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Spatial Aspects of Unemployment in the Visegrad-Group Economies

Tomáš Formánek, Roman Hušek

Abstract

Purpose of the article: Most regional macroeconomic processes may not be adequately analyzed without accounting for their spatial nature: regional distances, interactions between neighbors, spill-over effects and interdependencies. This contribution focuses on various factors ruling unemployment dynamics in the Visegrad Group countries and their major economic partners: Germany and Austria. The analysis is performed at the NUTS2 level. Methodology/methods: Spatial econometrics is a unique tool for a broad range of quantitative analyses and evaluations. Spatial econometric models are based on geo-coded (spatially defined) data. Spatial econometrics and regional competitiveness paradigms are combined into different types of regression model specifications describing unemployment dynamics. Alternative spatial structures (i.e. neighbor definitions) are used for verification of stability in estimated model properties. Scientific aim: We aim to provide a detailed empirical evaluation of spatially determined factors of regional unemployment dynamics, along with insight into the robustness of such approach. Both conceptually and parametrically varying neighbor definitions are used to provide evidence for model evaluation. Findings: We find strong positive spatial dependence patterns in the estimated models, robust against varying neighborhood definitions. Our results strongly support the importance of regional and potentially cross-border (international) cooperation in macroeconomic policies addressing unemployment. The estimated models also underline the importance of using spatial models, by pointing out the bias in OLS-estimated models. Conclusions and limits: Spatial approach to econometric analysis provides important insight and robustness to a broad range of unemployment analyses that may be carried out using regional (spatial) data. At the same time, it should be noted that this article focuses mostly on the spatial and stability aspects of model estimation, while leaving out other interesting topics such as spill-over effects calculations as based on estimated models. Also, estimations provided in this

article might benefit from spatial panel data-based methods – once data availability issues are sorted.

Keywords: *Spatial econometrics, Unemployment, Regional competitiveness, Visegrad Group*

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Introduction

Spatial econometric models explicitly address the presence of spatial effects (such as economic spill-overs) when analyzing the relationships between variables using regression models and other quantitative estimation methods. Spatial models play an ever more important role in regional macroeconomic and social analyses, real estate studies, agricultural & ecological applications, epidemiology and in many other non-economic fields of research. For this type of unemployment analysis, data usually need to be geo-coded by means of the latitude/longitude geographic coordinates system[1], as distances and common borders are used to estimate spatial dependencies.

It may be argued that much of the spatial effects (spatial dependencies) are attributable to omitted variable factors. However, spatial autocorrelation may be conveniently interpreted as a proxy for many real and theoretically sound, yet practically unobservable spatial effects – many spatial interactions and their dynamic features are very difficult to explicitly define and properly structure in a way that would facilitate informative and harmonized quantification. Tasks such as consistently measuring cross-border work commuting preferences, accounting for administrative/qualification employment barriers between countries, quantifying the impact of language differences, aerial distances vs. topology, etc. would inherently introduce many subjective decisions and – in practical terms – many disputable features to quantitative models. Hence, spatial models may provide a useful, interpretable and functional approach towards regional (macroeconomic) data analysis.

The remainder of this paper is structured as follows: Section one covers key topics of the spatial approach to econometrics, section two provides some additional literature review and section three focuses on regional competitiveness and unemployment dynamics. Section four discusses the empirics of spatial models being applied at the regional level NUTS2 (as defined by the Nomenclature of Territorial Units for Statistics); estimated models are interpreted and discussed in section 5. The last section and the list of references conclude our contribution.

[1] Geo-Data source used in this article: GISCO – Eurostat (European Commission); Administrative boundaries:
© EuroGeographics.

1 Spatial autocorrelation and spatial econometric models

Before estimating spatial models, we should apply preliminary tests for spatial autocorrelation in the observed cross-sectional data. Many types of spatial autocorrelation test statistics are available (see Anselin, Rey 2010), yet Moran's I seems to be the most widely used:

$$I(x)_t = \left(\frac{n}{S}\right) x_t^T W x_t \left(x_t^T x_t\right)^{-1}, \quad (1)$$

where x_t is the vector of n spatial observations (units) of the variable x under scrutiny at time t. $S = \sum_{i=1}^{n}\sum_{j=1}^{n} w_{ij}$ is the standardization factor corresponding to the sum of all elements of the spatial weights matrix W. The expected value of Moran's I under the null hypothesis of no spatial autocorrelation is: -1/(n-1). As in (Ullah, Giles 1998), $var(I(x)_t)$ is used to calculate a z-score and test for statistical significance: whether neighbor units are more similar to one another than they would be under the H_0 of spatial randomness. The sign of Moran's I discriminates between positive and negative spatial autocorrelation.

Spatial weights matrix (W) is the corner stone of spatial econometrics and, perhaps surprisingly, its construction is the most ambiguous part of the otherwise well rooted methodology of spatial model specification and estimation. W is usually calculated in a two-step approach: First, a square spatial matrix is used to define neighbors (spatially close observations) using a dummy variable technique, where each element of the symmetric spatial matrix equals 1 if the two spatial units are neighbors and 0 otherwise. Then, W is constructed by row-standardizing the spatial matrix, so that the row weights sum up to 1, while diagonal elements of W are set to zero by definition (units are not neighbors to themselves).

The first step (W construction) often requires extensive geographical (polygon-based) mapping datasets and specialized software. Contiguity approach is a theoretically simple yet computationally complex rule, defining two units as neighbors if they share a common border. A generalization of this approach is based on the premise that a second order neighbor (considered as a neighbor) is the neighbor of a first order (actual) neighbor – where the maximum accepted order of neighborhood (neighborhood lag) may be set arbitrarily. Distance-based approach usually constructs the spatial matrix by defining two units as neighbors if their distance does not exceed some ad-hoc predefined threshold. This is a relatively popular approach, yet it generates "islands" (units with zero neighbors), unless the defined threshold for distance between neighbors is greater than the maximum first nearest neighbor distance. The maximum distance-based approach is less convenient for analysis of regions with uneven geographical densities – sizes of units and distances between them. Distances are measured using **centroids**, conveniently chosen representative positions for each unit. Depending on model focus, data availability and researcher's individual preferences, centroids may be pure geographical center points, locations of main cities, population-base weighted positions, transportation network based, etc. Alternatively, we may apply a *k*-nearest neighbors (*KNN*) approach, where we denote a preset number of *k* nearest units as neighbors. This method conveniently solves for differences in areal

densities (k neighbors are ensured for each unit), yet it usually leads to asymmetric spatial matrices with potentially flawed neighborhood interpretation (simple transformation algorithms for asymmetric spatial matrices are available).

The second step ($\boldsymbol{W}$ construction) usually consists of row-standardizing the binary 0/1 neighborhood indicators of the spatial matrix into matrix $\boldsymbol{W}$ so that all rows sum to unity. However, with increasing variance in units' neighbor-count (e.g. for distance-based neighbors with uneven geographical density), this widely adopted approach suffers from allocating excessive influence to links from units with few neighbors. To overcome this drawback, sometimes the non-zero elements in $\boldsymbol{W}$ matrix are "generalized" before the row-standardization. For example, distances to neighbors are used to reflect some prior information concerning the spatial dependency processes: often we assume that spatial influence is inversely proportional to distance (linear, quadratic or other functional forms of influence decay may be used). The efficiency of any such $\boldsymbol{W}$ generalization crucially depends on the accuracy/validity of the prior information used.

The variety of available neighbor definition approaches, the choice of centroids and possible $\boldsymbol{W}$ standardization methods imply that researchers usually need to consider several different choices (spatial structure settings) in order to verify model stability and robustness. As far as spatial matrices are concerned, there usually isn't a single right solution and researches often look for the most useful or interpretable model setup.

Once significant spatial dependence in observed data is verified, spatial regression may be used to account for such situation. Again, various model specifications and estimation methods are available. **Spatial lag model** is used when focusing on the analysis of spatial interactions in the dependent variable (here, the dependent variable is the one with spatial structure). A general formula for the spatial lag model and its reduced form may be written as

$$\boldsymbol{y_t} = \rho \boldsymbol{W y_t} + \boldsymbol{X_t \beta} + \boldsymbol{u_t}, \qquad (2)$$
$$(\boldsymbol{I} - \rho \boldsymbol{W}) \boldsymbol{y_t} = \boldsymbol{X_t \beta} + \boldsymbol{u_t}, \qquad (3)$$

where $\boldsymbol{y}_t$ is the vector of all y_{it} spatial unit observations at time t, $\boldsymbol{I}$ is the $n \times n$ identity matrix, $\boldsymbol{X}_t$ is a matrix of regressors (includes the intercept element, may include lagged variables). Maximum likelihood (ML) approach is used to estimate both the spatial dependence parameter ρ and the regression coefficients $\boldsymbol{\beta}$ which are used to explain the variability in individual y_{it} observations that is not explained spatially. $\boldsymbol{u}_t$ and its elements u_{it} describe the random part of the regression model. The spatially defined portion of each dependent variable y_{it} in (2) and (3) may be expressed in terms of weighted averages of its neighbors' values: $\boldsymbol{W y}_t$ is the spatial lag of $\boldsymbol{y}_t$ and we may write $SpatialLag(\mathbf{y_{it}}) = \mathbf{w_i^T y_t}$, where $\mathbf{w_i^T}$ is a row vector: the i-th row of $\boldsymbol{W}$ matrix is used for calculation ($\boldsymbol{W}$ has zeros on the diagonal and is row-standardized). Additional detailed discussion is provided in (Anselin, Rey 2010).

Even if the research is not focused on the spatial dependence and its analysis, we may still take advantage of the **spatial error model** to account for

(correct for) the spatial nature of the observed data. In this case, we deal with spatial autocorrelation by introducing spatially correlated errors $\boldsymbol{u_t = \lambda W u_t + \varepsilon_t}$ that are justified by the presumed existence of unobservable features associated with location or with spatially defined omitted variables. By analogy to equations (2) and (3), the spatial error model and its reduced form may be expressed as

$$\boldsymbol{y_t = X_t\beta + \lambda W u_t + \varepsilon_t}, \qquad (4)$$
$$\boldsymbol{(I - \lambda W)y_t = (I - \lambda W)X_t\beta + \varepsilon_t}, \qquad (5)$$

where λ is the spatial dependence parameter and individual β_j coefficients are used to explain the variability in y_{it} observations that is not explained by the spatial nature of the observed data. While $\boldsymbol{u}_t$ suffers from spatial autocorrelation, $\boldsymbol{\varepsilon_t}$ is a vector of truly random elements. Estimated models (3) and (5) may be compared upon their maximized log-likelihoods. Specification test for equation (5) is available and based on the spatial common factor hypothesis that exploits the fact that model (5) may be expressed in spatial lag form (3) if spatially lagged regressors are explicitly included in $\boldsymbol{X}_t$ and if specific common factor constraints on β-coefficients hold. Spatial lag of the k-th regressor is defined as: $\boldsymbol{SpatialLag(x_{kit}) = w_i^T x_{kt}}$. Additional information on spatial models such as (2) to (5) and further model selection and validation topics are discussed in (Anselin, Rey 2010) who also provide complementary literature references.

As the $n \times n$ dimension of the $\boldsymbol{W}$ matrix is determined by the number of spatial units, computational limits for the methods described here exist. However, econometric models comprised of, say, 500 and more units may be easily handled using ordinary PC configurations and the freely available R software (http://www.r-project.org), especially if spatial matrices are sparse (each unit has a relatively limited amount of neighbors).

2 Spatial econometrics – brief literature review

Moran (1950) and Geary (1954) are often cited as the founding fathers of spatial econometrics, yet the actual framework for contemporary applied spatial analysis was provided through introducing a flexible spatial weights specification, as in Cliff and Ord (1969, 1981 and subsequent publications). Fujita *et al*. (1999) provide a comprehensive theoretical background of the so called Economic Geography, which emphasizes the importance of spatial spillovers between economies and focuses on economic convergence models. Practical aspects of $\boldsymbol{W}$ matrix construction, along with model specification and estimation topics within the R software environment are covered by Bivand (2015).

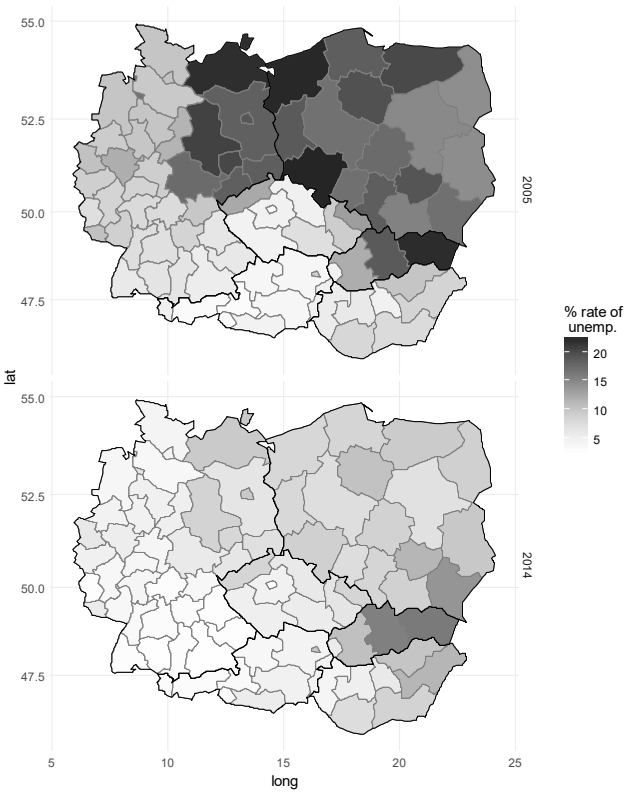
Also, spatial regression models have been extended to encompass the time dynamics aspects of the geo-coded variables and their interdependencies. Elhorst (2014) provides an advanced yet concise textbook on modern spatial panel data methods, while Baltagi *et al*. (2012) and Fingleton (2014) published papers with applied analyses and forecasts based on spatial panel data models; they also provide many additional references to relevant literature.

3 Regional competitiveness and unemployment

At the microeconomic (firm) level, the notion of competitiveness is fairly clear and based on the individual firm's capacity to compete, grow and make profit through products or services that meet market requirements in terms of price and quality (other relevant market factors may play a role). However, at the macro level, the concept of country-based or regional competitiveness and its definitions is less clear, even though competitiveness is frequently presented as the main goal of economic policy actions. Using the political paradigm, competitiveness is usually perceived as some combination of productivity, employment (unemployment) rate, living standards, foreign direct investment (FDI) attractiveness, etc. However, individual and collective political preferences, country-specific short term fluctuations in key macroeconomic indicators, general public attitudes and other rather amorphous influences may play a potentially significant role in definition of competitiveness, leading to ambiguous interpretations and possible misunderstandings.

Some authors (e.g. Krugman, 1994) consider the concept of national and regional competitiveness to be mostly meaningless and potentially dangerous, arguing that the analogy between nations (regions) and firms is inherently flawed: unsuccessful firms are ultimately supposed to go out of business whereas no equivalent situation for a nation or region should occur as far as developed countries are concerned. Martin (2004) provides detailed and structured discussion of macroeconomic competitiveness aspects.

This contribution focuses on spatially defined macroeconomic variables that are consistent with the mainstream "consensus view" (see Martin, 2004) of regional competitiveness theory, where successful regional macroeconomic performance may be assessed in terms of living standard dynamics (i.e. GDP per capita in absolute or relative terms) and in terms of unemployment and its dynamics. Both GDP per capita and unemployment are often cited as constituent parts of quantitative models of regional competitiveness, perhaps along with some convenient technological advantage indicator (e.g. high-tech sector labor force proportion). For in-depth discussion, please refer to Gauselmann, Marek, Angenendt (2011).



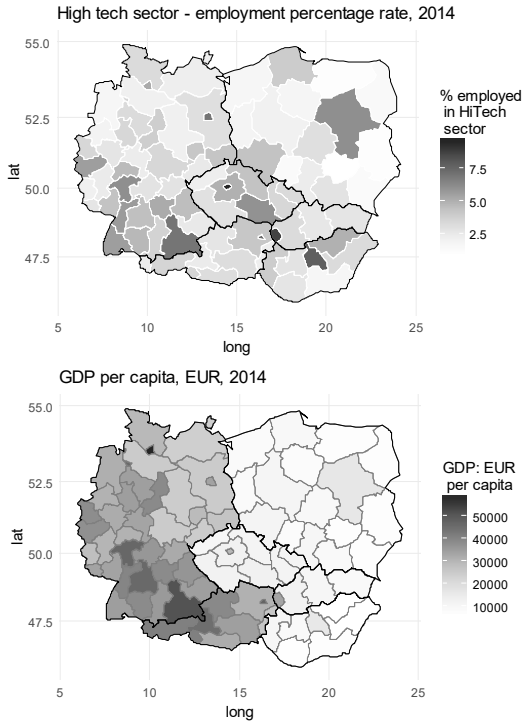
Source: Eurostat (lfst_r_lfu3rt), self prepared using R software

Graph 1 ***NUTS2-level unemployment rates, comparison of years 2005 & 2014***

Graph 1 shows two choropleths (i.e. info-map graphs) providing spatially defined and time-specific comparisons of unemployment in Visegrad Group countries, Austria and Germany. From Graph 1, we may observe prominent spatial autocorrelation patterns – observations are spatially clustered for both years displayed. Individual choropleths may be briefly discussed as follows: In 2005, the unemployment data show a clear difference in labor-market situation between former 'Western EU' (Austria and 'West Germany' i.e. Federal Republic of Germany) and 'Eastern EU' (all remaining) regions. From the 2014 unemployment choropleth, we may see that much of the clear distinction between unemployment rates in the "old" and "new" EU regions is dissipated between 2005 and 2014 (partly due to an overall decline in unemployment), yet the differences remain somewhat visible. The 2005 unemployment data is provided for readers'convenience and reference only, the empirical part of this article is based on recently observed data.

Graph 2 consists of two choropleths for two additional competitiveness-related variables: the percentage rate of employment in high tech sector and GDP per capita. The percentage rate of employment in high tech sector shows a strong

positive correlation with the GPD indicator, as well as a strong negative correlation with unemployment (see Graph 1). The GDP per capita variable suggests a lack of wealth-convergence between Germany and Austria on one side and former 'Eastern' countries on the other side. The only distinctive exception is the SK01 NUTS2 region (Bratislava).



