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As the new editor-in-chief, it is my pleasure to welcome you to issue number 52 of the *International Journal of Management and Economics*. My predecessor, Professor Jolanta Mazur, has greatly improved the academic standard of our publishing during more than 4 years of her diligent editorial work. Before stepping down from her position, Professor Mazur left the Journal in superb shape, setting a very high benchmark for me as the next editor-in-chief. I hope she will continue to inspire and help us further develop as Honorary Editor-in-Chief. I would also like to welcome three new members of the Academic Board: Professor Manuchehr Shahrkhi, California State University, USA, Professor Theo Vermaelen, INSEAD, France, and Professor Ralf Zurbrugg, University of Adelaide, Australia. I know that, together with other distinguished Board members, they will greatly contribute to the high academic profile, diversity, and international recognition of our Journal.

This issue consists of six papers covering attention-grabbing topics in both economics and management. Five of them are based on empirical research and one is an original conceptual work. From the geographical perspective, two papers focus on Central and Eastern Europe, one on emerging Asian economies, and one on Africa. The remaining papers are of general international orientation.

The first article, by Tobias Böing, Georg Stadtmann, and Meerim Sydykova, is entitled “Measuring Nominal and Real Convergence of Selected CEE Countries by the Taylor Rule”. In it, the authors evaluate business cycle convergence of the Czech Republic, Hungary, and Poland with the Eurozone. They also examine heterogeneity within these countries. By applying a simple Taylor rule with an inflation rate and unemployment gap they are able to obtain CEE country specific Taylor rates and compare them with Taylor rates for the Eurozone. The results demonstrate a convergence in Taylor rates with a high degree of heterogeneity between the examined countries. However, as business cycles seem to be still not fully synchronized, the authors conclude that joining the Eurozone might have happened too early in the three selected CEE countries.

The second paper, “FDI and Intra-industry Trade in the Automotive Industry in the New EU Member States”, by Łukasz Ambroziak, investigates how foreign direct investment (FDI) influenced intra-industry trade in automotive products in six new EU member states; namely, the Czech Republic, Hungary, Poland, Romania, Slovakia and Slovenia.
The research demonstrates that FDI inflows to the automotive sector was a significant factor shaping intra-industry trade in automotive products in selected countries during the 1995–2014 period. The author also argues that the development of intra-industry trade in automotive products allowed manufacturers and consumers from new EU member states to benefit more from international trade.

The third article covers a similar area of interest, but with a regional focus on Asia and shows how FDI inflows depend on the development of a free market institutional framework. Klimis Vogiatzoglou, in his paper “Free Market Institutions and FDI Performance in Emerging Asian Economies”, examines long-run developments in free market institutional systems across thirteen emerging economies in South, Southeast, and East Asia over the period 1995–2014. Using a panel-econometric model, he empirically assesses the impact of free market institutional progress on the inflow of FDI to a given country. The results indicate that the free market institutional framework is a significant factor driving inward FDI. In other words, it looks like multinational companies seriously take into account the state of free market institution development while making their location choices across emerging economies. This should be a meaningful message for all governments and regulators that make an effort to attract foreign investors.

The next paper, “Comparative Models of Capitalism in the Areas of Financial System and Corporate Governance – the Diversity of Capitalism Approach Perspective”, by Paweł Pisany, is an original conceptual work related to the methodology and results of a comparative analysis conducted by Bruno Amable in the area of financial systems and corporate governance. The article offers interesting examples and presents an application of game theory in comparative institutional studies, including the author’s own “institutional game.” The author argues that, despite some criticism (mainly) regarding its assumptions and interpretations, Amable’s methodology remains an appropriate tool for assessing types of modern capitalism and has potential practical applications, particularly in current, turbulent times. For instance, such an approach may also be applicable when designing current financial reforms in the EU, especially the European Capital Markets Union (CMU).

In the fifth article, “Internationalization of the Entrepreneurial Activity of Social Purpose Organizations”, Rafał Kusa aims to identify patterns of international entrepreneurial activity of social purpose organizations. The author employs a four-dimensional cluster analysis based on a survey sample of 55 international social ventures, distinguishing 3 homogenous patterns of internationalization.

The final paper of this issue, “Perceived Service Quality and Customer Loyalty: A Mediating Effect of Passenger Satisfaction in Nigerian Airline Industry”, was written by Rahim A. Ganiyu. The author uses a cross-sectional survey research design to gather primary data with the help of a structured questionnaire and collects a convenient sample of 800 respondents. Methodologically, the paper relies on correlation and multiple regression analysis to investigate the collected data. The findings support the conceptual
hypothesis that perceived service quality is positively related to passengers’ satisfaction and, by extension, enhances loyalty towards the airlines. Indeed, passengers’ satisfaction partially mediates the relationship between service quality and customer loyalty. As intuitive as it may seem, the way to build a loyal base of customers is to identify what they principally expect from an airline and then satisfy their needs.

This is the last issue in 2016. At the end of the work, we list the reviewers who helped us assess the submissions considered for publication over the past year (issue numbers 49, 50, 51, and 52). We would like to thank them cordially for their time and expertise in keeping our academic standards high. We would also like to express our appreciation in the name of the many authors who benefited from inspiring remarks and suggestions from our reviewers about how to improve their articles.

At the turn of the year, I would like to wish all readers, authors, and other members of our academic community a Happy New Year 2017. May the New Year bring us prosperity, plenty of intellectual inspiration, and fulfillment in our professional and scientific mission.
Abstract

We propose using a simple Taylor rule to evaluate business cycle convergence of the Czech Republic, Hungary, and Poland with the Eurozone. Our findings indicate an ongoing convergence of those CEE countries to the Eurozone, but with instabilities and heterogeneity between the countries. Especially Poland has shown a high degree of convergence in recent years. But there are still relevant differences in Taylor rates of each country to the Eurozone of about two percentage points.

Keywords: CEE, monetary policy, currency union, convergence, Taylor rule

JEL: E52, E58, F15
Introduction

One of the characteristics of a currency union is that there exists only one central bank which has to implement a monetary policy for all its members. Since the central bank can only set one target rate common to all countries, it has to orientate itself at the weighted average of the macroeconomic conditions. Therefore, only in case that the member countries have reached a sufficient degree of convergence, in particular business cycle convergence, the monetary policy will suit all countries. In the Eurozone countries are evaluated according to the Maastricht criteria.

However, several authors criticize that these criteria measure just a nominal convergence but not real convergence [e.g. Heylen et al., 1995]. While nominal convergence is about nominal macroeconomic variables such as inflation rates or nominal interest rates, real convergence is about real macroeconomic variables such as unemployment rates or the real GDP. Despite this criticism, the Maastricht criteria are still relevant for all Central and Eastern European (CEE) countries. Once a country fulfills the criteria, it has to abolish its national currency and adopt the Euro [De Grauwe, Schnabl, 2005].

In this paper we examine the degree of convergence to the Eurozone and the heterogeneity within the CEE countries. By applying a simple Taylor rule with an inflation rate and unemployment gap [Nechio, 2011] we derive CEE country specific Taylor rates. We also compare these CEE rates with Taylor rates for the existing Eurozone.

Our results show a convergence in Taylor rates with a high degree of heterogeneity between the CEE countries. Despite that, business cycles are still not fully synchronized so that the decision to join the Eurozone might be too early for them to take.

The remainder of the paper is structured as follows: section 2 consists of brief review of the aspects connected with the convergence of CEE countries to the Eurozone. In section 3 we describe the use of Taylor rule for convergence assessment, while we present the data and our methodology in section 4. The results are presented in section 5. We finally conclude the results in section 6.

Convergence Between CEE Countries and the Eurozone

Central banks set interest rates to achieve stable prices or low unemployment volatility. The optimal interest rate to accomplish those goals depends on the state of an economy. In the presence of, for example, contractionary demand shocks central banks have to decrease the interest rate to achieve its goals [Blanchard et al., 2013].

In a currency union, however, a central bank sets one interest rate for all member countries. This raises the problem that countries which are members of that currency
union will incur costs, because the common interest rate likely deviates from the optimal interest rate. These costs are relatively small in case that the economies have reached a high degree of business cycle convergence.

In that case, economies are facing the same fundamentals and shocks so that the central bank has to set roughly the same interest rate. Then, all economies of a currency union will achieve price stability and low volatility of unemployment and output. In the opposite case of a high degree of heterogeneity, a common interest rate will not satisfy the needs of individual economies so that economies bear high costs of being a member of a currency union.

For the European Monetary Union, the Maastricht criteria [Forgó, Jevčák, 2015] should ensure a sufficiently high degree of convergence. These criteria demand low inflation and low interest rates, exchange rate stability, and low government debt levels and deficits. One major critique of the Maastricht criteria is that they measure nominal convergence but not real convergence [e.g. Heylen et al., 1995]. While nominal convergence is based on nominal macroeconomic variables, real convergence is about the convergence of real macroeconomic variables such as business cycle measures (output or unemployment gaps).

