is protected by anti-smoking laws and only 42 countries representing about 19 percent of the world's population meet the WTO's best practice for pictorial health warnings on cigarette packages (WHO 2018).

Denmark and the US, however, represent two examples of successful transition, where the number of daily smokers has decreased significantly throughout the past 70 years. In this paper, we highlight key institutions and key institutional entrepreneurs that paved the way for the transitions within the Danish and US smoking regimes. The reason for choosing these two countries is that Denmark and the US are two of a handful of countries in which smoking prevalence has dropped significantly during the past century (The Danish Cancer Association 2017). In 1953, 80 percent of the male population in Denmark smoked daily, while the same was true for about 40 percent of the women; for an average of 60 percent of the population (Danish Health Authorities 2015).

Smoking prevalence in the US peaked in 1953 at 45 percent (Saad 2012), so the vantage point of the US counterpart is relatively lower. Since the 1950s, however, the number of smokers has been decreasing more or less steadily in both countries – except for a slight increase of female smokers during the feminist movements in the late 1960s. While cigarette consumption has continued to decrease in the US, where 15.5 percent of the population were smokers in 2016, the development has stagnated in Denmark since 2011, where the total number of daily smokers has now stabilised slightly above 20 percent (Hyldal 2018). Regardless of the current Danish stabilisation, these two smoking paths do represent significant transitions of behaviour change among the respective populations, where smoking prevalence on average has dropped from 60 to 20 percent in Denmark and from 45 to 15 percent in the US for both genders (Centers for Disease Control and Prevention 2018; Danish Health Authorities 2015).

What is striking about the Danish and American transition pathways is that the drivers of change have not been studied sufficiently to date. We explain and identify some of the key forces behind the significant changes of smoking perception and behaviour in high-income countries. We provide answers to the question: Who were the leading pioneers of the anti-smoking agenda and which institutions respectively enabled and constrained the transitions in Denmark and the US?

Theoretical vantage point and methodological considerations

Theoretically, we primarily draw upon on two resources. First, we are inspired by Turnheim and Geels' phase-model for destabilisation enactments, which was developed on the basis of an empirical study of the decline of the British coal industry. It includes five lessons that are useful when examining the different stages of a given

destabilisation process (Geels & Turnheim 2012:46). The model describes how an industry can choose to cope with increasing destabilisation pressure by moving from 'blindness and denial' in stage one to 'incremental responses' in stage two. In these early stages of destabilisation, an industry tries to downplay delegitimisation criticism while remaining highly committed to maintaining and consolidating a current regime. The third and fourth stages revolve around 'increasing doubts and diversification' and 'decline and destabilisation'. In these stages, an industry faces severe pressure that results in performance decline. The industry starts to doubt the current regime, their commitment towards the current regime declines and they begin a process of exploration searching for solutions outside of the current regime (Geels & Turnheim 2012:46). The final stages of the model focus upon on 'reorientation' and 'dissolution'. In these stages, an industry is driven by survival and is desperately trying to figure out if it can change its core identity and beliefs as a last attempt to avoid total collapse.

In the following analysis, we draw upon the earlier stages of this phase-model in particular, because of the smoking industries' repeatedly successful coping strategies of dealing with increasing delegitimisation pressure. The delegitimisation phase-model builds upon the theory of socio-technical transitions developed by historian Frank Geels. Briefly described, this theory draws on a mix of different disciplines, including science and technology studies, institutional theory, history and evolutionary economics. It revolves around the interaction between three levels: 'the landscape,' 'the regime' and 'the niche'. The landscape level refers to major societal developments such as climate change, economic crises, war or ideological changes, and is often referred to as the macro-level. The regime – which is often described as the meso-level – refers to conditions of a socio-technical system regarding, e.g., regulation, institutions or cognitive biases (Geels 2004). Niches revolve around the diffusion of innovations that seek to enter and penetrate an incumbent regime from a micro-level, which potentially puts pressure on existing and incumbent technologies within a given socio-technical system.

In order to analyse the decline in tobacco smoking, we also draw upon Barbara Czarniawska's theory on how institutions emerge. In her study of the emergence of the London School of Economics, Czarniawska argues that institutions should be thought of as 'anthills' that are established by a highly important institutional entrepreneur who behaves like a queen in an anthill (Czarniawska 2009:438). While it takes many ants to maintain and build an anthill, the queen is the one who initiates the building process. Drawing upon Bruno Latour, Madelene Akrich and Michel Callon's (2002;1986) ideas about building alliances and establishing interest, Czarniawska explains that institutional entrepreneurs possess a certain entrepreneurial nature that distinguishes them from other people. They are good at forging alliances, they have a strong drive and they have a certain sense of feeling 'what is in the air' (Czarniawska 2009:438). In other words, they are agents of change. To continue the idea of the institutional entrepreneur, we draw inspiration from Antadza and McGowan's theoretical contribution with respect to moral entrepreneurs who fall under the category of institutional entrepreneurs (Antadza & McGowan 2017: 4). In contrast to various types of institutional entrepreneurs that are inclined towards re-working the relationship between niches and levels of a given

regime, moral entrepreneurs aim to transform the macro-landscape, thereby creating pressure on a socio-technical regime from above rather than from below (ibid.:2). Thus, the aim of a moral entrepreneur is to target the landscape level by exercising discursive action, which potentially delegitimises certain kinds of behaviours while altering power relations at the regime level (ibid.:4).

We situate our paper within the broad research field of transition studies that is dominated by scholars interested in sustainable transitions (Sengers, Wieczorek & Raven 2016). Many of these scholars build upon the ideas developed by Rip and Kemp (1998) with respect to technological change, and often investigate how one technology replaces another. Some of the significant case studies in the field revolve around, e.g., the transition from horse-drawn carriages to automobiles, or the transition from sailing ships to steam ships (Geels 2005; 2002). In contrast to many of these transition studies, which focus on competing niche technologies, we draw attention to key institutions and the institutional and moral entrepreneurs that have destabilised the smoking regimes described above.

In accordance with a multitude of other studies on social innovation (Westley et al. 2011; Mulgan 2006; Mumford 2002; Mumford and Moertl 2003) and socio-technical transitions (Elzen et al. 2011; Geels and Verhees 2011; Raven 2007; Söderholm 2013; Tainter 2011), we provide a historical account of tobacco consumption in Denmark and the US. Working backwards from the current smoking regimes of the examined countries, we begin our transition narrative at the height of the former smoking regimes. Because we draw upon empirical sources that are produced by social scientists and primarily of a secondary nature, it is therefore important to highlight that although these sources have already been 'through a particular level of analysis' (Jensen 2017:1100), we find them compatible with the purpose of our investigation.

The following historical analysis begins with an account of how tobacco smoke was perceived in the beginning and middle of the 20th century. Taking that as our vantage point, we describe the key actors within the delegitimisation phases of smoking, including both proponents and opponents of anti-smoking legislation.

The heyday of smoking

In the beginning of the 19th century, it was normal for Danish boys to receive a pipe as confirmation gift. Smoking a pipe was perceived as a symbol of entering adulthood (Danish Cancer Society 2017). The two professions that contributed the most to the spread of cigarettes were soldiers and seamen, whose dangerous and harsh lives – including their smoking habits – came to be perceived as an expression of masculinity (Danish Cancer Society 2017:25). During the Second World War, American soldiers were provided with large amounts of cigarettes by the government and cigarettes were used as a currency in parts of Europe when other currencies lacked stability. Although a small anti-tobacco movement had been active at the beginning of the 20th century, it was crushed when soldiers returned from the battlefields of World War One with cigarettes in their mouths. It was perceived as disrespectful to be against smoking, and

the popularity of cigarettes among soldiers created an image of smoking that came to be associated with peace and freedom (Danish Cancer Society 2017:24).

While it had been socially unacceptable for women to smoke prior to the 1900s, this changed when the tobacco industry targeted the female population with slogans like 'Reach for a Lucky instead of a sweet' during the Second World War. Such slogans appealed to women and their cigarette consumption rose as a result. Later, during the 1960s and 1970s, women began to use tobacco smoking as a weapon against the patriarchal state. Cigarette smoking as a symbol of freedom and independence spread from a small group of feminists to larger groups of women who wanted to signal their independence from social norms that they felt restricted women.

During the 1950s and through the 1970s, people smoked everywhere: teachers smoked in classrooms, social workers smoked among kids in kindergartens and people smoked on plains, in trains, in cars and all public spaces (Danish Cancer Society 2017). From the 1900s to the 1950s, most people thought of smoking as an innocent activity; it was a time of ignorance regarding its health consequences, and the tobacco industry continued to expand their business rapidly. The destabilisation enactment of the smoking transition path had not yet begun (Turnheim and Geels 2012:38). However, this changed when scientist started to publish research indicating a connection between smoking and lung cancer.

Health scientists vs 'Big Tobacco'

Some of the pioneering studies connecting lung cancer with tobacco consumption came from the Netherlands and Germany between 1939 and 1948 (Doll 2010:4). But these studies did not gain significant attention outside of Germany because of the Second World War. It was not until new research that included more significant data was published in the UK and the US in the early 1950s that scientists were able to argue with certainty that smoking was a significant factor in the occurrence of lung cancer (Doll 2010:4). These publications gained significant attention and more researchers became interested in the potential health hazards of cigarette smoking. The research accumulated: after 1964, no serious scientific research objected to the link between lung cancer and smoking. While a scientific consensus had been reached by this time regarding smoking and lung cancer, many other questions with respect to the health hazards deriving from tobacco smoke were still unanswered, which generated more health research (Doll 2010:18-19).

The role of the scientific institutions with respect to decreasing smoking behaviour cannot be downplayed: these institutions became the initiators and spokespersons of a new smoking narrative that started to challenge the business of 'Big Tobacco'. In the rest of the paper, we use this term as an abbreviation for the four largest American tobacco companies, including American Tobacco, Benson and Hedges, Philip Morris, and U.S. Tobacco (Oreskes & Conway 2010:16). The increasing accumulation of scientific research knowledge on the health hazards of smoking created an increasing external pressure (Turnheim & Geels 2012:38) on Big Tobacco, which began to perceive scientific research as a fundamental threat to their profits. In order to protect

their business, boards of directors as well as CEO's of the Big Tobacco companies began to respond incrementally. They countered the lung cancer research results by claiming that it was the creation of a limited number of 'mad' scientists (Danish Cancer Society 2007: 32). In addition, they argued that the hazards of smoking might just as well be the result of air pollution or other unknown substances. In other words, the destabilising enactments of the smoking regime had been set in motion by the early 1950s. What characterises these early phases, however, is that external pressure was still weakly articulated (Turnheim & Geels 2012:38); the tobacco industry was able to shrug the criticism of by denying the scientific evidence and continuing more or less with business as usual.

In general, though, the scientific results started to worry the industry. In order to meet the criticism Big Tobacco launched the filter cigarette. During the 1952 press conference held to introduce the new product, filter cigarettes were highly praised by the industry as the biggest health protector in the history of the cigarette. The filter cigarette became instantly popular within a couple of decades in the US, which meant that while 2 percent of the cigarettes sold in the early 1950s included filters, that number had increased to 90 percent in 1979. Another strategy adopted by the industry which sought to counter the threatening health research was the introduction of deceptive branding concepts like 'light' and 'low-tar', 'mild' and 'ultralight', which were used to further reduce the perceived health risks of smoking (Minhas and Bettcher 2010:711).

Furthermore, according to health researchers Raman Minhas and Douglas Bettcher, lax regulation policies allowed the industry to exploit a flawed testing protocol that measured the amount of tar, carbon monoxide and nicotine content. 'Despite knowledge that this test method is insufficient to measure the biological or epidemiological impact of cigarette products and does not provide meaningful information about the relative health risks of different brands of cigarettes, the tobacco industry shaped the testing results to characterize its brands with the aforementioned misleading descriptors' (ibid.). The misleading labels, combined with the filter cigarette, were very successful (Turnheim & Geels 2012:38) and effectively delayed the transition path of delegitimising smoking. The scientific community, however, did continue to gain wider attention in the media; once the health researchers started to communicate their research results to the public, a completely new industry paid for by the tobacco industry rose as a result.

The new industry's product and ambition was to spread doubt among the population with respect to the scientific results on smoking. This strategy of creating scientific distortion was even more callous and sophisticated than the introduction of filter cigarettes and 'mild labels'. The tobacco industry in the US, which had grown to become one of the most powerful industries in the country, started to collaborate with Hill and Knowlton, one the most effective public relations firm in the country (Oreskes & Conway 2010:16). Historians Naomi Oreskes and Erik M. Conway describe how Big Tobacco pursued this strategy of sowing doubt about the scientific consensus with respect to the health hazards of tobacco consumption. At the same time, Big Tobacco continued to promote their products through the manipulative counter-narratives described above, especially through ads targeting new consumer groups such as women.

The tobacco companies took advantage of a few unscrupulous scientists, who manufactured uncertainty about the scientific consensus and the vulnerability of science, which is partly driven forward by a healthy skepticism towards established science. An infamous memo written by an industry executive in 1969 stated that 'Doubt is our product'…'since it is the best means of competing with a "body of fact" that exists in the minds of the general public' (Oreskes & Conway 2010:34). The 'Tobacco Strategy' as Oreskes and Conway call it (ibid.:6) targeted science by involving high-profile industry lawyers and public relations experts who were willing to sow doubt about scientific facts. One of the many documents analysed by Oreskes and Conway was titled 'Bad Science: A Resource Book' (ibid.). The book provides numerous examples of how to undermine established scientific facts and it includes a list of scientists willing to speak on behalf of a think tank or corporation whenever they need a comment with respect to a certain issue. Through this strategy, the tobacco industry was incredibly successful in manufacturing a scientific debate, as they were able to convince journalists of their responsibility to present 'both sides' of the discussion. This now infamous strategy represents another pillar of Big Tobacco's successful strategies to slow down the destabilisation pathway by its commitment to maintaining a smoking regime from which they made incredible profits (Turnheim & Geels 2012:38). (The 'Tobacco Strategy' - later also adopted by the fossil fuel industry successfully penetrated respected media outlets such as The Washington Post and The New York Times, who wrongfully claimed to represent both sides of the scientific debate on climate change for several years. (Oreskes & Conway 2010:7)).

As corporate institutions with unprecedented economic power that employed the effective expertise of public relations companies like Hill and Knowlton, Big Tobacco's four main representatives – Philip Morris, U.S. Tobacco, Benson and Hedges as well as American Tobacco – stand out as the biggest contesters of the transition pathway towards delegitimising smoking throughout our condensed historical journey.

Destabilising the smoking regime in the US: lawsuits

Throughout most of the 20th century, tobacco politics in the US was favourable towards the industry. It was perceived as a successful and important sector of the economy as a provider of jobs, economic growth and export revenue. The few scientists who were outspoken critics of tobacco consumption in the beginning of the delegitimisation phase faced heavy resistance for decades, and their position was usually drowned out by the tobacco industry's successful narrative (Albæk et al. 2007:8). Within the US Congress, the issue of tobacco has been dealt with traditionally in a secluded political subsystem containing tobacco industry representatives, members of congressional agricultural committees and bureaucrats. During the period from 1947–1999, an increasing number of people died as a result of lung cancer, but despite this trend most hearings in the agricultural committee (78 per cent) dealt positively with the industry (Albæk et al. 2007: 8). This close alignment between government elites and industry executives resembles the political situation in Denmark, which we discuss below.

On the US federal government level, the period from 1964 to 1984 has been described as a period of 'regulatory hesitancy' (Albæk et al. 2007). Whereas a landmark report published in 1964 by the US Surgeon General on smoking and health provided ammunition to a growing number of tobacco control advocates, the industry successfully fended off the scientific consensus as unscientific, and 'merely statistical, not causal' (Albæk et al. 2007:9). But while the federal political system was hesitant and passive, the US court system provided another political venue for destabilising the smoking regime. In contrast to the Danish political system, which only has a single passage point (Callon 1986) in the form of the Danish Parliament for promoting a certain political agenda, the US political system allows for political 'venue shopping' (Albæk et al. 2007:9). Whenever a political venue is not favorably disposed towards a political position, one may choose another political venue that is more closely aligned with one's position on a certain topic. The mutual agreement upon the position on a certain topic between a political venue and a political advocate implies that the venue is more disposed towards favouring and advancing the political agenda of a given advocate. Contrary to the generally favourable treatment of the tobacco industry by the US Congress, US state-level court systems became highly successful political venues and obligatory passage points (Callon 1986:207) for tobacco control spokespersons (Akrich et al. 2002) and federal state officials, who were able to unify their interests (Akrich et al. 2002) with the state courts regarding the issue of controlling tobacco.

During the mid-1950s, mid-1980s and mid-1990s (Albæk et al. 2007:10), three waves of tobacco litigation occurred in the US. While the first two litigation waves, which included primarily lawsuits initiated by individual citizens, were unsuccessful, the third wave included lawsuits initiated by the states. A number of the individual lawsuits focused on issues of addiction and the harm that the industry's product caused to the lives of smokers as well as non-smokers exposed to second-hand smoke. But due to the plaintiffs' shortage of money, many of these lawsuits failed when they came up against the tobacco industry's 'deep pockets' and its ability to fund appeals on many occasions.

Many of the lawsuits, however, helped uncover some of the wrongdoing of Big Tobacco (Albæk et al. 2007:10), which increased the pressure and destabilisation of the industry (Geels & Turnheim 2012:38) as the lawsuits captured the public's attention. While Albæk et al. (2007) describe the individuals launching lawsuits as primarily unsuccessful, we argue that they should rather be perceived as moral entrepreneurs who incrementally increased the pressure on the smoking regime through discursive actions on the landscape level (Antadza & McGowan 2017: 2). The media attention that followed the lawsuits made the public more aware than it had been before about the wrongdoings of the tobacco industry.

Inspired by the pioneering lawsuits of the first litigation waves, a number of state and federal lawsuits eventually moved the issue of tobacco smoking from being a matter of private concern to one of public concern. In one important litigation process in 1994, the Attorney General of the State of Mississippi won a case against the tobacco companies in which he argued that non-smoking taxpayers should not pay for the treatment of sick smokers while the industry made lots of profits. The State of Mississippi won this

lawsuit, which was soon followed by many other state lawsuits, which led to a settlement with the tobacco industry in 1997 in which the tobacco industry acknowledged that smoking can indeed lead to a number of sicknesses and death (Albæk et al. 2007:10).

Concurrently with the first waves of litigation, a new coalition was formed in the mid-1980s to fight Big Tobacco. The coalition consisted of the American Cancer Society, the American Heart Association and the American Lung Association, which allied with community groups throughout the country to shift the attention regarding smoking towards a hitherto unknown subject: the health dangers of environmental tobacco smoke (ETS). A second report by the Surgeon General in 1986 identified a connection between second-hand smoke (EST) and lung cancer as well as other diseases (Albæk 2007:9). This report sparked a renewed concern about the negative aspects of exposure to second-hand smoke, which also increased the pressure on and destabilisation (Geels and Turnheim 2012:38) of the tobacco industry.

In 1998, as a result of various court orders, certain tobacco documents produced by Big Tobacco companies became publicly available, and quickly became infamous. These documents, which were leaked by an anonymous whistleblower, included more than six million previously secret internal documents that had been written by Big Tobacco lawyers, scientists and top executives. The texts detailed practices of the industry intended to deceive and manipulate the greater public. The papers revealed that the industry had knowingly promoted a dangerous product without informing the public of its dangers. They also detailed how the industry had increased the amount of nicotine in their products in order to make consumers more addicted while still denying publicly that nicotine was addictive (WHO 2002:9). The revelations of these documents accelerated the destabilisation of the smoking regime and exacerbated a potential crisis in the industry (Geels & Turnheim 2012:38). In other words, the period of federal 'regulatory hesitancy' was over, and the industry was increasingly finding itself in trouble on multiple levels.