Source: Eurostat (htec_emp_reg2, nama_10r_2gdp), self prepared using R software

Graph 2 ***NUTS2-level High tech sector employment ratio; GDP per capita, year 2014***

Country-wise situation considered, Austria exhibits a strong stability in observations, as its color-coded data hardly change in any of the choropleths. The Slovak Republic shows a very prominent core-periphery pattern, as all favorable values (low unemployment, high GPD per capita indicator, strong high-tech sector) deteriorate with distance from SK01 (Bratislava) eastwards, i.e. towards the border with Ukraine (EU border). The Czech Republic manifests analogous core-periphery behavior with unemployment indicators worsening with distance from CZ01 (Prague). However, there is one important exemption from this pattern: the well-performing CZ03 (Southwest region) apparently benefits from bordering with high-performing Bavarian and Austrian regions. Interestingly, no such positive effect may be observed for CZ04 (Northwest region), which shares most of its borders with former East German regions. Similar, yet less prominent core-periphery behavior may also be observed in data from Poland and Hungary.

Germany seems to have at least two highly competitive centers (Bavaria and Hesse NUTS1 regions) that are both located in the former 'West Germany', while East-West differences are becoming less distinctive over time.

4 Empirical analysis and interpretation of results

Using the quantitative and economic paradigms outlined in previous sections, selected regional competitiveness indicators may be assembled into a relatively simple, yet useful, informative and theoretically well-defined spatial model explaining unemployment dynamics in terms of per capita productivity and using a convenient technological advantage indicator (high-tech sector labor force proportion).

4.1 Data

Even though Eurostat (http://ec.europa.eu/eurostat) has made a great progress in harmonization and availability of spatial macroeconomic and socio-economic data at 'lower' levels of NUTS aggregation (NUTS2, NUTS3) over the last years, data availability issues are present in most data series relevant for this study. Unfortunately, this impedes the use of panel data methods and somewhat limits the selection of other suitable estimation approaches. At the NUTS2 level, there is a great likelihood of missing observations across regions during each year included in the dataset (annual data are used, as relevant quarterly observations are completely unavailable for most variables). The set of 82 geo-coded cross sectional observations at the NUTS2 level (2010 NUTS specification) is comprised of 8 regions in the Czech Republic, 4 in the Slovak Republic, 9 in Austria, 38 in Germany (of those, 8 are former East-German regions; 9 including the unified Berlin), 16 in Poland and 7 in Hungary. R-software was used to extract GDP per capita, unemployment and high-tech employment data from Eurostat. Specifically, the following databases are used (identification by table code): "nama_10r_2gdp", "lfst_r_lfu3rt" and "htec_emp_reg2". Although observations in some spatial data series may cover the period from 1999 to 2016, actual data availability issues and temporal relevance considerations lead to focusing the research on the year 2014 as suitable and complete datasets for 2015 are not yet completely available at the NUTS2 level. Finally, it should be noted that we had to impute missing 2014 HighTech employment rate data for the PL62 region (Warminsko-Mazurskie): we use a value of 1.2% - the same value was observed in this region in both 2012 and 2013.

4.2 Model specification

The application part is based on regressing regional unemployment on GDP (logs of GDP per capita) and a convenient technological advantage measure (relative employment in high-tech industries). Using the general specification of spatial lag and spatial error models (2) and (4), equations (6) and (7) represent the chosen models used for estimation and subsequent analysis of regional unemployment dynamics:

$$Unem_{it} = \rho \, \boldsymbol{w}_i^{T} \boldsymbol{Unem}_t + \beta_0 + \beta_1 log(GDP_{it}) + \beta_2 TechEmp_{it} + \beta_3 HiUnCl_{it} + u_{it} \quad (6)$$

$$Unemp_{it} = \beta_0 + \beta_1 log(GDP_{it}) + \beta_2 TechEmp_{it} + \beta_3 HiUnCl_{it} + \lambda \boldsymbol{w}_i^T \boldsymbol{u}_t + \varepsilon_{it} \quad (7)$$

where $Unem_{it}$ is the general rate of unemployment for a given NUTS2 region i at time t (2014), $\boldsymbol{Unem}_t$ is a vector of all *Unem* observations for the year 2014. GDP_{it} is region's GDP per capita (current prices). The expression $log(GDP_{it})$ may be interpreted in terms of relative (percentage) changes. The dynamic interpretation is consistent with neo-classical macroeconomics, as described by Williams (2005) and others. The competitiveness-related variable $TechEmp_{it}$ describes the percentage of employees working in the "high-tech industry" (NACE r.2 code HTC) in each region. $HiUnCl_{it}$ is a dummy variable based on Ord's G^* (local G as in Ord, Getis 1995) that discerns local clusters (hotspots) of high values of the variable being analyzed – as we searched for high unemployment clusters, we found a single cluster, containing the following NUTS2 regions: HU10, HU31, PL21, PL22, PL32, PL33, SK03 and SK04 (generally speaking this cluster consist of units close to or bordering with Ukraine).

4.3 Model estimation

At the 5% significance level and across varying neighbor structure definitions, Moran's I as per equation (1) test results provide a strong evidence against the null hypothesis of spatial randomness in all observed variables as described in the previous paragraph. Due to space limitations, individual Moran's I results are omitted here. All relevant statistics, figures, estimated models and tests mentioned here are available from the authors upon request. As Moran's I results suggest strong and positive spatial autocorrelation for all observed data series, OLS method is not an appropriate estimator. However, it may provide a base-reference for comparison against more sophisticated models.

Table 1 shows the core estimation output, where column (a) is obtained by OLS with no spatially defined information included (model without unemployment clustering) and column (b) is obtained using OLS (unemployment hotspots included). Columns (c) to (g) provide a representative set of estimation results for various spatial dependence specifications. Overall, Table 1 demonstrates both the superiority of spatial models against OLS as well as a reasonable robustness of spatial models against changes in neighborhood definition and spatial lag / spatial error model specification.

Results in columns (a) and (b) were verified against heteroscedasticity and multicollinearity. Specialized Lagrange multiplier test statistics for spatial autocorrelation were used to decide whether spatial lag (6) or spatial error model (7) should be used for estimation (see Anselin, Rey 2010). At the 5% significance level, spatial lag model is supported by the observed data across all selected $\boldsymbol{W}$ specifications. For a limited range of $\boldsymbol{W}$ specifications, spatial error model is also supported, yet leads to generally inferior estimation results. For comparison, models (6) and (7) with matching $\boldsymbol{W}$ matrices are included in table 1: see columns (e) and (f).

After spatial dynamics is explicitly addressed by the model, random elements exhibit no spatial autocorrelation at the 5% significance level. Except for

columns (a) and (b), all standard errors shown in Table 1 are only asymptotically valid, yet the sample size n = 82 provides a reasonable evidence for testing individual null hypotheses.

Table 1 ***Outputs from alternative model estimation methods***

Coefficient (var. name) Coefficient est. (standard error) [p-val., z-val.] * sig. at 0.05 ˙sig. at 0.10	(a) OLS model (no spatial inf. used)	(b) OLS model (unemployment clustering used)	(c) Spatial lag model (binary, 240km max. dist.)	(d) Spatial lag model (weigted, 240km max. dist.)	(e) Spatial lag model (KNN method, k=4)	(f) Spatial error model (KNN method, k=4)	(g) Spatial lag model (KNN method, k=13)
Intercept	**38.655*** (3.867) [0.000]	**32.074*** (3.926) [0.000]	**9.070*** (4.427) [0.041]	**25.339*** (4.415) [0.000]	**12.850*** (4.219) [0.002]	**18.431*** (6.241) [0.003]	**6.992** (4.361) [0.109]
log(GDP)	**-3.231*** (0.408) [0.000]	**-2.580*** (0.409) [0.000]	**-0.665** (0.415) [0.109]	**-2.090*** (0.402) [0.000]	**-0.990*** (0.398) [0.013]	**-1.164'** (0.652) [0.074]	**-0.501** (0.411) [0.223]
TechEmp	**-0.012** (0.152) [0.935]	**-0.071** (0.140) [0.611]	**-0.194'** (0.117) [0.098]	**-0.056** (0.131) [0.666]	**-0.165** (0.113) [0.143]	**-0.144** (0.133) [0.277]	**-0.186** (0.116) [0.108]
HiUnCl	---	**3.221*** (0.817) [0.000]	**1.922*** (0.702) [0.006]	**2.159*** (0.839) [0.010]	**1.416*** (0.692) [0.041]	**1.267*** (0.949) [0.182]	**2.144*** (0.680) [0.002]
P	---	---	**0.705*** (0.107) [0.000]	**0.309*** (0.108) [0.004]	**0.606*** (0.096) [0.000]	---	**0.759*** (0.100) [0.000]
λ	---	---	---	---	---	**0.707*** (0.086) [0.000]	---
Log likelihood	-178.69	-171.24	-160.63	-168.07	-159.03	-164.24	-159.16
AIC	365.38	352.47	333.26	348.13	330.05	340.47	330.33
BIC	375.01	364.51	347.70	362.57	344.49	354.91	344.77
Wald test [p-value]	37.91* [0.000]	35.12* [0.000]	18.18* [0.000]	47.03* [0.000]	18.62* [0.000]	11.32* [0.010]	19.16 [0.000]
R^2 = 1 - SSR/SST	0.490	0.575	0.692	0.611	0.714	0.690	0.702

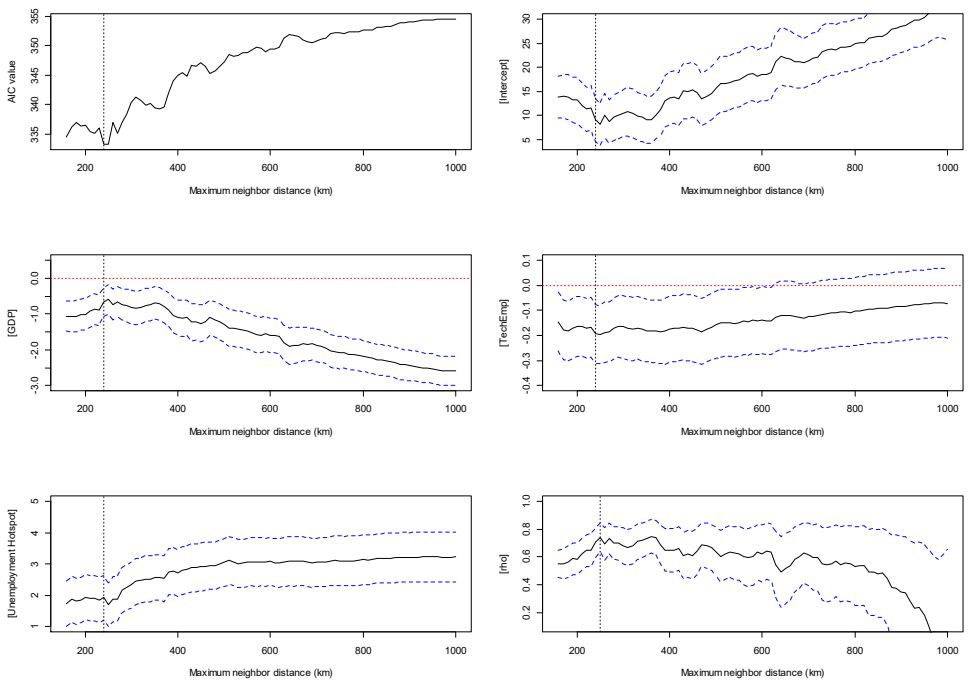
Source: self prepared using R software

Basically, any spatially-augmented estimation of the model is superior to the OLS-based model estimates as measured by the maximized log-likelihood (LL) statistics, Akaike and Bayes information criteria (AIC, BIC), etc. The *KNN*-based spatial lag model with k = 4 as shown in column (e) leads to the best results as far as all model-evaluation criteria are concerned. However, the performance of the model as depicted in column (c) is almost equally good. Given the results of the Anselin-Rey test statistics (Anselin, Rey 2010), the *KNN* method for k = 4 also provides an interesting opportunity to compare coefficients from spatial lag and spatial error models (e) and (f): both specifications confirm strong spatial dependence and lead to reasonably similar $\boldsymbol{\beta}$ coefficients. Maximum neighbor distance threshold methods (c) and (d) provide other effective ways to define $\boldsymbol{W}$ and estimate a spatial lag model. For column (d), we assume that spatial dependence decays quadratically (along the square of distance).

4.4 Estimation robustness – stability of results

Given the multiple possible approaches to spatial matrix and $\boldsymbol{W}$ matrix construction and the resulting ambiguity potential, specification robustness was tested against changes in neighborhood definition for the spatial lag model (6):

Multiple estimations of model (6) were performed with the dataset available, while varying the spatial weights matrix $\boldsymbol{W}$. A representative robustness analysis output is shown in Graph 3 and it may be briefly summarized as follows: Starting from a very sparse $\boldsymbol{W}$ matrix constructed using maximum neighbor distance threshold set to 160 km (lower distances generate "islands" that are incompatible with ML estimation of spatial models), neighbor thresholds are increased and new $\boldsymbol{W}$ matrices generated by iterations of 10 km, up to a maximum neighbor distance of 1.000 km. Hence, a total of 85 alternative spatial structure-specifications of model (6) are produced, estimated and summarized in figure 2. Results obtained using distance thresholds beyond 1.000 km provide no significant improvement over OLS: $var(w_i^T \boldsymbol{Unem}_t)$ falls quickly with the number of neighbors approaching its maximum value of 81. Graph 3 shows the AICs, $\boldsymbol{\beta}$ and ρ coefficients with their asymptotic (+/-) one standard error bands.



Source: self prepared using R software

Graph 3 *NUTS2-level unemployment rates, comparison of years 2005 & 2014*

Relative model (estimate) instability at the lower end of the distance threshold interval should not be viewed as puzzling: 160 km is the minimum distance that avoids islands, but such spatial structure is not realistic (providing very few neighbors for the spill-over effects to take place on any observed region). High distance thresholds are not economically realistic either, as they are not

consistent with prevalent regional interactions for unemployment. For readers' convenience, Table 1, column (c) results are highlighted by a dotted vertical line in Graph 3: it corresponds to the maximum distance threshold of 240 km – where the best (lowest) AIC values are obtained.

As we evaluated the fitted values of spatial models shown in columns (c) to (g) of Table 1, we may conclude that the specifications used provide a reasonable basis for the usage of the spatial model for prediction purposes for all regions considered. Specifically, the results do not show any significant bias towards, say, accurately predicting unemployment in German regions (38 of the total 82 spatial units) at the expense of other countries (i.e. NUTS0 regions). A significant proportion of this behavior may be attributed to the heterogeneity of German regions, where 8 NUTS2 units belong to the former "East Germany" (9 regions including the unified Berlin). Overall, the dataset contains a favorable heterogeneous mix of NUTS2 regions observed at diverse "performance" levels, leading to satisfactory predictive properties of the model.

5 Discussion and interpretation of the results

Once spatial dependence in the data is properly addressed, the regression model may serve as a tool for discerning the influence of geographically defined conditions from factors that may be – at least potentially – influenced by macroeconomic policies such as regionally focused fiscal stimuli, establishing or subsidizing technological parks, applied research funding, tax incentives, etc.

Across all alternative model specifications (a) to (g) from Table 1, we may see that a marginal improvement in any of the competitiveness indicators (model regressors) leads to an expected decrease in unit's unemployment rate. However, many $\boldsymbol{\beta}$ coefficients in spatially augmented models are substantially attenuated ("scaled down" towards zero) as compared to the OLS model coefficients in columns (a) and (b). Along with strong positive spatial dependence (high and significant coefficients ρ and λ), such results have two main interpretations: they strongly support the importance of regional and potentially cross-border (international) cooperation in macroeconomic policies addressing unemployment, plus they underline the importance of spatial models, by pointing out the bias in OLS-estimated expected effects of changes in economic policies and the expected results of other ad-hoc events bearing the potential of influencing unemployment.

Conclusions

Spatial econometric models provide a useful estimation framework that allows for improved analyses of regional macroeconomic data. Spatial models have a unique ability to discern between geographical determination (spatial autocorrelation, spill-over effects) and the influence of relevant macroeconomic variables, many of which may be subject to or directly controlled by economic policy actions as undertaken by the central authorities at different levels.

Our results strongly support the importance of regional and potentially cross-border cooperation in macroeconomic policies addressing unemployment. Robust spatial dependencies were identified in observed data – spatial

autocorrelation tests are consistently significant for a very wide range of neighborhood definitions. This study also provides relevant implications towards the analyses of dynamics in other macro-indicators of competitiveness. As regional observed data display strong spatial autocorrelation, either spatial lag or spatial error models should be considered while assessing macroeconomic dynamics, its properties and relevant implications towards economic policy actions.

References

Anselin, L., Rey, S. J. (editors) (2010). *Perspectives on Spatial Data Analysis*. Springer Verlag, Berlin.

Baltagi, B. H., Bresson, G., Pirotte, A. (2012). Forecasting with spatial panel data. *Computational Statistics and Data Analysis*, vol. 56, pp. 3381-3397.

Bivand, R. (2015). *"The Problem of Spatial Autocorrelation:" forty years on.* [online] [cited 2016-11-30]. Available from the Internet <http://cran.r-project.org/web/packages/spdep/>.

Cliff, A. D., Ord, J. K. (1969). The problem of Spatial autocorrelation. In: Scott, A. J. (editor) London Papers in Regional Science 1, *Studies in Regional Science*, Pion, London, pp. 25-55.

Cliff, A. D., Ord, J. K. (1981). *Spatial Processess: Models and Applications*. Pion, London.

Elhorst, J. P. (2014). *Spatial Econometrics: From Cross-Sectional Data to Spatial Panels*. SpringerBriefs in Regional Science, Berlin, Springer.

Fingleton, B. (2014). Forecasting with dynamic spatial panel data: practical implementation methods. *Economics and Business Letters*, vol. 3, no. 4, pp. 194-207.

Fujita, M., Krugman, P., Venables, A. J. (1999). *The Spatial Economy*. MIT Press, Cambridge.

Gauselmann, A., Marek, P., Angenendt, J. P. (2011). MNE's Regional Location Choice - A Comparative Perspective on East Germany, the Czech Republic and Poland. *IWH Discussion Papers*, vol. 8, pp. 1-32.

Geary, R. C. (1954). The contiguity ratio and statistical mapping. *The Incorporated Statistician*, vol. 5, pp. 115-145.