The benefit of real convergence is that it lowers the costs and increases the political support of being member of a currency union [Heylen et al., 1995]. For instance, high unemployment rates in European Monetary Union (EMU) countries due to the common currency might lower its political support. Nominal and real convergence have been studied for CEE countries. Fidrmuc and Korhonen [2006] survey studies on business cycle convergence for CEE countries. They find a great variation of results depending on the country and the methodology, and the strongest evidence in favor of convergence for the Czech Republic and Poland. In the more recent study for CEE countries mostly, Gächter et al. [2013] even find evidence for a decoupling of business cycles after the global financial crisis starting in 2007 and a high degree of heterogeneity between those countries. Matkowski et al. [2016] analyze the real income convergence of CEE countries with western European countries. They find clear-cut evidence in favor of an ongoing convergence in real income. Cevik et al. [2016] examine real convergence in CEE countries by relying on several macro variables. They find a considerable convergence in trade and productivity, but there has been limited evidence of business cycle convergence.

There are several problems with existing methodologies that assess convergence. Most econometric methodologies are not very traceable or robust. For instance, the identification of supply and demand shocks in dynamic systems is difficult and nontransparent. We use the output or unemployment gap as an alternative, which also allows decomposing the business cycle into a supply and demand component and makes the identification of shocks more transparent and robust. Some other methodologies for real convergence, such as unit root tests or co-integration studies, have the problem of not measuring business cycle synchronization.
Additionally, most methodologies do not aggregate different criteria, such as inflation and unemployment. Actual interest rates measure those criteria implicitly, when assuming the central bank to react to those fundamentals. However, central banks of CEE countries which seek to become member of the EMU, might set interest rates to fulfill the Maastricht criteria or suffer from institutional deficits, which makes the convergence of actual interest rates less sensible.

Assessing Convergence by the Taylor Rule

Monetary policy rules have gained importance in the last few years [Williams, 2015]. Within the so called ‘Federal Reserve Accountability and Transparency Act of 2014 (FRAT)’ Bernanke [2015] evaluates several Taylor rates related to the monetary policy implemented by the Federal Reserve. The original work of Taylor [1993] focuses on the following relationship:

\[ i_t = 1 + 1.5 \cdot \pi_t + 0.5 \cdot (y_t - y_t^*) \]

\( i_t \) is the nominal interest rate (Taylor rate) set by the central bank in percentage. \( \pi_t \) and \( y_t - y_t^* \) are the inflation rate and the output gap, respectively. Taylor [1993] assumes for equation (1) an inflation target of 2 percent and a real interest rate of 2 percent, which is roughly suitable for the European Monetary Union.

Nechio [2011] uses a slightly different version of the Taylor rule to examine the macroeconomic conditions and the degree of heterogeneity within the Eurozone:

\[ i_t = 1 + 1.5 \cdot \pi_t - 1 \cdot (u_t - u_t^*) \]

Nechio [2011] relies on the unemployment gap \( (u_t - u_t^*) \) instead of the output gap \( (y_t - y_t^*) \) to measure the business cycle. There are some advantages of using the unemployment gap, including its availability on a monthly basis and its higher importance to voters than the output gap. We followed the work of Nechio [2011] and applied the Taylor rule defined in equation (2). In both equations, the Taylor principle is fulfilled, since the coefficient with respect to the inflation rate of 1.5 is greater than 1. In this case the monetary policy is contractionary after an increase in inflation so that the real interest rate actually increases.

Our proposal is to use a Taylor rule for aggregation of different criteria of convergence, i.e. inflation rates and the unemployment gap, to one measure in a sensible way. Furthermore, Taylor rule uses criteria which represent important goals of central banks and it provides a single number per each period, which is easy to interpret.
There are, at least, two objections to this approach. First of all, the weights proposed by Taylor [1993] or Nechio [2011] might not describe the optimal monetary policy rule for each economy or currency union. For example, the ECB might use different weights than those proposed in the literature. We can resolve this problem by estimating a Taylor rule of the Eurozone to determine those optimal weights. Secondly, the assumption of a constant natural interest rate, which influences the intercept in a Taylor rule, is questionable. However, if the natural interest rates move in the same direction by the same amount between two economies, the difference in Taylor rates is unaffected.

Data and Methodology

We selected the Czech Republic, Hungary, and Poland as the economically most interesting CEE countries, because they are the most likely candidates for an accession to the Eurozone. Detailed information with respect to the different data sources are given in the appendix. We use monthly sampled data from 01/1998 to 05/2016 for the inflation and unemployment rate to construct Taylor rates. Since the Non-Accelerating Wage Rate of Unemployment (NAWRU) is only available on an annual basis, we assume the NAWRU to be constant within one year. In order to measure inflation, we rely on the consumer price index. For the OLS regression to determine alternative weights, we use data from 01/1999 to 05/2016 of the main refinancing rate of the ECB, the inflation rate, and the unemployment gap.

For the computation of Taylor rates, we use, first, equation (2), which applies the weights by Nechio [2011], and, second, an OLS specification. We present both specifications as a robustness check. For the second specification, we run an OLS regression to determine the weights and yield:

\[(3) \quad i_t = \beta_0 + \beta_1 \cdot \pi_t + \beta_2 \cdot (u_t - u_t^*) + \epsilon_t\]

Table 1 presents the full regression output. Especially the coefficient with respect to the inflation rate is lower in the OLS specification than in equation (2) so that the ECB reacts less strongly to changes in the inflation rate. Interestingly, the Taylor principle is not fulfilled.

We assess business cycle convergence by rolling correlations and rolling volatility over a period of six years, which is roughly one business cycle:

- Correlation: The development of synchronization of Taylor rates is assessed by rolling correlations. It is computed by Pearson’s correlation coefficient and the correlation refers to Taylor rates of the Czech Republic, Hungary, or Poland with those of the Eurozone.
Tobias Böing, Georg Stadtmann, Meerim Sydykova

- Volatility: The development of deviations of Taylor rates is assessed by a rolling volatility or dispersion measure. For period $t$, this volatility measure for country $j$ (the Czech Republic, Hungary, or Poland) is:

$$vol^j_t = \sqrt{\frac{1}{T} \sum_{t=1}^{T} (tr^j_t - tr^{EZ}_t)^2}$$

$T$ is the number of observations in an estimation window. $tr^j_t$ and $tr^{EZ}_t$ are the Taylor rates of country $j$ and the Eurozone, respectively.

Results

Taylor rates for the Czech Republic, Hungary, Poland, and the Eurozone are presented in Figures 1 and 2. Figure 1, by using the weights from Nechio [2011], suggests three phases. In the first phase the Taylor rate decreases tremendously in each of the CEE countries due to the decline of inflation rates, which can be seen in Figure 7. This might be attributed to the transition to market economies. The end of this phase differs between the CEE countries. While the Czech Republic experiences a relatively fast convergence towards low Taylor rates of less than 5 percent, Hungary and Poland shows slower convergence.

In the second phase, from around 2001 to 2013, there are still significant differences in Taylor rates between the CEE countries and the Eurozone; and the volatility of Taylor rate in those CEE countries is higher than the volatility in the Eurozone. In the third phase starting in 2013, there is a convergence in Taylor rates in Figure 1, although there is still a difference of around two percentage points with the Eurozone. Figure 2, by using OLS weights, which put less emphasis on the inflation rate, shows less volatile Taylor rates and smaller deviations from the Eurozone interest rate. Especially in Hungary, there is a significant convergence from 2000 to 2012. From 2012 to 2016, however, the Taylor rates in CEE countries are persistently higher than in the Eurozone.

We present rolling correlation estimates in Figures 3 and 4 to assess the synchronization of Taylor rates. Each point represents the correlation with Taylor rates of the Eurozone over the past 6 years. The figures show a high degree of heterogeneity between the CEE countries after the initial phase of convergence. Poland experienced a high degree of synchronization from 2002 to 2008 and from 2011 to 2016. After the global economic crisis in 2010, however, the correlation of Taylor rates between Poland and the Eurozone was weak. The synchronization of Taylor rates between the Czech Republic and Hungary with the Eurozone was relatively stable. Especially when using OLS weights, the synchronization decreased since the global financial crisis in 2008 (see Figure 4).

In Figures 5 and 6 we present the volatility over the last 6 years in order to assess the deviations from the Eurozone Taylor rates. After the initial phase until 2004, the typical
deviations were relatively stable. The levels of deviations differ between the CEE countries. In the case of the Czech Republic the difference from Taylor rates in the Eurozone has been around or less than two percent. Poland showed higher deviations of around 4 percent, but they decreased clearly from 2009. In the case of Hungary, the deviations differ between both Figures. The results show, however, a relevant difference of Taylor rates to those in the Eurozone.

Our results are in line with previous literature. Firstly, we confirmed relevant differences between the CEE countries. This applies mostly to Poland, which differs from both other countries. Its differences in Taylor rates are still very high, although there has been clearly an ongoing convergence in recent years. Secondly, like Gächter et al. [2013], we found a decoupling in business cycle in the Czech Republic and Hungary.

**Conclusion**

We analyzed the development of inflation rates and unemployment gaps for the Czech Republic, Hungary, and Poland by using Taylor rates. Our findings suggest an ongoing convergence among countries. There have been relevant deviations from the Eurozone in those countries in recent years.

There has been a synchronization of Taylor rates, however, the results are not very stable over time. There are differences between the Czech Republic, Hungary, and Poland so that every country should be evaluated on its own. In recent years Poland has shown a clear convergence to Taylor rates of the Eurozone. This holds for the business cycle synchronization and for absolute deviations. The Czech Republic showed a high degree of convergence from 2004 to 2011. The convergence although has been lower in recent years. Hungary experienced a slower convergence than the Czech Republic and Poland. Our results indicate that accession of the Czech Republic, Hungary, and Poland to the Eurozone might be an option in the following years, which can be regarded as a positive development. The deviations from Taylor rates of the Eurozone in recent years are not larger than for peripheral countries of the Eurozone [Nechio, 2011].