During the mid-1990s, the US Food and Drug Administration added another blow to the already substantial number of lawsuits against Big Tobacco when they discovered that the tobacco industry had secretly added ammonium to the cigarettes in order to increase the absorption of nicotine into the blood, consequently making consumers more addicted to the drug. This story was widely reported in the US media, which added to the already widespread suspicion of the industry's callous and unscrupulous tactics.

These various litigation waves that entered the public sphere through the political venue of the court system (Albæk et al. 2007) represent how the tobacco industry faced increasing and more coordinated pressure on a discursive (Antadza & McGowan 2017: 2) macro-level as well on the political meso-level (Geels 2005:452). One of the most significant results of these effective litigation processes was the steady decline in tobacco consumption from the 1970s and onwards (Saad 2012). At the same time, industry actors began to doubt the viability of their product in the US market, and began to focus their attention on low-income countries with laxer regulation, where consumption rose as a result (WHO 2008:16; Geels & Turnheim 2012:38). The US Congress did pass the 'Family Smoking Prevention and Tobacco Control Act' in 2009 signed into law by

Barack Obama (US Food and Drug Administration 2018), which aims to reduce tobacco-related illnesses and deaths by curbing tobacco use among adolescents and children. The bill bans a variety of 'flavours' that appeal to young people and prohibits the use of labels such as 'mild' or 'light', and was seen as a judicial milestone achievement for the tobacco-control advocates.

To summarise: While US federal anti-smoking legislation has been generally less comprehensive than, for instance, the Danish smoking bill of 2007, these US litigation processes contributed to aligning its anti-tobacco legislation more closely to the political agenda in Europe.

Danish opposition to the anti-smoking agenda: cultural values and taxation benefits

In the following section, we examine how the Danish smoking transition came about. We highlight three factors that explain the Danish Parliament's institutional capacity ([omitted]) with respect to regulating tobacco consumption. These three determining factors are: 1) the liberal perception of smoking, 2) the taxation regime and 3) the tradition of establishing voluntary agreements with corporations. In order to explain the Danish Parliament's stand on tobacco smoking in the past, we also take a closer look at the relationship between EU tobacco lobbyists and the Danish Government's actions within the European Union.

One important reason for the Danish Parliament's lack of action to regulate tobacco is that 95 percent of Danes, according to a poll conducted in 1997, primarily blame smokers – not the industry – if they get sick or die as a result of smoking (Albæk et al 2007). In accordance with other countries such as the Netherlands, Germany and the UK, Danes share a liberal belief that opposes the intrusion of the state in matters of private consumption (Duina & Kurzer 2004:65). Smoking has also primarily been considered an ethical issue in the past, which placed the issue outside the arena of party politics (Albæk et al. 2007:2).

Another important principle regarding the inaction of Danish politicians with respect to smoking regulation policies stems from the parliamentary tradition of consulting the corporate sector when new legislation is initiated. Elbæk et al. (2007) describe how tobacco regulation proposals in the Danish Parliament continuously are regularly followed by the current minister of health calling for 'talks with the industry' or 'voluntary agreements' (Albæk et al. 2007:13). This regulatory tradition has contributed significantly to the slowing down of the delegitimisation process of smoking (Albæk et al. 2007:13; Turnheim & Geels 2012:38). A third explanation of the Danish Parliament's inaction with respect to regulating tobacco consumption stems from the fact that the government has profited tremendously from the Danish tobacco industry's de facto monopoly in the Danish market. Due to a high taxation policy initiated on tobacco products in 1922, both the domestic tobacco industry and the government have continued to profit from the current taxation regime (Albæk et al. 2007:12). The biggest tobacco industry player in Denmark had net sales of more than 900 million Euro in 2016 while employing approximately 7600 people worldwide (Scandinavian Tobacco Group 2017).

The high Danish taxation regime on tobacco products has made international tobacco competition very difficult, resulting in a domestic market share of 97 percent for the Danish industry. This defensive position by the government that is closely aligned with the smoking industry demonstrates the Danish Parliament's commitment to defend and maintain the status quo (Turnheim & Geels 2012:38). Political scientist Paulette Kurzer and sociologist Francesco G. Duina contribute to our understanding of this reactionary image of the Danish Parliament in their description of Denmark's role within the EU. In their analysis of tobacco control measures in the EU in the 1990s, they include Denmark in the group of countries, including Germany, the UK and the Netherlands that have been historically protective of the tobacco industry because of their shared liberal view with respect to state influence on consumption. Kurzer and Duina (2004:65) also show how Danish members of the European Parliament obstructed and delayed a proposed European Commission ban on tobacco advertising initiatives for nearly a decade from 1989 to 1998 by working closely with industry lobbyist from tobacco companies in order to prevent state revenue loss from the Danish tobacco industry.

In other words, the Danish Parliament used its institutional capacity to act in accordance with the interests of the tobacco industry until the late 1990s. But as public opinion began to shift due to the work of the several institutional entrepreneurs, Danish politicians began to change their views according to the changing public perception, as we shall now discuss.

Drivers of destabilisation in Denmark: NGOs and politicians

The Danish Lung Association, the Danish Cancer Association and the Danish Heart Foundation had published about the dangers of smoking since the 1950s. However, these non-profit organizations had not been very successful in changing the opinion of the people. It was not until 1992 that things changed significantly. In 1992, the Organisation for Economic Cooperation and Development (OECD) published a landmark report that showed how Danish life expectancy had dropped dramatically over a period of approximately 14 years. In the late 1970s, Denmark had the fifth longest life expectancy compared to other OECD countries. By 1992, Denmark had fallen to 35th on the same list; it was positioned below southern European countries like Portugal and Greece, despite its having a large welfare-state and a well-functioning health care system compared to other European countries (Duina & Kurzer 2004:70). The OECD report specifically cited Denmark's high smoking rates among teenagers and women as possible explanatory factors for the dramatic fall in life expectancy. This landmark publication put significant discursive pressure (Antadza & McGowan 2017: 2) upon the smoking regime from the landscape level. It provoked a response by the former Prime Minister of Denmark, Poul Nyrup Rasmussen, who decided to launch a new programme in 1993 with the purpose to control tobacco consumption. Furthermore, the publication of the OECD report is an example of the effect that institutions can have within society. Regarding the Danish transition of smoking regimes, it is striking that the country's push towards transition originated from international institutional

bodies like the OECD and the EU, rather than from Danish political institutions. In the aftermath of the OECD publication, Danish media coverage of tobacco began to become more negative. An example from the Danish newspaper Politiken helps illuminate the development. During the 1960s and 1970s, the number of smoking ads published in the paper had far outnumbered the number of articles about tobacco (Albæk 2007:6-7), but this began to change after the OECD publication. The number of articles in Politiken covering tobacco escalated in the mid-1990s, which implies that the population had become more informed about the perils of tobacco consumption. From 1986 to 1997, the number of people who feared environmental tobacco smoke had likewise risen from 54 percent to 63 percent (ibid.: 7). But instead of accusing the tobacco industry for making people sick, an overwhelming majority of Danes (95 percent) still blamed the smokers themselves if they got sick.

While the OECD report did push the anti-smoking agenda in Denmark, a number of politicians played a substantial role in leading the new public smoking pathway. One of the first movers in terms of promoting the anti-smoking agenda in Parliament was the former Minister for Social Affairs, Aase Olesen, from the social-liberal party. Olesen was a non-smoker who – beginning in the mid-1980s – started to promote the idea of creating smoking-free environments in Denmark. 'It is a human right to breathe smoke-free air' (our translation), she proclaimed from the speaker's chair of the Danish Parliament in the mid 1980s (Trudsø 2015). With her reference to human-rights, Olesen is an example of a moral entrepreneur (Antadza & McGowan 2017: 2) who sought to change the general perception of smoking at the landscape level. Her proposal, however, was refused by a majority of members of Parliament, who were at that time still predominantly heavy smokers. She was even ridiculed in the media and by her colleagues and the general public, because the question of smoking was still perceived as a personal matter. But her effort was not in vain. Only a few years later, the fight was picked up by her conservative colleague, Agnete Laustsen, who was able to introduce a government circular that supported smoke-free environments in governmental institutions.

Seven years later, in 1995, the message contained in that same circular entered into legislation by ex-smoker Yvonne Herløv Andersen, from the former Centre Democrats Party. During the vote on the new smoking law, Agnete Laustens, the initiator of the original circular, had to disobey her party leader with respect to the issue, thus making her very unpopular within the party. Although the new smoking law of 1995 was not very comprehensive compared to our current standards, it represented a milestone for the Danish tobacco control advocates. These three politicians can thus be seen as the institutional entrepreneurs (Czarniawska 2009:438) of the first Danish smoking law, who successfully contributed to changing the perception of smoking at both the regime and landscape levels (Geels 2005:452). They also became very important actors within the transition phase of the Danish society, contributing significantly to the destabilisation of the smoking regime (Turnheim & Geels 2012:38). Yvonne Herløv Andersen has described the process towards reaching the smoking legislation as 'a game of chess in the Danish Parliament divided between smokers and non-smokers' (our translation,

Trudsø 2015). Andersen explained that most of the smokers worked for the 'benefit of themselves instead of for the broader health conditions of the general population.' (our translation, ibid.) However, the battle against smoking did not stop in 1995; rather, the legislation paved the way for a much feistier law that was adopted in 2007. In contrast to the former law, the 2007 version prohibited smoking in indoor working spaces, restaurants, larger bars and clubs. One year after this new smoking law was adopted, 60 per cent of the Danish citizens liked it and were in favor of expanding it (Danish Cancer Society 2017). A year later, the age limit for buying cigarettes was increased to eighteen from sixteen, and in 2014 the Danish Railway Company forbid smoking in all of its public railway stations and on its platforms.

The smoking law of 2007 was similar to the 1995 law in that it was pushed primarily by one institutional entrepreneur. Her name is Inge Haunstrup Clemmensen, and she has been called 'the mother of the 2007 smoking law' (Trudsø 2005). Clemmensen was raised in a culture where smoking was a natural part of her life, and she is a former smoker herself. But despite her background, she has been the leading driver in publicising health hazards of smoking. Trained as a medical scientist and working for the Danish Cancer Society as a professor, she has published widely on the hazards of smoking while pushing the anti-smoking agenda through the Danish media (Mandag Morgen 2011). Although she has been able to transform the Danish culture on smoking quite significantly, she is not satisfied yet. The final frontier for Clemmensen's fight revolves around getting rid of the last smoking offices in work spaces, and making it illegal to smoke in smaller bars. When that goal is completed, she wants to target the smoking culture that has moved outdoors (Mandag Morgen 2011). In accordance with the aforementioned politicians who were responsible for the first smoking law, we argue that Clemmensen can be considered an institutional entrepreneur (Czarniawska 2009:438) because of her past and present engagement with respect to fighting tobacco smoke. In addition, she has been and is one of the most eager forces behind the destabilisation of the Danish smoking regime (Turnheim & Geels 2012:38), and her effort has contributed substantially to the decrease of tobacco use among Danes.

Conclusion

We highlight in this paper the importance of institutions and key institutional and moral entrepreneurs in the delegitimisation phases of smoking regimes. We have shown how the closely aligned interests of tobacco corporations and parliamentary institutions obstructed the anti-smoking agenda to a large extent for many decades in both the US and Denmark. These closely aligned interests between parliaments and big tobacco shed a good deal of light on the relevance of corporate-political configurations within transitions.

Our study on how the corporate-parliamentarian configurations of Denmark and the US constrained and obstructed the transition towards smoke-free societies may be used as a suitable model for studying other transition pathways. We are interested in particular in how the insights from the smoking case can be used in highlighting the challenges we face with regard to future green transitions that are necessary due to climate change.

While the delegitimisation process of global warming and environmental degradation has been pushed for several decades by a variety of scientists and climate activists, CO2 emissions continue to rise (Watts 2017) and remain unregulated. The fossil fuel industry has pursued similar strategies with respect to deceiving the public as the tobacco industry (Oreske and Conway 2010) which indicates the level of opposition environmentalist and the general public will be facing from the corporate-political alliance of the political elites and fossil fuel executives.

The research on the smoking regimes presented in this paper illustrate serious parliamentarian problems that stem from the fact that democratically elected officials to a large extent protect corporate interests rather than the interests of public health. If the fossil fuel industries currently have similar relationships with the democratically elected US and Danish officials as the smoking industry had during the early stages of destabilisation, green transitions proponents face severe political challenges in the coming decades.

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PAPER

Poland in an Integrated European Economy: Are Foreign Language Skills Valued by Employers in the Polish Labor Market?

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Abstract It seems self-evident that the ability to speak a language other than one's native tongue would be an economically valuable skill in many labor market situations. A large empirical literature, for example, has identified a significant positive effect on wages for immigrant workers who develop fluency in the language of their migration destination. Much less attention has been paid to possible labor market advantages from mastery of a foreign language by workers remaining in their home country. We present an empirical study of the effect of foreign language ability on the base wage of full-time workers in Poland in 2014 using a unique data set with over 100,000 survey responses. Our results confirm that English has a particularly strong quantitative effect on wage levels, and competence in French and German also enhances wages but to a lesser extent than knowledge of English. The wage effect of foreign language skills appears stronger in the private sector, in foreign-owned firms and in regions more closely integrated with foreign trade.

Keywords: Wage differentials; Human capital; Foreign language knowledge; Transitional economies; Confirmatory factor analysis

JEL Classification: I26; J24; J31; P23

1. Introduction

In an increasingly integrated global economy, it seems clear that fluency in English or other languages with commercial importance would be a potentially significant addition to a worker's human capital for those living in peripheral countries. Language skills might be especially valuable for workers in a country like Poland which has predicated its relatively successful transition strategy on increased integration with

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Western Europe and, ultimately, membership in the European Union and which has been the beneficiary of significant inflows of foreign capital. In addition, to support this transition policy Poland adopted language education objectives designed to create a multilingual workforce. While each person has his or her own reasons for learning foreign languages and experiences unique practical benefits, some of the cognitive, social, cultural and economic advantages of bi/multilingualism are universal. Language is now recognized as an economic variable[1] and the 'economics of language' has emerged as an interdisciplinary research field analyzing "the mutual effect of language-related and economic variables" (Grin, 1994, p. 25)[2].

The links between foreign language competence and the creation of value in an economic sense have been extensively studied in Grin (1994, 2002, 2003, 2006, 2014) and Grin *et al.* (2010). The authors augmented the fundamental economic models with the explicit inclusion of linguistic variables and showed that knowledge of foreign languages is beneficial to individuals, firms, and society as a whole and has a market and non-market value at the private and societal levels. At the private level, non-market benefits of language learning are mainly derived from the ability to communicate with more people, an exposure to different cultures, a linguistically rich and diverse environment, a joy of learning something new, a feeling of personal achievement, increased reputation, prestige and recognition among peers. Private market benefits of language acquisition manifest themselves in various labor market outcomes, such as employability, occupational mobility, and earnings.

In this paper we focus on the impact of foreign language competence on labor income[3] earned by workers in the Polish labor market in 2014. Hence, the core question is whether linguistic skills and earnings are linked, how, and how strongly. The question whether language itself, *ceteris paribus,* results in earnings differentials "remains, throughout the history of language economics, the single most important area of research" (Grin, 2003, p. 17). Interestingly, to date there are no specific theoretical models that could be used to explain the role of foreign languages as determinants of labor income. The most typical theoretical framework used in the works on language-based wage differentials[4] "is derived from the combination of the language economics perspective with human capital theory developed in education economics" (*ibid*., p. 46). While the theory of language-based earnings differentials is still at a state of development, their existence has been confirmed

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[1]   See Zhang and Grenier (2013) for a comprehensive survey and references therein.

[2]   See, *e.g.,* Chiswick and Miller (2007) and Ginsburgh and Weber (2011) and references therein.

[3]   In this study, the terms 'earnings,' 'wages' and 'labor income' are used interchangeably to avoid word repetition. Strictly speaking, these terms are not identical.

[4]   In this study, the term 'return' is occasionally used in lieu of 'wage differential' or 'wage premia.' Grin (2003, p. 46) points out that "The term 'rate of return', in this context, is not fully appropriate. (…) the concept of rate of return presupposes that human capital is treated as an investment entailing (mostly) current expenditure in order to generate future benefits. In other words, the passage of time should be explicitly taken into account. However, the overwhelming majority of existing statistical work on the private value of second language skills eschews the question of time. Typically, information will be gathered on the current value of a range of variables for individual observations, and these values related to one another through multivariate analysis; hence, it is more appropriate to speak about 'earnings differentials'. Hence, most of the literature in this area therefore presents differentials, not rates of return."

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by a vast number of empirical studies.[5] The estimated language wage differentials are generally positive, implying that employers do find these skills valuable, although the magnitudes of this effect differ widely. Most of these studies focused on the role of language on immigrant earnings and showed that immigrants significantly benefitted from knowing the dominant language of their host country, mostly in Australia, Canada, Germany, the UK and the US [see Chiswick and Miller (2015) for an overview]. Several studies examined the wage effect of mother tongue on earnings in multilingual countries such as Canada, Luxemburg, Switzerland, and Ukraine. Fewer studies estimated the wage premium associated with speaking a foreign language in a particular country: Fry and Lowell (2003), Saiz and Zoido (2005), Chiswick and Miller (2010) for the United States; Levinsohn (2007) and Casale and Posel (2011) for South Africa; Lang and Siniver (2009) for Israel; Azam *et al.* (2013) for India; Di Paolo and Tansel (2015) for Turkey; Williams (2011), Ginsburgh and Prieto-Rodriguez (2011, 2013) and Stöhr (2015) included several West European countries in their analysis. The empirical evidence is even more scant for post-communist Central and East European countries. We are aware of only a few previous studies on the relationship between foreign language skills and earnings in the Czech Republic, Hungary, Estonia, Latvia, and Poland (Galasi, 2003; Garrouste, 2008; Toomet, 2011; Fabo *et al.*, 2017; Liwiński, 2018).

Our study contributes to the growing field of language economics in several ways. First, we add to the small but growing empirical literature on the returns associated with the multilingual skills of *natives* in a *monolingual* society. Our sample is drawn from the total Polish population that may also be described practically as the native-born population because immigrants constitute a tiny fraction – less than 2% – of Polish residents (Duszczyk *et al.*, 2013, p. 23). And Poland still remains "an overwhelmingly monolingual country where Polish is the first language used at home for 94.5% of the population" (Wójtowicz, 2015, p. 99). Thus, we consider the native-born population in Poland and estimate the effects of foreign language competence on earnings for those people who learned a foreign language, that is, the language that is not demolinguistically dominant in the country. In this regard, our study is novel and differs from the majority of previous work because "investigating the differential association between language skills and labour market outcomes for natives and for migrants requires applying different conceptual frameworks and models" (Araújo *et al.*, 2015, p.65, footnote 32).

Second, many of the limited number studies of foreign language ability of native workers refer to language *use* (typically at the workplace) rather than language *skills*. Language use is a fairly vague and unreliable definition of language competence (Grin, 2003, pp. 19-20). We investigate the extent to which, *ceteris paribus*, a better *general* knowledge of foreign languages can be associated with higher earnings. The rationale behind this approach is that "there might exist wage premia associated with the knowledge of a second language, whether individuals actually use the second language on the job or not" (Saiz and Zoido, 2005, p.523).

Third, our large, nationally representative data set with 106,583 observations enables

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[5] The reader is referred to Gazzola *et al.* (2015) who prepared an extensive bibliography on 'Language Economics.' In particular, the list of studies on language and labor market outcomes appears on pp. 16-27.

us to analyze wage premia associated with different levels of proficiency (beginning, intermediate, and advanced) in six foreign languages (English, German, French, Italian, Spanish, and Russian) while controlling for a large number of socio-demographic factors that may affect earnings. The large number of observations also allows us to explore potential heterogeneity in language-based differentials along various dimensions, such as type of establishment, and various measures of the extent to which the individual's employment is connected to international economic activity.