Krugman, P. (1994). Competitiveness: A Dangerous Obsession. *Foreign Affairs*, vol. 2, pp. 28-44.

Martin, R. (2004). *A study on the factors of regional competitiveness – a draft final report for the European Commission Directorate-General Regional Policy*. Cambridge University Press, Cambridge.

Moran, P. A. P. (1950). Notes on continuous stochastic phenomena. *Biometrica*, vol. 37, pp. 17-23.

Ord, J. K., Getis, A. (1995). Local spatial autocorrelation statistics: distributional issues and an application. *Geographical Analysis*, vol. 27, pp. 286–306.

Ullah, A., Giles, D.E.A. (edsitors) (1998). *Handbook of Applied Economic Statistics*, Marcel Dekker, New York.

Williams, S. (2005). Examining the relationship between employment and economic growth in the ten largest states. *Southwestern Economic Review*, vol. 32, pp. 13-24.

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The Impact of Interest Rate Policy, on the Banking System and on Real Estate Development

Pamela Priess

Abstract

The research purpose is to find out if signs of a real estate bubble are shown at the Austrian real estate market right now. Lending rates are composed of different factors: the base rate is the price that the customer is willing to pay. The risk premium is given to compensate the lenders risk of full or partial failure of repayment. The inflation adjustment takes into account the impairment of money over the term of a loan. The liquidity premium increases with extension of the term of the loan. The European Central Bank influences the interest rate policy by varying the interest for money saved there by the banks. At the moment there are used negative interest rates, i.e. penalty interest. The methodology used was that recently the ECB lowered the interest rates which might cause real estate bubbles and, subsequently, banks and economic crises may follow, if interest rates were to be increased again sooner or later. Therefor the author studied the amount of sales and the connection to the interest rates and the interest rate policy of the banks right now. Summarizing it can be seen that in Kittsee, an Austrian area with a lot of real estate sales, as an example, 565 real estate properties were sold in the years 2005 to 2015, the median prices increased in relation to the buyers residence in Austria or non-Austrians at about 375% to 490%, this might indicate signs of change on the market.

Keywords: *Basel II, Basel III, Credit rates, Euro, House purchase, Euribor, SMR, UDRP, Real estate, Kittsee, European Central Bank*

JEL Classification: *M10, M21, O1, R3*

Introduction

This article is based on information of financial institutions like the International Monetary Funds the Austrian National Bank and the Austrian Ministry of Finance and the experience working as an indepentant Real Estate Agent in Vienna. This article explains first the basics and mechanisms within the interest structure, the role of the European Central Bank and the Regulatory banks are described as controlling agents. Subsequently one part of this article explains the possible impact of the development of the two major interest binding indicators the Euribor and the secondary-market yield on the purchase of houses presented by the example of Kittsee in the years 2006-2013.

The financial situation of several investors has changed over the past years. The financial high outcomes from former years cannot be achieved anymore. The real estate market has a very important role in a country's economy. The changes in the real estate market affect the consumption and decisions for investing lose capital. If households are not able to repay their loans it has an impact on the banking areas too and finally the so called real estate bubble arises again. Interest rates are important in the economy for financing and lending and here in particular the interest rate which must be paid to lend money. Usually loans are taken at banks but also loans from private to private are becoming increasingly common.

The goal of research is a statement about the Austrian Real estate market and the situation banks have to cope with right now. Austria's house prices are increasing, none the less poor economic growth. (Press release statement of the Austrian National Bank)

The methods applied, are the review of literature, press articles, interviews and the authors knowledge according to day to day experience and its analysis at the Austrian Financial and Real Estate Market.

1 Financing Real Estate Projects today

Financing for real estate projects can be achieved by parameters such as height, interest rate and period of times of the commitment defined by the institution or person who is giving money – the creditor. The creditor must be defined: A creditor is going to lend money only if he can gain a profit, the interest, and only if he can expect the repayment of the given amount to be received in time. Someone who would like to lend money, a debtor is going to act as cost effective as possible for him.

There are several investors who are constructing new residential buildings and commercial properties. Austrian construction and real estate companies, project developers who are operating national and international and investors who are looking for good deals are constantly searching at the property market. But in recent times it got more and more difficult to gain high profits. Several Banks changed their requirements to support new projects therefore especially new or small developers have a high risk not to get their ideas into reality. (Bach et al, 2012)

2 Development of an interest rate

An interest rate is - at least in the banking area – not an effect of exuberant imagination; it emerges out of composition of different components. Calculation basis are usually two indicators for the setting of interest rates, the Euribor and the secondary-market yield. However, banks can lend money only by strict regulative, thereby it can be assumed that allocation is restraint and a shift toward private lending can be observed.

2.1 Nominal interest rate and Terms

The nominal interest rate consists of the short-term interest rate, a risk premium, an inflation payment for the term and the liquidity premium. The short-term interest rate is the core of the nominal interest and shows the interest rate at which the creditor is ready to pay without considering other factors and can therefore be seen as the real price of the lending. Banks often take the Euribor or the secondary market yield as to start from for the interest calculation. These indicators are still described later. (Zerbs, 2002)

The risk premium compensates the risk of a total or partial failure of the repayment for the credit grantor, this is directly connected to the credit standing of the customer.

The inflation payment has to compensate the currency depreciation which will appear until the end of terms. The countries taking part in the euro have fixed an inflation rate to be aimed of 2% per year; this aim is currently almost not achieved and is clearly lower than this ideal value. (Zerbs, 2002) The liquidity premium pays the fact that preference of short-term loan assignments exists at banks. This is the only one of the described ones having a time relation and rising in positive relation with the credit period.

At this time factor and its consideration different theories can be found in the financial economy and an awarded loan is seen as an investment form:

The expectation theory assumes the fact that interest rates at the capital market are going to rise, therefore the price of money as a product raises. Basic idea is the decomposition of the credit period in several one-year-long terms. If interest rate progression is expected, people invest into short-term arrangements; this reduces the yields of the short-term arrangements again. By the raised demand the price of money as a product rises, this affects the total revenue – yields of the used capitals decrease, the interest rate rise. A lowering of interest rates can be expected. (Zerbs, 2002)

The Term Premium theory takes in consideration the fear of the investors for future development and therefore the preference of short terms. This is leading into mechanism which can be seen at the Expectation theory. The Market segmentation theory refers to different markets for investment products. Starting at this view it explains different interest rates for different investment – with mechanisms described above. Here reference is made to the capital flows during the terms, and special redemption out of a financed project is considered, this affects less the area of the private loan debtor than the enterprise area. Compared to private credit applicants this can end up in special repayments which are raised out

of our payment of investment funds or life insurances or returns out of rental yields by financing a block of flats. (Zerbs, 2002)

3 Control and regulating mechanisms

3.1 European Central Bank (ECB)

The ECB has among a lot of other things monetary policy mission in the European area. In general money supply is regulated and thereby controlled by the purchase and sale of liquid assets. In this way the price of the commodity money is also influenced by the corresponding market behavior of market participants. Thus it can however regulate interest only in short-term investments, in longer-term investments pricing of the commodity money is regulated on the capital market, this follows the above mentioned theories based on short-term interest rates. (Cœuré, 2016)

Banks hold accounts at the ECB for short term funds, which bare interest accordingly. Depending on the incentive of banks to deposit money - influenced by the height of interest rate, this is the way money supply and bank liquidity is controlled. This liquidity is a component of regulatory assessing the credit volume that an individual bank may be assigned, as will be described later. The mechanisms leading to this formation of interest are illuminated here in detail.

This liquidity is a component of regulatory of the assessing of a credit volume that an individual bank may be assigned to, in which way may be described later in this article. The mechanisms leading to this formation of interest are not illuminated here in detail. (Cœuré, 2016)

3.2 Fixed interest rates, EURIBOR and SMR

A loan rate consists over all of a base - here for example the Euribor or the secondary market yield (SMR). This interest rates apply for loans with variable interest rates. (Laski, 2016)

3.2.1 Euribor

The Euribor is the central bank interest rate, to which usually interest rates are adjusted to the market demand in 3-month cycles.
The European Interbank Offered Rate is the interest rate at which banks borrow funds and act mutually. Such interest rate is published daily and is used in addition to investments also for financing. The markups to the final interest rate of the financed amount are according to the customer's creditworthiness 0.5 % to 2.0%. (Pruschak, 2016)

If the Euribor is changed, inevitably variable agreed credit rates change.

3.2.2 Secondary Market Yield (SMR) / UDRP

Credit interest rates rise and fall. They used to be linked to the so-called secondary market yield. Now, in general, the so-called UDRB takes this place.

The SMR Federation stated the average yield of circulating (issued) federal bond. The calculation and provision of SMR by the Austrian Control Bank (OeKB)

has been stopped by 31. 3. 2015. The reason therefore was the not always current average yield data of the underlying bonds. It was replaced by the revolving weighted average yield on government bonds (UDRP), which is formed since 01. 04. 2015.

If no other indicator is finalized in a loan agreement, since April 2015 the UDRP was settled, as a reference base, corresponding to the value of the SMR, but calculated differently.

As this does not affect numbers, for simplicity we are going to refer to the SMR indicator within this article. (Tacha, 2016)

3.2.3 Equity base requirements, Basel I-III

The European Union was in 2009 in the middle of a crisis which resembles that of 1929. Bank crises are not rarity: Since 1985 there have been thirty of such crises and each time they have caused very high costs for the general public. A specialized group for bank supervision and financial control authorities of other states established policies and regulations in Switzerland to steer in the opposite direction in order to avoid such crises.

Thus Basel II was introduced starting from 2007: Each credit was evaluated separately according to the creditworthiness and standing of the customer and the individual credit risk and had to be supported with equity. As from this point this was no longer a fixed percentage per credit as it used to be in the agreement Basel I starting from 1992. There it was set that for a credit 8% and for mortgage credits 4% of the credit sum had to be reset. (Haag, 2016)

From experience it was clear that these reset amounts did not prove to be sufficiently and there was no relation made to the total amount of the loans. Now there where created new regulations by establishing Basel III and these regulations took also the net equity base of the bank in consideration. In addition to the specific risk costs of one individual matter the equity capital funds of the bank is to be raised by 10.5% of the loans.

An anticyclical amount of approximately 2% of the loans also needs to be reset o act as a buffer. Also a limit of indebtedness for the banks was introduced: This was set in order to reduce the Leverage effect, which occurred by credit losses to the capital funds ceiling, and also to avoid the development of credit blisters. (Hache, 2016)

Main purpose of the new set up regulations is to stable the positon of the financial market and to strengthen the load ability of banks against the losses, which are then charged most times to the public of the taxpayers.

It should be also prevented that too many loans are granted and a credit bubble arises. Based on this regulatory each Member State has to decide whether the banks in their own country have to increase their equity capital. This scheme is based on the following idea: Since the granting of credit is subject to economic cycles and may form credit bubbles, the banks should increase their own capital funds base in good times, so that they are more resilient during a cyclical downturn in economy (Haag, 2016).

In leverage, the equity ratio of banks, the sum of all assets is set into the proportion to equity. The net assets of a bank are subjected to different risks and therefore subjugated to evaluations.

This is an example to illustrate: A government bond has a loss risk of 1%, a mortgage loan has a loss risk of 50%, a company credit as one of 100%. The equity capital requirement is set at 10.5%. If equity capital would be explicit consist out of low-risk government bonds, 100 Euros of equity capital would be a capital asset of 95.240 Euro (100 Euro/1%/10.5%). If equity capital would be explicit consist out of mortgage credits, then 100 Euros of own capital funds would be a capital asset of 47.620 Euros (100 Euros/50%/10.5%). If the portfolio of banking assets would consist out of corporate loans it would only be 952 euros, which are expected to be included as property asset (100 Euro/100%/10,5%) if the providence of equity capital at the amount of 100 Euro is considered. (P. Gantenbein (2007)

Since a bank also wants to achieve a return on equity and government bonds end up with minimum risk on the lowest yield, a mixture of individual risk weightings would be the best solution, to take account of both the high returns on one side and the assurance aspects on the other side.

An evident weak point of the concept to back up lendings of with equity capital was that the banks were allowed to do the evaluation of risks of their net assets - in general loans and the collateralization of the loans – themselves. This aspect is evidently shown through the bank history of the last years.

Therefore another indebtedness ratio of 3% was introduced to additionally stabilize and strengthen the banks. The indebtedness degree is roughly calculated by the quotient from share abilities and net assets. This means that a bank may assign additionally 33.33 euros of credits for each Euro own equity. Countries which had already adopted this limit of indebtedness before 2007/2008, showed smaller consequences of the financial crisis, than it was seen in countries without the border. (P. Gantenbein, 2007)

This border is discussed controversially. Banks with attention on safe net assets reject these, since this limits its scope of action. Other banks reject a disclosure of the composition of their portfolio. From an investors view a 3% debt ratio can be designated as rather risky, as the bank can go into dept up to a percentage of 33.33% of its equity.

What still arises out of the derivation of capital equity backing is the fact that loans for individual groups of population seems no longer available. Basically only borrowers with excellent credit ratings obtain loans. Indeed a “credit crunch” or “loan clip” is generally denied, however in the background of the above mentioned restrictions this would be quite understandable. Other factors for rather restrictive lending represent the introduction of liquidity ratios, which regulate the term transformation in loans.

As a counter move to the supposed and rather restrictive behavior of banks, the current interest rate situation would be quite likely to cause an increased demand for financing. Considering that forms of investment with a manageable risk have currently no significant and appreciable yield, it would be natural to

expect an increase in investment in real estate. For this purpose, it is necessary also to illuminate these instruments.

4 Recent Development at the market caused by low interest rates

According to the recent development in the banking area the German central bank presented that there might be the danger of an upcoming real estate bubble. During the past few months it showed that loans were given more and more often and this might end up in a critical and alarming development. The real estate prices have increased significantly in recent years in the major cities and metropolitan regions.

Although banks still acted in a conservative way when they give loans, the loan volume increased in such a height as it did not grow over the last 13 years. The financial institutes need to act careful these days and considerate their real estate loan decisions with high intent.

The fact that the key interest was lowered by the European central bank (ECB) upon zero for the first time in March 2016 strengthens the real estate boom. The extreme low interest rate policy of the ECB is according to the opinion of many economists no adequate resource to counter the problems within the Euro area. It is even spoken of a “cartel of debtors” which puts the central banks in the positon of prisoners of the politics. In certain manner one can say with the present low interest that savings deposits were devaluated and the real aim of this action is missed. The low interest rate should speed up the economic growth, the inflation, but the inflation rate remains static. Enterprises which should take up loans for investments are rather hesitant in taking money for company enlargements. In many European countries, retirement systems with this interest rate structure will not work on a permanent strategy, this applies to be a social issue for all age groups, sooner or later.

Banks who are depositing their currently not needed savings at the Central Bank do not get interest for this money,in addition they do also currently have to pay for it with penalty interest rates, because the so-called interest rate for deposits is currently negative.

Sooner or later banks are possibly going to transfer this additional expenditure, which represent a high amount of costs to the banks, to their customers.

As already discussed in some media, many banks have already increased their fees or publish increases for bank services in other areas which had been free of charge formerly e.g. cash withdrawals, debit cards fees, additional fees for one-time services, switch fees, bank card generation or other services. The longer the current yield structure is remaining the more difficult it is for the banks to come along with the reserves the recent years have brought. Some banking experts also believe that negative interest on private customers accounts might be possible in the near future, if the interest rate structures are not going to change.

The European Central Bank (ECB) has effectively abolished interest rates. Banks can borrow money there right now at zero interest rates. Depending on the positioning of the particular bank ti is necessary to look behind the scenes and to

discuss what business structure the bank is following. On one hand the low interest rates show almost not any additional capital as almost any interest or a very low interest is granted. On the other hand, also the costs of borrowing money are historically low.

Banking institutions living highly on interest income, which rely on interest income, are floating into an existence threatening situation. Especially when they have high deposits eg.: savings banks, people's banks and the so called "Raiffeisenbank". (Pruschak, 2016) The low interest rates stimulate definitely the stock and real estate markets in general. Prices for homes and condos rise and have risen strongly in recent years, especially in the provincial capitals and cities. The first signs of a property bubble might be seen already in this development, but the following two aspects are to consider:

1. According to experience the lending standards decline at a real estate bubble.
   Considering the trend of recent months it is clearly that the banks have not lowered standards in lending and continue lending money to very conservative criteria and asset backing.
2. The volume of loans usually expands strongly as a sign of a real estate bubble.
   Considering the long-term development, it shows that the volume of loans only slightly increased. In the past six years, the increase was only about two percent.

Last year, however, the increase in housing loans increased to 3.5 percent, which shows a rapid increase which has - compared to the past twelve years - not been that high at any time. Also, the total amount has reached a value of 1.230 billion euros in the last quarter of the year 2015. It is obvious that some banks provide long-term housing loans in large quantities and height.

This behavior of the banks can be seen as a consequence, since these do not generate interest, they invest their money to real estate financing projects. It is, in particular regarding long-term loans, to be seen what happens when interest rates rise or if customers cannot pay back loans when economy weakens and unemployment rate rises.

5 Development of the interest policy and house purchases by using the example of the municipality Kittsee

After explaining the way rate fixation is done the following question needed to be investigated and answered:

Do the declining interest rates affect house purchases in the reference area of kittsee? With low interest rates, a shift from classical saving products towards enhanced property purchases would be expected.