The results of Nechio [2011] show that it is highly questionable whether the Eurozone is an optimal currency area in itself, which is shown by the experiences of some EMU countries during the economic crisis since 2007. Taking this point as well as the uncertainty about convergence into consideration and facing the fact that it is easier to join the Eurozone than leaving it, it seems sensible to wait a couple of years to have evidence of business cycle convergence over a longer period.
Notes

1. Author’s email address: boeing@europa-uni.de
2. Author’s email address: stadtmann@europa-uni.de
3. Author’s email address: meerim.n@gmail.com
4. Currently, the Eurozone consists out of the following 19 countries: Austria, Belgium, Cyprus, Estonia, Finland, France, Germany, Greece, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, the Netherlands, Portugal, Slovakia, Slovenia, and Spain.
5. In the case of the European Monetary Union, the single main objective is price stability, which is defined by an inflation rate measured by consumer prices of below but close to 2 percent in the medium term. But since many central banks also care about unemployment, such as the Federal Reserve, and since both goals are related to each other [Blanchard, Gali, 2007], we focus in our analysis on both inflation and unemployment.
6. This is consistent with equation (1), since $4 + 1.5 \cdot (\pi_t - 2) + 0.5 \cdot (y_t - y_t^*) = 1 + 1.5 \cdot \pi_t + 0.5 \cdot (y_t - y_t^*)$.
7. Both Taylor rules would lead to the very same level of the Taylor rate in case that the following relationship holds perfectly: $0.5 \cdot (y_t - y_t^*) = -1 \cdot (u_t - u_t^*)$. The term in brackets on the left-hand side symbolizes the output gap and the term in brackets on the right-hand side symbolizes the unemployment gap.
8. See, for example, Woodford [2001] who argues that a Taylor rule satisfies several properties of optimal monetary policy.
9. See European Commission [2013] for a detailed description of the procedure to calculate the NAWRU.
10. The t-statistic with respect to $H_0: \beta_1 = 1$ is $-9.26$. We use robust standard errors following Andrews [1991] to accommodate for autocorrelation.

References


Appendix

Description of the Data Set

The data set was downloaded from ECB’s Statistical Data Warehouse (unemployment rate, inflation rate, main refinancing rate) and from the AMECO Database (NAWRU) on 30/08/2016.

- **Inflation Rate**: Harmonized consumer price index; annual growth rate; ICP.M.CZ.N.000000.4.ANR (Czech Republic), ICP.M.HU.N.000000.4.ANR (Hungary), ICP.M.PL.N.000000.4.ANR (Poland), ICP.M.18.N.000000.4.ANR (Eurozone (EA 19))

- **Unemployment Rate**: Standardized unemployment; total; STS.M.CZ.S.UNEH.RTT000.4.000 (Czech Republic), STS.M.HU.S.UNEH.RTT000.4.000 (Hungary), STS.M.PL.S.UNEH.RTT000.4.000 (Poland), STS.M.I8.S.UNEH.RTT000.4.000 (Eurozone (EA 19))

- **Non-Accelerating Wage Rate of Unemployment (NAWRU)**: AMECO Database; ZNAWRU (for Czech Republic, Hungary, Poland, and Eurozone)

- **Main Refinancing Rate**: FM.B.U2. EUR.4F.KR.MRR.FR.LEV (Eurozone), data from 01/1999 to 05/2016

### TABLE 1. Regression results of the OLS Taylor rule estimation

<table>
<thead>
<tr>
<th>Variable</th>
<th>Estimated coefficient</th>
</tr>
</thead>
<tbody>
<tr>
<td>Intercept</td>
<td>1.61***</td>
</tr>
<tr>
<td></td>
<td>(11.89)</td>
</tr>
<tr>
<td>Inflation rate</td>
<td>0.42***</td>
</tr>
<tr>
<td></td>
<td>(6.60)</td>
</tr>
<tr>
<td>Unemployment gap</td>
<td>-0.93***</td>
</tr>
<tr>
<td></td>
<td>(-19.52)</td>
</tr>
<tr>
<td>Adjusted R2</td>
<td>0.76</td>
</tr>
<tr>
<td>Observation</td>
<td>209</td>
</tr>
</tbody>
</table>

Note: *** refers to a significance level of 1%. The parenthesis shows the t-statistic with respects a null hypotheses $H_0: \beta_k = 0$. We use robust standard errors following Andrews [1991] to accommodate for autocorrelation.

Source: ECB, Eurostat, own elaboration.
Measuring Nominal and Real Convergence of Selected CEE Countries by the Taylor Rule

FIGURE 1. Taylor rates using weights by Nechio [2011]

Note: The Taylor rates are computed by the following specification: $i_t = 1 + 1.5\pi_t - 1(u_t - u_t^*)$.

Source: ECB, Eurostat, own elaboration.

FIGURE 2. Taylor rates using OLS weights of the Eurozone

Note: The Taylor rates are computed by the following specification: $i_t = 1.61 + 0.42\pi_t - 0.93(u_t - u_t^*)$.

Source: ECB, Eurostat, own elaboration.
FIGURE 3. **6-year rolling correlations with the Eurozone Taylor rate (Nechio [2011] weights)**

![Graph showing 6-year rolling correlations with the Eurozone Taylor rate (Nechio [2011] weights)](image)

- **Czech Republic**
- **Hungary**
- **Poland**

**Source:** ECB, Eurostat, own elaboration.

FIGURE 4. **6-year rolling correlations with the Eurozone Taylor rate (OLS weights)**

![Graph showing 6-year rolling correlations with the Eurozone Taylor rate (OLS weights)](image)

- **Czech Republic**
- **Hungary**
- **Poland**

**Source:** ECB, Eurostat, own elaboration.
FIGURE 5. 6-year rolling volatility with the Eurozone Taylor rate (Nechio [2011] weights)

Source: ECB, Eurostat, own elaboration.

FIGURE 6. 6-year rolling volatility with the Eurozone Taylor rate (OLS weights)

Source: ECB, Eurostat, own elaboration.
FIGURE 7. Inflation rate

Source: ECB, Eurostat, own elaboration.

FIGURE 8. Unemployment gap

Source: ECB, Eurostat, own elaboration.
Łukasz Ambroziak

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FDI and Intra-industry Trade in the Automotive Industry in the New EU Member States

Abstract

This paper investigates the extent to which foreign direct investment (FDI) influenced intra-industry trade (IIT) in automotive products in six New EU Member States (the Czech Republic, Hungary, Poland, Romania, Slovakia and Slovenia) in the 1995–2014 period. Changes in IIT intensity are analysed using the Grubel-Lloyd indices. To examine the IIT pattern, IIT indices are divided into two types of trade: IIT in vertically differentiated products (low and high quality VIIT) and IIT in horizontally differentiated products (HIIT). The research indicates that IIT in automotive products allowed manufacturers and consumers from the new EU Member States to benefit more from international trade. FDI inflow to the automotive sector of the NMS has been a key factor shaping IIT in automotive products.

Keywords: foreign direct investment (FDI), intra-industry trade (IIT), automotive industry, new EU Member States

JEL: F14, F15

Introduction

The automotive industry plays an important role in the European Union in terms of output, employment and trade flows. Over the past two decades, significant changes to the automotive map of the EU have occurred. Since the early 1990s several new EU Member States (NMS) have attracted substantial foreign direct investment (FDI) into
their automotive industries. At the beginning, FDI inflows to the automotive sector were consisted mainly of acquisitions of existing industrial plants by foreign investors to restructure them (brownfield investment) and start joint ventures. Apart from Western European corporations (Italian Fiat, German Volkswagen, French Renault), foreign investors also included South Korean Daewoo (in a joint venture with Fabryka Samochodów Osobowych – FSO in Warsaw and in Lublin in Poland).

The factors conducive to investment inflows from both directions were different. Automotive company involvement from the EU was driven by the expectation of benefits related to fragmenting production processes. Central European countries were selected as investment locations based on such factors as the long tradition of car production (FSO in Poland, Skoda in the Czech Republic, Dacia in Romania), a skilled workforce, and relatively low labour costs. Investment inflow to the automotive sector was also fuelled by the economic cooperation of those countries with the European Union (which commenced in the 1990s) and prospects of their future EU membership. Asian investors were primarily motivated by the desire to evade tariff barriers and maintain previous export markets (the so-called tariff jumping investment).

In addition to brownfield investment, greenfield investment played an important role in foreign direct investment (FDI) inflows to the examined countries. This consisted of building enterprises ‘from scratch’ to produce motor vehicles, rather than buying an existing plant. Such investors consider factors such as the labour availability, proximity to suppliers and outlets, and transport infrastructure levels. Consequently, more attractive conditions in the Czech Republic and Slovakia resulted in lost car factory opportunities for Poland with Japanese Toyota, which owns the plants in Kolín (the Czech Republic), French PSA Peugeot Citroën (manufacturing in a factory in Trnava, Slovakia) and Korean Hyundai (which owns plants in Žilina, Slovakia, and in Nošovice, the Czech Republic).