Finally, to our knowledge, this is one of the few attempts to measure the returns to individual investment in acquiring language skills for workers in a transition economy ten years after accession to the multilingual EU. Existing studies for transition economies are generally restricted to data from the 1990s and early 2000s.

The rest of this study proceeds as follows: Section 2 provides details on our data and measures of language proficiency. We describe our estimation methods in Section 3 and report results in Section 4. Section 5 identifies and discusses several channels (cognitive, social, and cultural) through which knowledge of foreign languages may affect an employee's productive skills and performance. Section 6 concludes the paper.

2. Data and variables

The data used in this study are proprietary to the Sedlak & Sedlak (S&S) company. S&S was founded in 1990 and is Poland's oldest HR advisory firm providing compensation consulting services and carrying out salary surveys. The aim of the surveys is to build a comprehensive national database on salaries for as many job positions as possible. S&S collects salary data directly from companies as well as from the general population via Computer Assisted Web Interviewing (CAWI) where an online questionnaire is provided to the respondent via a link or a website.

In particular, S&S conducts a web-based Polish General Salary Survey (in Polish - Ogólnopolskie Badanie Wynagrodzeń, OBW) which, at the time of writing this article, is the largest non-governmental salary survey in Poland. The survey was launched in 2004; and since then the survey has been ongoing, that is, activated and ready to receive responses all year round. Annual databases are then created by combining the survey responses submitted from January 1 through December 31 of that year. The OBW questionnaire is located on the 'wynagrodzenia.pl' website (the domain name can be translated as 'salary. pl'). The invitations to the survey are distributed through email campaigns, text links connected to various articles published by S&S employees on the Internet, and through cooperation with partner companies, web pages, and paper magazines. The mixed methods of soliciting responses make it difficult to calculate a true response rate. However, it is known that nearly 6 million individual users visit the website each year, and more than 100 thousand participate in the survey. To ensure data reliability and quality, S&S employs a number of quantitative and qualitative checks of the survey responses along with a sophisticated data cleaning procedure. It involves plausibility analysis (that is, checking for inconsistent and/or conflicting answers), examining questionnaire completion time, analysis of outliers, etc. On average, every year about 5% of all survey responses are

excluded from the database.This study uses data from the 2014 OBW survey. After data cleaning, the total number of responses was 106,583. These include only hired workers, and do not include employers and self-employed individuals. For each respondent we have a variety of background personal (gender, age, education, total work experience), workplace (sector of employment, firm ownership, tenure, occupation, wage) and environmental (local labor market conditions) characteristics.

In the survey, respondents were asked about their knowledge of six foreign languages: English, German, Russian, French, Italian, and Spanish. For each of these languages, respondents were asked to self-evaluate their proficiency using the following pre-defined scale: no knowledge, beginner, intermediate or advanced. The last three levels correspond to A1/A2, B1/B2 and C1/C2 levels in the self-assessment grid (CEFR) used in the European Language Portfolio (http://www.coe.int/en/web/portfolio/self-assessment-grid). In our sample, English was the most popular foreign language (86.5% of all respondents had at least some knowledge of it), followed by German (35.4%) and Russian (27.0%). Sixty-four percent stated either intermediate or advanced levels of proficiency in English while this share was about 10% for German and Russian, and about 1-2% for all other languages. Finally, 54% of the survey respondents indicated that they had some level of ability in two or more of the languages covered by the survey.

3. Estimation

Our examination of the wage returns to the language skills of Polish workers is based upon the estimation of the coefficient β in the following Mincerian (1974) wage equation:

$$\ln W_i = \alpha + \beta L_i + \gamma X_i + \varepsilon_i \tag{1}$$

The dependent variable is the logarithm of individual i's monthly salary W_i. Language ability is indicated by the variable L_i. X_i is a vector of control variables. In our basic specification, X_i includes gender, human capital measures (education, total labor market experience, tenure at the current employer) and region of residence. Education is captured by indicator variables for whether the individual has attained one of the following levels: a bachelor's degree, a master's degree, a doctorate, an MBA degree, or participated in a formal, non-degree educational program after graduation. To allow for non-linear wage returns to experience and tenure, we also include their squared values. Regional control variables correspond to the sixteen NUTS2 Polish administrative regions (voivodships). Interregional migration within Poland is unusually low in comparison with other European countries with the result that regional labor market disparities in wages and employment are quite persistent (Adamchik and Hyclak, 2017). Finally, ε_i is an error term that is assumed to be white noise.

It should be noted that OLS estimates of β may be hampered by at least two sources of distortion: omitted variable bias and measurement error bias (Card, 1999, 2001; Gunderson and Oreopoulos, 2010). Omitted variable bias results from the fact that people who are more proficient in foreign languages may also have greater innate

abilities (such as, cognitive abilities, motivation, attitude, willingness to work hard, entrepreneurial, managerial and organizational skills, *etc.*) as well as more favorable socio-economic and family background that would allow them to earn more even without foreign language knowledge. When those traits and other characteristics are not controlled for in the estimation procedures, it may cause OLS to overestimate the true value of β because the estimated returns can reflect the economic returns to these omitted variables as well as the pure causal effect of foreign language knowledge. Measurement error bias results from the fact that people may not accurately report their foreign language competence.[6] Random misreporting may cause OLS to underestimate the true value of β; however, if the measurement error is systematically related to the level of foreign language proficiency, then the bias can go in either direction.

The possible ways of dealing with the aforementioned biases typically include finding appropriate proxies for the unobserved factors and/or applying specific econometric techniques, such as IV. However, in this paper we cannot resort to these solutions because no suitable proxy variables, or instrumental variables, or repeated measurements are available in the dataset, and no validation studies exist in the literature.[7] We did try to construct and use an internal IV by utilizing a novel approach proposed by Lewbel (2012) [IVREG2 package in STATA]. The obtained regression coefficients seemed to be meaningful but a strong rejection of the null hypothesis of the Sargan-Hansen test (for IV-2SLS) and the Hansen J-test (for IV-GMM) cast serious doubts on the validity of the estimates (Baum, 2007). We hence proceed with OLS estimation of our model in this analysis. While no such studies exist for foreign language acquisition and wages, numerous studies for education and wages have shown that IV estimates of the returns to education are typically higher than OLS estimates (Gunderson and Oreopoulos, 2010). As such, we believe that our OLS estimates can provide a fair picture of the likely impact of foreign language proficiency on wages and may be viewed as a lower bound of the true value of causal wage returns to foreign language skills.

It is also worth noting that our data set does not constitute a random sample from a target population of all hired workers in Poland. Our sample may be defined as a 'voluntary response sample' because it only includes those people who voluntarily chose to participate in the survey. Compared to random samples, voluntary response samples

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[6] Indeed, self-reported linguistic measures may be susceptible to misreporting. However, self-evaluations are often the *only* way to assess language skills in the general population and they have been widely used in large-scale studies on languages [e.g., special Eurobarometer surveys titled "Europeans and languages" and "Europeans and their languages" conducted for the European Commission in 2001 (No. 147), 2006 (No. 243) and 2012 (No. 386)]. There is some evidence that self-evaluations may be a generally reliable way of measuring the level of language skills. Oscarson (1984), Blanche and Merino (1989) and Ross (1998) all conclude that self-assessments are highly correlated with the outcomes from formal test of language ability. In a more recent study, Dragemark-Oscarson (2009) reports the results from the Swedish National Evaluation where correlations between self-assessed and formal scores were high (about 0.7) and where 85% of students received the score they had estimated.

[7] In a companion paper, we attempt using the 1989 educational reform in Poland as an instrumental variable. Even if the reform is a valid instrument, it will allow us to estimate the wage regression with only one endogenous language variable. For several language variables to be simultaneously included in the regression, we would need several instruments, which are not available to us.

are typically prone to different biases. We tested our data set against the official data of the Polish Central Statistical Office and found that our sample is representative across a number of socio-demographic characteristics. Hence, we can rule out the presence of a strong self-selection bias, which increases our confidence in the quality of our data set.

Finally, we understand that our self-reported and non-random data are not generally suitable for making statistical inferences. However, in 2015 the American Association for Public Opinion Research changed its position on reporting measures of precision from nonprobability samples and now allows for such reporting, provided that the measures are accompanied by "a detailed description of how the underlying model was specified, its assumptions validated and the measure(s) calculated" (AAPOR, 2015, p. 5; AAPOR, 2016, p. 1). Because of the voluntary response nature of our sample, we applied bootstrapping techniques in order to estimate the precision of estimates from the survey.[8]

To sum up, the very large size of our data set, its similarity to the official statistics for the population of all hired Polish workers, and the proven reliability and validity of self-reported linguistic measures – all these give us confidence to proceed to quantitative analysis and suggest that our findings will be reflective of meaningful phenomena and tendencies in the Polish labor market.

4. Estimation results

4.1. Wage regression with a composite 'foreign language ability' score

The goal of this study is to examine the relationship between an employee's foreign language ability and their earnings. However, we do not have accurate measures of foreign language competence. Instead, we have several proxy indicators (*i.e.*, self-reported knowledge of six foreign languages) that share correlation with the latent trait but also contain measurement error. We assume that a factor called 'foreign language ability' underlies and determines the observed levels of proficiency of the reported six foreign languages, as well as error. In other words, we believe that changes in the unobserved latent 'foreign language ability' variable would result in changes in the observed knowledge level of six foreign languages. Hence, we want to "combine" all the languages in order to generate a composite 'foreign language ability' index, to obtain estimates of this latent factor for individual observations, and to use these individual factor scores in the analysis of wages.

A popular statistical technique to analyze problems of this kind is confirmatory factor analysis (CFA). Linear relations are postulated to hold between the latent factor and observed variables:

$$L_{ij} = \mu_j + \lambda_j F_i + \varphi_{ij} \qquad (2)$$

where F_i is the unobserved latent 'foreign language ability' factor for individual *i, i =*

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[8] We generated 500 independent replications by randomly selecting 106,583 respondents with replacement from the original survey data set. As one might expect, given the large number of observations in our sample, the bootstrap standard errors converge on the robust standard errors so subsequent tables report just the latter statistic. Another reason was that the large number of variables included in our regressions, the huge data set, and the large number of replications (500) required a very long computation time for each bootstrap.

1, …, n; L_{ij} is the observed self-reported foreign language proficiency of individual i in six foreign languages (j = 1, …, 6); λ_j are factor weights or loadings; μ_j are the intercepts; and φ_{ij} are measurement or unique errors. The observed self-reported foreign language proficiency in each language (L_{ij}) is coded as 0-1-2-3, which corresponds to no knowledge, beginning, intermediate, and advanced knowledge. Unlike a typical Likert scale, we start our scale with a zero because a zero has its own connotation of representing nothing or an absence of the characteristic being measured. The 0-1-2-3 discrete scale is assumed to be a "reflection" of the latent 'foreign language ability' trait. The similar ordinal ability scales for foreign language proficiency were employed by Bleakley and Chin (2004), Lang and Siniver (2009), and Toomet (2011).

In the subsequent analysis, the language variable L_i in Eq. (1) is measured by the predicted latent factor values, *i.e.,* individual composite foreign language ability scores ($\hat{F}_i$). A number of methods exist for predicting latent factor scores in the CFA framework (Bollen, 1989; DiStefano *et al.*, 2009). In this study, we use Bartlett's (1937, 1938) approach because this procedure produces unbiased estimates of the true factor scores (Hershberger, 2005). We use the CONFA module in STATA in order to estimate a one-factor CFA in Eq. (2) as well as individual factor scores ($\hat{F}_i$).

Panel A in Table 1 shows the results of CFA for Eq. (2): the estimated means of the data (μ_j), loadings (λ_j), and variances of the error terms (φ_{ij}). All parameters are freely estimated, with the exception of one loading that is used for identification. It is set equal to 1 and has no standard errors. This means that the contribution of each foreign language to the latent 'foreign language ability' factor is compared with this reference. The English language appears to be the major determinant of the latent factor with λ=1, followed by German (λ=0.22), French (λ=0.11), Spanish (λ=0.10), Italian (λ=0.04), and Russian (λ= -0.11). The fit of the model is good: both RMSEA and RMSR are below 0.05, and CFI seems to be touching the desirable region (from 0.9 to 1.0). Panel B of Table 1 shows the regression results when the composite 'foreign language ability' scores ($\hat{F}_i$) are used in lieu of L_i in Eq. (1). The estimated wage premium $\hat{\beta} = 0.195\,(st.err = 0.002)$. Although the metric or scale of the latent factor ($\hat{F}_i$) is arbitrary, the estimation results suggest that there is a strong statistically significant relationship between a worker's salary and his or her foreign language competence.

4.2. Wage regression with all six foreign languages

We next turn to an examination of the potential wage returns to ability in all six of the languages available in our data. We also allow for a nonlinear effect of language ability at the advanced or intermediate level rather than imposing a 0-1-2-3 linear hierarchy as in the previous section. In the OLS regressions reported in Tables 2 and 3 the language variable L_i in Eq. (1) is measured by 12 dummy variables (0-1) indicating advanced or intermediate ability in each of six foreign languages, with the reference group being workers with a beginning level understanding or no knowledge of that language.

Table 2 reports the OLS estimates with varying controls included in the vector X_i in Eq. (1). The basic model in Column (1) includes controls for gender, education, experience,

tenure and region described in Section 3. The regression in Column (2) adds extended controls for city size (Warsaw, large cities, medium cities and small cities), for industry of employment, for the type of firm (private, state-owned, public sector of non-profit), for majority foreign-owned firms, and for the department in which the individual works. Finally, the regression in Column (3) adds dummy variables for the worker's position in the firm, ranging from top management to ordinary worker. Some researchers argue that job characteristics may be endogenous and should not be included in wage equations. On the other hand, if job characteristics affect earnings, then excluding such variables may result in biased estimates. As Table 2 shows, although there are differences between the estimates of β, the overall pattern of findings is robust to the inclusion of job characteristics.

In Table 2, there are two sets of estimates reported for each language variable. Rows "a" report the OLS estimates of β in Eq. (1) along with robust standard errors. Rows "b" report the percentage effects ($\hat{p}$) associated with $\hat{\beta}$ and their standard errors. Halvorsen and Palmquist (1980) and Kennedy (1981) pointed out that in semilogarithmic regression equations the coefficient of a dummy variable, multiplied by 100, is not the usual percentage effect of that variable on the dependent variable. Kennedy (1981) proposed an approximate unbiased estimator of the percentage impact of a dummy variable regressor on the level of the dependent variable in a semilogarithmic regression equation:

$$\hat{p} = 100\left(\exp\left(\hat{\beta} - 0.5\hat{V}(\hat{\beta})\right) - 1\right) \tag{3}$$

where $\hat{V}(\hat{\beta})$ is the OLS estimate of the variance of $\hat{\beta}$. Garderen and Shah (2002) developed a convenient approximation for the unbiased estimator of the variance of $\hat{p}$, which can be reported together with Kennedy's approximate unbiased estimator of the percentage change:

$$\tilde{V}(\hat{p}) = 100^2 \exp(2\hat{\beta})\left(\exp\left(-\hat{V}(\hat{\beta})\right) - \exp\left(-2\hat{V}(\hat{\beta})\right)\right) \tag{4}$$

Hence, Rows "b" in Table 2 report $\hat{p}$ and $\sqrt{\tilde{V}(\hat{p})}$.

The results in Table 2 show large positive correlations between wages and advanced knowledge of English. As compared to the reference category (no or little English), workers with advanced knowledge of English earn 61.9% more [Column (1)], 33.9% more [Column (2)] and 23.4% more [Column (3)]. Advanced knowledge of German and French as well as intermediate knowledge of English are also positively related to individual wages with very similar magnitudes of estimated coefficients which, however, are substantially smaller than those found for advanced English. For instance, in Specification 3, those with advanced German earn 9.9% higher wages, those with advanced French earn 10.2% higher wages, and those with intermediate English earn 8.8% higher wages than those in the respective reference groups. Intermediate German, intermediate French, Italian (both levels), Spanish (both levels), and advanced Russian do not exhibit statistically significant relationships with worker wages, and intermediate Russian has a statistically significant negative effect on earnings in all of the regressions reported in the table. Adding extended controls and the indicators of position within the

firm in Columns (2) and (3) serve to lower the estimated coefficients on the language variables but there remains a substantial wage effect of English, French and German. Clearly part of the wage effect from knowledge of foreign languages stems from the effect of language ability on selection into firms in higher paying industries and locations and into positions at higher pay levels within the firm.

One reason for both direct and indirect wage effects of foreign language ability on earnings would be the enhanced productivity of multilingual workers in a business climate where Poland is highly integrated with the multilingual European Union and Polish firms compete in an increasingly integrated global economy. To examine evidence for such a productivity basis for the language effects noted above, we divide the sample into three sub-samples by the type of firm, the ownership of the firm, and regional intensity of intra-industry international trade. These results are reported in Table 3. In Columns (1) and (2), we divide the sample by the type of employer identified by the survey respondents. In Column (1), the sample consists of those working for privately-owned businesses while in Column (2) – of those working in state-owned enterprises, government agencies or non-profit organizations. In Columns (3) and (4), we report language estimates for Polish workers in firms with majority foreign ownership and firms with control by Polish owners. In Columns (5) and (6) we present results for samples of workers divided by their region of residence and the regional intensity of intra-industry trade. Uminski (2014) argues that entry into the EU intensified trade links and foreign direct investment inflows in Poland. One effect of this has been an increase in the cross-border fragmentation of production that can be measured by indices of intra-industry trade. Uminski calculates the Grubell-Lloyd index for each of the 16 Polish voivodships (NUTS2 regions) in 2011 and we use these data to classify the 8 voivodships with above average indices as areas with high regional intra-industry trade.

Similar to Table 2, Table 3 reports two sets of estimates (Row "a" and Row "b") for each language variable. The results in Columns (1) and (2) show a marked difference in estimated wage effects. The coefficients for advanced and intermediate knowledge of English and advanced knowledge of German and French are substantially larger in the private sector regression. For instance, as compared to those with no or little English, workers with advanced knowledge of English earn 61.2% higher wages in the private sector and 29.1% higher wages in the public sector. The premia for intermediate English are 24.1% and 11.6%, respectively. These results suggest that the extra productivity associated with foreign language ability is most pronounced for workers in the more competitive private sector where the interface with the rest of Europe and the global economy is higher. In particular, government agencies and non-profit organizations are likely to have a largely local market for their services in which the productivity advantage of multilingual workers is likely to be much smaller. Again the differences between Columns (3) and (4) are striking. The wage returns to advanced and intermediate knowledge of English are much bigger for those working in foreign-owned establishments with the estimated payoff to advanced knowledge at 68.5% (versus 37.6% in Polish-owned firms) while the coefficient on intermediate knowledge shows a 30.2% wage advantage in foreign firms (versus 16.4% in Polish-owned firms).

Polish workers in foreign-owned firms with advanced and intermediate knowledge of German have substantially higher wage gains than those in Polish firms (16.4% versus 9.6%, and 3.8% versus no return, respectively). A comparison of the results reported in Columns (5) and (6) of Table 3 shows that the effect of advanced and intermediate English ability on wages is substantially higher for those workers in regions of the country with more intense intra-industry trade linkages. However, the wage returns to advanced French and German are rather similar in both sets of regions. Again we note the statistically significant negative wage effect of intermediate ability in Russian across all the subsample regressions reported in Table 3.