Table of amount of purchases in relation to the years and the Euribor and SMR

Year	Amount of purchases	3-M-Euribor	SMR 10j.BuAnl.
2005	6	2,2	3,4
2006	36	3,1	3,8
2007	44	4,3	4,3
2008	72	4,6	4,4
2009	36	1,2	3,9
2010	64	0,8	3,2
2011	49	1,4	3,3
2012	83	0,6	2,4
2013	76	0,2	2,0
2014	59	0,2	1,5
2015	40	0,0	0,7

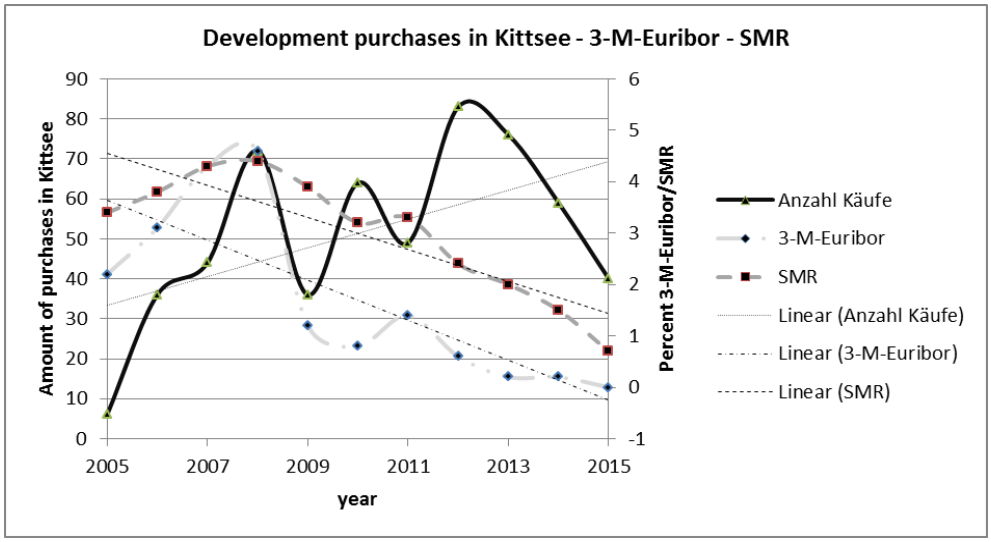
Source: WKO Wirtschaftskammer Wien: https://www.wko.at, according to real estate land register.

Chart 1 visualizes the curves of the number of real estate transactions in Kittsee for the period of 2005 to 2015 at a total of 565 pieces. For the same period, the development of the 3-month Euribor and the SMR are displayed.

In comparison to the development of the 3-month Euribor and the SMR it can be stated that with decreasing interest rates an increase in real estate purchases is only partly recorded:

While in the years 2005 to 2008, the number of purchases increases together with the 3-month Euribor and the SMR, it can be observed the opposite trend of the graphs of Euribor and SMR between 2009 and 2011.

Chart 1: Development of purchases in Kittsee compared to the 3M Euribor / SMR development.



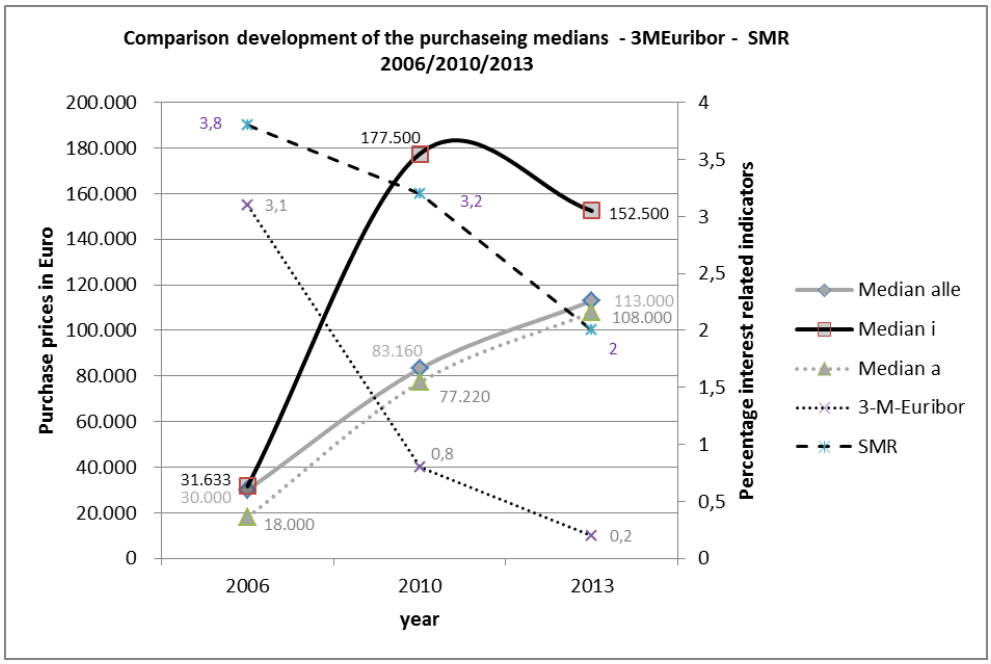
Source: Self produced graphic according to stated numbers and evaluated prices.

The trend lines show within the checked period in smoothed form the development of the three curves: Here it can be derived that, real estate purchases increased by falling interest rates.

Whether the properties were financed by a loan or not, was not evaluated. In general it can be assumed, that the negative progression of the graph of the amount of purchases in 2007 and 2013 was triggered by Basel II and Basel III and these loan restrictions and new regulations. However, the decline in buying activity might also emanate out of other factors. (Pichler, 2016)

Chart 2 shows the development of medians of the purchasing prices of real estate transactions in Kittsee for the period of 2005 to 2015. This presentation refers all transactions, transactions of buyers resident in Austria and buyers not resident in Austria. Shown are also the developments of SMR and 3-month Euribor.

Chart 2: Comparison of development of the purchase price medians in Kittsee - History 3M Euribor and SMR 2006/2010/2013



Source: Self produced graphic according to stated numbers and evaluated prices.

As the interest indicators decreased, the media rates of the groups increased, this can be inferred by the increased demand which can be seen in chart 1.

Among the purchases by buyers domiciled in Austria this development is much steeper and a peaks in 2010, then the number of purchases dropped which can also be analyzed according to Graphic 1. The activities increased as prices went down.

The increase in purchase price medians is approximately 490 % from 2006 to 2013. The median of all purchases in this period increased by 600%, in the group of buyers not resident in Austria this increase was about 375 %. (Pichler, 2016)

Looking at the Chart 1 and 2 a reason for the development can also been taken by the opened highway A6 in 2006.In principle, however, signs are given that a real estate bubble could have arisen:

- Rents are currently higher than the monthly installments for a leveraged home purchase.

- At the reference municipality Kittsee an increased buying activity can be seen, this fact might also been supported by the matter that a new highway was created in this area.

- Prices rose in a few years by several hundred percent. (Pichler, 2016)

In principle, low lending rates allow also people buying a home which cannot afford a house purchase in times of high interest rates or who cannot afford the repayment of the loan.

Recent example is the banking and financial crisis, whose roots go back to 2001. At this time, especially after the September attacks, the US FED lowered its key rate to raise the mood of the economy. Especially by the cheaper access to the product of money real estate purchases increased. Housing prices rose significantly due to increased demand by some 100%. The rental rates also increased, so that it was partially more effective to finance external and buy than to rent.

Credit restrictions as the current Basel rules were not yet in action, it was given less attention to the creditworthiness of customers; main focus was given to the alleged rapid increase in profits of banks by a high quantity of credit refunds. People with low income were partly also given real estate loans without evidence of their income, so nearly 2/3 of US citizens could live in the externally financed home. Loan commitments were sold to hedge funds and speculators, who were acting worldwide and were able to attract investors who would usually react less reckless in other circumstances. (Krüger, 2008)

After the FED began to raise interest rates again as from 2004, debtors were forced to sell their property quickly and certainly not always at a justified price. Hence, the result was a gap between the mortgage or the collateralization of the credit amount compared to the outstanding amount of the loan, which was not possible to be covered by the sale of the house.

The bubble burst in 2006, when the additional supply dropped the housing prices tremendously. Therefore, many outstanding and now unsecured residual loans had to be depreciated. Banks with low equity stumbled into economic difficulties.

Conclusion – The danger of low interest rates

Even when the reference area of Kittsee is certainly not representative for the Austrian real estate industry, especially by being located in a triangle of three borders which were opened in 2005, signs indicate that in this area buildings were traded due to increased demand consequently above their real value. Hopefully the regulatory of the banks have been complied with the lendings and that no key interest rate increase will be done by the ECB.

Hope for this issue is given by the detectable decrease of the median values after the introduction of Basel III and also the decrease of the number of transactions.

The global crisis resulted from the fact that initially uncertain loan arrangements were resold, partially mixed in funds and mixed with secured engagements, there also shares of insurance agencies and other securities-based investment opportunities were acquired, so that the originally to the US limited losses were followed by almost worldwide epidemic extent. (Krüger, 2008)

In this way also the European banks happened to slide into uncertain economic position. The first one was the German IKB Bank, which had to admit a high deficit in 2008. Due to involvement and further extended shares of insurances and pension funds also the revenue for those companies came out quite lower than expected. This matter has had effective consequences for annuities and for repayment vehicle financed bullet loans (Krüger, 2008)

To prevent this development, the equity backing restrictions for banks and the enhanced reference for creditworthiness were created, in Austria implemented with the reglementations of Basel II and Basel III. Aim of these measures is to make the financing more secure, to prevent viral distribution of bad loans.

If the aim was achieved can only be told after certain years and economic up and downs. Right now the residential property price index rose by 4% in Austria in 2015. (Ragacs et al, 2016)

If very low interest rates are hold for a longer time, piling effects on financial arbitration and stability can follow. According to Executive Board Member of the European Central Bank Mr. Benoît Cœuré „the euro area experience so far has been clearly positive". (Ragacs et al, 2016)

References:

Agentur for Mediaservice T-Online (2008): http://www.t-online.de/ wirtschaft/id_15759330/ein-jahr-us-immobilienkrise-wie- es-zu-der-misere-kam.html [online] [Cited 2008-04-01] Available from Internet.

Andrea Krüger (2008). Amerikanische Erfolgsgeschichte: [online] https://www. tagesschau.de/wirtschaft/immobilienkrise16.html. Available from Internet.

EURIBOR: [online] http://www.finanzen.net/zinsen/euribor/[online] [Cited 2008-04-01] Available from Internet

Kazimierz Laski: http://www.econ.jku.at/members/Poll/files/WS09/Zinss%C3% A4tze%20und%20deren%20 Laufzeitstruktur.pdf [online] [Cited 2008-04-01] Available from Internet.

Manfred Tacha: Online-Redaktion. [online] http://www.konsument.at/geld-recht/kreditzinsen-smr-hatausgedient [online] [Cited 2008-04-01] Available from Internet.

Frédéric Hache (2016): BASEL III: [online] www.finance-watch.org/ifile/Publications/.../Basel-III-in-5-Fragen1.pdf (2013) [online] [Cited 2008-04-01] Available from Internet.

Gruber P. (2015): Wirtschaftskammer Oesterreich (WKO). Available from Internet http://wko.at/statistik/prognose/zinsen.pdf03.2016 [online] [Cited 2008-04-01] Available from Internet.

Hansjörg Bach, Matthias Ottmann, Erwin Sailer, Frank Peter Unterrrainer (2012): Immobilienmarkt und Immobilienmanagement: Enscheidungsgrundlagen für die Immobilienwirtschaft, 220-240 p.

Christian Ragacs, Klaus Vonda, Friedrich Fritzer, Ernest Gnan, Walpurga Köhler-Töglhofer, Claudia Kwapil, Doris Prammer, Lukas Reiss, Doris Ritzberger-Grünwald, Martin Schneider, Alfred Stiglbauer, 2016: [online] https://www.oenb.at/en/Monetary-Policy/real-estate-market-analysis.html

Isabella Haag, 2016, BASEL II: [online] http://ratgeber.immowelt.de/a/regeln-fuer-banken- basel-ii-und-basel-iii.html (2007): [online] [Cited 2008-04-01] Available from Internet

Journal of Applied Corporate Finance (2005): [online] [Cited 2008-03-25] Available from Internet.

Klaus Spremann, Pascal Gantenbein (2005): Kapitalmärkte. UTB; Auflage: 1., Aufl. (April 2005)

Mag. Susanne Stein-Pressl, Dr. Wolfgang Pichler: Real Estate land certificate and abstract of titles. [online] Registered payed access available from Internet (2015, 2016). www.IMD.at [online] [Cited 2008-04-01] Available from Internet.

Manfred Weber (2013): So funktioniert der Geldmarkt. Haufe-Lexware (August 2013).

Markus C. Kerber (2015): Wehrt Euch, Bürger: Wie die Europäische Zentralbank unser Geld zerstört. FinanzBuch Verlag (September 2015), 4-15 p.

Norbert Häring (2012): So funktioniert die Wirtschaft. Haufe-Lexware; Auflage: 1. Auflage, Nachdruck. (Februar 2012), 16-18 p.

Norbert Häring (2010): Was Sie schon immer über die Wirtschaft wissen wollten, aber bisher nicht erfahren sollten. Schäffer-Poeschel (September 2010), 84-89 p.

Pascal Gantenbein (2007): Zinsen, Anleihen, Kredite. Oldenbourg Wissenschaftsverlag; Auflage: 4 (April 2007), 5-47 p.

Stephen Cameron, Kevin Holme, Alice Rapport (2005): Managing interest rate risk in real estate development.

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The Papris Methology Verification Using the Implementation of Specific Information System for Public Administration

Vladimír Krajčík, Pavel Vlček

Abstract

The article focuses on process management in public administration using the specific case study of the statutory city of Ostrava. Based on the selected part of the PAPRIS methodology, the process management is verified, and conclusions from the application of information system e-SMO ("Electronic Statutory City of Ostrava") are generalized. Ostrava is third the biggest city in Czech Republic with approximately 320 thousand citizen. Article describes experiences with SW implements, which are used for model of process in public administration. Particulary at local authority of Ostrava town. Model of process is a basis for reengineering of process in state administration and preparation for implementation of big information systems. Mapping of process is providing implement and confirmation methodology to identify existing processes. Problem with its using consist in that, senior manager don't informs, what organization is determinate by processes. If are not described in given to organization current processes, or how would have had look new optimum processes, will not endeavour about reengineering successful. Procedural analysis namely offer tool and check methodology to identification current suit („at") and it is possible him use either as instruction („how so about to be") for reengineering function handling administrative and self-rule activities. Purpose of the article: The PAPRIS methodology was used when defining the objectives for implementation of the information system for public administration (PAPRIS – Process Approach – Public and Regional Information System). This methodology has been elaborated by one of the authors and published in a very general scheme when solving many

case studies (Krajčík, 2006), (Krajčík, 2007), (Krajčík, 2013) (Krajčík, 2014). We assume that the PAPRIS is primarily a methodology with incorporated elements of procedural approach for project management in public administration information systems (PAIS). The specific supporting process of communication between the client and the e-SMO ("Electronic Statutory City of Ostrava") system has been chosen for verification. The model of supporting communication process, created by ARIS tools, is crucial, and the structure of scripts (ICM and IVR) is subsequently made. The aim of this article is to verify that the methodology is sufficient and appropriate to manage such a large project such, undoubtedly, is the e-SMO (Vlček, 2009). Methodology/methods: Defined productive and non-productive processes with their defined process cuts represent a crucial category for the process structure of IS projects. This is fully accepted by the PAPRIS methodology. Process cuts are understood, in the logic modelling according to the PAPRIS methodology, as clearly defined logic directional cuts in three-dimensional space of all project processes. The process set is systemically categorized, in a given logic directional cut, into the mutually disjoint process subsets, which are characterized by this particular directional operator. The directional operator always has a clear logical allocation that is based on the construction of a process view. Theoretically, an infinite number of process views can be used. One of the important issues in a methodology for the case studies includes the size of the research sample. It is usually assumed that there is no ideal number of cases and that the number between four and ten usually provides good results. Other authors defining against any quantitative standards for any determination of the sample size of the case studies, since such an approach denies the internal logic of this methodology and the richness of the information obtained from participants in the research. Research which is carried out using case studies does not aspire on compliance with the requirement the representativeness of the sample. (Štrach, 2007). Methodology of case studies is among the established guidelines of qualitative research (Štrach, 2007). Research on using case studies in the last 30 years has seen an extraordinary increase in social-scientific research, including research on business and management (Dul, Hak, 2008). Scientific aim: The essential aim of this study is to describe the way the process cut defines a productive process and non-productive process, in accordance with the PAPRIS methodology using the specific example. While the triggering mechanism of the project production process is an event causing its own production – i.e. the specific output with added value for the customer, the project of non-productive process is caused by the project management event. Therefore, it is caused by the need to control, monitor, track, inspect, evaluate outputs, decide and regulate the project implementation. Findings: Within the support of the communication process, two examples were used to verify the methodology. The global perspective on the process was created in ARIS tools and the communication between the call centre and the client was made in Visio tools. The PAPRIS methodology is based on the concept of process variability, which has been clearly formulated. The fundamental direction of the process development, anticipated changes and the opportunity to

react to them in accordance with defined objectives of the PAIS project are guaranteed.

Keywords: *Process, Process Analysis, Process Model, PAPRIS Methodology, Information System for Public Administration, ICM (Intelligent Contact Management), IVR (Interactive Voice Response).*

JEL Classification: *D83, L15*

Introduction

In the open information society the public administration authorities have an opportunity to draw from the findings and experience that numerous productive, non-productive, profit, and non-profit organizations have acquired in the sphere of process improvement for several decades (Grasseová, 2008). Process management is one of possible tools for further economic growth in the organization. In public administration sector it means the introduction of such changes that will lead to:

- increase in public administration efficiency, i.e. to a higher service quality provided in accordance with the status of individual public administration bodies,
- error rate reduction,
- acceleration of service delivery (citizen request processing),
- cost-reduction of provided services (Vlček, 2006),(Vlček, 2009).

The project e-SMO is a good option. The information system e-SMO ("Electronic Statutory City of Ostrava") represents a modern and attractive way of communication between citizens and authorities. Fast, reliable and clear operation of citizen's requirements is given thanks to the option of using the Internet, telephone and other elements of communication used for dealing with the public authority. The eSMO is a tool that should make transactions provided by public authority easier. From a technical viewpoint, the communication between citizens (the ICM structure and IVR scripts) and the e-SMO is designed in such a way that, in case of the further expansion, there will not be necessary to change the logic of the functional units. Only modular expansion, from the citizen-client's viewpoint the expansion of user units, is performed. Depending on the dialled telephone number a script, which controls the behaviour of IP Call Centre, is selected (Vlček, 2009).

1 PAPRIS Methodology

The selected parts of this communication system will be verified using the PARRIS methodology. The PARRIS methodology (PAPRIS – Process Approach - Public and Regional Information System) (Krajčík, 2013), (Krajčík, 2014) is based on defined process categories that are described in the procedural elements of project management methodologies. Furthermore, it is based on general principles and characteristics of the procedural approach to project management of information systems, and on the principle of system categorization as well.

Basis process of PAPRIS methodology delimit product and no-product process. It is necessary to managing, to monitoring, to pursue, to supervize, to evaluate outputs, to decide and to coordinate project implementation.