The largest inflow of foreign direct investment in the transport equipment sector went to the Czech Republic (Table 1). As of the end of 2014, the stock of inward FDI in the transport equipment industry exceeded 10.6 billion EUR and accounted for nearly one-third of FDI in Czech manufacturing and over 10% of inward FDI in the entire Czech economy. The second largest recipient of foreign investment was the transport equipment industry in Poland (9.2 billion EUR as at the end of 2014). However, FDI in this sector played a lesser role than in the Czech Republic. In Hungary, Slovakia and Romania the stock of inward FDI in the transport equipment industry as of the end of 2014 was below 4 billion EUR, whereas in Slovenia, was – 0.5 billion EUR. Importantly, in Slovakia the transport equipment industry accounted for as much as 27% of foreign manufacturing capital.

Foreign direct investment inflows into the automotive industries of new EU Member States increased trade flows of automotive products and changed trade patterns. A growing share of overall trade represents intra-industry trade (IIT), i.e. the simultaneous export and import of products within the same industry. Per theory, the existence of IIT increases the benefits of trade in relation to inter-industry trade for both producers and
consumers. Growing economies of scale reduce production costs and prices while contributing to product diversity. This benefits consumers since lowering production costs leads to decreasing prices. In addition, a diversified range of products allows consumers to have a wider choice of goods and better satisfy their expectations. Producers also benefit from this situation as they are likely to increase sales.

### TABLE 1. Inward FDI in the transport equipment industry in the NMS (as at the end of 2014)

<table>
<thead>
<tr>
<th>Country</th>
<th>FDI in transport equipment</th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>value in million EUR, in percent</td>
<td>share in total FDI, in percent</td>
<td>share in manufacturing FDI, in percent</td>
</tr>
<tr>
<td>Czech Republic</td>
<td>10621.8</td>
<td>10.6</td>
<td>31.7</td>
</tr>
<tr>
<td>Hungary</td>
<td>3819.4</td>
<td>4.7</td>
<td>18.8</td>
</tr>
<tr>
<td>Poland</td>
<td>9221.5</td>
<td>5.4</td>
<td>18.3</td>
</tr>
<tr>
<td>Romania</td>
<td>3244.0</td>
<td>5.4</td>
<td>16.8</td>
</tr>
<tr>
<td>Slovakia</td>
<td>3650.0</td>
<td>8.6</td>
<td>27.0</td>
</tr>
<tr>
<td>Slovenia</td>
<td>495.0</td>
<td>4.9</td>
<td>15.0</td>
</tr>
</tbody>
</table>

Source: own elaboration based on wiiw Database on Foreign Direct Investment.

This paper investigates the extent to which FDI influenced intra-industry trade in automotive products in six New EU Member States (the Czech Republic, Hungary, Poland, Romania, Slovakia and Slovenia) in 1995–2014 period. Changes in IIT intensity are analysed with the use of the Grubel-Lloyd indices. When examining the IIT pattern, IIT is divided into two types of trade: IIT in vertically differentiated products (low and high quality VIIT) and IIT in horizontally differentiated products (HIIT).

The paper begins with the theoretical aspects of FDI impacts on intra-industry trade and a review of research studies. Furthermore, ITT changes in automotive industry products in the NMS are analysed. Trade in automotive products are comprised of final goods (motor vehicles) and intermediate products (parts and accessories).

### The Impact of Foreign Direct Investment on Intra-industry Trade

The theoretical analysis of ITT determinants in the literature is substantial. Originally, Loertscher and Wolter [1980] noted that IIT between countries was intense if gross domestic product (GDP) \textit{per capita} of the trading countries was high, given that the difference in this indicator was relatively small and the average size of their aggregate outputs was high and
similar. According to the above-mentioned literature, IIT can also be influenced by such factors as geographical proximity (measured as the distance between capitals of countries or the existence of a common border), membership in a free-trade area and the presence of multinational enterprises (MNEs). Since the 1980s, the presence of MNEs has significantly affected international trade and, consequently, also IIT. Dunning [1993] defined a multinational or transnational enterprise as an enterprise that engaged FDI and owned or in some way controlled value-added activities in more than one country. This is the threshold definition of MNE. Thus, the concept of 'MNEs' is intrinsically connected with the concept of 'FDI'. Later in this section, special attention is paid to the theoretical impact of FDI on IIT. Notably, the theory dealing with the FDI impact on IIT is only a part of a larger attempt to describe mutual relations between FDI and trade flows. Those depend on the character of capital flows. Based on theory, horizontal foreign direct investment (HFDI) displaces trade and is positively related to trade costs (Box 1). Furthermore, vertical foreign direct investment (VFDI) complements trade and is facilitated by low trade costs.

**Box 1. Horizontal versus vertical FDI**

<table>
<thead>
<tr>
<th>Horizontal FDI</th>
<th>Vertical FDI</th>
</tr>
</thead>
<tbody>
<tr>
<td>Horizontal MNE serves consumers in both home and host markets locally. Instead of incurring costs associated with trade, these companies set up a production facilities both at home and abroad. Horizontal MNEs are likely to come into existence if markets are large (enabling the exploitation of economies of scale at the company level), plant set-up costs are low, and trade costs are high. Therefore, horizontal MNE activity (horizontal FDI) and goods export are substitutes.</td>
<td>Vertical MNEs are characterised by the complete unbundling of headquarter services (in a skilled labour abundant country) and production (in an unskilled labour abundant one, where variable costs are high). In this way, they save money thanks to fixed plant set-up. Vertical MNEs engage in commodity trades. They are more likely to come into existence if the parent-to-host country skilled-to-unskilled labour (capital-to-unskilled labour) endowment ratio is high, and both trade costs and foreign fixed plant set-up costs are low. Consequently, vertical MNE activity and goods trade are complementary.</td>
</tr>
</tbody>
</table>

**Source:** [Baltagi, Egger, Pfaffermayr, 2007, pp. 262–263].

The pioneering work to attempt to explain FDI’s impact on intra-industry trade was done by Helpman and Krugman [1985]. They found that the presence of multinational enterprises (including those vertically integrated) removes any unambiguous relationship between the share of intra-industry trade and differences in relative factor endowments. The volume of trade and the share of intra-corporate and intra-industry trade grow as differences in factor endowment increase until such differences exceed the critical point. Such findings suggest a hypothesis that the greater the engagement of multinational corporations in the world economy, the weaker the effect of changes in differences in factor endowment (equated with differences in GDP per capita) on the share of intra-industry trade.

Markusen [1984, 2002] and Markusen and Venables [1998, 2000] concentrated on horizontal foreign direct investment. In a situation of constant economies of scale and
no trade costs such investments will not be made. They are attracted by the existence of noticeable trade barriers to market access, which a multinational enterprise seeks to evade by investing in a production plant in the country where the products are sold. Therefore, horizontal FDI substitutes for trade flow, i.e. it replaces exports and consequently contributes to decreasing the share of intra-industry trade.

Markusen and Maskus [2002] noted that trade liberalisation could contribute to an increase in the intra-industry trade index of the trading countries. However, the liberalisation of investment activities can reduce the intensity of intra-industry trade where trade costs are either too high or too low. Therefore, the intra-industry trade index will be high if 1) the countries involved in trade are of similar size or the smaller country is better endowed with skilled labour; or 2) trade costs are low, whereas the costs of investment activities are high. Similar conclusions were drawn by Fukao, Ishido and Ito [2003].

Recently, in the literature special attention has been paid to modifications of the traditional model with multinationals formed in 2 × 2 × 2 model (2 countries, 2 factors of production and 2 goods). Those modifications consisted in adding another factor of production [Egger, Egger and Greenaway, 2007], another country [Ekholm, Forslid and Markusen, 2007] or these two variables simultaneously [Baltagi, Egger and Pfaffermayr, 2007]. The modifications were induced by the continuously changing form of multinational activities. The division of multinational enterprises into horizontal (market-seeking production) and vertical integrated FDI (resource-seeking investments) does not fully reflect the investment strategies of such enterprises. More and more frequently, multinationals apply complex investment strategies, e.g. export-platform FDI. According to Ekholm, Forslid and Markusen [2007], export-platform FDI is defined as investment and production in a host country where output is largely sold in third-country markets, and not the parent or host-country markets.

Previous considerations were summarised by Ambroziak [2012a] and presented in Figure 1. Although some authors suggest that in the global economy there is no clear division into horizontal and vertical FDI (HFDI and VFDI respectively), this division enables us to better understand the mutual relationship between FDI and IIT. Horizontal FDI, stimulated mainly by high trade costs, substitutes trade flows and, as a result, also IIT. HFDI can also indirectly lead to growth in horizontal IIT because it influences economic development in the host country and diminishes differences in the market potential and level of development between the host and home countries.

Vertical FDI, also identified with the fragmentation of production processes, is of great importance to IIT development. It is very difficult to indicate which part of vertical FDI has a typical vertical character and which part adopts the form of export-platform FDI. In general, both types of vertical FDI promote mainly vertical IIT. Typical VFDI complements trade flows, thus influencing the intensity of vertical specialisation. In the case of export-platform FDI, its impact on IIT intensity depends on the market to which goods produced in the relevant plant are exported [Ambroziak, 2012a]. Assuming the import of
parts and accessories to the host country, ITT growth occurs if final goods are exported to the home country. However, if final goods are exported to third countries, ITT falls. Next, in the case of the so-called global platform FDI (wherein final goods are exported to third countries as well as to the home country), the scale of IIT growth depends on the portion of exports reaching the home market. An increase in IIT intensity will result from vertical IIT as differences between unit values in export and import will be significant. It is worth stressing that intra-industry trade in final and intermediate goods can only occur if those goods are defined as the same industry. Vertical FDI can theoretically generate intra-industry trade in horizontally differentiated goods. It can happen with the simultaneous export and import of intermediate goods exhibiting no significant differences in unit values between the home and host countries [Ambroziak, 2012a].