Why do English, German and French exhibit positive effects on wages while Italian, Spanish and Russian do not? Nowadays, English has an especially prominent status in multilingual European economic space. No other language can currently compete with English to accomplish the three activities of modern business communication: networking, knowledge sharing and relationship management (Linn, 2016a, pp. 40-52). English has been described as the *de facto* extraterritorial *lingua franca* of Europe (Seidlhofer, 2010, 2011; Doughty, 2013; Linn, 2016a, 2016b). Germany has been the major trading partner of Poland since 1990, with the 25-30% share in Poland's exports and imports (GUS, 2017a, Tables 1 and 25). Germany and France are the key suppliers of foreign capital to Poland with about 17% and 14% of total FDI in the country, respectively. Germany is dominant among firms with foreign capital carrying out business activities in Poland: in 2016 there were 5,401 firms with German capital, that is, one-fifth of the total number of 24,780 entities with foreign capital. French capital was employed in a much smaller number of firms – 1,227 entities, or 5% of the total number (GUS, 2017b, Table 6). One of the reasons explaining the insignificant effects of Italian and Spanish on wages could be a traditionally low share of Italian- and Spanish-speaking countries in the Polish business and commerce. With respect to Russia, there was a dramatic change in Poland's major trading partners. After World War II, during 1950-1990 the USSR was the main trading partner of Poland, with 30-40% of both exports and imports. At the beginning of the 1990s, Germany replaced Russia as the main trading partner, and in 2016 the share of Russia dropped to 5.8% in the Polish imports and to 2.8% in the Polish exports (GUS, 2017a, Tables 1 and 25).

A study by Fabo *et al*. (2017) analyzed the demand for foreign language skills in the Visegrad Group (the Czech Republic, Hungary, Poland and Slovakia). The authors examined about 74,000 job advertisements published on leading online job boards in 2015. Foreign languages were demanded in 33-75% of the job advertisements in the region, out of which 52% required English skills, 12% asked for German ability and 2% or fewer specified skills in French, Italian, Spanish or Russian. English was the most demanded foreign language skill particularly in Poland where it was listed in 64% of the job advertisements (for comparison, 49% in Slovakia, 39% in Hungary, and 28% in the Czech Republic). In order to better understand the relationship between language knowledge and employment status, Araújo *et al*. (2015, p. 85) applied logistic regression to the sample of native-born Polish adults (17,683 observations) and found that for those 25-40 years-old only English and German significantly influenced the chances of

employment. Assessing the usefulness of foreign languages for personal and professional development, 65% of respondents in Poland cited English, 31% German, and only 8% Russian, 3% French, 2% Spanish, and 1% Italian (EC, 2012, Table QE1a on p. 70).

5. Discussion

5.1. Foreign language competence and productive skills

Why do multilingual speakers tend to outearn monolinguals in the workplace regardless of whether they actually use a foreign language on the job or not? Recent research has identified several channels – cognitive, social, and cultural – through which knowledge of foreign languages may affect an employee's productive skills and performance. A brief, non-exhaustive and non-technical description of such channels appears below.

Cognitive effects

The cognitive benefits of 'the multilingual brain' have been well-researched in psychology. Experimental evidence shows that knowledge of foreign languages improves memory[9] and attention[10], boosts creativity and innovation[11], heightens the ability to monitor the environment[12], enhances decision-making skills[13] as well as the ability to task-switch/ multi-task[14], and affects the way an individual perceives reality[15]. Adesope *et al*. (2010) conducted a meta-analysis of 63 studies (involving 6,022 participants) that examined the

[9]   The collective evidence from a number of studies suggests that multilingualism tends to contribute to 'cognitive reserve' (see, *e.g.,* Craik *et al*., 2010; Bialystok *et al.*, 2012)*.*

[10]   According to Sorace (2007, p. 194), advantages of multilingualism "are particularly evident in tasks that involve cognitive flexibility and the control of attention; bilinguals seem to be better at selectively paying attention, at inhibiting irrelevant information and at switching between alternative solution to a problem."

[11]   The EC (2009, pp. 7, 19) Report on this subject matter concludes that there is an increasing body of evidence revealing "a greater potential for creativity amongst those who know more than one language, when compared with monolinguals" and that multilingualism leads to "a higher capacity for generating new (creative and innovative) processes."

[12]   Albert Costa, who conducted a study comparing German-Italian bilinguals with Italian monolinguals on monitoring tasks, explains that "Bilinguals have to switch languages quite often – you may talk to your father in one language and to your mother in another language. It requires keeping track of changes around you in the same way that we monitor our surroundings when driving" (Bhattacharjee, 2012).

[13]   Multilingualism seems to improve decision-making skills by reducing decision-making biases. Keysar *et al.* (2012) find that people make more rational decisions when they think through a problem in a non-native language. The authors write, "Emotions and affect play an important role in decision making and in considerations of risk. (…) An emotional reaction sometimes induces a less systematic decision. Making a decision in a foreign language could reduce the emotional reaction, thereby reducing bias" (p. 667). Costa *et al.* (2014) also find that the impact of various heuristic biases in decision making is diminished when the problems are presented in a foreign language.

[14]   Multilingual people can easily switch from one language system to another, and this 'juggling' skill seems to translate into the ability to switch among multiple tasks (see, for example, Prior and Gollan, 2011; Hernández *et al.*, 2013; Wiseheart *et al.,* 2016*)*.

[15]   Athanasopoulos *et al.* (2015) analyze whether the grammatical patterns of the language affect people's worldview. The authors find that German monolinguals tend to look at the event as a whole (that is, the action but also the goal of the action), whereas English monolinguals tend to focus only on the action. Interestingly enough, German-English bilingual speakers seem to switch between these perspectives based on the language context they were given the task in.

cognitive correlates of bilingualism and conclude that "bilingualism is reliably associated with several cognitive outcomes, including increased attentional control, working memory, metalinguistic awareness, and abstract and symbolic representation skills" (p. 207).

Social (communication) effects

In a global marketplace, more and more companies expand their business activities beyond national borders and break into new markets. Brannen *et al*. (2014, p. 495) state that "As firms internationalize and enter new markets, whether as "born globals" or more traditionally, they must navigate across countless language boundaries including national languages. Operating internationally means having to interact with transcontinental intermediaries, distinct government agencies and foreign institutions, which reside in different language environments." In these companies, foreign language skills are regarded as a priority because multilingual employees will be able to communicate and negotiate with foreign producers and consumers in their native language. In particular, several studies identified a clear link between foreign language skills and exporting performance of a firm[16] so that language barriers are often viewed as trade barriers[17].

Furthermore, knowledge of foreign languages broadens access to multilingual business information worldwide. In the era of global connectivity, businesses are often faced with diverse national informational systems, and translations are often unavailable. More than 7,000 languages are spoken in the world; and there are now over 250 languages represented on the Internet (OECD, 2013, p. 100). Cross-border access to economic and political information is crucial for companies when finding out about other businesses, existing or potential business partners elsewhere in the EU or worldwide, setting up branches, conducting cross-border trade, or providing cross-border services.

Finally, in a modern increasingly multicultural and multiethnic workplace, fluency in foreign languages means that an employee will be able to communicate, interact and connect with co-workers, both in formal and informal settings. Multinational companies increasingly bring together people from around the world to work in teams (virtual or face-to-face) on common projects. Research and empirical data have shown that language-related issues can impact (either negatively or positively) on group cohesiveness, interpersonal relations and trust as well as on working atmosphere and knowledge-sharing, all of which in turn can impact on team performance.[18] It is worth noting that the ability to communicate informally is just as important as formal communication for promoting awareness of others' activities, building valuable interpersonal ties, developing trust, and establishing shared identity and context (Yuan

[16] The UK National Centre for Languages (CiLT) surveyed about 2000 exporting SMEs from 29 European countries and found that a significant amount of business was lost because of inadequate language skills. On the other hand, the study finds that SMEs which had a languages strategy and invested in staff with language skills achieved 44% more export sales than those which did not (Hagen *et al.,* 2006, p.7*).* The EC (2008) report "Languages mean business" concludes that multilingualism opens doors to new markets and new business opportunities, and that a wide range of languages will be needed in the future.

[17] See, *e.g.,* Melitz (2008), Lohmann (2011), Isphording and Otten (2013).

[18] See, *e.g.,* Kassis-Henderson (2005, 2010), Lauring and Selmer (2010), Kassis-Henderson and Louhiala-Salminen (2011), and a special issue of the Journal of International Business Studies (2014, Volume 45, Issue 5).

et al., 2013, p. 910). Fluent bi/multilingual speakers will be able to freely socialize with their peers, while less fluent employees may experience anxiety in informal social settings and may hold back from participating in colloquial, spontaneous conversations.

Cultural effects

"The limits of my language mean the limits of my world" (Wittgenstein). Language is a constituent of culture, hence, multilingualism and multiculturalism are intertwined and inseparable. Foreign language education is no longer viewed strictly in terms of the acquisition of communicative competence, but also in terms of intercultural communicative competence (Della Chiesa *et al.*, 2012). Multilingual employees are able to better understand foreign culture. Opening up to a different culture allows multilinguals to see the world from different perspectives, increases their cultural awareness and sensitivity, makes them more adaptable to cultural differences in foreign business environments, and more appreciative of foreign partners' actions and opinions.[19]

Several reasons (derived from basic labor economics) were put forth to explain why firms may be willing to pay more to bi/multilingual employees than to their comparable monolingual counterparts. First, *ceteris paribus*, bi/multilingual employees can be more productive than monolingual ones, typically because they can carry out duties that monolinguals cannot (see, *e.g.*, Grenier, 1984, p. 38). Second, since foreign language skills can be directly observed at hiring, it may lead to a better matching between the language attributes of a worker and the linguistic characteristics of a job (see, e.g., Grin, 2003, p. 18). In turn, good job matches are believed to redistribute workers from the lower to the upper part of the match quality distribution which determines wages. Third, foreign language competence may be considered by employers as a signal of a worker's unobserved cognitive ability and motivation. In this case, a wage premium may arise because foreign languages signal generally higher productivity even if a worker's job responsibilities do not directly require knowledge of foreign languages (see, *e.g.*, Stöhr, 2015, p. 87). To sum up, foreign language knowledge is now viewed as a form of human capital[20] that enhances an employee's performance and productivity in the workplace and, hence, contributes to value creation.[21] The importance of multilingual staff for companies was stressed in an article in *The Financial Times* (Hill, 2013). At the *FT* roundtable, both executives and consultants agreed that companies benefited from the

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[19] See, *e.g.*, Über Grosse (2004), Frederiksson *et al.* (2006)*,* Grin and Faniko (2012), British Council (2013).
[20] "Language skills are an important form of human capital. They satisfy the three basic requirements for human capital: they are embodied in the person; they are productive in the labour market and or in consumption; and they are created at a sacrifice of time and out-of-pocket resources" (Chiswick and Miller, 2007, p. 314. Also see Chiswick, 2008, pp. 4-5). "Particular language skills could (…) be interpreted, in the same way as other types of skills, as an area in which individuals and societies could profitably invest, as a *source* of economic advantage" (Grin, 2002, p. 13).
[21] Multilingualism in professional settings, and more specifically in the corporate world, is analyzed in numerous academic papers as well as in trade and professional periodical publications. See, *e.g.,* two special issues on multilingualism at work in the Journal of Multilingual and Multicultural Development (2013, Issue 6) and in the Multilingua: Journal of Cross-Cultural and Interlanguage Communication (2014, No. 1-2). Also, Grin *et al.* (2010), Gunnarsson (2010, 2013), Berthoud *et al.* (2013), Angouri (2014).

diverse background and skills of multilingual employees and would benefit more in future. Their advice to business was "Hire more multilingual employees, because these employees can communicate better, have better intercultural sensitivity, are better at co-operating, negotiating, compromising. But they can also think more efficiently." The growing importance of foreign language skills has prompted researchers to develop new concepts – 'cosmopolitan capital,' 'intercultural capital,' 'transnational linguistic capital,' and 'transnational cultural capital' – in order to emphasize this very specific aspect of human capital (Carlson *et al*., 2017). Whatever the name is, this form of human capital refers to foreign language skills and can be acquired via different forms of foreign language learning.

5.2. The current state of multilingualism in the Polish society

Several surveys were carried out in Poland (either separately or among the EU countries) to assess foreign language skills in the general population and its socio-demographic subgroups. The Polish Academy of Science conducted a national survey on foreign language competences in 1993 and 2013 (Wysmułek and Oleksiyenko, 2015). According to its results, the proportion of respondents able to speak at least one foreign language well enough to have a conversation did not change much during the past 20 years – 41% in 1993 and 43% in 2013. In 2013, the youngest generation (21-25 years of age) exhibited the highest proportion (70%) of those who could speak at least one foreign language. This share was lower (60%) for the 26-35 age group, 35% for the 36-45 age group, and about 30% for all older age groups. Overall, in 2013 the majority of respondents (54%) cited English as their first foreign language, 28% cited Russian and 15% cited German. However, the distribution varied for different age groups: the predominant majority of younger people spoke English while the majority of older generations spoke Russian.

Another survey on foreign language competences was conducted by the European Commission in 2005 and 2012 (EC, 2005; EC, 2012). The findings for Poland were disappointing: the proportion of respondents able to speak at least one foreign language well enough to have a conversation decreased by 7 percentage points (to 50%), at least two foreign languages – decreased by 10 percentage points (to 22%), at least three foreign languages – decreased by 9 percentage points (to 7%). Only 11% used their first foreign language daily, 24% often but not daily and 59% occasionally. Assessing the usefulness of foreign languages for personal development, 65% of respondents cited English, 31% German, 8% Russian, but 14% said that foreign languages were not useful at all. The Polish people were most likely to be discouraged from learning another language because it was too expensive (38% of responses), they did not have a reason or incentive to do so (26%), or they lacked the time (20%).

The two surveys mentioned above mainly focused on the number of self-reported foreign languages known by an individual, irrespective of proficiency levels. A study by Araújo *et al*. (2015) analyzed both the number of foreign languages and proficiency in 25 EU countries in 2011. In this regards, Poland exhibited the worst results both in the EU and among the Visegrad Group (the Czech Republic, Hungary, Poland, and Slovakia). In

Poland, only 13% of individuals who knew one or more foreign languages declared that they knew at least one of them at the proficient level. This share was 17% in the Czech Republic, 24% in Hungary, 36% in Slovakia, and 25% on average in the EU. The study also reported the share of proficient individuals in the total population, that is, among those who knew and did not know foreign languages. Again, Poland remained among the worst performing countries with only 8%, while the EU average was 16%.

Given the accelerated pace of globalization and the rapid growth of emerging economies, language skills are becoming crucial. Poland needs to develop its citizens' foreign language competence in far greater numbers and in a wider range of languages in order to increase its competitiveness and to enjoy the full benefits of both the European and global integration.

6. Summary and conclusions

We find robust evidence that ability to speak a foreign language is an important component of a worker's human capital in Poland, using a very large sample of individual respondents to a 2014 salary survey and controlling for a large number of wage determinants. Our results provide very consistent estimates of a positive relationship between knowledge of foreign languages (especially English, and also German and French) and wage levels. The correlations between language ability and wages are substantially bigger for those working in sectors of the economy more closely linked to the European Union and the global economy (such as, in private firms, in foreign-owned businesses, and in regions of the country with a high rate of intra-industry trade with the rest of Europe). This suggests that the growing integration of Poland with the European Union in particular and the growing importance of global business in general are important reasons for the relative high value placed on foreign language skills in the Polish labor market. As such, our results provide support for the language training policy initiatives of the Polish government and the European Union. There appear to be important productivity advantages to having a workforce with the ability to communicate effectively in commercially important languages that grow in significance in sectors of the economy with closer links to international business.

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Table 1. Confirmatory factor analysis and the wage equation with a composite 'foreign language ability' index

Panel A. Eq. (2): Confirmatory factor analysis

Language variables (0-1-2-3 scale)	Means (μ_j) coef. (std. err.)	Loadings (λ_j) coef. (std. err.)	Var[φ_{ij}] coef. (std. err.)
English	1.717*** (0.003)	1 (.)	0.447*** (0.020)
German	0.472*** (0.002)	0.217*** (0.008)	0.516*** (0.002)
French	0.098*** (0.001)	0.110*** (0.005)	0.155*** (0.001)
Italian	0.042*** (0.001)	0.041*** (0.002)	0.071*** (0.000)
Spanish	0.056*** (0.001)	0.099*** (0.004)	0.084*** (0.000)
Russian	0.405*** (0.002)	-0.105*** (0.005)	0.541*** (0.002)
Factor cov: ability-ability		0.485*** (0.020)	
	Fit indices		
RMSEA	0.041		
RMSR	0.008		
CFI	0.879		

Panel B. Eq. (1): Wage regression with a composite 'foreign language ability' index

β	0.195*** (0.002)
R^2	0.401
Number of observations	106,583

NOTES TO TABLE 1: The basic regression in Eq. (1) includes controls for gender, education, experience, tenure, and region of residence (see Section 3 for the description of variables). Coefficient estimates for the control variables are not reported but are available from the authors upon request. The two absolute fit indices – the root mean square error of approximation (RMSEA) and the root mean square residual (RMSR) – assess the differences between the original sample variance-covariance matrix and the predicted model-implied variance-covariance matrix. For both indices, values less than 0.05 indicate good model fit. The comparative fit index (CFI) compares the predicted model-implied variance-covariance matrix with a more restricted baseline model (often called a null model) where all correlations between observed variables are set to zero. CFI values of 0.90 and above represent good model fit. *Significant at the 0.10 level or better. **Significant at the 0.05 level or better. ***Significant at the 0.01 level or better.

Table 2. OLS estimates of wage returns to ability in six languages (all workers)

Language variable	Estimate	Basic	Basic + Extended controls	Basic + Extended controls + Position at the firm
(A)	(B)	(1)	(2)	(3)
Advanced English	a	0.482 (0.031) ***	0.292 (0.022) ***	0.210 (0.016) ***
	b	61.9 (8.7) ***	33.9 (5.1) ***	23.4 (3.4) ***
Intermediate English	a	0.170 (0.016) ***	0.128 (0.012) ***	0.084 (0.008) ***
	b	18.5 (3.3) ***	13.6 (2.4) ***	8.8 (1.5) ***
Advanced German	a	0.170 (0.016) ***	0.130 (0.013) ***	0.094 (0.010) ***
	b	18.5 (3.3) ***	13.9 (2.6) ***	9.9 (1.9) ***

Language variable (A)	Estimate (B)	Basic (1)	Basic + Extended controls (2)	Basic + Extended controls + Position at the firm (3)
Intermediate German	a	0.018 (0.008) **	0.021 (0.006) ***	0.006 (0.005)
	b	1.8 (1.4)	2.1 (1.1) **	0.6 (0.9)
Advanced French	a	0.146 (0.012) ***	0.117 (0.013) ***	0.097 (0.008) ***
	b	15.7 (2.4) ***	12.4 (2.5) ***	10.2 (1.5) ***
Intermediate French	a	0.024 (0.009) ***	0.042 (0.009) ***	0.024 (0.008) ***
	b	2.4 (1.6)	4.3 (1.6) ***	2.4 (1.4) *
Advanced Italian	a	0.042 (0.058)	0.040 (0.046)	0.033 (0.021)
	b	4.1 (10.5)	4.0 (8.3)	3.3 (3.8)
Intermediate Italian	a	-0.033 (0.042)	-0.020 (0.033)	-0.021 (0.024)
	b	-3.3 (7.0)	-2.0 (5.6)	-2.1 (4.1)
Advanced Spanish	a	0.042 (0.024) *	0.026 (0.026)	0.013 (0.038)
	b	4.3 (4.3)	2.6 (4.6)	1.2 (6.7)
Intermediate Spanish	a	-0.029 (0.018)	-0.024 (0.016)	-0.015 (0.012)
	b	-2.9 (3.0)	-2.4 (2.7)	-1.5 (2.0)
Advanced Russian	a	-0.017 (0.016)	0.018 (0.012)	-0.005 (0.013)
	b	-1.7 (2.7)	1.8 (2.1)	-0.5 (2.2)
Intermediate Russian	a	-0.060 (0.008) ***	-0.019 (0.004) ***	-0.033 (0.004) ***
	b	-5.8 (1.3) ***	-1.9 (0.7) ***	-3.2 (0.7)
Number of observations		106,583	98,783	98,783
R2		0.412	0.544	0.656

NOTES TO TABLE 2: All language variables are binomial (0-1) with the reference group being workers with a beginning level understanding or no knowledge of that language. The basic regression includes controls for gender, education, experience, tenure, and region of residence (see Section 3 for the description of variables). See Section 4.2 for the description of additional variables included in Columns (2) and (3). Coefficient estimates for the control variables are not reported but are available from the authors upon request. The number of observations in Columns (2) and (3) is reduced due to missing values. Row "a": OLS estimates of the coefficient on a dummy language variable in Eq. (1), robust standard errors in parentheses. Row "b": The percentage effect associated with β, standard errors in parentheses. *Significant at the 0.10 level or better. **Significant at the 0.05 level or better. ***Significant at the 0.01 level or better.