The graphic relations are on the figure No. 1.

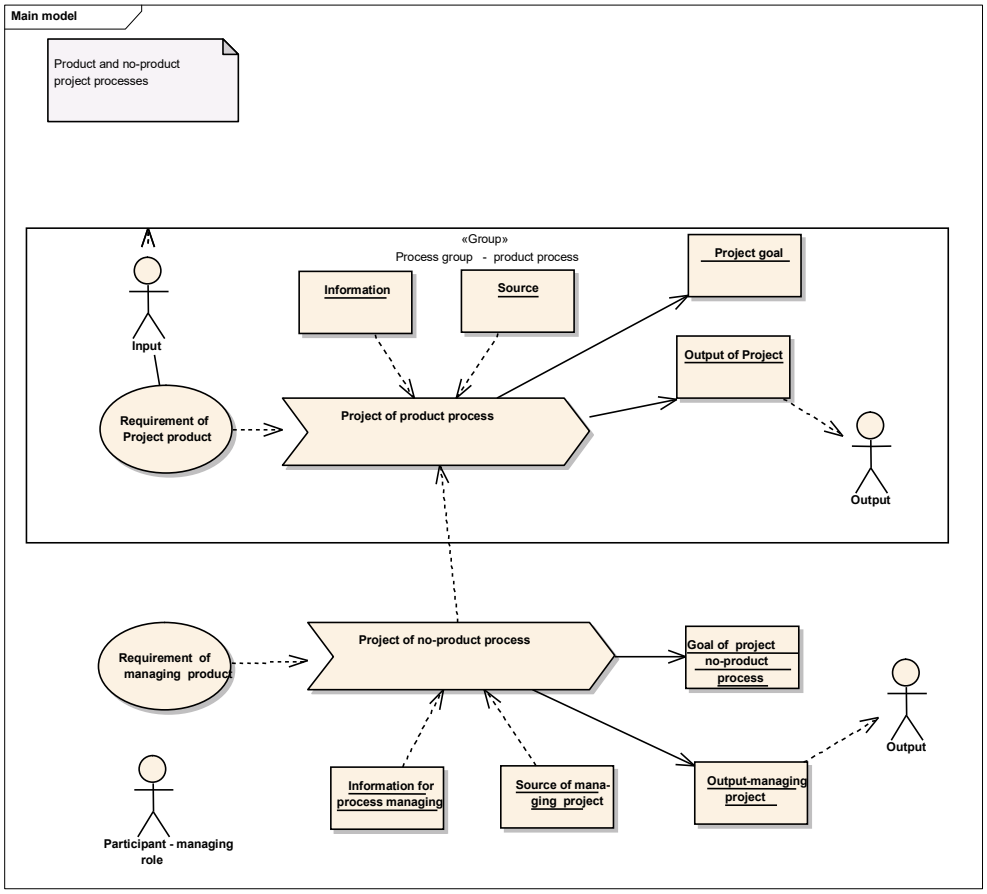

Figure 1 *Schema: Product and no-product project process*

On the other way PAPRIS methodology provides process of control quality project outputs. The process to collects information which compare project outputs

with real values of implement information system. Process controls of the harmony with relevant standard. The process to analyse the acceptance criterion witch content real information system and control development element and authorize procedures. The graphic relations are on the figure No. 2.

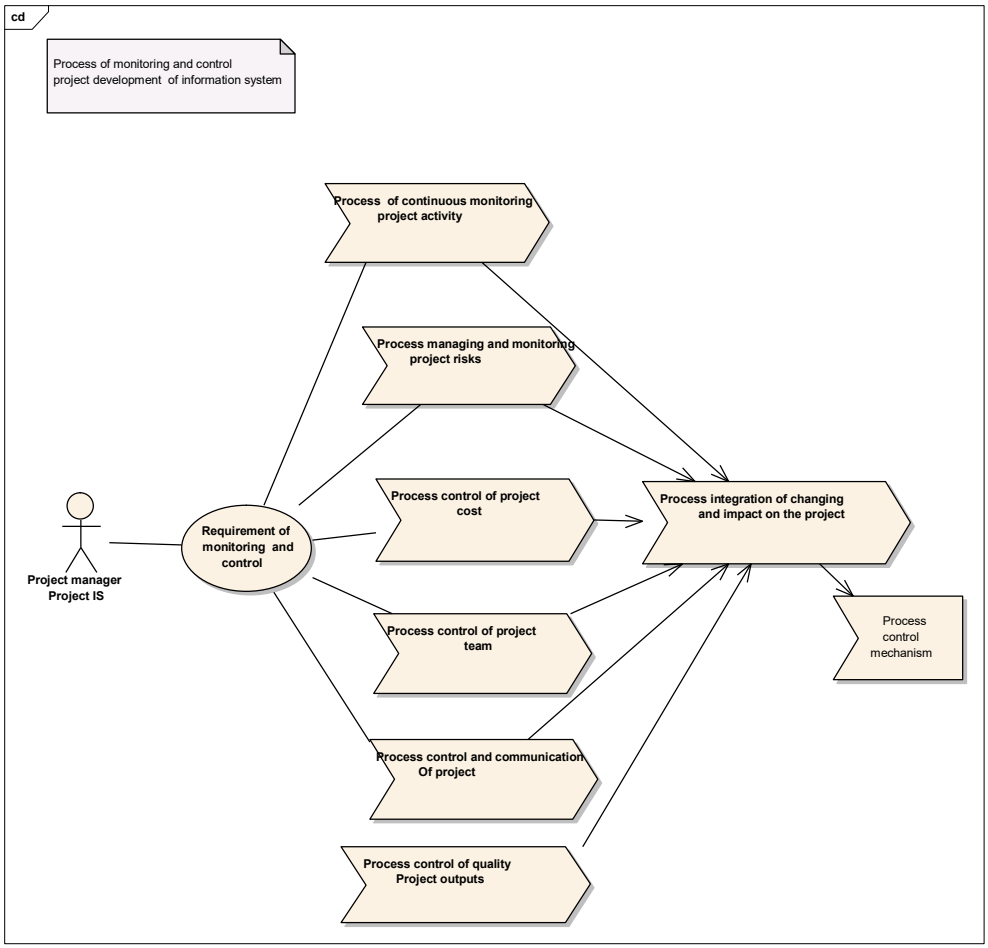

Figure 2 *Schema: Process of monitoring and control project development*

1.1 Goal Formulation Process and Output Process

The project's process goal is in accordance with the PAPRIS methodology and it is defined for the IS final state, which was chosen by the control body in the IS project. We can categorize it according to the level of abstraction, time horizon, the degree of openness, and by its content. Its design and implementation have been coordinated.

1.2 The Process of Defining the Project Purpose

The project purpose is an information requirement that is viewed as a goal defined in the broader context of the generated process output which is part of the IS. That means that the project area, expressing a reason or a requirement on the information output existence, as the IS needs it. The process function reacts to the purpose, says what it has to be filled with. The process is, as part of the IS project, transparently and clearly justified. It is defined why and for whom it exists and what it has to provide. The formulation of the process function is done in accordance with the principle formulated in the PAPRIS methodology.

1.3 The Process of Specification of the Strategic Planning Process

The intentions are based on the project's vision. There is a clear idea about for how relatively long time the process, in its particular form defined by the IS, will realize its mission and fulfil the imaginations of the contracting authority. The strategic aims are concretized by the strategic objectives of the IS process. They are measurable and determine the range and the time period in which the aim should be fulfilled. The other processes defined in a dynamic perspective are directly linked to this process.

The strategic aims define long-term interests of the contracting authority as well as the final output from the IS. So, this process can be understood as a basis and guide for the formulation of the sub-aims.

2 Processes within the PAPRIS Methodology in the e-SMO Application

Processes are designed as legally independent – describing possible technological channels that are operating as a part of the e-SMO project. Possible legislative restrictions, in the sphere of mutual communication between the client and the Statutory City of Ostrava (SMO), which result from individual agendas, are taken into account within each agenda – only the channels that are in compliance with agenda legislation are always selected for agenda communication. Currently it includes all the major technological possibilities established in the market.

Communication between the client and the SMO represents one of the major benefits and features of the e-SMO project. The project includes the following communication channels:

- Call Centre – authorized and unauthorized access;
- Web Portal – authorized and unauthorized access;
- Information Booth – authorized and unauthorized access;
- SMS Gateway;
- Reservation System Counters – only authorized access;
- Client Notification System (Vlček, 2009).

Individual agendas are designed in such a way that the technological possibilities of individual communication channels are maximally supported and fully used.

The results of these changes are following:

- Increasing the effectivity of the clients' requests processing;
- Increasing the clients' awareness in relation to individual agendas – i.e.

increasing the clients' awareness of the course of individual agendas processing, the required documents, contact information and, last but not least, increasing the clients' awareness of the status of request processing;

- Minimizing the number of personal visits in the SMO / ÚMOb offices;
- Taking into account the clients' preferences regarding the communication with the SMO.

Possible changes of communication requirements resulting from the legislative changes in relation to individual agendas are considered individually in each agenda, and therefore, they are not objects of this support process (Vlček, 2005).

The change of clients' preferences for individual channels can be expected – as the citizens' access to the Internet, mobile technologies and the widespread use of electronic signatures are increasing. The increase in use of the authorized portal and the e-mail communication with electronic signature can also be expected. This tendency also significantly depends on the number of citizens registered in the e-SMO. The support process includes all the communication channels that were, as a part of the e-SMO project, put into service (Figure No. 3).

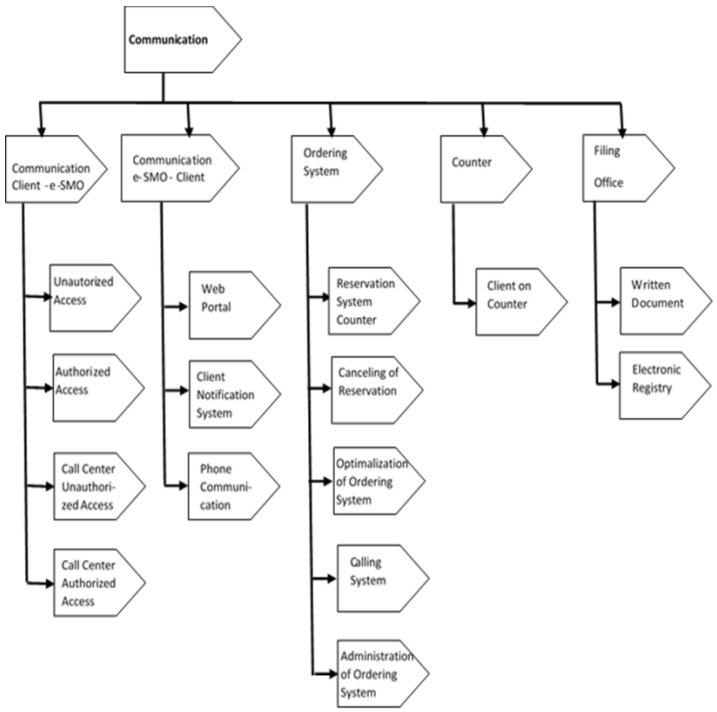

Figure 3 ***Schema: Description of Communication*** (Source: Siemens internal materials)

The process is divided into two basic scenarios:

- communication model: client – SMO – communication channels that the

client can communicate with the SMO;

- communication model: SMO – client – communication channels that the SMO can use for communication with clients and it is divided into three supporting sub-processes:
- Ordering System;
- Serving Clients at Counter;
- Filing Office (Vlček, 2009).

The process begins with the client's request, respectively SMO's request, to communicate with SMO, respectively to communicate with the client, and ends with establishing communication on the particular communication platform, including the client possible authorization in the e-SMO. The factual solution of the specific requirement is always part of the particular agenda.

3 Structure of ICM and IVR Scripts

Depending on the dialled telephone number the caller selects ICM script that controls the behaviour of IP Call Centre. Two phone numbers are used during the implementation. The first is intended for a common telephone contact and it is to be found in all the information media used for informing the public (Internet, message boards, ...). The second is intended for VIP citizens (private telephone number) (Vlček, 2010).

After the selection of ICM script (Figure No.4), based on the dialled phone number (DN), the verification, whether the call comes during the contact centre working hours, is done. The comparison is performed towards predefined values that are set in the configuration parameters of the utilized components. This is a static definition. So if something changes, it is necessary to make this change in configuration parameters of this object as well.

If the call comes in working hours, the verification of the call centre occupancy will follow. Current records stored in the MS SQL database are used to obtain the current value, which is later used for comparison. These data are also used for report collection. The resulting value represents the function of the current number of calls in queue IPCC, the average operating time of call, and the number of active agents. Based on the obtained values, it is possible to inform the callers from the very beginning. They may spend in line more time than they are willing to accept, and thus give them a choice.

It is assumed that the IPCC occupancy is not too high. Thus, the call can be forwarded. Then there is started the main IVR script, the task of which to obtain information from the citizen needed for further decisions in the ICM script. The ID agenda and the Customer ID belong among the acquired information. These values are further used in decision-making and choosing skill groups. If there is an available agent in one of skill groups, in which the agents are grouped according to the level of knowledge, the call will be directly forwarded to the available agent. Of course, the aim is to choose an agent from the group with the highest level of knowledge at first, when there is no agent available in this group, the next group of agents with lower level of knowledge is sought through. However, if no available agent is found in any of the groups, the call is forwarded to the call queue. Based

on the DN, the priority is set for VIP calls to ensure that high-priority calls will be preferred before other calls.

When the call is forwarded to the queue, the estimated waiting time is calculated. This value is then passed to the IVR script, which ensures that the caller is given a message that informs him/her about the estimated waiting time in the queue. If the agent is available or has just been released, the incoming call is forwarded to the available agent.

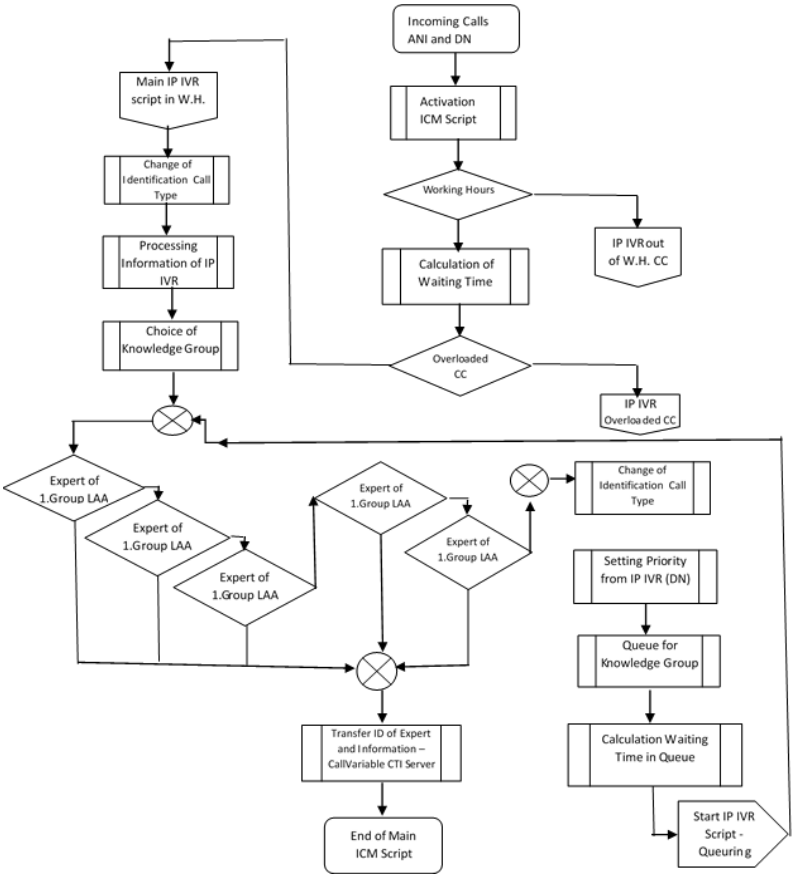

Figure 4 ***ICM Script Demonstration Source:*** (Siemens internal materials)

4 Discussions

The process management in public administration using the PAPRIS methodology on the specific case study of the statutory city of Ostrava was found to be very useful and up-to-date subject matter. The reason for the usefulness and topicality gives the increasing implementation opportunity of public and regional information systems that solve the need for public information and thanks to their

content and the access are socially beneficial. The original scope of work provides the basis for further research of procedural approach for project management in development of both the public and regional administration information systems.

The examples of possible follow-up studies include further development of the procedural approach for the PAPRIS methodology based on the implementation experience in already realized IS municipal projects in the fields of development processes, supporting sources and the development of new standards in relation to new occupations created to ensure the IS project management. The study on workplace process development of the PAPRIS methodology would be appropriate. It would include organizational, technical and personnel support of the institute with the task to ensure the development of the methodology.

There would undoubtedly be requirement for the development of technical support of tools for the process methodology support analysing the selection and purchase of tools and specification of the work procedures in the particular environment (based on the generalization gained in the course of the e-SMO project realization using the PAPRIS methodology).

5 Conclusion

The sensitive social bond, client (citizen) – public administration, may be intentionally influenced by the use of information systems and technologies. The appropriate implementation of the principles of process analysis using the PAPRIS methodology provides the opportunity to integrate automated principles into processes performed by state and local government administration.

The presented work is based on both theoretical studies of the procedural PAPRIS methodology and also on the e-SMO project implementation. Based on the specific example, the application then confirms that information and processes, respectively functioning mechanism that collects, creates, develops and produces valid and relevant information to the procedural approach, process maps and process flows, are the basic precondition for rational and efficient management of the new IS.

On the one hand, this article tries to prove the introduced fact; on the other hand it also tries to clarify the ideological concepts gained in the course of the implementation of project process technologies and methodologies in the management of information systems in public administration, and to show the specific creation and management procedure. The authors believe that the text will contribute not only to the development of theoretical knowledge, but it will also lead to the practical application of the PAPRIS methodology.