FIGURE 1. The impact of FDI on IIT – summary of the theoretical considerations

Source: Ambroziak [2012a].

The Literature Review

Intra-industry trade in the new EU Member States has been analysed by a number of authors. However, only a few examined intra-industry trade in the NMS in the context of foreign direct investment. Hoekman and Djankov [1996] were the first to study that
topic. They concluded that 'FDI inflows are highly correlated with export performance and intra-industry trade levels. However, existing data do not allow an investigation of the direction of causality or the relative contribution of foreign affiliates or joint ventures to the volume of trade'. Aturpane, Djankov and Hoekman [1997] analysed ITT determinants between the European Union and eight Central and Eastern European countries (CEECs) during the period 1990–1995. They found that after controlling for country-specific factors, we find a positive and significant relationship between FDI and product differentiation and both vertical and horizontal IIT'. Kaminski [2001] showed that CEECs receiving relatively high FDI inflows in the 1990s also experienced expanded IIT. Caetano and Galego [2006] found that determinants of horizontal and vertical IIT within the enlarged EU (25 EU Member States) differed, although both had a statistically significant relationship with the size of the country and foreign direct investment. Kang [2010] examined the evolution and determinants of intra-industry trade in the period before and after accession of the Central and Eastern European countries (CEECs) to the EU. The author showed that 'FDI stock from a trading partner is positively correlated to the level of IIT in most cases and its coefficients are statistically significant. This means that share of IIT in bilateral trade between European countries is higher, when importing countries invested more in exporting countries'.

Czarny and Śledziewska conducted a number of empirical studies on changes of Polish IIT from since 2000. They stressed that rapid and positive changes led to an increasing role of high quality VIIT and HIIT. These changes resulted from a modernisation of Poland's economy, aided by FDI inflow, Polish producers' gradual adjustment to EU technical standards, trade liberalization before EU accession and, finally, Poland's entry to the Single European Market [Czarny and Śledziewska, 2009]. The impact of FDI on IIT in the Visegrad countries was examined by Ambroziak [2012a]. The author identified a statistically significant positive correlation between intra-industry trade (both, of horizontal and vertical type) and foreign direct investment in those countries. Contrary to most studies, a very low interrelationship between FDI and IIT was found in Polish foreign trade by Cieślik [2008], who found that although the activity of multinational companies is positively related to the volume of bilateral trade between Poland and EU-15 countries, at the same time these companies do not seem to contribute to the development of the intra-industry-trade'.

Several authors conducted research on intra-industry trade in automotive industry goods produced by the specific countries or groups of countries. Leitão, Faustino and Yoshida [2010] studied vertical IIT within the Portuguese automobile parts and components industry during the 1995–2005 period. The authors concluded that 'income difference, representing factor endowments difference, is driving force for international fragmentation of production process. However, income difference effect on VIIT is non-linear via size of automobile production. Income difference effect is positive only for small size of automobile production countries'. Türkcan [2011] examined IIT in Austria's auto parts
trade between 1996–2006. The results showed that ‘a substantial portion of IIT in the Austrian auto-parts industry is vertical IIT’. Vertical IIT in auto-parts was positively correlated with FDI. Kawecka-Wyrzykowska [2009], who analysed IIT in automotive industry products of the new EU Member States in the period 2000–2007, confirmed a positive relationship between FDI and intra-industry trade. The author also concluded that ‘trade in the automotive sector is not, as suggested by some previous studies, mainly of vertical character. In some countries, an increase of horizontal intra-industry trade in the automotive sector has been recorded mirroring a fast catching up process and the involvement of transnational corporations’. Similar findings were reached by Ambroziak [2011], who analysed IIT in automotive products of the new EU Member States between 2000–2009. Ambroziak [2012b] also studied IIT in the automotive industry in the European Union during the period 1995–2010. The research results showed that a progressive specialisation by some of the new EU Member States in small car production and export led to changes in IIT patterns. ‘The share of low quality VIIT in trade of motor vehicles increased, while the share of high quality VIIT in trade of automotive components grew significantly’. Surugiu and Surugiu [2015] examined the determinants of intra-industry trade in the Romanian automobile parts and accessories sector in the period 1995–2012. The results of their econometric analysis indicated that ‘economic growth’ had a direct influence, and ‘physical capital endowments’ an indirect influence, on Romanian IIT.

The Research Method

The intensity of intra-industry trade was measured by a simple Grubel-Lloyd index, computed on the basis of bilateral trade flows [Grubel and Lloyd, 1975]. One reason for selecting this index was that it was the most frequently used measure in such analyses. In addition, the application of bilateral (rather than multilateral) trade eliminates the phenomenon of so-called geographical bias in measuring intra-industry trade [Fontagné and Freudenberg, 1997]. The GL indices for specific industries were then aggregated using three variables, i.e.: trading country $k$, trading partner $k'$ and industry $i$, in accordance with the following formula:

$$GL_t = 1 - \frac{\sum_{k=1}^{K} \sum_{k'=1}^{K'} \sum_{i=1}^{N} |X_{i,t}^{kk'} - M_{i,t}^{kk'}|}{\sum_{k=1}^{K} \sum_{k'=1}^{K'} \sum_{i=1}^{N} (X_{i,t}^{kk'} + M_{i,t}^{kk'})}$$

where:

$X_{i,t}^{kk'}$ – exports from country $k$ to country $k'$ of product group $i$ (here: 4-digit HS code level) in year $t$;
\( M_{i,t}^{kk'} \) – imports of country \( k \) from country \( k' \) of product group \( i \) (here: 4-digit HS code level) in year \( t \);

\( N \) – number of product groups in the automotive industry (3 groups here: products of the automotive industry, finished goods and parts and components) in trade between countries \( k \) and \( k' \);

\( K' \) – total number of trade partners or number of trade partners in specific groups of countries, i.e. the EU-15, the EU-12 and third countries,

\( K \) – number of trading countries, i.e. the six new EU Member States as a whole.

The calculations were based on data at the 4-digit HS (Harmonised System) code level. The GL index takes on values from the interval \(<0;1>\). The higher it is the greater the share of intra-industry trade between two countries.

The division into intra-industry trade in horizontally differentiated products (offering diverse products of the same quality) and intra-industry trade in vertically differentiated products (offering the same products or very close substitutes of different quality) was made in accordance with the concept developed by Greenaway, Hine and Milner [1994], as subsequently modified by Fontagné and Freudenberg [1997]. Intra-industry trade was divided into horizontal and vertical IIT on the basis of the so-called unit values of specific products.

Horizontal intra-industry trade (HIIT) is considered IIT when it satisfies the following criteria:

\[
\frac{1}{1+\alpha} \leq \frac{UV_{ij}^x}{UV_{ij}^m} \leq 1+\alpha ,
\]

whereas vertical intra-industry trade (VIIT) is IIT when the following conditions are met:

\[
\frac{UV_{ij}^x}{UV_{ij}^m} < \frac{1}{1+\alpha} \quad \text{or} \quad \frac{UV_{ij}^x}{UV_{ij}^m} > 1+\alpha ,
\]

where:

\( UV_{ij}^x \) – the unit value of exports of product \( i \) from industry \( j \),

\( UV_{ij}^m \) – the unit value of imports of product \( i \) from industry \( j \),

\( \alpha \) – the deviation of relative unit values in exports \( \left( \frac{UV_{ij}^x}{UV_{ij}^m} \right) \) In the literature it is assumed that \( \alpha = 0.15 \) [e.g. Dautovic, Orszaghova and Schudel, 2014; Caetano and Galego, 2006].

The method presented above assumes that price differences (the so-called unit value) reflect differences in quality. Products with roughly the same unit values should be treated
as similar. According to Greenaway, Hine and Milner [1994], based on the assumption that perfect information exists, a product range sold at a higher price must be of a higher quality than a product sold at a lower price. Stiglitz [1987] argued that even in conditions of imperfect information product price would reflect its quality. According to Oulton [1990], only in the short-term can consumers buy products at prices higher (lower) in relation to their quality, due to omission, inertia or the high cost of shifting to other suppliers.

In this paper intra-industry trade will be divided into four types of trade:

a) low quality VIIT – low quality vertical intra-industry trade when $x < 0.87$; meaning that the unit value of exports is relatively lower than the unit value of imports (country $k$ exports low-quality goods and imports high-quality ones);

b) HIIT – horizontal intra-industry trade when $0.87 \leq x \leq 1.15$; meaning that within the same industry country $k$ exports and imports goods which are of the same price (quality) but differ in some other features such as colours, country of origin, etc.

c) high quality VIIT – high quality vertical intra-industry trade when $x > 1.15$; meaning that the unit value of exports is relatively high in comparison to the unit value of imports (country $k$ exports high-quality goods and imports low-quality ones);

d) non-allocated IIT – means that the relative unit value of exports and imports is impossible to be computed. There can be various reasons for it, e.g. the lack of data for export quantity or import quantity.