Table 3. Sector differences in OLS estimates of wage returns to language (basic model, all workers)

Language variable (A)	Esti-mate (B)	Private sector firm (1)	State owned, public sector or non-profit firm (2)	Majority foreign-owned firm (3)	Majority Polish-owned firm (4)	High regional intra-industry trade (5)	Low regional intra-industry trade (6)
Advanced English	a	0.478 (0.029) ***	0.256 (0.030) ***	0.522 (0.022) ***	0.320 (0.032) ***	0.509 (0.035) ***	0.405 (0.047)***
	b	61.2 (8.1) ***	29.1 (6.7) ***	68.5 (6.4) ***	37.6 (7.6) ***	66.3 (10.1) ***	49.8 (12.2) ***
Intermediate English	a	0.216 (0.018) ***	0.110 (0.019) ***	0.264 (0.016) ***	0.152 (0.018) ***	0.227 (0.026) ***	0.169 (0.024)***
	b	24.1 (3.9) ***	11.6 (3.7) ***	30.2 (3.6) ***	16.4 (3.6) ***	25.4 (5.6) ***	18.4 (4.9) ***
Advanced German	a	0.159 (0.017) ***	0.078 (0.026)***	0.152 (0.015) ***	0.092 (0.019) ***	0.167 (0.021) ***	0.176 (0.024)***
	b	17.2 (3.5) ***	8.1 (4.9) *	16.4 (3.0) ***	9.6 (3.6) ***	18.1 (4.3) ***	19.2 (5.0) ***
Intermediate German	a	0.022 (0.008) **	0.005 (0.010)	0.037 (0.010) ***	0.002 (0.008)	0.024 (0.006) ***	0.005 (0.016)
	b	2.2 (1.4)	0.5 (1.7)	3.8 (1.8) **	0.2 (1.4)	2.4 (1.1) **	0.5 (2.8)
Advanced French	a	0.147 (0.014) ***	0.088 (0.018) ***	0.088 (0.032) **	0.118 (0.018) ***	0.148 (0.011) ***	0.112 (0.024)***
	b	15.8 (2.8) ***	9.2 (3.4) ***	9.1 (6.1)	12.5 (3.5) ***	15.9 (2.2) ***	11.8 (4.6) ***
Intermediate French	a	0.044 (0.014) ***	0.046 (0.016) **	0.048 (0.016) **	0.014 (0.014)	0.018 (0.010)	0.036 (0.026)
	b	4.5 (2.5) *	4.7 (2.9)	4.9 (2.9) *	1.4 (2.5)	1.8 (1.8)	3.6 (4.7)
Advanced Italian	a	0.061 (0.056)	-0.090 (0.038) **	0.055 (0.045)	-0.062 (0.038)	0.081 (0.072)	-0.094 (0.060)
	b	6.1 (10.3)	-8.7 (6.0)	5.5 (8.2)	-6.1 (6.2)	8.2 (13.5)	-9.1 (9.5)
Intermediate Italian	a	-0.008 (0.042)	-0.115 (0.024) ***	-0.008 (0.042)	-0.069 (0.028)**	-0.014 (0.056)	-0.088 (0.014)***
	b	-0.9 (7.2)	-10.9 (3.7) ***	-0.9 (7.2)	-6.7 (4.5)	-1.5 (9.6)	-8.4 (2.2) ***
Advanced Spanish	a	0.027 (0.024)	-0.002 (0.046)	0.034 (0.029)	0.042 (0.042)	0.044 (0.026)	0.038 (0.065)
	b	2.7 (4.3)	-0.3 (7.9)	3.4 (5.2)	4.2 (7.6)	4.5 (4.7)	3.7 (11.7)

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Language variable	Esti-mate	Private sector firm	State owned, public sector or non-profit firm	Majority foreign-owned firm	Majority Polish-owned firm	High regional intra-industry trade	Low regional intra-industry trade
(A)	(B)	(1)	(2)	(3)	(4)	(5)	(6)
Intermediate Spanish	a	-0.042 (0.022)	0.031 (0.048)	-0.062 (0.020) ***	-0.005 (0.023)	-0.036 (0.022)	-0.006 (0.034)
	b	-4.1 (3.7)	3.0 (8.6)	-6.0 (3.3) *	-0.5 (4.0)	-3.6 (3.7)	-0.7 (5.9)
Advanced Russian	a	0.004 (0.018)	-0.034 (0.009) ***	-0.009 (0.020)	0.005 (0.014)	-0.024 (0.018)	0.002 (0.030)
	b	0.4 (3.1)	-3.3 (1.5) **	-0.9 (3.4)	0.5 (2.4)	-2.4 (3.0)	0.2 (5.2)
Intermediate Russian	a	-0.044 (0.006)***	-0.031 (0.014) **	-0.026 (0.010) **	-0.044 (0.010)***	-0.064 (0.011)***	-0.050 (0.010)***
	b	-4.3 (1.0) ***	-3.1 (2.4)	-2.6 (1.7)	-4.3 (1.7) ***	-6.2 (1.8) ***	-4.9 (1.6) ***
Number of observations		83,763	22,820	34,551	72,032	75,620	30,963
R²		0.451	0.300	0.506	0.330	0.412	0.376

NOTES TO TABLE 3: All language variables are binomial (0-1) with the reference group being workers with a beginning level understanding or no knowledge of that language. The basic regression includes controls for gender, education, experience, tenure, and region of residence (see Section 3 for the description of variables). Coefficient estimates for the control variables are not reported but are available from the authors upon request. Row "a": OLS estimates of the coefficient on a dummy language variable in Eq. (1), robust standard errors in parentheses. Row "b": The percentage effect associated with β, standard errors in parentheses. *Significant at the 0.10 level or better. **Significant at the 0.05 level or better. ***Significant at the 0.01 level or better.

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Non-performing Loans in the Greek Case: Evolution and Initiatives in the Regulatory Framework

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Abstract The paper examines the evolution of non-performing loans in the Greek banking market. The study focuses on the conditions related to the development of non-performing loans, (NPLs), their evolution and the regulation framework.

NPLs have been one of the major consequences of the crisis in Greece, which started after the world financial crisis, and can be mainly attributed to the Greek public debt. The Greek economy suffers from the austerity policies applied after the Memorandum of Understanding was signed between Greece and its lenders in order to reduce the public deficit and in the long term the public debt. The paper distinguishes some conditions that resulted in the NPLs. One of them is the excessive increase in borrowing which took place before the crisis; it was favored by the banks' policies but also the stable economic environment since the mid-90s, thanks to the upcoming entry of Greece into the European Monetary Union. During the crisis, the great depression of the economy along with the reductions in income and deposits caused the development of the NPLs in Greece.

NPLs appeared mainly in 2010 and continue to exist up until the year 2019. They concern all the categories of loans, housing, consumer and business loans. The Greek State with the approval of its lenders tried to introduce some regulatory frameworks regarding the borrowers, households and corporations, and banks with special emphasis to housing loans. Despite those initiatives, NPLs remain a major problem for the banking system and the Greek economy and society.

Keywords: Non-performing loans; Banks; Households; Corporations; Greece

JEL Classification: E43; E44; G21; G28

1. Introduction

Non-performing loans (NPLs) are considered to be loans in default for more than 90 days (Bank of Greece, 2018). In the Greek case, they are one of the main problems in the banking sector; their extent has also turned them into a major

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social problem. The phenomenon of NPLs appeared during the crisis period that followed the obligations undertaken by Greece in the Memorandum of Understanding (MoU) signed with its lenders, (European Commission, European Central Bank and International Monetary Fund). The consequences of the austerity plan dictated by the MoU appeared also in the reduction of the GDP, the investments, the consumption, (private and public), and the growth of unemployment (Karafolas, 2018).

The crisis in the Greek economy came after a long period of notable growth; during the economic growth, banking loans had a positive role in facilitating the investments and consumption of households and corporations. On the other hand, the excessive growth can characterize them as one of the causes of the NPLs problem. The social consequences of NPLs led to the intervention of the Greek State. Regulatory initiatives were undertaken to face the problems, with a preventive legal framework being established as a protection measure.

This paper is interested in examining the evolution of NPLs in the Greek case through some major parameters. The first section of the study discusses the conditions that permitted the creation of this problem by referring not only to the crisis but the pre-crisis period as well. Section 2 analyses the evolution of NPLs and their structure by referring to the housing, consumer and business loans. Section 3 examines the regulation framework concerning both, the borrowers and the banks, as well as the initiatives undertaken by the public authorities. Conclusions follow in the next section.

2. Conditions for the creation of NLPs

Conditions for the creation of NPLs are placed in two periods: the first is before the crisis, in particular before the MoU in 2010, characterized by the excessive growth of loans; the second is the time period that followed the MoU, characterized by the growth of NPLs.

2.1 *The excessive growth of loans*

Since the mid-90, the loans to the private sector have followed a substantial growth that was accelerated in the beginning of the decade of 2000 as a consequence of the entry of Greece to the Eurozone, (figure 1). In 1992, following the Maastricht treaty, some criteria were decided for the entry of a European Union country to the Eurozone. The prerequisites decided are related to the stability of price, low interest rates, low public deficit and public debt, and the stability of the exchange rate, (European Commission, 2018).

Greece's decision to join the Eurozone resulted in an economic stability related to those pre-requisites. Thus, after many years, inflation and interest rates have fallen sharply, (figure 2), approaching the average of the Eurozone countries. The favorable economic environment has created trust and very favorable conditions for households and corporations, prompting them to request for bank loans. The economic stability and the competition in the banking market after its liberalization in the early 1990s', favored

the offer of loans especially those that had not been developed until then. In the second half of the 90s, housing and consumer loans were a significant portion of the private loans and since 2005 they have increased to more than 50% of private loans.

Figure 1. Credit to the Greek domestic private sector by domestic Monetary Financial Institutions per category of loan, (1980 - 2018), (outstanding amounts at end of period in Meuros) [1]
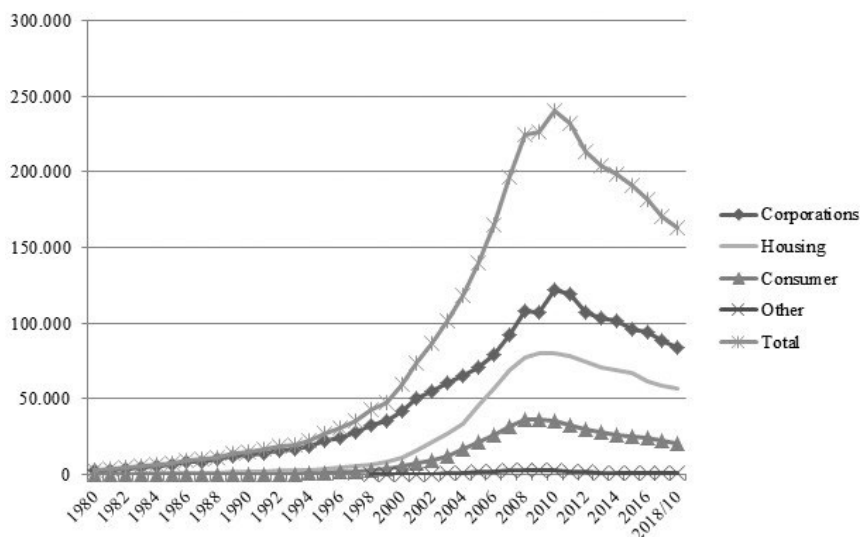
Source: Bank of Greece, 2018a, author's calculations
[1] Loans to corporations, housing loans, consumer and other loans

Figure 2. Evolution of consumer price index and banking interest rate for loans to individuals and private non-profit institutions in Greece.
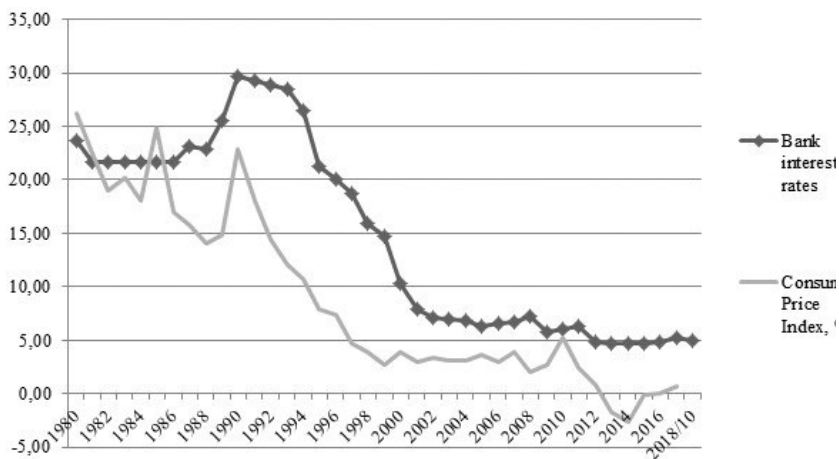
Source: Hellenic Statistical Authority, 2018, and Bank of Greece, 2018b.

2.2. The economic depression

In 2010, loans to the private sector reached their highest in the Greek economy, 240 billion euros. From 2011 to 2018, the sharp decline in loans is observed in figure 1. This is attributed to the depression which characterized the Greek economy during this period of time. As it appears in table 1, the main macroeconomic indicators have a negative evolution and only in 2017 a slight positive change in GDP and private consumption began. A major problem is the high unemployment reaching more than 23% during the time period of 2011-2017. These conditions created serious difficulties for household and corporations which reduced their income and their savings capacity, (table 1). It has to be noted, however, that part of the decline in their savings capacity is also attributed to the withdrawal of deposits from the Greek banking market either to transfer funds to other countries or even to be kept at home.

Table 1. Evolution of macroeconomic indicators, (rate change, %)

	2009	2010	2011	2012	2013	2014	2015	2016	2017
Gross Domestic Product (GDP)	-2,0	-5,3	-8,9	-6,6	-3,2	0,7	-0,4	-0,2	1,5
Private consumption	-2,2	-6,9	-9,7	-7,2	-2,6	0,6	-0,2	0	0,9
Public consumption	-10,3	-4,4	-6,3	-6,7	-6,4	-1,4	1,6	-0,7	-0,4
Unemployment of the year	9,5	12,7	17,9	24,4	27,5	26,5	24,9	23,5	21,5
Total savings[1]	237,5	209,6	174,2	161,5	163,3	160,3	123,4	121,4	126,3

Source: Bank of Greece, 2015, 2018c and 2018d (author's calculations), On 2019: Bank of Greece, 2011
[1]In billion Euros

3. Evolution and structure of NPLs

The Bank of Greece considers non-performing loans as those loans that have been in default for more than 90 days. These are to be distinguished from non-performing exposures that include non-performing loans and loans whose debtors are assessed as unlikely to pay their credit obligations in full without realization of collateral, regardless of the existence of any past due amount or the number of days past due (Bank of Greece, 2018). This study is interested in non-performing loans.

The data on NPLs is provided by the Bank of Greece under the following notes, (Bank of Greece, 2018e):

a) The data is on an individual basis and refers to the balance sheet of loans (before provisions) of the Greek commercial and cooperative banks operating.

b) For the period of 2014 and thereafter, the data submitted by credit institutions follows the definitions of the European Banking Authority.

c) For the period of 2002 – September 2014, the data submitted by the credit

institutions was in accord with the Act of the Governor of the Bank of Greece 2452/1999; according to this, NPLs also include loans from regulated debts for which the time period of 12 months, since the start of payment, has not been completed.

d) Changes between some quarters in amounts may appear due to the restructuring of the Greek banking system (bank clearances, sales of affiliates abroad, etc.).

e) The data refers to loans comprised in the balance sheet in order to be consistent with the operational objectives of reducing non-performing loans. For this reason, differences may appear with previous publishing data that comprise balance items as well.

In table 2 the evolution and structure of NPLs in the Greek banking system are presented for the time-period of 2002 up until 2018 (June). Four categories are examined, consumer loans, housing loans, corporation loans and the total of loans as a distinct category. Two main sub-periods are distinguished. In the first time period, from 2002 to 2010, two sub-periods can be distinguished; one till 2008 and the other one till 2010, including, thus, the years 2009 and 2010. During the time period 2002-2010 NPLs are not very important. The average of total NPLs during the period of 2002-2008 is 6,9% and only in 2009 and 2010 a notable growth is registered, (table 2), since the consequences of the world financial crisis began to influence the Greek economy, (table 1). The second period is from 2011 to 2018. A huge change is observed from 2011, one year after the agreement of MoU in 2010. During this time period the total NPLs are more than 40% while the their average of the period is 40,9%; for the last 4 years the average has been 48%, (table 2).

Table 2. Evolution of non-performing loans, total and per category

	Consumer loans	Housing loans	Corporation loans	Total of NPLs
2002	9%	7%	8%	8%
2003	8%	5%	9%	8%
2004	7%	5%	9%	8%
2005	8%	4%	9%	7%
2006	7%	4%	7%	6%
2007	6%	4%	6%	5%
2008	9%	5%	5%	6%
2009	16%	9%	8%	10%
2010	27%	14%	12%	14%
2011	38%	21%	19%	22%
2012	51%	28%	29%	31%
2013	56%	34%	39%	40%
2014	58%	36%	45%	44%

	Consumer loans	Housing loans	Corporation loans	Total of NPLs
2015	63%	41%	49%	48%
2016	62%	42%	50%	49%
2017	58%	44%	47%	47%
2018/06	57%	44%	48%	48%

Source: Bank of Greece, 2018e.

Table 3. Evolution of non-performing loans per country, (significant institutions [1])

	(Q4/2016)	(Q3/2017)	(Q2/2018)
Belgium	3,4%	2,9%	2,5%
Germany	2,5%	2,0%	1,7%
Estonia	C	C	C
Ireland	15,9%	12,2%	8,7%
Greece	45,9%	46,6%	44,8%
Spain	5,7%	4,8%	4,2%
France	3,7%	3,2%	3,0%
Italy	15,2%	11,9%	9,7%
Cyprus	37,8%	34,0%	29,2%
Latvia	3,2%	2,6%	1,9%
Lithuania	3,8%	3,1%	3,4%
Luxembourg	1,8%	1,4%	0,6%
Malta	4,4%	3,7%	3,8%
Netherlands	2,4%	2,3%	2,1%
Austria	5,7%	4,2%	3,3%
Portugal	19,5%	18,1%	15,3%
Slovenia	15,4%	13,6%	9,0%
Slovakia [2]	-	-	-
Finland	1,6%	1,6%	C
Total	6,2%	5,2%	4,4%

Source : European Central Bank, 2018.

[1] Significant institutions at the highest level of consolidation for which common reporting (COREP) and financial reporting (FINREP) are available.
C: the value is suppressed for confidentiality reasons.
[2] There are no significant institutions at the highest level of consolidation in Slovakia.