References

Dul, J. & Hak, T. (2008): Case study metodology in business research. Oxford: Butterworth-Heinemann/Elsevier

Elfring, T., & Hulsink, W. (2003): Networks in Entrepreneurship: The Case of High-technology Firms, Small Business Economics, Vol. 21, no. 4, pp. 409-422

GRASSEOVÁ, M. (2008): Procesní řízení ve veřejném sektoru: teoretická východiska a praktické příklady. Brno: Computer Press, 2008. ISBN 978-80-251-1987-7

Hammer, M. & Champy, J. (2000): Reengineering - radikální proměna firmy. Praha: Management Press 3. vyd. 2000. ISBN 80-7261-028-7

Hammer M.(2012): Agenda 21. Co musí podnik udělat pro úspěch v 21. století. Management Press, Praha 2012. ISBN 9788072612444

Krajčík,V (2006): Procesní přístup k řízení projektu UNIV, In: Acta Academica Karviniensia č. 2/2006, 79-89, Obchodně podnikatelská fakulta Slezské univerzity v Opavě, Karviná 2006, ISSN 1212-415X

Krajčík,V.(2007): Managing human resources in project IT management., In: Vesnik, vědecký odborný časopis University Vitebsk, ročník 43, 2007, číslo 1, s. 27-35, Universita Vitebsk, Běloruská republika, ISSN 21038-0246

Krajčík, V. (2013): Procedural Methology PAPRIS. In Accounting and Management Information Systems AMIS 2013, str. 426- 444. The Bucharest University of Economics Studies, Bucharest 2013. ISSN 2247- 6245. ISSN – L 2247 – 6245.

Krajčík, V. (2014): Information System For The Management Of The Processes. In Accounting and Management Information Systems AMIS 2013, str. 648-668. The Bucharest University of Economics Studies, Bucharest 2014. ISSN 1583- 4387

Štrach, P. (2007): Tvorba výukových a výzkumných případových studií, Acta Oeconomica Pragensia, Vol. 15, no. 3, pp. 22-36.

Vlček, P. (2005): Process Analysis and Public Administration, Mezinárodní konference Strategic management and its support by information systems, Čeladná 2005, 7. – 9. 9., ISBN 80-248-08773

Vlček, P. (2010): Process Analysis as an Optimalization Support in Public Administration, 9th WSEAS International Conference on DATA NETWORKS, COMMUNICATIONS, COMPUTERRS (DNCOCO ´10), University of Algarve, Faro, 3.-5.12.2010, ISSN 1792-6157, ISBN 978-960-474-245-5

Vlček, P. (2009): E-SMO Project and SW Tools Used in Process Modelling, WSEAS International Conference ACS 09, Genova 2009, Genova 17. – 19.

10. 2009, ISSN 1790-5109, ISBN 978-960-474-127-4

Vlček, P. (2006): Some aspects process analysis in public administration, Manažment v teórii a praxi, ročník II, číslo 2, ISSN 1336-7137

Weske, M. (2001): Business Process Management: Concepts, Languages, Architectures (Hardcover) Springer. ISBN-13: 978-3642286155

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Financing as One of the Key Success Factors of Small and Medium-Sized Enterprises

Stjepan Pticar

Abstract

All entrepreneurs try to be timely unlimited, constant and successful in their business. In doing so, their company founding, running operations and development all depend on adequate and quality financing. The goal is to ensure a stable financing and growth and the question is how, when and from which sources should the financing be ensured. When talking of financing, it is primarily meant ensuring the money or the capital, a synonym of the entrepreneurship and its main moving strength. In order to be successful, it is of high importance to meet optimal business decisions and specially investing decisions. Even though the focus of the financing process is not solely limited to money, money plays a central role and is also the basis and the requirement for business activity and the very existence and the end goal of a business as well. One important focus of entrepreneurs is the question of an optimal financial structure for their own enterprise. The specifics of every individual company together with the industry they are in and macroeconomic environment they operate in do not allow for a uniform and generally applicable solution to this problem. The focus of this problem lies in the ratio between the size and structure of assets on one side and the size and structure of equity and debt on the other side. Every entrepreneur should also know which amount and structure of long-term assets, fixed assets is necessary for his enterprise. The function of investment planning defines these requirements before the actual investment takes place. An entrepreneur who is already longer in business will at this point analyze his actual financial structure with a focus on capital accumulation and conditions of raising debt.

Keywords: *Financing, Assets, Equity, Debt, Sources*

JEL Classification: *L26*

Introduction

Main financing problems

The business process of every company includes purchasing process, production process and sales process which finishes the circulation of assets and as a goal has value creation, profit maximization, existence and growth of a company. The particular position of small entrepreneurs is that the role of ownership and the role of management very often centers around one person, an entrepreneur, and among other goals, the entrepreneur aims to achieve maximum profit within the shortest possible period with minimum nominal capital and to increase that capital. Still, inadequate investing is a potential danger and a possible cause of illiquidity, insolvency, excessive indebtedness and inability of fulfilment of planned goals.

Liquidity is the ability of an enterprise to cover the due short-term liabilities with current assets and solvency is the general ability to cover the liabilities. In this respect, the financing problem of a company lies in the inability to cover the due short-term liabilities on time as an effect of insufficient cash. The business financing of a company has a function to recognize this situation on time and to ensure enough money to prevent illiquidity from happening. In other case, illiquidity can step by step turn into insolvency and excessive indebtedness and as a chain reaction spread itself on the whole economy. "The causes of this problem in their various forms can be very different from each other and can therefore be classified by different criteria. According to their origin the causes are classified as external and internal." (Vukicevic 2000)

External causes are influenced by the macroeconomic policy of the state which has a goal of achieving the development on a global level of the country through the measures and means of achieving it.

As an example, the role of the national bank is to ensure the liquidity and solvency of the commercial banks through its monetary and credit policy and the reserve policy. The commercial banks then can substantially influence the liquidity and solvency of the microeconomic entities, especially small and medium-sized enterprises. If the policy of the commercial banks limits, hardens or disables the access to credit for small and medium-sizes enterprises, their financing will be endangered and as a result their illiquidity will come with a high probability. The fiscal policy of the state can also have a substantial impact on the liquidity and solvency of small and medium-sized entrepreneurs because the dynamic of the tax system has a contrary logic from the interest of entrepreneurs and it decreases their liquidity. A worsening of general credit requirements or decline in liquidity of big corporations has a further negative impact on small and medium-sized enterprises who work with them. The speed of payments and the circulation of money also

influence liquidity and solvency. Finally, rules and regulations and the entrepreneurial infrastructure as well influence liquidity and solvency of entrepreneurships. The quality of regulations, their applicability in practice and the overall quality of entrepreneurial infrastructure can leave a positive or a negative impact on liquidity and solvency. (Abrams 2004)

Internal causes correspond to all company-related causes of illiquidity and insolvency because of which the entrepreneur can not pay his due liabilities with his available current assets (cash) since the quantity of it is lower than the due liabilities to be paid at that moment. The main reason for that is the inconsistency between revenues and expenses. An inconsistence can also appear in times of short-term and long-term financial balance. The reasons for it are often more complex inconsistencies in the financial structure of a company. In a balance sheet of an insolvent company, insolvency can be recognized as an imbalance between the structure of assets and the structure of sources of those assets. This happens when a part of fixed assets is financed by short-term (current) financial sources, and the higher the ratio of this kind of financing is, the stronger the negative impact on liquidity and solvency is. This is the case in financial investments when the rule is disrespected that fixed assets should be financed from long-term sources and current assets should be financed from short-term sources. Namely financing of investments from short-term sources, blocks permanently current assets. Same thing happens when investing in securities, especially in the long-term ones. Illiquidity is often the effect of an inability to collect receivables and insolvency of a poor financial result, a situation when revenues are lower than expenses, so the company is making losses. There are also other reasons for illiquidity and insolvency, such as poor organization of accounting and finance function.

Financing as a term

Founding a company requires capital. The amount of the nominal capital depends on the legal form of the company: corporation, partnership or own business. The money is necessary during the business activity to purchase everything needed for the production process. Using financing, company ensures materials, salaries, external services from other companies, taxes and other duties payable to the state. In short, the whole running operations are financed until collecting payables for goods and services sold. That is the moment when the new cycle begins. Money is also required for financing the development. “In an economy in which goods are traded for money, money plays a central role in a cyclical movement. The money is the requirement for the continuity of a company because the cyclical movement generally begins and ends with money“(Orsag 1997)

In this respect, the role of finance function/department of a company is to ensure the money for financing of the business activity. Financing of a company contains the following functions:

- Planning, sourcing and deploying all financial resources of a business unit;
- Coordination between receivables and payables due;
- Regulation and monitoring of financial ratios and cash flows;

- Financial control and analysis of a rational deployment of money. (Lazaric 1990)

The conclusion may be that financing is the money side of an entrepreneurship, including its various forms: initial financing, current financing and development financing of an enterprise. However, the financing function does not only include ensuring the sources of money, but also its investing and reimbursement. One can discuss financing in its narrow sense, as sourcing of money for business needs from particular sources. In this way a company creates liabilities to these sources. In a broader sense, financing can be understood as investment of money in fixed assets and current assets necessary for the business activities or for the development and reimbursement of money which will pay off the liabilities created in the process of money sourcing. In doing so, the money travels through a cyclical movement and changes its original form depending on in what it was invested and then in the return process its gets back to its original form (cash) increased by the amount of profit. According to this, financing is understood as a continuous process of sourcing, investing and reimbursing the money in an appropriate measure, structure and dynamics. (Horvat, Tintor 2006) Business finances of an enterprise has a duty of meeting the optimal financial decisions in terms of ensuring the optimal amount and structure of necessary assets and the most cost-effective combination of the size, structure and dynamics of its sources.

Forms of financing

We differentiate between three main forms of financing: initial financing, current financing and development financing.

Initial financing should ensure enough initial capital for founding the enterprise and setting up the operations. Under this we understand ensuring the long-term sources for financing of initial investments in fixed assets.

Current financing should ensure the sufficient quantity of short-term sources of financing of current short-term requirements of the enterprise. This means the financing of required current assets for supporting of well functioning business activities and maintaining of liquidity and solvency of the company. However, every entrepreneur wants to be as successful as possible in his venture and he aims to achieve development and growth which will in turn enable the increase in assets, scope of business, create profit and his own enrichment. To develop his enterprise and to grow, he will be motivated through a fight for survival on the market. (Skrtic 2002)

Development financing should ensure the sufficient quantity of additional long-term sources of financing of new investments, in other words of development and growth.

Every form of financing requires sufficient quantity and quality of sources of financing. They are the requirement for a successful business, development and growth of any enterprise. Sources of financing can be own and foreign. This will be covered in more depth in the further section, but one can point out here that the choice of own vs. foreign financing depends on a number of factors. These are the

legal form of the company, its state of development and economic performance, availability of the sources of financing, financing terms and further factors. This is why in the practice, the sources of initial financing are primarily own sources of an entrepreneur, sources of current financing come from his business activity, are trade credits and short-term loans from financial institutions, while sources of development financing come mostly from the additional capital increase or additional long-term loans from financial institutions.

Financial structure

A sound analysis of financial structure requires a good basic understanding and knowledge in accounting. Norm Brodsky, an experienced entrepreneur and author claims „if you learn the fundamentals of accounting, you will see that numbers are not as complicated as you thought they would be and that you develop knowledge you need to gain control over your company. (Brodsky 2009) Financial structure of an enterprise is depicted in its balance sheet. It is characterized as a balance between assets and liabilities and shareholder's equity, which represent the sources of financing of those assets. The financing process is formalized in the accounting of the economic entity. This process can be seen as a duality of the accounting principles, as a structure of assets on one side and structure of liabilities and shareholder's equity on the other side as well as through the logical connections between these structures. (www.accounting-world.com) The easiest way to do it is by analyzing the financial statements, particularly the balance sheet.

So the balance sheet is the main source of information for analyzing the financial situation of an enterprise. This is why the analysis of the balance sheet is so important. The starting point and the basis of this analysis is the balance between the value of assets and of liabilities and shareholder's equity. All other important relations are based on this one. According to this, we differentiate between:

- Vertical financial structure – it contains separately financial structure of assets and of liabilities and shareholder's equity.
- Horizontal financial structure – it shows the connection between parts of assets and of liabilities and shareholder's equity.

Vertical financial structure

Structure of assets

Vertical financial structure contains the structure of assets and sources of financing of these assets of an enterprise. Entrepreneurs have a constant need of having assets, means which they deploy in their business activities. This need for assets changes depending on the dynamics and the growth of a business. The asset part of the balance sheet shows all the assets an entrepreneur has at his disposal to be used in his activity. This is the reason why the vertical analysis of the balance sheet begins with analysis of asset structure. The asset part of the balance sheet contains various forms of value in terms of assets: cash, objects, rights, accounts receivable and other assets which can be classified in terms of accounting either as fixed assets (long-term assets) or current assets (short-term assets).

Fixed assets are composed of fix, long-term means of production which are in circulation for longer than one year and they return back to cash through depreciation and amortisation.

Current assets are means of production which are shorter in circulation and it is expected that they will be sold, used or spent during the financial year or a business cycle. In this respect, from the financial point of view, it will be differentiated between long-term and short-term bound assets. Long-term bound assets are means of production which are continuously in circulation or deployment and should be financed from the long-term sources of financing. The rest are current assets and they should be financed from the short-term sources of financing. The vertical structure of assets is generally seen as a ratio between fixed assets and current assets but also as a structure of each one of them in terms of possibility and speed of their translation into cash. One of the main goals of the analysis of the vertical financial structure is determining the optimal amount of assets in terms of requirements for continuous business activities, growth and development. Another goal is optimizing the investment in current assets.

Structure of liabilities and shareholder's equity

Structure of liabilities and shareholder's equity shows from which sources are the assets of a company financed as well as the ratio of financing these assets from own equity vs. borrowed money. This structure also gives a hint as to when are these liabilities due to be paid back. This side of the balance sheet formalizes the relationship between company owners and sources of financing and therefore plays a central role in the analysis of the structure of sources of financing. Shareholder's equity consists of the nominal capital and other capital positions and liabilities of a company consist of items from different sources and with different maturity. The main objective is to find the optimal structure of financial sources and to decide whether it is cheaper to use own sources of financing or to take a loan. The structure of liabilities and shareholder's equity represents the ratio between the own sources of financing and foreign sources of financing, or in economic language, equity and liabilities (debt). This ratio is known as debt to equity ratio or leverage and is measured and shown as liabilities/owner's equity. An acceptable ratio is generally meant to be the ratio between liabilities and shareholder's equity of less than 1 or 1, and an unfavourable financial structure is the one with a ratio higher than 1. That would mean that the entrepreneur has more debt than his own capital. Since this ratio has implications on solvency of the entrepreneur, in this case, the entrepreneur would often be insolvent. This criteria is a hint concerning the necessity of having a higher ratio of own capital in the total capital of the enterprise which will then result in higher security and lower business risks.

Horizontal financial structure

Horizontal financial structure is a time-connection between assets and their sources of financing. Assets show all means of production and their structure. In which scope and with which costs assets are supported, depends on the structure of

debt and equity. From this point of view there are also some key rules of financing of an enterprise.

Long-term investments, the investments in fixed assets should be financed from long-term sources of high quality. This rule is based on the principle of security, liquidity and solvency. Since it is about assets which have a long-term depreciation and amortisation, meaning their transformation back into cash, their financing from the sources with a short-term maturity would lead to illiquidity and insolvency.

Analogous to this financing rule of long-term financing, there is a rule that assets that bind the short-term capital, current assets should be financed from the short-term sources. The principle of profitability is applied here. In the case of financing of current assets from the long-term sources, since the amount of assets to be financed is constantly changing, those sources would not be fully utilized and additionally, the interest of financing with longer maturity is also higher. When engaging in a business activity or an investment, an entrepreneur can prioritize security over profitability and in this case, he can also finance current assets from the long-term sources. By doing this, he would increase the security of his investment, but decrease its profitability. The analysis of the horizontal financial structure gives entrepreneurs a good insight in the financial situation of their enterprises. Not only entrepreneurs have interest in their financial indicators. These are also their business partners, money lenders and other stakeholders. The information about the financial situation enables the entrepreneur to actively and timely manage his own finances and especially to implement necessary measures if it comes to an unfavourable financial situation. There are numerous indicators and financial ratios which give insight into financial situation in terms of liquidity, solvency and financial security.

Besides liquidity, the analysis of the horizontal financial structure of a company also includes viewing of its solvency. Solvency is the ability of an enterprise to pay all of its due liabilities at any given time. To measure solvency, it is important to know the total value of all assets and to compare it to the amount of total liabilities. The lower the ratio of liabilities in total financing is, the higher the solvency is.

Optimal financial structure

All entrepreneurs focus on the question of an optimal financial structure for their own enterprise. The specifics of every individual company together with the industry they are in and macroeconomic environment they operate in do not allow for a uniform and generally applicable solution to this problem. The focus of this problem lies in the ratio between the size and structure of assets on one side and the size and structure of equity and debt on the other side. One of the most important things is to have a reasonable ratio between debt and equity. The optimal ratio depends on factors such as competitive position of a company, capital requirements of the business and industry it is in. The general rule is that the ratio between liabilities and shareholder's equity, debt to equity ratio, should be lower than 1 or 1. If this ratio is higher than 1, it means the liabilities are higher than the

shareholder's equity and this may indicate an unfavourable financial situation of a company. (Strauss 2005)

Optimal investment in fixes assets

Many empirical studies verify a positive correlation between the degree of planning of entrepreneurial activity (inclusive financial planning) and the success of the enterprise. (Gaunsel 2005) One finance expert claims about enterprises: „those who do not implement a well funded control at the beginning, plan to fail. (Davis 1988) Every entrepreneur should know which amount and structure of long-term assets, fixed assets is necessary for his enterprise. The function of investment planning defines these requirements before the actual investment takes place. An entrepreneur who is already longer in business will at this point analyze his actual financial structure with a focus on capital accumulation and conditions of raising debt. Well known and often used methods of evaluating the economic feasibility and efficiency are payback period rule, net present value method and internal rate of return method.

Payback period rule is a calculation of duration of a period in which an investment will pay back. This is the period in which investment cost will be refinanced through annual profits and amortisations.

Net present value method determines the value the future payments have today. The net present value is calculated by discounting the future payments and summing them up. The higher the difference between present value of future payments and initial investment is, the more financially attractive the project is.

Internal rate of return method is a method of calculating the average annual return of an investment. Internal rate of return is the discounting factor of discounting the future payments to have a present value of the initial investment. If internal rate of return (IRR) is higher than costs of capital plus the risk premium, the investment will be profitable within its whole duration.