The automotive industry is defined as the manufacturer of motor vehicles, trailers and semi-trailers (ISIC 34 rev. 3). For automotive trade data the corresponding table between ISIC rev. 3 and SITC rev. 3 and between SITC rev. 3 and HS 1996 was used. Products of the automotive industry include the following groups of goods at the 4-digit HS code level: 8702, 8703, 8704, 8705, 8716 (motor vehicles) and 8407, 8408, 8409, 8706, 8707, 8708, 8709 (parts and accessories). As an exception, data for FDI are related to the entire transport equipment industry, i.e. the automotive industry and the other transport equipment industry. This was due to the lack of more detailed data. However, in the NMS the prevailing share of FDI was located in the automotive industry.

The source of trade data was the UN Comtrade database, whereas investment figures are based on the wiw Database on Foreign Direct Investment.

### Changes in the Intensity of IIT in the Automotive Industry of the NMS

The buoyant inflow of FDI to the new EU Member States has contributed to an increased degree of production processes fragmentation in the European automotive industry. The division of production processes into specific stages, frequently located in several countries, created trade flows: between plants producing parts and components, between
the plant making semi-finished products and the car assembly plant, and between the assembly plant and the outlet for the cars produced. A major part of those trade flows was intra-industry in nature. In 2014 the intensity of intra-industry trade in automotive industry products was 44% (Figure 2), which was 9 percent higher than in 1998, but 1 percent lower relative to 2004.

From the late 1990s the intensity of intra-industry trade in parts and accessories in the NMS rose, being higher than for motor vehicles. This resulted from greater possibilities to differentiate intermediate goods than final products. Semi-finished goods can be differentiated at every stage of vehicle production. One example is the manufacture of petrol and diesel engines of various cubic capacity on the one hand, and the manufacture of such engines parts on the other hand (e.g. pistons, valves, filters). The greater the number of plants producing automotive parts and accessories in a country and the higher the number of car models assembled on the basis of intermediate goods manufactured, the greater the potential for growth in intra-industry trade in automotive parts and accessories. In 2014 IIT accounted for more than half (nearly 53%) of the trade of the NMS in such goods. Therefore, the share was 10 percent higher than in 1995 and almost 20 percent higher than in late the 1990s. The proportion of IIT in motor vehicles has increased from the late 1990s to 2004 by 43.6%. After 2004 the intensity of intra-industry trade started to decline, particularly from 2011. In 2014 IIT accounted for as little as 33% of the trade of the NMS in motor vehicles.

**FIGURE 2. The intensity of intra-industry trade (GL) in automotive product industries of the new EU Member States (as a whole), in percent of total trade in automotive products**

Source: own elaboration based on UN Comtrade.
According to the literature at times high IIT indices can result from an incorrect aggregation of trade data [Ambroziak, 2012b]. From the point of view of calculating and interpreting intra-industry trade indices, the concept of an industry is important. Defining it correctly allows the phenomenon of two-way trade to be reliably measured. However, this is not an easy task. In practice, it is reduced to the selection of an appropriate classification of trade data (the HS or SITC classification) and a proper degree of details. The adopted level of data aggregation (e.g., grouping products into certain sets), is not always tantamount to the grouping of products in particular industries. The higher the number of goods in a distinguished data aggregate, the greater the likelihood of intra-industry trade. In the case of automotive parts and accessories, a particularly numerous group of products treated as an industry is subheading HS 8708, i.e. parts and accessories for motor vehicles. This group includes bumpers, safety belts, brakes, gearboxes, drive axles with differential, wheels, suspension shock absorbers, radiators, silencers, clutches and steering wheels. For instance, simultaneous export of gearboxes by a country and import of shock absorbers will be registered as an intra-industry trade.

Within the examined period individual NMS intensity of intra-industry trade in products of the automotive industry varied widely. However, factors influencing horizontal IIT in motor vehicles and in automotive parts and components were different. The intensity of intra-industry trade in motor vehicles in a specific country resulted from both supply and demand for such vehicles. The lesser the differences between such supply and demand, the greater the potential for growth in intra-industry trade in such goods. The main determinant of the level of IIT in motor vehicles was which country the plant producing such vehicles was located. Manufactured cars could be sold in foreign markets or in the domestic market. The higher the share of export-oriented production, the greater the possibilities of growth in intra-industry trade.

As for demand-side factors affecting development of IIT, the level of demand for vehicles and its composition depended on incomes and consumer preferences for the vehicles type purchased. Consumers could buy cars manufactured domestically (new or used) and vehicles imported from foreign countries (new or used). A higher share of imported vehicles in the sales of a country implies a greater intensity of IIT in that group of goods. However, it does not refer to cases when a country does not produce vehicles. In 2014 the lowest indices of intra-industry trade in motor vehicles were found in Slovakia and the Czech Republic, being 18% and 25% respectively (Figure 3). In the 1995–2014 period the intensity of intra-industry trade in such goods showed a marked decrease, especially after the financial and economic crisis of 2008/2009. After EU accession, the involvement of foreign investors allowed, the Czech Republic and Slovakia to begin specialising in manufacturing vehicles – mainly low-emission urban cars, regarding which they became the unquestionable leaders in Central Europe. In 2002 Japanese Toyota launched production in its factory in Kolín (the Czech Republic) and in 2006 French PSA Peugeot Citroën began car production in Trnava (Slovakia), Korean
Hyundai in Žilina (Slovakia) and Nošovice (the Czech Republic). In 2014 1,251,000 vehicles were manufactured in the Czech Republic, whereas the output in Slovakia was 971,000 units [OICA, 2015]. The vast majority of this production was exported. At the same time, both countries domestically registered fewer than 300,000 new cars, some of which had been imported [OICA, 2015]. The increasing differences in demand and supply for vehicles pushed down IIT indices.

Compared to the late 1990s, the intensity of intra-industry trade in motor vehicles increased in Poland, Hungary and Romania. In the period of EU membership, no automotive firm made any new investment in a car assembly plant. During the 2008–2014 period, production of vehicles in Poland dropped from 952,000 to 593,000 [OICA, 2015]. Of total car sales after the financial and economic crisis of 2008/2009 (which were below 400,000 units, and largely imported vehicles), more than half of Polish trade in motor vehicles was intra-industry in nature (56% in 2014). In the last years the respective share was below 50% in Romania. During Hungary’s first years of EU membership it exceeded 50%, but steadily decreased after 2011 to a mere 34% in 2014. The fall in IIT indices stemmed largely from an investment by German Daimler in a plant producing Mercedes cars in Kecskemét (where production was launched in 2012). In 2014 Hungary manufactured 438,000 vehicles, i.e. double the 2011 figure. At the same time, new car sales did not exceed 90,000 units [OICA, 2015]. A relatively high index of IIT in motor vehicles characterised Slovenia, but from the late 1990s it went down by nearly 20 percent and in 2014 it was 35%.

A significant role in the foreign trade of the NMS, and thus in their intra-industry trade, was played by used car imports. This phenomenon intensified after the NMS joined the European Union. For instance, in 2014 Poland imported nearly 750,000 second-hand vehicles [Ministry of Finance, 2015], but only some of them were recorded in trade statistics. Those excluded cars were brought by private individuals. Therefore, considering the actual scale of the phenomenon, in many countries, primarily in Poland, the intensity of IIT in motor vehicles would probably be higher.

At the same time, the intensity of intra-industry trade in automotive parts and accessories mainly depended on the development level of the automotive components manufacturing industry, as well as the presence of vehicle assembly plants in a country. Due to highly fragmented automotive industry production processes, factories that produce parts supplied car assembly plants in many other countries. For instance, the Toyota factory in Wałbrzych delivered engines and gearboxes to plants in Valenciennes, France, and Kolín, the Czech Republic. A single factory assembling vehicles could be supplied with parts and accessories by many sub-suppliers from various countries. Therefore, the motor vehicle production process created trade flows between countries participating in the production chain.
FIGURE 3. The intensity of the intra-industry trade (GL) in products of the automotive industries in the new EU Member States, as a percent of total trade in automotive products

Source: own elaboration based on UN Comtrade.
The highest indices of IIT in parts and accessories were noted in the Czech Republic. This resulted, in part from the large scale of vehicle assembly, which used both domestic and imported parts and components. It was also the result of a well-developed automotive parts and components industry. The supply of such intermediate goods was sufficient for enough production to sell the product to export markets. During the period in question, however, the intensity of intra-industry trade in parts and accessories in the Czech Republic was on the decline. This fall is related to greenfield investment in vehicle assembly plants. A rising share of parts and components manufactured in the subject country was used at such plants. In addition, it was necessary to supplement the domestic offer with imported parts and components. Nevertheless, in 2014, 56% of Czech trade in parts and accessories was still intra-industry in nature. IIT indices in the group of parts and components also dropped in Slovakia. As with the Czech Republic, this can be explained by specialisation in the manufacturing (export) of passenger cars, which relied on imported components to an even greater extent than did Czech factories. In 2014 the index of IIT in such goods was slightly over 40%, whereas in the late 1990s it sometimes even exceeded 60%.

The case in Poland and, to a lesser degree, other NMS was the opposite. Between 1995–2014 the Polish index of IIT in parts and accessories increased by a factor of 2.5, to 58%. From the early 2000s major investments of automotive companies (such as car assembly factories) were located outside Poland, which became the leader in attracting investment and exhibited particularly robust growth after the financial and economic crisis. Plants manufacturing parts and components supplied their output to domestic assembly factories (which produced a small number of cars) and exported their products. The main recipient of intermediate goods for the automotive industry was Germany, to which Poland exported domestically manufactured engines for Volkswagen vehicles. A clear majority of those parts was sold to the Chinese market. Due to Poland’s participation in the global value chains of the automotive industry, its IIT in parts and accessories is influenced by the import needs of countries other than those to which exports are sold.