The Greek banking market has the highest percentage of NPLs among the Eurozone countries. During the time period of 2016-2018 the average of NPLs for the Eurozone

countries, (regarding significant banks for the economy), was 5,2%, while for Greece it was 45,8%, (calculations from table 3); NPLs in the Greek market are almost 9 times higher compared to the Eurozone average. In table 2, the earliest and highest movement of non-performing consumer loans can be observed. In 2008 and 2009 they are somewhat higher compared to the other categories of NPLs and in 2010 and 2011 they are almost double. From 2012, more than half of the consumer loans are non-performing loans; in 2015, 63% of consumer loans were NPLs, (table 2). Consumer loans include secured and unsecured loans offered to households for the coverage of consumers' needs in the form of credit cards, overdrafts and consumer loans, (Bank of Greece, 2018).

Households were the first to act on the crisis difficulties by delaying the payment of consumer loans by more than 90 days. These loans are mostly non-secured and of small amounts compared to housing and corporate loans; the risk weight of these exposures is 75% mainly, while the risk weight for housing loans is placed mostly at 50% and 35% because they are secured by mortgages, (Piraeus Bank, 2018). The growth of these loans was higher compared to the total, at the time period of 2000-2010, (figure 1), since households were encouraged to take a consumer loan by the banks, even if their interest rates were the highest in the market as non-secured loans.

Housing loans were developed mainly during the period 2000-2010, (figure 1), thanks to the favorable conditions created for the households in the Greek market by the low interest rate and the banking competition. Non-performing housing loans have the lowest growth compared to the other categories of NPLs, table 4, however their part remains considerable. In the second half of the crisis period, that is 2015-2018, housing NPLs had a significant growth, compared to the first half, 2011-2014. House loan presents a further difficulty since, in most cases, it concerns the main residence of the borrower and the amount of the loan is important.

Thus, an arrangement between the interested parties, households and banks, has been the preferable option, encouraged by the Greek State. This policy appears in the delay of the growth of non-performing housing loans compared to the others, (table 2). Moreover, the continuous depression of the Greek economy and especially the growth of unemployment further limited the possibilities of performing these loans.

Up until the decade of 2000, the majority of banking loans was mainly to corporate because of the limited demand for consumer and housing loans due to the unfavorable conditions, mainly the high interest rates, (see figure 1 for loans and figure 2 for interest rates). Non-performing corporation loans followed the general aptitude of total NPLs reflecting the economic situation. The decline in consumption, private and public and the non-performing consumer loans resulted in a delayed increase in non-performing corporation loans, (table 2).

4. The initiatives on the regulatory framework

4.1 The existing framework

The over-indebtedness of households and corporations and the huge growth of NPLs led the Greek legislators to exercise their regulatory intervention in order to counter

such a phenomenon. Several legislation and regulatory measures have been undertaken. Legislation was put into effect for the first time in Greece under the law 3689/2010 in order to deal with the over-indebtedness of households without commercial status, (Hellenic Republic, 2010). According to the law, heavily indebted debtors who may be subject to the law can regulate and get rid of their debts in part; they can apply if they have overdue debts, if their inability to fulfill them is permanent and if they have reached the permanent state of impossibility of paying their arrears without deceit. The aim of the legislation is to permit these households their economic return to society and the protection of their main residence.

The bankruptcy law concerning traders was amended and updated. In 2007, the current bankruptcy code under the law 3588/2007 came into force, (Hellenic Republic 2007); it has been amended many times during the years of the financial crisis. It provides for a comprehensive and autonomous system of legal rules that supervises appropriate procedures for the purpose of collective creditors' satisfaction by their debtors, (traders, households or associations of persons with legal personality and financial purpose). Debtors are in a situation of insurmountable economic dyspraxia but they can provide potentialities for the rescue of their businesses. Exclusively for debts arising from business allocation, the law 4307/2014 attempted to take measures to tackle the effects of the economic crisis by providing incentives so as to regulate business and professional debt to financial institutions through an alternative out-of-court settlement, (Hellenic Republic 2014). This initiative did not have the expected results as there was no obligation by credit institutions to conclude an agreement. In 2017 a novel process for the Greek legislation was introduced for out-of-court settlement of debts of traders and businesses. This process is carried out through an electronic platform under the supervision of an independent accredited mediator in the negotiations between the debtor and the creditors. The law 4469/2017, introducing the "Extra-Judicial Mechanism for Dealing with Dealers and Businesses", aims to empower debtors who are unable to pay but viable to regulate their total debts simultaneously to all creditors, as banks, tax authorities, social security funds, local authorities, suppliers, workers and other individuals, (Hellenic Republic 2017). It is important that, despite the out-of-court procedure, the borrower is protected by a strict and concrete automatic suspension of persecution from new and old claims against him. Similar arrangements have been made also for those who are self-employed and the farmers who receive income from a business activity but have no bankruptcy capacity and are, therefore, excluded from the possibility of using law 4469/2017. They can settle their debts to the State and social security funds with favorable provisions of law 4469/2017, such as a reduction in fines, surcharges but also in a basic debt with the possibility of repaying the balance up to 120 installments. In addition to the above, other preventive legal measures were applied in favor of debtors. They are the following: a) the legal framework for the protection of over-indebted debtors by the collecting societies, pursuant to law 3788/2009, (Hellenic Republic 2009); b) the program facilitating loyal borrowers, law 4161/2013, that is an extra-judicial procedure aiming in facilitating the payment of loan installments to borrower whose loan is still performing but has difficulty with its payment, (Hellenic

Republic 2013); c) the possibility of suspending the auctions for non-performing loans for the year 2014 with private initiative under the law 4224/2013 (Hellenic Republic 2013a) and d) the banking ethics under the law 4224/2013 for the purpose of individual adjustment of each borrower's debts.

4.2 The results

The legislation initiatives undertaken by the Greek authorities in order to solve the NPLs problem, by helping households, small and medium enterprises (SMEs) but also the banks had some results. However, the continuing economic depression resulting in the decline and even the disappearance of the revenue of debtors limited the expected results. NPLs continue to be the critical problem of the Greek economy and society and, of course, the banking system. Households proceeded to appeal for inclusion in the law 3689/2010; about 200.000 appeals were registered up until the 3d quarter of 2018; about 60.000 have been examined out of which 65% have been regulated and 35% have been rejected, (Tziortzi, 2019).

Greek systemic banks led to the sale of exposures of their assets in order to deal with their NPLs problem. These exposures were secured and unsecured business, consumer and retail loans. Greek banks first dealt with the debtors by offering good repayment terms of the loan, such as paying only 10% of the balance. The response of debtors was rather limited due to the low disposable income and the more general uncertainty that made them cautious even to favorable offers. Four Greek banks, considered as important for the economy, sold NPLs of a total value of 8,9 billion euros in 2018 to eight different specialized funds, (table 4). Part of the exposures was secured and part was unsecured. That was reflected in the price of sale; exposure packages containing secured loans were sold at a price between 30% and 35% of the book value of the loan, (table 4); for non-secured loans the price was respectively between 3% and 10%.

Table 4. Sell of NPLs of banks to specialized funds-buyers

Bank	Amount (Meuros)	Purchase price as % of book value	Kind of exposure	Buyer
Alpha Bank	900	10%	Unsecured Consumer loan / small business	B2Holding
Alpha Bank	283	35%	Unsecured and Secured Business and retail loans	Anacao/DB/ APS
Alpha Bank	1.000	33,6%	Secured SMEs	Apollo/LLC/ IFC

Bank	Amount (Meuros)	Purchase price as % of book value	Kind of exposure	Buyer
Alpha Bank	1.300	5,8%	Unsecured Consumer loan / small business	Hoist
Eurobank	609	3%	Unsecured Consumer loan	Intrum
Eurobank	1.000	6%	Unsecured Consumer loan	B2Holding/ Waterfall
National Bank of Greece	2.000	6%	Unsecured Consumer loan / small business	CarVal and Intrum
Piraeus Bank	400	5%	Unsecured Consumer loan	APS
Piraeus Bank	1.450	30%	Secured Small and Medium Entreprises (SMEs)	Bain Capital
TOTAL	8.942			

Source: Tzortzi, E., 2019a., (author's calculations)

4.3 New legislative reactions

The results so far led the Greek authorities to undertake new legislative initiatives in order to deal with the sale of NPLs held by the banks and the protection of households.

The reduction in the stock of non-performing exposures by 47% has been the subject of a proposal by the Bank of Greece that reminds the creation of a "bad bank". Through this proposal, the Bank of Greece envisages the transfer of 40 billion euros and part of the deferred tax credits of 7,5 billion euros to a Special Purpose Vehicle (SPV) of non-performing exposures (NPEs), including mainly the NPLs, (Pantelias, 2018). Loans will be transferred at net book value, (net of loan loss provisions). The amount of the deferred tax asset to be transferred will match additional loss, so that the valuations of these loans will approach market prices. Subsequently, legislation will be introduced enabling to transform the transferred deferred tax credit into an irrevocable claim of the SPV on the Greek State with a predetermined repayment schedule, (according to the maturity of the transaction). To finance the transfer, the Special Purpose Vehicle will proceed with a securitization issue that may comprise three classes of notes, (senior, mezzanine, and subordinated junior/equity). The lowest class of notes, (subordinated junior/equity), will be subscribed by banks, (each participating by no more than 20%), and the Greek State. The valuation of the loans to be transferred will be carried out by independent third parties, and the final structure of the transaction will be determined by

the arrangers subject to market conditions. The scheme will be managed exclusively by private investors, (servicing companies for loans and credits) and apparently there will be an asset class separation for each transaction and management operation (business, housing, consumer loans, etc.).

The Greek government undertakes a new initiative regarding the non-performing housing loans. The Government's proposition provides for a substantial haircut on the housing loan, lower interest rates and a state subsidy of 1/3 of the installment or even 50% in the case of economically inactive households, (Anoixto parathyro, 2018). The central idea of this, is to protect the weakest households from losing their homes, but also to have a rapid consolidation of the bank's loan portfolio. The basic criteria for the entry to the program will be the value of the property, (up to 250.000 euros in objective value) and disposable income, (up to 35.000 euros per year). The plan provides for a reasonable interest rate and a monthly installment to repay the loan, as well as a repayment term of up to 25 years. In addition to the charge already bearing in favor of the creditor bank, a new charge in favor of the State will be applied. In the case of the sale of the property, the State may demand payment for the amount corresponding to the subsidy offered. The repayment of the amount will correspond to the present value of the property rather than the initial value and the difference will be cleared.

5. Conclusions

Non-performing loans constitute one of the main socio-economic results of the crisis affecting Greece, especially after the agreement with its lenders with the aim of reducing public deficit and public debt. Examining NPLs one has to distinguish at least two periods. The first one is during the economic growth, when the banking market and the economic stability favored the offer of loans, even excessively; during this period NPLs were limited. The second is during the period of crisis, when economic depression does not permit debtors, households and corporations to meet the repayment of the loans. Greek authorities undertook legislative and regulatory measures in order to solve the problem of NPLs. These initiatives have been ineffective to a large extent, mainly because the economic crisis is very profound in the Greek economy and society. Households and corporations tried to respond to their debt obligations but the high unemployment, as a consequence of the economic depression, reduced the available revenue and, therefore, the possibilities of honoring the debt obligations.

Thus, NPLs continual growth corresponded in total to 48% of loans in mid2018 while the average for the Eurozone countries was no more than 4,4% at the beginning of 2018. The biggest problem is presented by the consumer loans which are the least secured loans.
The response of banks was to sell part of NPLs to specialized funds, whose creation was permitted by the legislative framework. Till 2018, NPLs of an amount of almost 9 billion euros were sold by the four banks which are important for the economy, with prices ranging from 3 to 30% of the book value of the loan.

In addition to previous legislative and regulatory measures, the Greek authorities intend to take further measures, more drastic ones compared to the past. One is provided by an

initiative of the Bank of Greece proposing the creation of a "bad bank" under the name of a Special Purpose Vehicle that will absorb about 47% of NPEs. The other is provided by the Greek government in favor of households concerning the housing loans. This plan provides for a substantial haircut of the housing loan with lower interest rate and in particular a State subsidy of 1/3 of the loan installment, under some conditions nonetheless.

These measures may help with the NPLs problem. However, a main parameter still remains to be considered. That is the economic recovery of Greece and with it, the particular one of households and corporations.

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PAPER

Impact of Foreign Investment Income on External Positions of Emerging Market Economies

Sergey A. Yakubovskiy[*] • **Tetiana A. Rodionova**[**] • **Tatyana V. Derkach**[***]

Abstract The impact of income from foreign investments onto the formation of external economic positions of nine emerging market economies of Central and Eastern Europe and Latin America is identified in the paper by using several approaches to assess financial stability. Constructing vector autoregression models and performing Granger causality tests reveal the negative impact of income on foreign investments onto the formation of external debt. Countries are grouped according to the extent of their dependence on external financing, based on the analysis of the coefficient of coverage of foreign investments, which is constructed as a share of the foreign direct, portfolio and other investment income repatriated by investors in the foreign capital received by the country. Countries, for which the investment income payouts are exceeding 100% of the direct investment inflows, are highlighted: Czech Republic and Poland. Investment income outflows of almost 100% of received foreign direct investments were observed in Chile and Argentina. Due to the huge amount of investment income outflows and large share of foreign currency, located outside the country's banking system, Argentina might face a new monetary and financial crisis in the nearest future. Formally, for Ukraine the ratio of investment income payments to FDI was the smallest among the studied countries, but this is explained by the active use of non-market transfer pricing in trade operations between Ukrainian affiliates and their "parent" companies that lead to a reduction of the official income of foreign affiliates in Ukraine.

Keywords: Foreign Investment income; External debt; International investment position; Stability of the national financial system; Emerging Market economies

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1. Introduction

Foreign investments have been playing a very important role in the development of national economies. For the developed countries they help multinational companies to extend the goods life cycle, find the new ways to increase sales on the foreign markets, lower the internal costs of production, etc. For the developing countries foreign investments bring new technologies and management skills, increase the level of national production and export, and become the source of foreign currency inflow. However, the positive effects of attracting foreign investments, especially of foreign direct investments, are often accompanied by an outflow of financial resources in the form of foreign investment income and by general deterioration of the current account balances of the recipient countries. The difference in interest rates between developed and developing countries, which increased during the post-crisis development of the world economy, also became one of the factors leading to an outflow of the investment income from the emerging market economies.

In the majority of the emerging market economies these negative consequences of the foreign investments attraction lead to the increase of the amount of debt obligations and to the overall deterioration of the international investment position of the countries. That is why it is necessary to study the influence of the structure of the national external financial liabilities of the countries that have been receiving the foreign investments, since the forms of attracted investments – foreign direct investments, portfolio investments or other investments determine servicing corresponding debt obligations. This paper explores the influence of various forms of investment inflows on the investment incomes and external debt obligations of nine emerging market economies of Central and Eastern Europe (CEE) and Latin America (LA). The choice of these countries is grounded by their rapid and efficient integration into the world financial market, the preservation of their own currency and the corresponding ability to implement a relatively independent own monetary and fiscal policies.

2. Literature review

The issues of international investments in general and of the foreign investments influence on the recipient countries in particular have been widely studied in the literature. According to Bracke & Schmitz (2010) for most foreign investments there are two distinct channels of returns: the first one is the direct investment income channel, taking the form of dividend or interest payments. This income is recorded in the primary income balance of the current account balance. The second channel is the increase in the market value of the foreign investment assets which is explained by changes in the formal price of the financial assets nominated in the domestic currency. Capital gains may therefore result from changes of the market price of the financial asset as well as from changes in exchange rates of national currencies. In case of devaluation of the national currencies capital gain is negative.There are researchers, who point out

that foreign investors tend to locate their assets in countries that have low employment protections. That is why the main objective of Polat & Soo (2017) study was to examine the causal relationship between foreign investment income return rate and employment protection. Results of their research show that employment protection has no significant effect on rate of return on investment income. From another side, the market size and the GDP dynamics increase the foreign investment income return.

Becker & Fuest (2011) analyze old, new and a "pragmatic" view on the taxation of foreign investors' income. According to their paper, while both the old and the new view focus on the implications of taxation for the international allocation of foreign investments assets, the "pragmatic" view emphasizes the compliance and administration costs of taxing foreign investment income. According to this view, foreign investors have many ways of avoiding taxes on repatriated income, that is why countries that are recipients of foreign investments should not introduce new taxes for the foreign investments` profit repatriation as such actions do not have any positive fiscal consequences.

The paper of Rogach & Dziuba (2017) investigates the role of exchange rate risk of investing in Ukrainian and other frontier equity markets during the period between 2006 and 2016. It is proved that frontier markets group represents substantial exchange rate risk for foreign investors and that among frontier markets Ukraine had the biggest exchange rate risk for foreign investors.

Authors study the influence of foreign investments on European economic integration – Beer et al. (2017) and disintegration processes within the European Union – Sydorova & Yakubovskiy (2017), assess the effect of foreign direct investments and their income outflows on exchange rate of national currencies Combes et al. (2011). One of the approaches to the study of the influence of capital inflow on financial stability of the countries is to analyze their potential for servicing external obligations. At the same time, since for the developing countries, external obligations are denominated in foreign currency, an important indicator of solvency is the value of exports of goods and services. Based on it, the World Bank experts, when analyzing the sustainability of the national financial systems, suggest calculating the ratio of foreign debt to GDP and to national exports of goods and services. Under these criteria the economies can be divided into three groups: with high, medium and low levels of foreign obligations. The first group consists of nations in which the ratio of foreign obligations either to GDP is more than 80%, or to the export of goods and services exceeds 220%. For the second group, these indicators should be in the intervals between 80% and 48%, 220% and 132%. For the third group of countries – with the most stable situation, ratio of external obligations to GDP is less than 48%, and the ratio of obligations to exports of goods and services is less than 132%. At the same time, this methodology does not take into account foreign financial assets of the nations including the volume of official reserves and foreign financial assets of banks, enterprises and population. That is why one of the effective criterion in assessing the financial imbalances of the developing countries in which nominal GDP is measured in non-convertible currency is the ratio of net international investment position (NIIP) to GDP. Due to this criterion the countries can be divided into three groups: with high (the ratio of negative NIIP to GDP is higher than

60%), with a medium (ratio of negative NIIP to GDP ranges between 60% and 36%) and low (negative NIIP to GDP is less than 36% or NIIP is positive) levels of dependence on foreign capital inflows. This approach was used in Sandru & Yakubovskiy (2018).

For a more comprehensive assessment of the influence of foreign capital on the recipient countries Rodionova (2013) introduced a new economic indicator, the "coefficient of coverage of foreign investments", which is the ratio of total investment income in the corresponding cumulative financial account inflows. According to the results of the research foreign direct investment income outflow had large negative impact on the balance of payments of Peru, Chile, Czech Republic, Poland and Slovakia.

3. Hypothesis, methodology and data

In general, in empirical studies the influence of different types of foreign investments on the external debt position of the countries has not received enough attention. Given the heterogeneous nature of financial flows, it is inappropriate to combine them to assess the influence of investments inflows on foreign debt growth. Foreign direct investments and portfolio or other investments are fundamentally different, since the foreign direct investments are associated with participation in the management of companies, while portfolio or other investments are not.

To test the hypothesis that the cost of servicing external liabilities is an important factor causing external imbalances in emerging economies, the vector autoregression (VAR) framework is chosen since it provides a systematic way to capture the rich dynamics in multiple time series.