The same methods described above also serve as a tool for choosing the best investment project. The investors who need to decide between more possible investment options which one to take, also use these methods of profitability. These are often banks and other financial institutions.

Determining the appropriate size of current assets

Finding of an optimal size of current assets is hindered by the fact that this value is constantly changing, depending on a number of internal and external factors. According to the principle of cyclical movement of all means of production, current assets have a central role in connecting all functions of the reproductive business process.

One of the roles of the entrepreneur is to ensure the sufficient amount of current assets as well as their optimal deployment. This means that the goal is to reach the highest profits possible with the minimum current assets. This is why the structure and the share of current assets in total assets of an enterprise is an important indicator. Since current assets are a part of a cyclical movement that happens at least once per year, in order to calculate the optimal amount of current

assets, one should determine the current assets turnover ratio. This value can be 1 or higher than 1. The coefficient of the yearly current assets turnover ratio is the ratio between total revenues and average employed current assets in a year. A higher coefficient implies more efficient use of current assets in the whole entrepreneurial process. Through permanent analysis of all revenues and expenses, the entrepreneur should pay attention not to become illiquid but also not to have unused cash somewhere on a bank account. This is why he should run a permanent financial policy of increasing the speed of revenues in the business process and at the same time to invest money wisely and on time. Again, it is a question of a principle which entrepreneur favours in exercising his business activity. Does he give advantage to security of an investment with a lower return or does he aim to achieve a higher profitability engaging in higher risks.

Optimal structure of sources of means of production

Optimizing the structure of sources of means of production means to ensure sufficient amount of sources with an appropriate ownership structure and maturity. An optimization of the size and structure of required assets of a company also influences the optimal amount and maturity structure of the sources of these assets. This is the reason for the goal of the entrepreneur to optimize sources in terms of their origin. The basis for this is the analysis and decision whether it is more economical to take a loan or to use own capital when investing in a project. The often used method when making this decision is a financial leverage. (Traverso 2003)

Entrepreneurs are primarily interested in profit maximization of own investments, so the optimal ratio between foreign sources of financing and own capital is the one with the highest return on equity (ROE) and the method of financial leverage assumes the profitability of using the debt financing. Furthermore, in order to define the limit of indebtedness, entrepreneurs use the rule of cost effectiveness, structured as a ratio between capital accumulation and financing costs. The coefficient can be higher than 1, 1, or lower than 1. A coefficient of lower than 1 points out at a situation where financing costs are higher than capital accumulation so from the entrepreneurial point of view, every raising of further debt should be critically examined.

Sources of financing

The business cycle and especially the financing cycle of every enterprise begins with sources of financing. The origin, the type and conditions of financing are key success factors for every company and the growth and development potential of an enterprise depend on them. This is the reason why these factors deserve a special focus of attention when analyzing the financing process of a company. The types of sources of financing and their size are depicted in the balance sheet in the area of liabilities and shareholder's equity. Sources of financing can be viewed from many different angles, among others, depending on a type of business ownership. Legal form of a company and the risks depending on it influence the decision on type and sources of initial financing, current financing

and development financing and growth. (Drucker 1992) There are three main legal forms of a company:

Trading company in ownership of one person

The owner is mostly also the manager. He bares the business risk solely. Nominal capital is generally the owner's investment, current financing comes from business activity and additional capital for development financing usually comes from the savings of the owner or from the annual profit.

Trading company in ownership of more people

It is an organizational form where partners manage the enterprise together, spread the business risk and share the profit. Partners ensure the nominal capital by their continuous share in the company, current financing comes from business operations and development financing is organized from a combination of sources.

Corporation (incorporated company)

A corporation generally has a higher number of owners, these are its shareholders. Shareholders ensure the nominal capital by organizing money, assets or rights, current operations (business activity) is financed from a combination of sources and development financing mostly by raising debt or capital increase. Shareholders organize a joint management, spread the business risk, share profits and decide on dividend payout.

Sources of financing according to their formation

Business processes can be financed from various sources which can be classified according to their formation to following groups:

1) Sources of financing from operations

They come from current business activity of a company and have a significant importance in terms of size and their share in total financing of an enterprise. Mostly, these are revenues from goods and services sold but they can also come from the sale of a part of fixed assets.

2) Sources of financing from investments

These sources are various loans for investments of an enterprise, which should in terms of their maturity be divided in medium-term and long-term loans. These are mostly loans from financial institutions but they can also be loans from business partners with specific conditions. **The access to bank loans by small and medium-sized enterprises is often limited.** The biggest obstacles for getting loans from banks come from the amount of money foreseen for crediting the company, from general terms and conditions of money investing and from insuring guarantee. Entrepreneurs seek for financing of their businesses loans with longer payback periods, lower credit costs, lower administrative barriers and minimal collaterals and banks aim at achieving exactly the opposite. Besides, more and more often there are debates about a situation of an absence of high-quality development programs for small and medium-sized entrepreneurs. Therefore, there are also alternative forms of sources of financing from investments other than from banks. These come from money brokers, business partners and other business partners.

3) Financing from the money sources

Money sources are based on financial activities of an enterprise. These are earnings from interest for loans, deposit money and dividends as well as earnings from transactions with stocks and securities.

Forms of financing

There are different criteria for classification of types of financing of an enterprise. The criteria are:

a) According to the availability of the source;
b) According to the origin of the source;
c) According to the ownership of the source.

According to the availability of the source

Here we differentiate between the short-term and long-term financing of an enterprise. The characteristics of a short-term financing are availability of the source up to one year, like for example short-term trade credits or money loans. Analogous to this, all sources of financing that are available for longer than a year are called long-term financing. These can be long-term loans or stock financing. In practice, sources of financing with availability between one year and five years are often called medium-term financing.

According to the origin of the source

According to the origin of financing, we differentiate between internal and external sources of financing. Internal sources of financing of a company are all these sources that come from business operations. Examples of this are profit, amortisation, securities, and savings. According to this, all other sources of financing that do not raise money for the company from its own activities, are called external sources of financing, like money loans or receipts from issuing securities.

According to the ownership of the source

We differentiate here between equity financing and debt financing. Equity financing consists of all sources that are personally assured by the owner or owners and do not have to be paid back. (www.extension.iastate.edu) These are nominal capital, increase in capital and retained earnings. Sources of debt financing are all those that do not come from the owner or from the own business. They create liabilities for the company, have a maturity and company has to pay interest for using them.

Equity financing

In every phase of a financing process, at initial financing, current financing and development financing, it is important to use appropriate sources of financing. An entrepreneur tries to finance his business as much as possible from his own sources, meaning from his equity. Initial capital is the first and the most important source of equity financing. It represents the starting point of a business activity. Then follow various types of revenues from operations but also from

financing, insurances, issues of stocks, amortization, net profit and other.

The first and the most important source of financing is the nominal capital (initial capital). After registering the business and existing articles of association, the known figure is the amount of the nominal capital and initial structure of sources of financing. The nominal capital can be in the form of money, assets or rights of managing the enterprise and it defines the size and structure of assets of a company.

During the business activity, the structure of sources of financing changes constantly. Money transforms itself into other non-financial asset forms (fixed assets and current assets) and then returns back into money form increased by profit. At the end of a business cycle (business year), the balance sheet and profit and loss statement are created and the annual profit or loss (from the profit and loss statement) will be reflected as a capital gain or capital reduction in a balance sheet. After being reduced by taxes, the profit carried forward will be used by the company as a source of equity financing in a coming business year.

Equity financing is a constant process which enables business development. The financing by customers is understood as a period between charging and shipment of goods, and revenues from a client can be seen on the particular client account which then reflects the balance on current account. The balance of a current account shows the total available cash which can be used for financing purposes.

Accounting as a function captures all business activities which cause a change in assets, capital, liabilities, financial profit or annual profit. An adequate financial planning, monitoring of all income and expenditure for supporting the planned business, enables the entrepreneur the insight in surplus of a current account. Entrepreneur can use this money as a financial investment which will give him earnings from interest, which can be again used as a source of equity financing.

Amortization is also a source of financing. The entrepreneur calculates the amortization with one of the legally foreseen methods, which suits him best for financing of business activity and for renewing and increasing the substance of assets. The amortization as an expense decreases the profit as a calculation basis for taxes, so the entrepreneur has to pay lower taxes. At the same time, amortization is an expense which does not cause an outflow of cash, so it has multiple positive effects as a source of equity financing of a company.

The entrepreneur can additionally increase the sources of equity financing by selling a part of his assets he is not currently using and earning interest for it. Current assets are very appropriate for doing so because they can be quickly sold and charged for. (www.efinancemanagement.com)

Possession of securities and stocks is another important form of equity financing since a cheque can be quickly and easily reimbursed. It is similar with other forms of securities. Receipts from stocks are these from the emission of own shares (sale at a given market price). Owning stocks of other companies in an own portfolio will also yield dividends which can also serve as a source of financing. Also the possession of bonds and other forms of current financial means earn

interest and entrepreneur can convert them into cash when he needs.

The net profit is another source of equity financing of a company. Profit (or loss) is calculated for a particular time span, mostly a business year, but it can also be a shorter period. Before calculating net profit, one calculates gross profit, shown as a difference between revenues and expenses in the analyzed period. When revenues are higher than expenses, the enterprise makes a gross profit and after its taxation, the amount that stays is net profit. By making profits, a company increases the sources of equity financing. The available cash on a current account increases the liquidity of a company and retained earnings increase the shareholder's equity and in turn the security of a business.

Debt financing

Debt financing is reached by lending money from financial institutions or from business partners. The entrepreneur himself can also be creditor of his own company if he invests in his company rather by giving it a loan than increasing its capital. So the debt financing of a company means ensuring its assets by creating liabilities to creditors (money lenders). Again, like equity financing, debt financing can be also divided in short-term and long-term financing. As short-term debt financing we understand taking short-term loans from banks or business partners or financing through short-term business means and examples of long-term financing are long-term loans from banks or business partners. (www.forbes.com)

To conclude, we can not stress enough that the primary goal all entrepreneurs have is to be successful in their business. This means to operate unlimited, constantly and as a result make profit and increase capital. In doing so, their company founding, running operations and development all depend on appropriate and high-quality financing. The goal is to ensure a stable financing and achieve growth. Important question is how, when and from which sources should financing be organized. Appropriate financing will ensure sufficient amount of money or capital, a synonym of the entrepreneurship and its main moving strength. To achieve sustainable success, entrepreneurs not only have to meet optimal financing but also other business decisions including investments.

References

Abrams, R. (2004): *Six-Week Start-Up,* Planning Shop, Palo Alto, 33

Accounting Concepts and Conventions, Accounting Word, On line: http://www.accounting- world.com/2011/10/accounting-concepts-and-conventions_4670.html

Brodsky, N. (2009): *Our Irrational Fear of Numbers*, Inc., 33

Davis, E. (1988): *Dodging the Bullet*, Venture, 78

Drucker, P. F. (1992): *Inovacije i poduzetnistvo*. *[Innovation and entrepreneurship]* Globus. Zagreb, 122

Gaunsel, B.B. (2005): *Toward a Framework of Financial Planing in New Venture Creation*, presented at United States Association for Small Business and Entrepreneurship Annual Meeting, January 2005, Palm Springs, California

Horvat, D., Tintor, Z. (2006): *Poduzetnicka ekonomija – Kako uciniti prvi korak [Entrepreneurial economics – How to do a first step]* Trgovacka akademija, Zagreb, 52

Internal Source of Finance, 2015: eFinance Management. On line: https://www.efinancemanagement.com/sources-of-finance/internal-source-of-finance

Lazaric, K., (1990): *Metode poslovnih financija [Methods of business finance]* Privredni vjesnik, Zagreb, 11

Orsag, S. (1997): *Financiranje emisijom vrijednosnih papira [Financing by emission of securities*] Rifin, Zagreb, 34

Skrtic, M. (2002): *Osnove poduzetnistva. [Essentials of entrepreneurship]* Mikrograd. Zagreb, 12

Strauss, S.D. (2005): *The Small Business Bible*. John Wiley & Sons Inc. New Jersey, 43

The 12 Best Sources Of Business Financing, 2010. Forbes. On line: http://www.forbes.com/2010/07/06/best-funding-sources-for-small-business-entrepreneurs- finance-dileep-rao.html

Traverso, D.K. (2003): *Poduzetnicke tehnike [Entrepreneurial techniques]* M.E.P. Zagreb, 14

Types and Sources of Financing for Start-up Businesses, 2013. On line: https://www.extension.iastate.edu/agdm/wholefarm/pdf/c5-92.pdf

Vukicevic, M. (2000) *Financiranje malog poduzetnistva [Financing of small entrepreneurship]*, RIF, Zagreb, 19

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Brands and their Association Networks

Zuzana Ihnátová, Ina Kováčová Bečková

Purpose of the article: One of the approaches how to create a concept of a brand is a form of identifying association network in the mind of the consumer and creating semantic maps composed of all associations that are largely shaped by cultural values of consumers. Methodology/methods: In the first phase, the author of the study was detecting the associations connected with the Mexican brand alcoholic beer Corona Extra using focus group with a sample of 15 respondents (Slovak students). In the second phase, she analysed the data found in the context of Slovak cultural values and compared them with the results of the secondary research (German and Spanish students). Scientific objective: The article highlights the importance of understanding cultural values of the target market for the management and brand communication across cultures. The main objective of the survey was to determine how the Slovak respondents perceive selected sample of global brand, to compare the findings of a secondary survey conducted at German and Spanish students, and in the final phase of the research to analyse the data found in the context of the cultural dimensions of respondents. Findings: On one hand, the associations formed by consumers about Corona Extra mutually differ depending on the countries surveyed. On the other hand, they correspond to the cultural values of the nation, and thus confirm the strong influence of the cultural aspects of the brand perception. Conclusions: The presented article confirms, that there will always be an open space for the extensive research in global marketing and cross-cultural differences in consumer behaviour. Exploring cultural aspects of communication of global brands will benefit not only in terms of increasing the efficiency of advertising campaigns, but also for the mutual knowledge and understanding between cultures.

Key words: *Brand, Culture, Values, Association network, Corona Extra.*
JEL Classification: *M15, M21*

Introduction

The brand holds its strong position to prepare an effective marketing mix, but especially in developing marketing communication of a company. In the past, the brand was used particularly to mark the product of the national manufacturers. Today, the brand has a much wider remit. It allows creating the perceived uniqueness of a product or service, distinguishing the competition while establishing intangible value in the form of consumer's trust and loyalty. Added emotional benefits or values provide product own identity (De Mooij, 2004). On the one hand, the brands are created 'artificially' by marketers to label products or services visually. On the other hand, the brands create some links through their communication, ideas or associations in the mind of the consumer, which largely influence consumer decision-making process. And to the extent, that the consumer often decides because of the brand, but the functionality of a product or service.

One of the approaches, how to create a concept of a brand, is a form of identifying *association network* in the mind of a consumer and creating semantic maps composed of a positive as well as negative associations (De Mooij, 2010). The association includes the brand name, visual processing tags, attributes, benefits and values as well as the place and the opportunity to use the product or service and others.

We assume in our article that the trend of convergence of consumer behaviour has not been confirmed worldwide, and we also agree to dispute the existence of groups of people across borders who share homogeneous values, needs and/or requirements. We agree that the needs of the population may be universal, but attitudes, motivation and manifestation needs of specific consumers at varying rates differ and are influenced by cultural values. Brand and its communication must, therefore, reflect the values of people and their cultural differences that are a precondition to create a positive relationship between consumer and brand.

The presented article highlights the importance of understanding and acceptance of existing cultural values of the target market for the management and brand communication across cultures. The main objective of the survey was to determine how the Slovak respondents perceived selected sample of global brand, and to compare the findings of a secondary survey conducted at German and Spanish students, and in the final phase of the research to analyse data found in the context of the cultural dimensions of respondents.

1 Literature review

1.1 The concept of brand

There is probably the most famous statement about the brand of the advertising guru David Ogilvy: *"A brand is what you get from your factory after it burns down."* (2007, p. 15). This quote clearly shows the importance of the brand even more nowadays, which is characterized by a saturated market of products and services. Consumers can choose items from each product line; and in most cases,

they often make decisions based on a brand. This is supported by the Haig (2006), who says that if there were no brands, every product would have a potentially equal chance of success: burgers would be just burgers, athletic shoes would be just athletic shoes and dark sparkling water with cola flavour would be simply a dark sparkling water with cola flavour. This means that the difference between successful and unsuccessful products is not based on the product itself but on the brand.

There are several definitions of the term, as it is usual with such a complex concept, which 'brand' certainly is. Marketing specialist Kotler defines a brand *as "the name, the title, the creative expression or combination of the preceding elements. Its purpose is to distinguish the goods or services of one seller or group of sellers from goods or services of competitors."* (1998, p. 390) The local author Lesáková writes, that the brand identifies not only a manufacturer, but also a service provider or a merchant, while marking goods with a specific brand is a fundamental instrument of a communication with target groups. The aim of marketing and communication strategies is that consumers perceive the brand as something specific and can satisfy their needs in an optimal way (2002). We add the final definition that the marketing and communication objectives should not meet 'only' needs, but in an ideal situation also the expectations created among a target group of consumers. In our perception, the needs and expectations of relatively large scale are interrelated and they influence each other. Expectations can create additional needs and vice versa, while meeting the needs does not automatically means meeting the full expectations. In this context, we can perceive a brand as a promise, which the manufacturer 'gives' to the consumer, that his expectations of the set of properties and features of the product or service will be met.

1.2 Aspects of a brand

Aspects of a brand are often factors that are used to clearly identify the brand and thus differentiate themselves from the competition, but also to increase the value of the brand itself. Therefore, the factors that directly affect the success of the brand on the market and are strongly influenced not only by social but above all the cultural values of consumers at the same time. A brand is defined by these main attributes: a name, a logo, colour and identity. The secondary brand attributes are: a slogan and a sound or music theme.

Name

Brand name selection is a complicated process from several aspects. First, nowadays, it is very difficult to find a name that has not been used or does not create some certain predetermined associations. As advertising Guru David Ogilvy says: *"To find a name that has not been registered by another company, is damn difficult."* (2007, p. 168) When determining the title, we need to build mainly on the fact, for whom the brand is primarily designed, as well as on its predicted long-term investment and territorial action. The brand name should be established so that it cannot be changed or edited in various stages of the life cycle of a product, or that the product launch extension should not have any effect on the brand on

geographically diverse markets. Each change implies a certain inconsistency in the mind of the consumer and can prove fatal for further brand action in the market, ideally, if the name is clear, concise and useful about the product. Moreover, if it has no negative connotations of the translation into foreign languages as part of its further dissemination across cultures.