**Horizontal Versus Vertical IIT**

During the examined period, the automotive trade of the NMS was dominated by intra-industry trade in vertically differentiated products. This means that differences in unit prices of exports and imports were significant enough to indicate differences in the quality of traded products. From the late 1990s there has been a clear decline in relative unit values in the export and import of motor vehicles. Thus, low quality vertical IIT and horizontal IIT gained importance (Figure 4). Most the NMS producing motor vehicles, i.e. the Czech Republic, Slovakia, Poland, Romania and Slovenia, exported vehicles with decreasing unit values. This stemmed from the ongoing specialisation of those countries in the manufacture and export of low-emission and economical cars. Unit prices of exports
were lower than sale prices of vehicles with higher engine capacity in foreign markets. Rapid growth in the production of urban cars pushed down the share of larger vehicles in NMS exports, thus decreasing the relative unit values of export and import of such goods. At the same time, due to the high import-intensity of export in these countries, unit value changes in exports and imports were closely interrelated. Specialisation in the manufacturing of low-emission cars reduced unit prices in imports of parts and accessories used in that production. Consequently, there was an increase in the relative unit price of exports of parts and components, which was reflected (with a few exceptions) in the growing importance of high quality vertical intra-industry trade. This was particularly evident in 2009 during the financial and economic crisis. After the introduction of support for acquiring new vehicles, a number of the EU-15 countries experienced growth in demand for urban cars manufactured in some NMS. As a result, in 2009 the share of low quality vertical IIT in motor vehicles in the NMS showed a visible rise relative to the prior year, whereas trade in parts and components witnessed an increase in the share of high quality vertical IIT.

**FIGURE 4.** Types of intra-industry trade in products of the automotive industries of the new EU Member States, by percent of total trade in automotive products

Source: own elaboration based on UN Comtrade.
The composition of IIT in products of the automotive industry varied between NMSs. Low quality vertical IIT played the most important role in the trade in motor vehicles of Romania, Slovenia and Poland. Exports of those countries were dominated by low engine capacity cars. In addition, Poland was characterised by significant imports of used vehicles with relatively low unit values and in the Czech Republic horizontal IIT accounted for more than half of intra-industry trade at the end of the discussed period, implying trade in vehicles of similar quality but different non-qualitative features, e.g. the colour, the country of origin, equipment, etc. In Hungary, high quality vertical IIT played an important role, as exported cars were of higher quality than imported cars. Hungary exported vehicles such as Audi, manufactured in the Győr plant, and Mercedes have been produced in Kecskemét since 2012.

Less significant differences in the composition of IIT were found in trade in parts and accessories. High quality vertical IIT dominated the trade of Romania, Slovakia, Hungary and the Czech Republic. Horizontal IIT formed the highest share of Polish trade, whereas in Slovenia low quality vertical IIT was the most significant.

Conclusions

The study demonstrated that FDI inflow to the automotive sector of the NMS has been an important factor shaping intra-industry trade in automotive products. The inflow of capital for the launch of a product in vehicle assembly plants increased domestic supply. Access to the large EU market enabled producers to specialise in manufacturing specific varieties, i.e. models of vehicles. The intensity of IIT in such cars depended on consumer demand for imported vehicles (both new and used) in individual NMS. If demand was high (e.g. in Poland), the indices of IIT in vehicles were also relatively high. In countries where demand for imported vehicles was low (e.g. in the Czech Republic and Slovakia) a greater share of the trade of such countries was inter-industry in nature.

Thus, high intensity of IIT in motor vehicles means more benefits for both manufacturers and consumers from the new EU Member States. Economies of scale contributed to cutting production costs, whereas a greater differentiation of goods enabled producers to open new outlets, e.g. to the EU Member States with relatively high-income consumers. At the same time consumers, thanks to a wider range of available products, could choose from more differentiated varieties, satisfying their diverse needs.

FDI inflow to plants producing automotive parts and accessories pushed forward the domestic supply of such articles. The level of production of motor vehicles in a country determined IIT in parts and accessories. A high level of production involves lesser prospects of IIT growth since some production of components is absorbed by domestic plants manufacturing vehicles (e.g. the Czech Republic and Slovakia), whereas only a limited
number of output is exported. It is frequently accompanied by an increased import of parts and components. In a situation where vehicle production in a country is limited, a higher proportion of manufactured parts and accessories can be exported to other countries (e.g. Poland). This usually involves a decline in import demand from domestic producers of vehicles for parts and components, which are later used in producing those vehicles.

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Notes

1 Author’s e-mail address: la28204@sgh.waw.pl
2 The impact of foreign direct investment on intra-industry trade was examined in previous publications of the author [Ambroziak, 2012a, 2013].
3 One example illustrating the investment and trade relationships in the automotive industry is the cooperation of the South Korean factories of KIA and Hyundai in the border regions of the Czech Republic and Slovakia. Some of the gearboxes produced in the factory of Hyundai in Nošovice, the Czech Republic, are delivered to the car assembly plant of Hyundai in the same locality, whereas others are supplied to the Slovak factory of Kia Motors (90 km away) where models of Kia Cee’d are made. At the same time, engines manufactured by Kia in the Slovak Žilina are dispatched not only to its own car assembly factory, but also to the Czech Nošovice.

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Free Market Institutions and FDI Performance in Emerging Asian Economies

Abstract

This paper examines long-term developments in the quality and efficiency of free market institutional systems across thirteen emerging economies from South, South-east, and East Asia over the 1995–2014 period. The paper also empirically assesses the impact of free market institutions on a country’s inward foreign direct investment (FDI) performance. We find that the free market institutional framework in most economies is still relatively inefficient, restrictive, and underdeveloped but has, nevertheless, substantially improved during the last twenty-year period. Our empirical results also indicate that a free market institutional system in a host-country is a factor that attracts inward FDI to emerging Asian economies by multinational companies. Consequently, policy makers should focus on further improving the quality of free market institutions.

Keywords: economic institutions; multinationals; FDI; Asia; developing countries
JEL: P14; P48; F21; F23; O53

Introduction

A clear trend in the contemporary globalization process is the growing share of developing countries in foreign direct investment (FDI) inflows. This share, which has been consistently increasing, currently accounts for some 44% of all inward FDI in the world.
economy [UNCTAD, 2016], and emerging economies from the Asia-Pacific region are now (collectively) the number one FDI recipient.

For multinational corporations (MNCs), this region is attractive as an operational location for several reasons. Among them are high market growth and potential, low labour costs, access to other markets, and deepening integration with the global economy. The growing phenomenon of outsourcing and vertical production networks in the region are another key strategic motive of FDI location [Yang, 2016; Wignaraja, 2016; Athukorala, 2014].

Countries that meet those criteria are presumably more likely to be the primary target of MNCs, and consequently exhibit stronger FDI performance. However, other characteristics also affect a host-location’s advantageous attributes and operational costs. Specifically, a country’s free market institutional system is also critical. This system encompasses all aspects associated with the functioning of the domestic market and regulatory framework, including private property rights (including intellectual and trademarks), contract enforcement, prices, trading, investments, financial market transactions, capital transfers, and labour market. Those attributes directly influence market conditions, transaction and business costs, as well as entrepreneurial motivations and activities. Consequently, this systemic element should impact the location choices of MNCs.

Given the ongoing trend of service sector growth and private participation in emerging economies in Asia, free market institutions are likely to become increasingly relevant. For instance, foreign companies operating in the financial banking, and insurance sectors would find it relatively difficult, risky, or less profitable to invest in countries where those sectors are not well-established under a free-market system and instead show a high degree of state control. This could apply to other service industries as well as such as real estate, wholesale and retail trade, telecommunications, education, health, and various business services. Notably, FDI in services shows a significant upward trend in developing countries in East Asia, and is believed will become even more important in the future [UNCTAD, 2016; ASEAN Secretariat, 2014].

Moreover, operations of certain MNCs may require a mature private sector, particularly if essential supplies, subcontracting activities, and business services have to be obtained locally, or if local partnerships and joint-ventures are necessary for penetrating and succeeding in the host market. Countries with more developed free market based institutions are more likely to exhibit the attributes of a private sector oriented economy, and hence attract MNCs that need local companies or partners. Finally, MNCs might view free-market orientated countries as generally more promising host-economies.

Although over the past three decades many developing countries in Asia have turned toward a more free market-oriented economy, free market institutions are in most cases still relatively underdeveloped, restrictive, and inefficient. Furthermore, local institutional frameworks generally differ across those countries, resulting in different domestic market
and business conditions [World Bank, 2016; Heritage Foundation, 2016; Gwartney et al., 2015; Djankov et al., 2002].

Consequently one might expect differences in the quality of free market institutions among emerging Asian economies to impact MNCs’ location choices, and thus influence a host-country’s inward FDI performance. This reasoning implies a vital role for efficient free markets in fostering foreign investments in developing countries. There is growing empirical literature in this field, which pays attention to developing and emerging economies in Asia with a primary focus on either overall institutional quality, business regulations, or certain economic institutions. Studies that comprehensively examine all relevant aspects of the free market institutional environment are scarce.