Specifically, to provide evidence on the dynamic interactions between the external debt (the total values of external direct debt instruments, portfolio investments debt securities, other investments debt instruments) and the income on foreign investment liabilities of the CEE and LA countries, the following VAR systems are estimated to test Granger non-causality:

$$ED_t = \alpha_1 + \sum_{i=1}^{p} \beta_{1i} Inc_{t-i} + \sum_{i=1}^{p} \gamma_{1i} ED_{t-i} + \varepsilon_{1t}$$

$$Inc_t = \alpha_2 + \sum_{i=1}^{p} \beta_{2i} ED_{t-i} + \sum_{i=1}^{p} \gamma_{2i} Inc_{t-i} + \varepsilon_{2t}$$

(1),

where ED and Inc and ε denote respectively the growth of total external debt to GDP ratio, income on individual investment category (depending on type of foreign capital: direct, portfolio and other investment income) and error term; α is a constant term; β and γ denote the coefficients to be estimated, p is the lag order selected. The null hypothesis of Granger non-causality from Inc to ED and from ED to Inc are $\beta_{1i}=0$ and $\gamma_{2i}= 0$, respectively. The rejection of the null hypothesis of the Granger non-causality from Inc to ED implies that the past investment income can help predict the external debt and vice versa. The model is estimated as follows. First, an unrestricted VAR is estimated. Then Granger causality testing is performed. The optimal number of lag length was chosen by looking at AIC and SIC criteria. The stability of VAR was checked: all AR roots are

inside the unit circle and Autocorrelation LM test states that no serial correlation in the residuals was detected. All investment income flows and debt series are I (0).

Quarterly data are used, taken from the International Financial Statistics and Balance of Payments statistics of the International Monetary Fund.The coefficient of coverage of foreign investment will be calculated for each country as a share of the investment income repatriated by investors in the foreign capital received by the country (the sum of liabilities for all types of investments in the balance of payments).

$$Cover^x = \frac{\sum INCd_t^x}{\sum xl_t} \qquad (2)$$

where Cover – coefficient of coverage of foreign investments of type x direct, portfolio and other investments) for a specific time period.

This coefficient will be also used as an indicator of instability in the country. The high level of profitability of foreign investments has serious negative consequences for the financial systems during the crisis, and therefore countries should pay attention to the analysis of the sustainability of such flows in order to take timely economic or even administrative measures to cut these flows.

4. Results

In the table 1 the summary of the net international investment positions and values of the external debt instruments and securities of Argentina, Brazil, Bulgaria, Chile, Czech Republic, Hungary, Poland, Romania and Ukraine in 2011, 2014 and 2017 is presented. According to the World Bank criteria two of the explored countries – Argentina and Brazil, in which the ratio of the value of external debt instruments and securities to GDP is less than 48%, could be considered as the countries with the high level of financial stability to external financial shocks. Bulgaria, Chile, Poland and Romania could be considered as countries with the middle level of financial stability to external financial shocks. Czech Republic, Hungary and Ukraine, where the ratio of value of external debt instruments and securities to GDP is higher than 80%, are the countries with the high level of dependence on external financing. However, it should be mentioned, that this approach for the evaluation of the stability of national financial systems does not take into account the possibility of rapid devaluation of national currencies which in a short period of time can dramatically reduce the value of GDP in foreign currency, that thereby will greatly increase the ratio of value of external debt instruments and securities to national GDP.

Table 1. Macroeconomic imbalances, in % GDP

	Net International Investment Position			External debt instruments and securities		
	2011	2014	2017	2011	2014	2017
Argentina	8.9	10.3	2.6	23.8	25.7	36.2
Brazil	-31.4	-28.7	-32.1	19.5	28.9	32.2
Bulgaria	-77	-66.3	-45.6	82.9	87.8	77.5
Chile	-8.0	-8.9	-20.9	39.6	57.9	64.7
Czech Republic	-40.1	-33.2	-29.1	50.4	61.5	94.4
Hungary	-88.3	-72.1	-56.5	150	131	104
Poland	-54.1	-62.2	-66.4	60.9	65.1	72.4
Romania	-61.3	-52.2	-48.3	70.7	57.3	52.8
Ukraine	-25.6	-37.5	-22.9	76.7	91.8	102

Source: ECB (2019), Eurostat (2019), IMF (2019), World Bank (2019).

Using another approach for the evaluation of the countries` financial stability that is based on the state of the international investment position, Argentina, Brazil, Chile, Czech Republic and Ukraine, for which the ratio of net negative international investment position is less than 36%, could be considered as the countries with the high level of financial stability to external financial shocks. Bulgaria, Hungary and Romania could be considered as the countries with the middle level of financial stability to external financial shocks. Poland, where the ratio of net negative international investment position to GDP is higher than 60%, is the country with the high level of dependence on external financing.

It should be mentioned, that this approach for the evaluation of the stability of national financial systems has also shortcomings, as it does not take into account the structure of the assets of the international investment positions of the countries. For example, the major part of other investment assets, which are calculated as amount of foreign currency outside the national banking system, make up to 50% of the total assets of the international investment position of Argentina and up to 74% of Ukraine. Without these amounts the ratio of net international investment position of Argentina is -23.5%; of Ukraine – -109%.

For a more reliable analysis of the impact of investment inflow on the national economies the results of the Granger causality test for external debt growth and all types of investment income flows for Brazil, Poland, Chile, Hungary, Czech Republic, Argentina, Ukraine, Romania and Bulgaria are presented in the Table 2. In most cases it is portfolio and other income flows which have impact on external debt accumulation.

Table 2. Granger causality test for external debt growth and all types of investment income flows

Country	Indicators	Lags			
		External debt	FDI income	Portfolio income	Other income
Argentina (2000: 2017)	ED				
	FDI income	4.53 (0.10)c		2.68 (0.10)c	6.30 (0.01)a
	Portfolio				
	Other	14.6 (0.01)a			
Chile (2007 Q1: 2018Q3)	ED				
	FDI income	14.6 (0.01)a			
	Portfolio				
	Other				
Czech Republic (2004 Q1: 2018Q3)	ED	15.9 (0.01)a			
	FDI income	9.05 (0.01)a			
	Portfolio	2.79 (0.09)c			
	Other				
Brazil (2001 Q1: 2018Q3)	ED				
	FDI income		12.0 (0.01)a		7.80 (0.02)b
	Portfolio				
	Other				
Hungary (2000Q1 : 2018Q3)	ED	7.11 (0.01)a	5.32 (0.02)b	10.7 (0.01)a	14.6 (0.01)a
	FDI income	5.23 (0.02)b			
	Portfolio	7.65 (0.02)b			
	Other				
Bulgaria (2007Q1: 2018Q3)	ED	4.96 (0.02)b		5.96 (0.05)b	6.48 (0.03)b
	FDI income	10.7 (0.01)a			
	Portfolio	11.1 (0.01)a			
	Other				
Romania (2000Q1: 2017Q4)	ED				
	FDI income	3.49 (0.06)c			
	Portfolio	19.5 (0.01)a			
	Other				
Poland (2004Q1: 2018Q3)	ED	22.7 (0.01)a			
	FDI income	2.55 (0.10)c			
	Portfolio	8.74 (0.01)a			
	Other				

Country	Indicators	Lags			
		External debt	FDI income	Portfolio income	Other income
Ukraine (2002Q1: 2018Q3)	ED FDI income Portfolio Other	4.44 (0.03)b 16.6 (0.01)a	3.65 (0.01)a		5.48 (0.06)c

Note: ED denotes external debt growth. Behind the country name the sample range is listed in parentheses. The numbers in the parentheses beside the Wald statistics are the P-values: a, b, c represent the 1%, 5%, and 10% significance levels, respectively. Only significant coefficients are filled in the table.

According to the Granger causality test for Argentina portfolio and other income flows have impact on external debt accumulation; the level of external debt causes FDI and other income flows. For Chile the level of external debt causes portfolio income flow. For Czech Republic the level of external debt causes FDI, portfolio and other income flows. For Brazil portfolio and other income flows have impact on external debt accumulation. For Hungary there is mutual causality for all variables considered – FDI, portfolio and other income flows have impact on external debt accumulation; the level of external debt causes FDI, portfolio and other income flows. For Bulgaria portfolio and other income flows have impact on external debt accumulation; the level of external debt causes FDI, portfolio and other income flows. For Romania the level of external debt causes portfolio and other income flows. For Poland the level of external debt causes FDI, portfolio and other income flows. For Ukraine FDI and other income flows have impact on external debt accumulation; the level of external debt causes FDI and other income flows.

Coefficients of coverage of foreign investments as a share of the foreign direct, portfolio and other investment income repatriated by investors in the foreign capital received by the country are presented in the Table 3.

Table 3. Coefficients of coverage of foreign investments, 2000-2017

	Coefficients of coverage of foreign investments, in %			In billion dollars		In %
	for FDI	for Pi	for OI	Total capital inflow	Total income inflow	Coefficients of coverage
Brazil	47.5	87.7	46.9	1475	825	55.9
Poland	104	51.9	44.6	467	358	76.7
Chile	98	33.8	49.8	356	278	78.9
Hungary	84.7	183	66.9	308	277	89.9

	Coefficients of coverage of foreign investments, in %			In billion dollars		In %
	for FDI	for Pi	for OI	Total capital inflow	Total income inflow	Coefficients of coverage
Czech Republic	148	29	27	276	242	87.7
Argentina	96.9	162	73.5	246	259	105
Ukraine	37	62.5	44.4	202	89	44.1
Romania	53.3	35.5	62.2	166	88	53
Bulgaria	44.8	344	44.2	84	40.3	50

Source: ECB (2019), Eurostat (2019), IMF (2019), World Bank (2019).

In the Table 3 emerging market economies are ranked due to the nominal terms of the amount of foreign capital that have been received by the countries. In nominal terms, Brazil, Poland and Chile received the largest amount of foreign capital during the period from 2000 to 2017. The ratio of total repatriated income in cumulative inflows of the financial account was 55.9% in Brazil, 76.7% in Poland and 78.9% in Chile. In a worse position are Argentina, Hungary and Czech Republic, which received US$246 billion, US$308 and US$276 billion respectively over 18 years, while the coverage ratio was 105% in Argentina (Argentina is the only one from the explored countries, where the ratio of total repatriated income in cumulative inflows of the financial account exceeds 100%), in Hungary 89.9% and in Czech Republic 87.7%.

Formally, in a somewhat better situation are Ukraine, Bulgaria and Romania, which received US$202 billion, US$84 and US$166 billion respectively over 18 years, while the coverage ratio was 44.1% in Ukraine, 50% in Bulgaria and 53% in Romania.

Considering each investment categories, those countries should be highlighted, for which investment income payments on FDI are exceeding 100% of the incoming FDI inflows: Czech Republic and Poland. Investment income outflows of almost 100% of received FDI were observed in Chile and Argentina.

For Ukraine the ratio of investment income payments to FDI is the smallest among the studied countries. It could be explained by the active use of non-market transfer pricing in trade operations between Ukrainian affiliates and their "parent" companies, the majority of which are registered abroad as the companies with offshore jurisdiction. These operations lead to a reduction of the official income of foreign affiliates in Ukraine. For Bulgaria, Hungary and Argentina investment income payments on portfolio investments are exceeding 100% of the incoming portfolio capital. For Bulgaria the extremely high level of coefficient of coverage of foreign portfolio investment – 344% is explained by the huge outflow of the foreign portfolio investments from the country – 3.4 billion of the US dollars during 2000-2011 which led to a significant reduction of total foreign portfolio assets in Bulgaria. For all of the explored countries income payments on other investments are less than 100% of the incoming capital.

5. Conclusions

Empirical estimations of the impact of returns on foreign investments on external positions showed that in countries with emerging economies these indicators have a significant impact on the deterioration of the external debt dynamics. The results of the comparative analysis of financial stability of the countries shows that Hungary and Ukraine with the ratio of value of external debt instruments and securities higher than 100% of GDP and Poland, where the ratio of net negative international investment position to GDP is higher than 60%, belong to the group of countries with the highest dependence on foreign financing.

The results of the Granger causality test for external debt growth and all types of investment income flows shows that for the majority of the explored countries portfolio and other income flows have influence on the external debt accumulation. This is the case for Argentina, Brazil, Hungary, Bulgaria and Ukraine. In Hungary there is mutual causality for all variables considered. In Czech Republic, Hungary, Bulgaria and Poland the level of external debt causes income flows. FDI income flows are significant for the debt accumulation in Brazil, Hungary and Ukraine.

The results of the calculations of the coefficients of coverage of foreign investments show the significance of the foreign direct, portfolio and other investment income repatriation from the emerging markets economies, especially for the countries of Eastern and Central Europe. In particular, for the period of 2013-2017 for Poland, Hungary, Ukraine, Romania and Bulgaria the coefficients of coverage of foreign investments exceeded 150%. In this case countries of Central and Eastern Europe must find the new ways to regulate foreign investors` activity, which from one side will correspond to the European Union norms, from another – will create effective barriers to foreign investment income outflow from the countries.

Argentina has the least stable financial system among the countries of Latin America. This is caused by two factors: by the significant volumes of the foreign direct, portfolio and other investment income repatriation from the country and by the large share of foreign currency, located outside the country's banking system. Thus, most likely Argentina will face a new monetary and financial crisis in the nearest future.

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PAPER

The Attitude of Jordanian Women toward Investment

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Abstract This study aimed for better understanding and exploring of the investment attitude of Jordanian women toward investment, types of investment vehicles, the sources of funds and investment goals. In regard to their demographic variables such as age, education level, income level, and marital status.

In order to achieve these goals, the study distributed 464 questionnaires to a sample of Jordanian women from North, Middle, and Southern regions of Jordan. The study found that Jordanian women have the same investment behavior as women from developed countries although they have a different culture and surrounding environment.

The study found limited investment participation of women in Jordan (26.50%); but on the other hand, 35.13% of Jordanian women are planning to invest in the future. Thus the study found that Jordanian women are conservative and prefer safer investment vehicles, where they depend on equity sources more than debt sources and most women invest to accumulate funds for retirement.

However, no statistically significant differences were found between different age and marital status groups. On the other hand, the results found statistically significant differences among different region, income and education level groups.

Therefore, Jordanian women are encouraged to participate more in investment, in order to improve the growth of the Jordanian economy. The study recommended future research in this area investigating the main investment barriers.

Keyword: Investment Attitude; Demographic Variables; Women; Jordan

JEL Classification: G41; J10; J16

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Introduction

The Arab world population reached 414,491,886 at the end of 2017, where Arab women represent 48.20 percent of the population and represent only 20.53 percent of the labor force. More specifically, the Jordanian population reached 9,702,353 at the end of 2017, where females represent 49.36 percent of the population and represent only 17.77 percent of the labor force (World Bank, 2017).

On the other hand, economic and investment empowerment indicators are relatively low in Jordan, where females owning land and owning apartments present 15.8 and 23 percent of female population in Jordan, respectively. The total value of security owned by females represents only 23.1 percent of total security value. Also, loans granted to female are relatively low, where 17.2 percent of total commercial bank loans are granted to females. On the other hand, 48.5 percent of microfinance loans of financial institutions are granted to females (Department of Statistics, 2015).

Although Jordanian women's roles are very important in the growth and development of the economy, their percentage of participation in the labor force and economic and investment empowerment is still relatively low, due mainly to cultural, social and demographic variables.

 A growing set of studies such as Zissimopoulos et al. (2008), and Das and Jain (2014), indicated the importance of demographic variables (age, education level, income level, and marital status) in investment attitudes of individual investors, although most of the studies did not focus on women.

Therefore, the following study aimed at a better understanding and exploration of the investment attitude of Jordanian women, with respect to types of investment vehicles, sources of funds, and investment goals. It concentrates on their demographic variables such as age, education level, income level, and marital status.

The study consists of four sections, besides this introduction. Section Two reviews empirical literature related to the study. Section three; discusses the data and methodology used in the study, and is followed up by the analysis of section three. Conclusions and Recommendations are stated in section five.

Literature Review

A growing set of studies indicated the importance of behavioral finance on the investment behavior decision of individual and institutional investors such as Ritter (2003), Shefrin(2011), and Waweru et. al. (2008).

In general individual investment behavior decision is difficult to measure because it is affected by influential factors, such as demographic variables (gender, age, education level, income level, and material status) Mittal and Vyas(2011) Zissimopoulos et. al. (2008), Das and Jain (2014), and Mak and Ip(2017).

Nemours studies examine the effect of gender on investment decision, where they try to compare the investment decision of women and men in the context of risk. Many researchers indicated that women are more conservative and risk-averse, such as {Schumell (1996) Hinz et al., (1977), Lewllen et al.,(1977), Barskey et al.,

(1996), Jianakoplos and Bernaset(1998), Sunden and Suretle (1998),Fehr-Duda et al.,(2006),Mittal and Dhade(2007), Bhushan and Medury(2013)Fellner and Maciejovsk, (2007), Agnew et al., (2008), and Speelman et al., (2013)}. Charles and Kasilingam(2013) conducted a study for the Indian stock market and concluded that the investors' age had a significant effect on investment decisions.

Moreover, ONeill(2003) had revealed that women's participation in investment is low because their income level is low.

Bajtelsmit and Bernasek(1996), Weber et al. (2002), Graham (2002), and Al-Ajmi(2008), they indicated the importance of education and income level on the investment decision, where they believe as education and income level increase, investment attitude will increase and risk aversion will decrease.

A set of studies indicated the importance of marital status on investment decision, such as Waite and Gallagher (2000) and Lupton and Smith(2003), where they indicated that women tend to invest if they face a problem such as a divorce and becoming a widow. To the best of author's knowledge, this is the first study that investigates the investment attitude of Jordanian women.

Data and Methodology

This section aims to investigate the population and a sample of the study, sources of data and research methodology.

Population and Sample of the Study

The population of the study consists of all Jordanian females, where they reached 4,789,148 at the end of 2017, presenting 49.36 percent of the Jordanian population.

According to Yamane (1967), the sample size should equal 400, in case the population size is more than 10,000, with a confidence level of 95 percent and 5 percent of desired level of precision.

Also, according to Cochran (1963), in which he developed a formula to calculate the exact size of the sample in case of a large population, the study sample should equal 384. Therefore, the sample was selected using a stratified random technique; in which the population was divided into subgroups depending on the population of females in the north, middle and eastern areas of Jordan and then the study chose a random sample from each subgroup.

Sources of Data

The study used primary data collected from distributing close-end questionnaires, where the study distributed 500 questionnaires.

Out of the 500 questionnaires, 470 were collected back, representing a response rate of 94 percent. Nonetheless, only 464 subjects out of the 470 were found to be suitable for data analysis, i.e. the actual response rate was 92.8 percent (265 was from the middle of Jordan, 161 in the north of Jordan and 38 in the south of Jordan). The questionnaires

were distributed and collected with the assistance of the Princess Basma Center for Jordanian Women's Studies at Yarmouk University.

Methodology

To investigate the attitude of Jordanian female toward investment, types of investment vehicles, sources of funds, and their investment goals. The study designed close – end questionnaires. It consists of two parts. Part one asks about the demographic characteristics of the respondent (age, monthly income level, marital status, and education level).

Part two consists of four paragraphs asking about the investment attitude of Jordanian women, in terms of types of investment vehicles, sources of funds, and investment goals. To ensure the validity of the questionnaire, the study designed it based on theoretical models from previous studies. Also, it was reviewed by financial experts in the field of investment, and finally a pilot study was conducted by distributing a random sample of 50 questionnaires to Jordanian women, where they found it simple and easy to be understood and answered.

Results

As it is indicated in Table (1), describes the demographic characteristics of the respondents of the study, where the sample is diversified in terms of respondents' demographic variables such as age, marital status, income level and education level.

Over many years, it ranges from 20 and older than 65, where 41.4% of the respondents are between 20 and 34 years old, 37.1% of them are between 35 and 49, 19.6% are between 50 and 64, and only 1.9% are older than 65.

The sample also contains respondents from various income levels, where income level ranges from less than JD 200 to more than JD 1000. It indicates that 30.6% of the respondents' income levels are less than JD 200, 46.8% of them their income level ranged between JD 200 and less than JD 600, 11.4% of their income level ranged between JD 600 and less than JD 1000, and only 11.2% are above JD 1000.

For marital status, 31.3% of respondents are single, while 56.5% of them are married, 5.8, 6.5 percent of them are divorced and widow, respectively.