Logo

Logo means for its brand a visual expression and is one of the most important brand identifiers. Healey (2008) defined logo as a characteristic functioning attribute in the context of the external environment, so that it evokes a clear understanding of brand in the mind of the recipient, stimulates his personal experience and strengthens the position for the other interactions. The strength of the logo appears even if a consumer can identify the brand without the brand's name. For instance, looking at the 'tick' sign, Nike brand automatically comes to mind of many. Graphic visualization of the logo, as well as the name, should not create negative connotations in the mind of the consumer through the symbols that are perceived negatively in his culture.

Colour

A selection of colours in visual processing of the logo is as important as the actual visual processing, as the overall completion of the logo is not critical only for the shape, but also for colour processing. Colour perception differs by gender, age, religion, psychological profile of the individual and his personal preferences and experiences. Moreover, the interpretation of colours is greatly influenced by cultural society factors (Svetlik, 2003). It is, therefore, essential to consider carefully the selection of colours in graphic designing of the logo of a brand, and to consider the above factors with the respect of the target groups, the preferred brand positioning and possible different colour perception in various cultures (i.e. a white colour is a symbol of death in Asian countries, though it is a colour of innocence and purity in Europe).

Brand identity

In addition to the visual processing of a brand that we have described above (name, logo, colour) the brand has the psychological level of expression – it is a way how consumers perceive the brand in the context of a rational and emotional benefits. In fact, Aaker (2003) argues that brand identity is a supporting factor in building relationship between the brand and consumers. Another author, Štensová, characterizes the brand identity as a *"set of associations, ideas in the mind of the consumer and these associations represent what the brand represents and they envision some promises of a producer or trader to the consumers"* (2006, p. 21). The author adds, there is the crucial role of the associations linked to the characteristics and values of the user that create an internal image as the result of emotional processes in the mind of the consumer. In this context, we can define brand identity through the association map – a concept which we will discuss later.

Slogan

Although, we have defined the slogan as a secondary attribute of a brand, its status in the brand communication is very important. Frequent repetition of descriptive slogan works much like a graphic symbol; therefore, it is easy for the

recipient to remember it. Thanks to an abridged form and symbolic nature of a slogan, this form of communication is used as a universal means of advertising, either alone or in addition to other forms of advertising (Jablonski, 2006).

Matúšová writes (2012, p. 38), that the slogan should be *"short, snappy and deliver a simple message. It is often based on emotional appeal to employ consumer around the brand."* We agree with this statement, and we emphasize the main nature of reference simplicity, which must be communicated clearly with the target group. It is also important, that the slogan is based on the advertising appeals that characterize the nature of the product or service. This enables a successful connection of the slogan and brand.

At the global marketing, we often face to a major decision whether a slogan associated with a global brand should or should not be translated in different markets from a geographic perspective. Verbal language is clearly an important element of communication and very specific factor in understanding the communication message. A small variation in pronunciation or 'hidden' associations can completely change the meaning of a word or a whole sentence. There are plentiful wrong and unsuccessful translations in the world of marketing. There may be two solutions: to keep an original English slogan untranslated at all, or to have two language versions – English one and a national one.

Sound or music theme

Sound or musical accompaniment is defined similarly to a slogan as a secondary attribute of a brand. In case, that the company decides to include this component in its brand communication, it must respect certain basic rules. First, sound theme is mainly considered to be an accompaniment of communication which means that it should execute its supporting role and, therefore, it can hardly operate in the communication independently. The force of a music theme is particularly the frequency of its repetition. Suitably selected sound or music phrase is intended to act on the emotional level of the recipient, and thus creates links especially in the subconscious level. Likeable tune or jingle then helps to create a link from the emotional to the rational level, so that, thanks to the familiar sound, the recipient can think of a brand, with which the sound is associated with.

But again, it is necessary to consider the fact that different melodies are preferred in different cultures, what can be used, for example, in promoting the brand in the country of origin effect strategy (e.g. Switzerland = high quality = Swiss watch = quality watch). In case that a considered country has a negative impact on the perception of the brand (e.g. poor quality of Chinese products), this emotion moves onto the actual product or service.

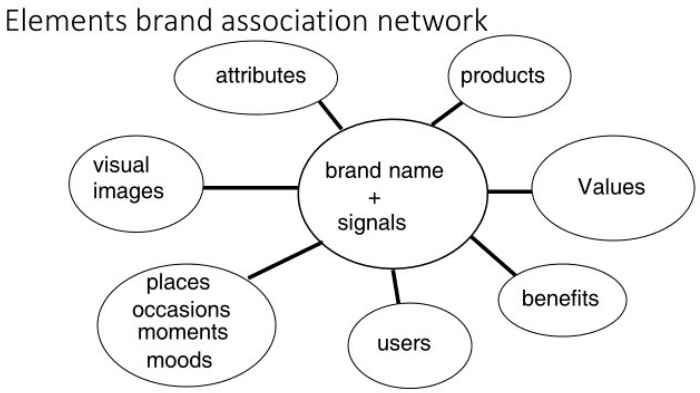
1.3 Brand as an association network

A brand is illustrated as a combination of various associations being created in the mind of the consumer. Introducing the operation of the association network of a brand is essentially important for understanding the role of an advertising and its central role to be played by developing global brands. There is evidence, that a direct link between consumers and brands is the result of the advertising. Meanings, that consumers give the objects of the material world,

largely affect their buying behaviour. And the aim of an advertising is to assign some attributes to some major brands. These meanings are then evaluated in the context of the target group, its motivations and aspirations. The fundamental objective of the advertising should be to create a strong association network of the brands to meet the consumer's values and motivations (De Mooij, 2010).

The main elements of the association network of a brand include: benefits, values, products, attributes, visual image, places, events, moments, moods and users.

Figure 1 Elements Brand Association Network



Source: De Mooij, Global Marketing and Advertising, 2010, p. 39.

These elements are strongly influenced by cultural values of existing consumers. They also establish the basic platform for the evaluation of the perception of a surveyed global brand by consumers included in the survey of this paper.

2 Methodology

2.1 Subject of the research

A global brand of the Mexican beer Corona Extra is the subject of the survey. The Corona Extra is the best-selling Mexican beer in the world; its communication strategy is built on the effect of country of origin. The brand was established in 1925 in Mexico. Since 1997, the Corona Extra has become the best-selling imported beer in the US. To empower its position as the Mexican symbol worldwide in 1999, the company launched a campaign with the slogan "La calidad no tiene fronteras". (Quality has no borders) In 2009, they launched a global campaign "Experience the Extraordinary ", which is positioning the brand as an unusual beer for unusual moments. On its Web site, the product is presented as a 'way' to connect people, and the foreigners become friends and friends become

even closer friends. Because Corona is more than just a beer. It represents the philosophy of living the moment, which is adopted by the whole world. Corona is not trying to complicate things, quite the contrary. Therefore, the Corona is drunk straight from the bottle, which is transparent, for there is nothing to hide in terms of composition and quality of beer. The restaurants or pubs are offering it cooled off and with a piece of lemon served directly on the neck of the bottle. "There are beers and then there is Corona "– others try to imitate it, but the original is the only one (www.corona.com).

2.2 Coding tools

In the first phase of the survey, we used the association network as a coding tool for recording associations induced by the brand (see image 1). In the second phase of the research, we used Hofstede's cultural dimensions for Slovakia, Germany and Spain (see table 1).

Table 1 Comparison of Hofstede's cultural dimensions: Slovakia, Germany and Spain

Cultural dimension	**Slovakia** Svetlik, 2008	**Germany** geert-hofstede.com	**Spain** geert-hofstede.com
Power position distance	41	35	57
Avoiding uncertainty	89	65	86
Individualism/collectivisms	70	67	51
Masculinity/feminism	28	66	42
Long-term/short-term orientation	53	83	48

Source: own processing

2.3 The research sample

Our research sample was represented by the students of a master degree study program – Marketing and Mass Media Communication - in the field of study 3.2.3 – Media Studies – at the Faculty of Mass Media, Pan-European University, who signed up for the compulsory optional course – International Marketing – in the academic year 2015/16. The survey was attended by the total number of participating students – 15.

The selection of the sample corresponds to the age of the target group of the Corona Extra brand, which is 18-35 years.

2.4 Research plan

The research plan was conducted in two phases. In the first phase, we examined associations connected with the Corona Extra alcoholic beer brand (Mexican beer) on a sample of respondents in the form of focus group. In the second phase, we analysed the data found in the context of existing Slovak cultural

values and compared with the results of the survey, which was conducted on a sample of German and Spanish students by an expert on intercultural issues – Marieke de Mooij (2010, p. 41).

3 The results, interpretation and comparison of the results

3.1 The results

In this part of the paper, we present the results of the association maps of the samples of respondents - students of the Faculty of Mass Media at Pan-European University. Figure 2 shows how a sample of students perceive a global brand of the original Corona Extra Mexican beer.

Figure 2 Corona Extra brand association maps of Slovak students

Source: own processing

3.2 Interpretation of results

The results are interpreted based on Hofstede's model of cultural dimensions. *Explication*: Although the results of the Světlík research show Slovakia as a famine country, we argue that rather masculine values prevail in Slovakia. High MAS index manifests in practice a relatively strong differentiation of the sexes. The perception of the assessed brand of beer as 'female' Radler confirms this argument. Also, the association of the beer with 'Breezer' is a form of attribution of female characteristics of the product, as especially women drink Breezer.

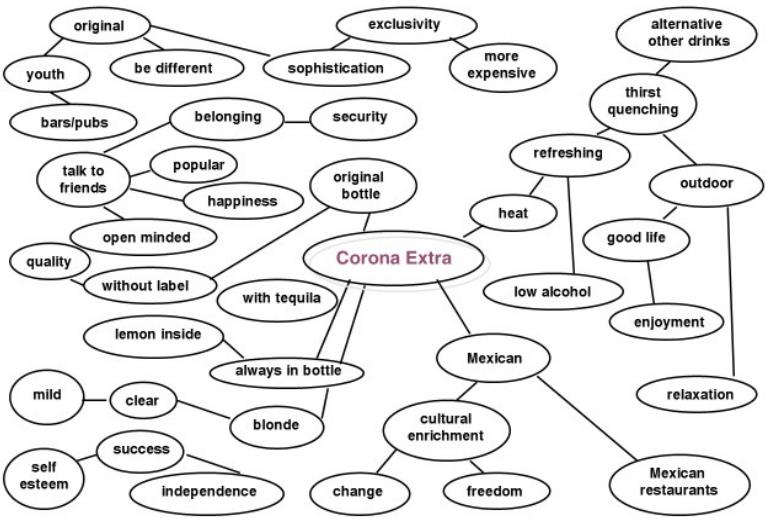
High IDV index is reflected in the chain, 'style' – 'image' – 'exclusivity' in the sense of 'exclusivity' or 'uniqueness'. These characteristics, together with the 'personalization' of the drink, which is formed by adding a piece of lemon, are complementary and establish the essence of the individualism index.

The 'sun' – 'Summer' – 'vacation' – 'beach' chain is the result of a global brand communication, with emphasis on the effect of country of origin. Mexico is associated primarily with the vacation destination in the Caribbean for our geographic latitude.

3.3 Comparison of the results

The figure 3 shows the results of a similar survey on a mixed sample of German and Spanish students.

Figure 3 Corona Extra brand association maps of German and Spanish students



Source: De Mooij, Global Marketing and Advertising, 2010, p. 41.

As pointed out by De Mooij (2010, p. 40), two different clusters of values are significant in the association maps.

- The **German value** assessments include: achievement, self-esteem, independence and freedom.

Explication: These values correspond to the German cultural dimensions. Germans are characteristically individualistic as a nation (IDV: 67) and masculine (MAS: 66). Individualistic values are reflected in the emphasis on individual autonomy (from groups, for example) and freedom of action. Masculine values are reflected in the strong competition and mutual challenge; accomplishments and achievements are valued in the society.

- On the contrary, the **Spanish values** manifest: belonging, happiness and sophistication.

Explication: Spanish people are in the context of other European countries collectivist (IDV: 51), which can be assigned to the values of solidarity and 'belonging' to the larger whole. Low scores of the masculinity index (MAS 42) are reflected in the prevailing feminine values in society, that prefers harmony, the emphasis on interpersonal relationships, and at the same time, the excessive competitiveness is not supported there. Spanish people are known for having fun in an informal atmosphere, and can fully enjoy life in the present. These aspects of their life philosophy are, therefore, reflected in the value of 'happiness'.

3.4 Slovakia, Germany and Spain Comparison

Slovaks and Germans are typical for a higher level of IDV index, but the symptoms are somewhat different due to the respondents' descriptions. The Slovak chain 'style' – 'image' – 'exclusive' is typical in the sense of 'exclusivity'. The German chain is 'independence' and 'freedom' that is rather differentiating themselves from their group and accent on individuality.

Higher MAS index is reflected by the Slovaks by gender differentiation and attributing female characteristics to the examined brand ('female'and 'radler'). The German index displays early signs of success and competitiveness, which is viewed positively in masculine culture.

Slovaks are different from the Spaniards in the IDV index. Slovaks are substantially rather individualistic, Spanish people collectivistic on the other hand and, therefore, there is not a large common penetration in the brand perception by the respondents from these countries. Similarly, the two surveyed countries are on opposite poles in the MAS index. As mentioned earlier, the Slovaks are rather masculine culture and Spanish people feminine. This difference is also reflected in a different perception of the brand. Slovaks associate the brand with exclusivity, image and style, what are the signs of masculine values. By contrast, there is emphasis of the Spaniards on belonging and happiness.

We can generally state that the Slovaks are rather closer to Germans in the cultural values, which are reflected in the perception of the Corona Extra brand (IDV, MAS). They significantly differ from Spanish people in the KOL and MAS indexes, which means that the both studied countries even largely differ in the perception of associations with the brand.

The respondents of all countries share common perception and brand connection with the effect of country of origin, i.e. 'Mexican Restaurants' and 'sun' – 'Summer' – 'vacation' – 'beach'. As mentioned above, this is a consequence of the global communication based on the promotion of the beer connected to the country – Mexico.

4 Conclusion

In the presented paper, we looked at the definition of the brand in terms of its association network, which is largely influenced by cultural aspects of target markets. Culture, as an important internal factor of consumer behaviour, plays

a strategic role in the life of a consumer in the modern age in the context of globalization and internationalization (Svetlik,2012). Brand helps the consumer decide which product to prefer over others, sometimes very similar products, often not only based on logical arguments. His relationship established on the brand plays a large role and is based on emotional factors. Popularity and preference for the brand are also based on existing associations bonded with the brand, which he creates in his mind himself. These associations are largely created by the advertising communication of the company. The communication designed to the global level does not automatically mean understanding and a correct interpretation of consumers in all parts of the world. Understanding intercultural differences, therefore, appears to be the key to decode advertising messages, despite the financial demands of this marketing strategy.

In the survey of the work, we found that the associations formed by consumers about the Corona Extra brand, on the one hand, mutually vary depending on the countries studied. On the other hand, they correspond to the cultural values of the nation, and thus confirm the strong influence of the cultural aspects of a brand perception. At the same time, we also found a common feature characteristic for all countries surveyed, resulting from a uniform global brand communication, with emphasis on the effect of country of origin. The selection of the sample corresponds to the majority intervention within the primary target group of consumers of the surveyed brand, despite certain limitations in generalizing the results to the national level of the population of the countries surveyed are not excluded.

This paper confirms that there will always be an open space for the extensive and detailed research in global marketing and cross-cultural differences in consumer behaviour. Exploring cultural aspects of communication of global brands will contribute not only in terms of increasing the efficiency of advertising campaigns, but also with the mutual culture knowledge and understanding.

References

Aaker, D. A. (2003): *Budovaní značky*: *Vytvoření silné značky a její úspešné zavedení na trh*. Brno: COMPUTER PRESS. 312 s. ISBN 80-7226-885-6.

De Mooij, M. (2004): *Consumer Behavior and Culture. Consequences for Global Marketing and Advertising.* Thousand Oaks, CA: Sage. 403 s. ISBN 978-1-4129-7990-0.

De Mooij. M. (2010): *Global Marketing and Advertising. Understanding Cultural Paradoxes*. Thousand Oaks, CA: Sage. 323 s. ISBN 978-1-4129-7041-9.

Haig, M. (2006): *Království značky*. Praha: Ecopress. ISBN 80-86929-09-4.

Hofstede, G. (2001): *Culture´s Consequences. Comparing Values, Behaviours, Institutions, and Organizations Across Nations* (2nd ed.) Thousand Oaks, CA: Sage. 596 s. ISBN 978-0-8039-7323-7.

Jablonski, W. A. (2006): *Politický marketing.* Brno: Barrister and Principal. ISBN 80-7364-011-2.

Kotler, P. – ARMSTRONG, G. (1992): *Marketing*. Bratislava: SPN, 1998. 385 s. ISBN 80-08-02042-3.

Matušová, J. (2012): *Budovanie a komunikácia značky. Značka a PR v reklame*. Trnava: UCM. ISBN 978-80-8105-440-2.

Ogilvy, D. *O reklame.* Management Press. 2007. 224 s. ISBN: 8072611546.

Světlík, J. a kolektiv (2008): *Kulturní aspekty české a evropské reklamy*. Praha: Professional Publishing. 56 s. ISBN: 978-80-86946-92-4.

Světlík, J. (2003): *Marketing pro evropský trh*. Praha: Grada Publishing. 272 s. ISBN 80-247-0422-6.

Světlík, J. (2012): *O podstatě reklamy*. Bratislava: Eurokódex. 312 s. ISBN 978-80-89447-85-5.

Štensová, A. (2006): Manažment značky. Vybrané problémy. Bratislava: vydavateľstvo Ekonóm. ISBN 80-225-2224-4.

Usunier, J. C., LEE, J. A. (2013): *Marketing Across Cultures*. Harlow: Pearson Education Limited, s. 477. ISBN 978-0-273-75773-3.

Web pages

Corona Extra. [online] [Cited 2017-04-13] Available from Internet: <http://www.corona.com/>

ITIM International. Country comparison by Geert Hofstede. [online] [Cited 2017-04-13] Available from Internet: <https://geert-hofstede.com/countries.html>

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