In addition, the sample includes respondents with different education level; 26.7% have high school or less, 20.3% hold diploma, 41.4% are bachelor degree holders and 11.6% are higher degree holders. Therefore this diversity implies that the sample contains different occupations, where 51.7% of them are employed, 42% are unemployed and 6.3% are retired.

This diversity implies that the respondents may have different investment attitude with different types of investment vehicles, sources of funds and investment goal. Table 2, reports the frequencies of respondents' answers of Jordanian women for investment attitude questions. Question (1), asked if the respondents are currently an investor, the results show that only 26.50% of Jordanian women are current investors. This implies limited investment participation of women in Jordan and indicates that Jordanian

women are highly affected by culture, social and demographic factors that limit their participation. On the other hand, Hira(2006), indicates that women have limited investment participation because they think that investment is stressful and scary. Thus, Beyer and Bowde (1997) indicated that women tend to participate less because they think that investment is considered as a masculine field.

Question (2), asked about the types of investment vehicles, where the main four investment vehicles most commonly invested in are listed (Gitiman et al. 2015)

The results indicated that 78.86% of women invest in real property, where 50.79% of real property was invested in building and apartments and 26.83% was invested in land. Only 3.25% of women invest in personal tangible property, 9.76% of women invest in financial securities, and 8.13% of women invest in others.

These results indicated that women in Jordan are risk averse and prefer to invest in safer assets rather than risky assets. This finding agrees with the findings of Schumell (1996) which indicated that women are risk averse and choose less risky assets because the women's confidence, regarding taking the correct financial decision is low. Mittal and Vyas (2009), indicated that women are risk averse due to biological and evolutionary, social and cultural and psychological factors.

This result is consistent with the results of [Hinz et al., (1977), Lewwllen et al.,(1977), Barskey et al., (1996), Jianakoplos and Bernaset(1998), Sunden and Suretle (1998), Fehr-Duda et al.,(2006), Mittal and Dhade(2007), Bhushan and Medury(2013)] , where they all indicated that women are conservative and prefer less risky investment vehicles.

Question (3), asked about the sources of funds. The results indicated that 71.54% of women finance their investment by equity sources, where 51.54% of equity was self-made by the women and 20% was inherited.

On the other hand, 28.46% of women finance their investment by debt sources, where 17.70% of debt was from financial institutions and 10.76% was from work incentives. Also, these results indicated that women are risk averse because they depend on equity sources to finance their investment more than debt sources. These results are consistent with the results of Department of Statistics 2015, which indicated that only 19.6% of commercial bank borrowers are females (17.2 percent of total commercial banks loans are granted to females).

Question (4), asked about the investment goals, the results indicated that 34.64% of women invest to enhance their income, 42% of women invest to accumulate for retirement, and 22.88% of women invest to save for a major expenditure.

Question (5), asked women who are not currently an investor if they are planning to invest in the future. The results show that 35.13% of Jordanian women are planning to invest in the future. This result is a good indication that probably the investment participation of Jordanian women is improving. Finally, Question (6), asked the prospective investors about the types of investment they prefer to invest in the future, the results show that 57.55% of women plan to invest in real property, where 37.14% of real property will be invested in building and apartments and 20.41% will be invested in lands. Thus, 20.41% of women plan to invest in personal tangible property, only 4.08% of women plan to invest in financial securities, and 17.96% of women plan to invest in others.

As it is indicated, the Jordanian women are still planning to invest in conservative assets, although the percentage of their investment may differ (for example real property, financial securities, and other percentages decrease, personal tangible property percentage increase) and they tend to invest in personal tangible property, such as Jewelry, antiques, coins, stamps,…).

To better understand the investment attitude of Jordanian women, the study investigates it with regard to demographic variables (age, education level, income level, and marital status). Table (3) reports Chi-square test results, in which it indicated statistically significant differences between region groups at 5% confidence level, each region in Jordan has different facilities of investment, therefore; there will be a difference between regional groups.

The results show statistically significant differences between income and education level groups at 5% confidence level.

These results are consistent with the results of Bajtelsmit and Bernasek(1996), Weber et al.(2002), and Graham (2002).

On the other hand, the results indicated no statistically significant differences between different age and the marital status group at 5% confidence level.

Although Graham et al., (2002), indicates that women tend to invest if they face a problem such as divorce and becoming a widow.

Conclusions and Recommendations

A growing set of studies indicated the importance of behavioral finance on the investment behavior decision of individual and institutional investors. The main objective of this study is to investigate the investment attitude of Jordanian women in the context of types of investment vehicles and goals of investment. The study also asks whether these investment attitudes differ between different Region. Age, Income, Marital Status, Education, and Occupation groups. The study found limited investment participation of women in Jordan (26.50%). On the other hand, 35.13% of Jordanian women are planning to invest in the future. Thus the study found that Jordanian women are conservative and prefer safer investment vehicles, where they depend on equity sources more than debt sources. However, no statistically significant differences are found between different age and marital status groups. On the other hand, the results found statistically significant differences between different region, income and education level groups. These results are based on the answers of 464 women from north, middle, and southern regions of Jordan. These findings have important implications to Jordanian women to encourage them to participate more in investment, because increased participation of Jordanian women will improve the growth of the Jordanian economy. Moreover, these findings also have important implications for investment managers and policy makers, thus researchers and academicians are interested in behavioral finance in context of women investment. The study recommended future research in this area investigating the main investment barriers for Jordanian women.

Table 1. Demographic Variables

Demographic Variables	Frequency	Percentage
Age		
20-34	192	41.4
35-49	172	37.1
50-64	91	19.6
65 or older	9	1.9
Month Income Level		
Less than JD 200.	142	30.6
JD 200-less than JD 600.	217	46.8
JD 600- less than JD 1000	53	11.4
Above JD 1000.	52	11.2
Marital Status		
Single	145	31.3
Married	262	56.5
Divorced	26	5.8
Widow	30	6.5
Education Level		
High school or less	124	26.7
Diploma	94	20.3
Bachelor degree	192	41.4
Higher education	54	11.6
Occupation		
Employed	240	51.7
Unemployed	195	42.0
Retired	29	6.3

Table 2. The frequencies of the respondents' answers of Jordanian women for investment attitude questions.*

Question No.	Question	Frequencies	Percentage (%)
1.	**Are you currently an investor?**		
	Yes	123	26.50
	No	341	73.50

Question No.	Question	Frequencies	Percentage (%)
2.	**Which of the following Types of Investment Vehicles you currently own?**		
	1. Real Property	97	78.86
	a. Building and Apartments.	64	50.79
	b. Land	33	26.83
	2. Personal Tangible Property such as (Jewelry, antiques, coins, stamps,…)	4	3.25
	3.Financial Securities	12	9.76
	4. Others such as (interest-bearing deposits,..)	10	8.13
3.	**Which of the following Source of funds you currently use?**		
	1. Equity.	**93**	**71.54**
	a. Self-Made.	67	51.54
	b. Inherited.	26	20.00
	2. Debt.	**37**	**28.46**
	a. Debt from Financial Institutions.	23	17.70
	b. Work Incentives.	14	10.76
4.	**Which of the following is/are your investment goal?**		
	1. Enhancing Income.	53	34.64
	2.Accumulation for Retirement.	65	42.48
	3.Saving for Major Expenditure, such as religious purposes, entertainment,…	35	22.88
5.	**If you are not currently an investor, do you plan to invest in the future?**		
	Yes	163	35.13
	No	301	64.87

Question No.	Question	Frequencies	Percentage (%)
6.	**Which of the following Types of Investment Vehicles you plan to invest in the future?**		
	1.Real Property		57.55
	c. Building and Apartments.	91	37.14
	d. Land	50	20.41
	2. Personal Tangible Property such as (Jewelry, antiques, coins, stamps,…)	50	20.41
	3.Financial Securities	10	4.08
	4. Others such as (interest-bearing deposits,..)	44	17.96

* You may choose more than one answer in questions 2-4 and 6.

Table 3. The Chi-square test of Investment Attitude and Demographic Variables.

Region	Value	Asymp. Sig. (2-sided)
Pearson Chi-Square	14.463	.001
Likelihood Ratio	14.624	.001
Linear-by- Linear Association.	.846	.358
Age Level	**Value**	**Asymp. Sig. (2-sided)**
Pearson Chi-Square	5.406	.144
Likelihood Ratio	5.413	.144
Linear-by- Linear Association.	4.928	.026
Income Level	**Value**	**Asymp. Sig. (2-sided)**
Pearson Chi-Square	19.383	.000
Likelihood Ratio	19.974	.000
Linear-by- Linear Association.	15.819	.000
Marital Status	**Value**	**Asymp. Sig. (2-sided)**
Pearson Chi-Square	7.202	.066
Likelihood Ratio	7.241	.065
Linear-by- Linear Association.	1.161	.281

Education Level	Value	Asymp. Sig. (2-sided)
Pearson Chi-Square	14.007	.003
Likelihood Ratio	14.163	.003
Linear-by- Linear Association.	13.457	.000
Occupation	**Value**	**Asymp. Sig. (2-sided)**
Pearson Chi-Square	22.998	.000
Likelihood Ratio	23.245	.000
Linear-by- Linear Association.	22.922	.000

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Lebanon Today
The Phoenicia of Yesterday[1]

Fernando Ayala[*]

It has never been easy to understand what is happening in Lebanon. Homeland of the Phoenicians and cradle of civilizations crossed by Egyptians, Greeks, Romans, Byzantines, among many others, including Alexander the Great, until the recent military invasions of Syria and Israel. The country was under the rule of the Turkish Empire for 400 years until the end of the First World War, in 1918. Year in which France declared it its Protectorate until 1943, when it granted independence. The colonial powers, England and France, defined its borders, naturally responding to their interests after the partition of Palestine in 1948, to create the State of Israel. The great Syria, which included what today is Lebanon, Palestine, Jordan and other territories, disappeared and was reduced to its current borders. Only in 2008, Damascus established diplomatic relations with Lebanon in a de facto recognition of its independence.Today, the number of inhabitants is estimated at 6,082,357 million[1] even though the last census was made in 1932[2]. These are divided into 18 religious creeds among Sunni Muslims, Shiites and Alawites; Christian Maronites, Greek Orthodox, Armenian Catholics, Melkites and Protestants along with Druze, Chaldeans, Assyrians, Copts. Which, among many others, make up the country of only 10,452 km[2], which means a density of 582 inhabitants per km[2].

Lebanon has the largest number of refugees per capita in the world, about 33% of the population, where Syrians reach 1.5 million and Palestinians approximately 500 thousand. The figures are contradictory, and many times those of the government do not coincide with those given by the United Nations Agencies for Refugees, UNHCR, or those of the United Nations Agency for Palestine Refugees, UNRWA. It is easy to imagine that this high concentration of refugees generates political costs for the Lebanese government and for those who wish to maintain the Christian character

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of the country. However, Sunnis and Shiites today make up most of the population, with the difference that among the first are the Palestinian and Syrian refugees, people "transitorily" installed in Lebanon and with limitations of their civil rights.

The small detail is that the Palestinian refugees are there since 1948, the year in which the first camps opened to house the thousands who had to flee their country after being left without a homeland or a passport due to the Israeli occupation3. There are currently 12 camps that concentrate around half a million Palestinian refugees, to which a significant percentage of Syrians has been added. Since the opening of the first camps, almost 4 generations of refugees have been born and raised in difficult conditions: they live in crowded Beirut neighborhoods, with precarious schools, hospitals, nursing homes, housing and markets organized autonomously and where the Lebanese police does not enter.

I had the opportunity to visit the camps of Burj El Barajneh and the best known by the international community, Sabra and Chatila, where in 1982 between 2,500 and 3,500 women, men and children were massacred by an armed Lebanese Christian group instrumentalized by Israel. It was proven to be a refined intelligence operation, where Israeli agents created the conditions through terrorist acts in Beirut to justify the subsequent killing[4]. In conversations with policy makers and the hospital director of one of the camps it is easy to perceive the frustration and despair about the future. While they are grateful for Lebanese hospitality, they are second-class citizens who can study at universities if they pay but cannot exercise their professions or access Lebanese citizenship ever. In the camp of Burj El Barajneh, which gathers around 18,000 thousand people, an average of 50 children per month are born. One of the survivors of Sabra and Shatila, as well as the political leader of Burj El Barajneh were born there, in 1952. All their lives waiting to return to Palestine. For its part, the war in Syria has caused around one and a half million refugees to cross the border, installed in precarious camps and often together with the Palestinians. The Syrians at least know that they have a country - destroyed, but that exists, and where they will probably be able to return with the support of the United Nations that will protect them from possible reprisals once the pacification is achieved.

The other side of the coin is the Lebanese population that has had to receive these hundreds of thousands of people with their dramas, in a country where national identity is perceived by religion, which divides cities and neighborhoods in Christian, Sunni or Shiite areas. Granting Lebanese nationality to refugees would substantially change the composition of the country and its tradition. Also, some Arab States and many of the Palestinians themselves do not wish to be given citizenship because it would deprive them of the right to return to Palestine, which is what Israel expects to happen. Naturally, all this generates confusion and the search for equilibria that are very fragile. A diplomat, with several years working in Lebanon, told me that: "Rather than a cohabitation between religious creeds, there is a mere coexistence". The country has already known two civil wars (1958 and 1975-1990), of which the latter left an undetermined number of deaths, estimated between 100 and 200 thousand. Lebanon is a creation of two colonial powers that have responsibility for what happens there.

Or, in the words of a prominent Israeli historian: "The Syrian, Lebanese, Jordanian and Iraqi nations are the product of fortuitous borders drawn in the sand by French and English diplomats ignorant of local history, geography and economics. He adds, it was especially the French who decided who would be Syrian and who would be Lebanese"[5]. The myth of Beirut being the "Switzerland or the Paris of the Middle East" due to the degree of economic, religious and cultural freedom it enjoyed for a short period, was fueled for a while. However, the reality was stark: two civil wars, and the manipulation and intervention of the intelligence services of the great powers and neighbors of Lebanon. The hard facts are that of a country with several countries inside plus second-class citizens, such as refugees, segregated and marginalized. Israel not only occupies a portion of its territory in southern Lebanon in what it considers a security belt, but regularly violates Lebanese air and sea spaces.

This helped legitimize the creation and presence of Hezbollah[6] - the armed resistance opposed to Israeli bombing and invasion which won the sympathy of most of the Lebanese. An Israeli ambassador told me that: "There is no possibility of establishing any kind of relationship with Israel and less while it is keeping a part of Lebanese territory occupied".

A sense of frustration is perceived among the Lebanese regardless of their religion, because of the political and economic situation. According to the survey and report of the German foundation Konrad Adenauer, published in February 2019, 77% of Lebanese are pessimistic about the future while 95% believe they are on the wrong path and 40% link their pessimism with corruption. The economy has grown only between 1 and 3% in the last decade, public debt reaches 152.9% of GDP and Moody's agency lowered its credit index from B3 to Caa1[7]. Many investors know about the rich potentialities of the country and its people but are aware of the impossibility of materializing important infrastructure projects due to the latent threats to the country's security and the instability of the region. What was Phoenicia, the culture that gave rise to the first articulated alphabet of 22 words, from which trade expanded, colonies were founded all over the Mediterranean and which houses marvelous cultural and archaeological treasures, home of the great poet Khalil Gibran, is today a laboratory where the interests of the great powers are mixed with the Lebanese national interest, which in turn is marked by the religious visions of the main groups that make up the country. A few seem to care about the future of the Lebanese. As one prominent businessman and connoisseur of the history of his country told me: "They do not let my country die, but they do not let it live either".

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[1] Líbano registra un incremento de su población.
[2] There were then 875,252 inhabitants, where Christians constituted 51% and Muslims 49%. This determined the distribution of the highest political positions in the State at the time of independence. So, the president is Christian, the Prime Minister Sunni Muslim and the president of the Parliament is Shiite Muslim. All demographic projections indicate that Muslims today reach about 64% against 36% of Christians, and this is the reason why a new census has not been

carried out since it would significantly alter the distribution of power.

[3] The United Nations notes in a 2016 report that there are 504,000 Palestinian refugees in Lebanon. It states: "The Palestinians are deprived of certain basic rights. Lebanon excluded Palestinian refugees from 73 job categories, including professions such as medicine, law and engineering. They are not allowed to own property, and they even need special permission to leave their refugee camps. Unlike other foreigners in Lebanon, they are denied access to the Lebanese health care system. The government refused to grant them work permits or permits to own land. The number of restrictions has been increasing since 1990".

[4] Both the United Nations and Israel proved the responsibility of the intelligence services of the latter country through the so-called Kahan commission, which meant the dismissal of the defense minister Ariel Sharon, who later, in 2001, would become Prime Minister.

[5] Yuval Noah Harari, De animales a dioses, Santiago: Penguin Random House, 2014, page: 399.

[6] Party of God created in Lebanon in 1982 in response to the Israeli invasion. Participated in the elections for the first time in 1992, winning 12 seats. In the last elections of 2018 it increased to 13, that is, it obtained 15.8%, being the country's greatest political force.

[7] Survey conducted by Statistics Lebanon Ltd. for Konrad Adenauer Foundation (KAS).

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Journal Transition Studies Review
Aims and scope

Transition Studies Research Network was founded in 2002 as CEEUN-Central Eastern European University Cooperation, with the aim to connect a group of experts and university faculty in a program of cooperation devoted to research programs and specialized international postgraduate and doctoral courses. The Network has grown fast and soon after the scientific "voice" was established with the Journal Transition Studies Review, published initially by the CEEUN, then by Egea - Bocconi University Press, and finally by Springer Wien-New York.

At the beginning, JTSR was focusing on transition in Central and Southeast Europe, interpreting CEEUN purely as a European network. Soon afterwards, the EU enlargement was achieved extending the aims and scope to differentiated forms of partnership with Russia, Ukraine, Caucasus, the Black Sea and Caspian Seas, Mediterranean regions and Near East. Today this approach has dramatically changed following a serious violation of the international laws and agreements by the Russian backed insurgency and later invasion of Crimea and Eastern Ukraine. Today we are facing the most severe crisis of security and confidence between European Union countries and Russia since the Second World War and the reunification of Germany. The future is unpredictable and certainly nothing will return to be as before in the relations with Russia.

CEEUN was launched in Vienna and its first meeting took place at the Institution that was founded by Friedrich August von Hayek and Ludwig von Mises, two great thinkers and economists: the Austrian Institute for Economic Research. Now the scenario is completely different. From 2005 on, a worldwide regional approach looking to Asia, Latin America, Eurasia and Great Middle East has been implemented. TSN-Transition

Studies Research Network has inherited from the previous CEEUN the "aims and scope" which were recently integrated. In the last ten years Transition Studies Research Network has progressively involved more than 400 internationally well known members and 95 university departments, institutes and research centers and is engaged in many areas and programs.

The scientific interests and fields covered are: Europe and the World, future approach to EU enlargement, global governance economic, financial and policy framework and impact, where the focus would be mainly on growth theories, innovation and human capital, cultural and intellectual heritage, main advanced industrial sectors technologies, investments, international affairs, foreign policy choices and security, monetary policy and main currency areas, banking and insurance, development and area studies, social policies, environment and climate, culture and society, juridical and law studies, regional approach to global governance, peculiarities and critical challenges.

The future transition to an open economy and institutional reforms, political and strategic issues and challenges, governance, European, Mediterranean, Asia-Pacific, Middle Eastern, Latin America and Africa perspectives are key topics of this high ranking journal.

Transatlantic and Asia-Pacific relations, security and international order represent, together with applied regional studies, another cornerstone of the Network's activity and of Transition Studies Review's contents as well as of three other Journals covering specific aspects and regions: the Journal of Global Policy and Governance; the Journal of East Asia in World Affairs, in cooperation with Asian universities and the Journal of Welfare Policy and Management at Udine University. The Network is deeply committed to a wide range of transition issues related to quantitative modeling and tools to analyzing and researching economic, financial, strategic studies, social, cultural, environmental, juridical main issues.

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