The main objective of this paper is to empirically examine whether a developing host-country’s free-market institutional system has an effect on the country’s FDI performance. Our empirical analysis considers developing and emerging economies from South, South-east, and East Asia over a 20 year period. As already mentioned, this group of economies constitutes a particularly dynamic region with respect to inward FDI. To maintain our focus on economic policy implications for emerging Asian economies with similar developmental and institutional characteristics, advanced countries from Asia or other areas are excluded. Since the examined time span is long, a number of changes to the relevant free market institutional systems have occurred. In addition to cross-country variability, this extended time span allows us to capture the change and impact of free market institutions on a host-economy’s inward FDI performance over time.

In the remaining part of the paper, we briefly present the literature, discuss the data and select variables, provide a short descriptive analysis of patterns and trends. Next, our econometric methodology is outlined, followed by a presentation and interpretation of empirical results. The last section summarizes the main findings and states out concluding remarks.

Theoretical and Empirical Literature

Although FDI theories initially ignored institutions, more recent FDI literature does consider the role of a host-country’s market system and overall institutional framework. The ownership – location – internalization (OLI) theory, which is well-established, suggests that FDI takes place when companies have advantages in each of those aspects [Dunning, 1980]. Besides other factors, MNCs assess the location advantage that relates to the host-country. Different host-countries generally exhibit different L-advantages; that is, features which translate into a favourable environment for MNCs’ operations. Input prices, wages, costs, infrastructure, natural resources, labour endowments, human capital, and demand conditions are examples of the location dimension. Dunning [1998] pointed out that a host-economy’s institutional framework is becoming increasingly more important
even for FDI in developing countries. In a recent formulation of the OLI paradigm, the L-dimension explicitly accounts for a market regulatory environment and institutional characteristics [Dunning and Lundan, 2008].

In other FDI theories which analyse various, more complex motivations, forms, and types of FDI [e.g. Oyamada, Uchida, 2011; Bergstrand, Egger, 2007; Ekholm et al., 2007; Markusen et al., 1996], the L-advantages (including the institutional framework) are not irrelevant. These are viewed as basic, facilitating host-country features that work together with other determinants. Generally, the literature suggests that in addition to location factors, MNCs also take into account various country attributes, including the institutional environment. Thus, market regulations and institutions cannot be disregarded [Peng et al., 2008].

On the empirical side, a considerable body of literature on the institutional determinants of FDI has emerged. Much of this literature is devoted to the role and impact of general legal environments, the extent of corruption, and the governance quality [e.g. Nondo et al., 2016; Shah et al., 2016; Godinez, Liu, 2015; Sánchez-Martín et al., 2014; Zhang, 2014; Buracom, 2014]. Generally, institutions that concern these attributes are, indeed, relevant factors in both developed and developing countries. Other empirical studies focus on either a specific economic institution, selected aspects of the free market system, or business regulations that entrepreneurs and companies face within a country. Various works indicate that inward FDI is stimulated by efficient business regulations and market-supporting institutions, such as property rights [e.g. Bayraktar, 2015; Corcoran, Gillanders, 2015; Torriti, Ikpe, 2015, World Bank, 2013; Khoury, Peng, 2011].

Finally, although institutions are generally considered to be important, there is also evidence that instead of general institutional quality and democratic institutions, MNCs appear to be more concerned with a host-country’s institutional framework related specifically to the domestic free-market system and the degree of economic freedom Mathur and Singh [2013].

**Variables and Hypotheses**

Given our heterogeneous set of countries differing greatly by size, we focus on inward FDI performance in relative terms. We consider two measures, namely inward FDI stock per capita and inward FDI stock as a percentage of GDP, which provides information about FDI’s importance for domestic economy. Furthermore, it better relates economic development implications to the absolute level of FDI.

An appropriate measure that reflects the extent of development and efficiency in free market institutions in a host-country is critical. Thus, instead of using a general measure of institutional quality, we construct our own indicator of the quality and improvement
in a country’s free market institutional system, using a data subset used for the Economic Freedom Index (EFI), which is compiled and published by “The Heritage Foundation”.

The EFI takes into consideration several crucial issues of economic freedom and market functioning. There are 10 different aspects of economic freedom, grouped into four broad categories (Rule of Law, Limited Government, Regulatory Efficiency, and Open Markets). For each of those 10 aspects a sub-indicator index value of between 0 and 100 is constructed. Based on those scores, an EFI overall index is calculated as a simple average. The higher the value of this 0–100 index, the more economic freedom exists in a country.

We construct our index by calculating the average score of the following EFI sub-indicator scores: “property rights”, “business freedom”, “labour freedom”, “monetary freedom”, “trade freedom”, investment freedom”, and “financial freedom”. In constructing our index, we ignore scores of “freedom from corruption”, “fiscal freedom”, and “government spending”, which are associated with limited government and corruption themes, because they are less directly relevant to free market institutions. Thus, our measure, which we call a free market institutional system index (FM), focuses solely on economic and free market institutions.

Under this measure, ranges higher index values indicate a more developed and efficient free market institutional framework. Changes (positive or negative) in our FM index over the time indicate changes (improvement or deterioration) in the free market institutional environment. Notably, from a correlation analysis, we find that compared to the EFI our measure exhibits a higher correlation coefficient with FDI in our sample. Based on the theoretical and empirical literature, FM is expected to contribute positively to a host-country’s inward FDI performance.

To conduct a valid empirical analysis of the impact of FM, several control variables are included. According to the literature, relevant host-country determinants of FDI include: market size (MS), welfare level (WL), labour cost (LC), natural resources (NR), international trade openness (OP), export orientation (XO), human capital (HC), infrastructure (IN), and economic stability (ES). The selection of control variables also depends on data availability. For the countries in our sample we were able to construct the above mentioned control explanatory variables using data over the period 1995–2014.

MS is associated with a market-seeking FDI incentive. Domestic market size is generally expected to positively impact absolute FDI inflows; however, in the case of relative FDI performance it might be less important. WL is also related to a market-seeking motive, as a country’s welfare level reflects consumer income and prosperity. Thus, a high WL indicates favourable demand conditions, which contribute positively to FDI inflows. LC generally has a negative effect on inward FDI. Especially in the developing country context, investment might be related to vertical FDI, where labour cost minimization in labour-intensive tasks is the primary focus. NR is expected to have a beneficial impact on attracting MNCs with a resource-seeking motive. OP generally promotes investment inflows.
open host-location is usually well-connected and integrated with other economies, which could be vital for a multinational’s network of subsidiaries and overall operations.

Furthermore, where MNCs location decisions are driven by an export-platform reason, export oriented host-economies would likely be FDI targets. In that scenario, XO is expected to be positively associated with FDI. For certain knowledge-related activities, services, and higher management tasks, skilful human resources are essential. Thus, a host-country’s HC, which may also reflect labour productivity, is expected to exert a positive effect on inward FDI. Lastly, IN and ES, which represent general factors, are both expected to attract FDI. IN is necessary for many economic activities. In addition, a more sophisticated infrastructure generally helps MNCs’ operations, and reduces various transportation and transactions costs. Economic stability in a host-country usually facilitating investment inflows. A sound macroeconomic environment sends promising signals to foreign investors.

For the dependent variable and above-mentioned explanatory variables, we created a panel-data set for 13 developing and emerging economies from South, South-east, and East Asian area (Bangladesh, Cambodia, China, India, Indonesia, Lao PDR, Mongolia, Nepal, Pakistan, Philippines, Sri Lanka, Thailand, and Vietnam) over the 1995–2014 period. Definitions and data sources for all the variables are presented in the Appendix (Table A1).

Patterns and Trends

This section analyses observed patterns and trends in free market systems, as well as relative FDI performance across the thirteen emerging Asian economies included in our research. Figure 1(a) shows the average FM index, which is calculated as the simple arithmetic mean of individual country FM indices. It is evident that, on average, quality in free market institutions has increased over 1995–2015. Figure 1(b), which shows the FM index for each country in 1995 and 2015, confirms this general improvement in free market institutional systems, with only three countries exhibiting a decline in the relevant index, and the remaining 10 showing an increase. Notably, the 3 decreasing countries initially show an increase and later fall. According to our results, Mongolia and Thailand exhibit the highest FM index. It should be emphasized, that although most Asian countries in our analysis have improved their FM index over time (some substantially), the quality and efficiency of free market institutional systems are still rather low, especially when compared to advanced and developed countries.⁴
We also trace FDI performance in relative terms. Figure 2(a) reveals that, on average (across the thirteen Asian economies), inward FDI per capita and inward FDI as a percentage of GDP both increased during 1995–2014. Furthermore, the relative importance of FDI in the domestic economy in those countries was considerable. In 2014 average FDI reached a per capita value of more than 1,100 USD, representing almost 36% of GDP. Figure 2(b), which shows FDI per capita by country in 2014 and in 1995 (reported in parenthesis), demonstrates that FDI in per capita terms grew substantially in each country. This is especially true for Mongolia, which also exhibits the highest FDI 2014 per capita value (5,793 USD). Thailand shows the second highest relative FDI performance. Notably, our previous analysis identified these as the two countries with the highest FM indices. Emerging economies such as, Indonesia, Vietnam, and Cambodia follow as the best performing countries in FDI per capita.

(a) Average FDI performance, 1995–2014

(b) FDI per capita: 2014 (1995)

<table>
<thead>
<tr>
<th>Country</th>
<th>FDI per capita</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bangladesh</td>
<td>59.0</td>
</tr>
<tr>
<td>Cambodia</td>
<td>846.0</td>
</tr>
<tr>
<td>China</td>
<td>778.7</td>
</tr>
<tr>
<td>India</td>
<td>199.1</td>
</tr>
<tr>
<td>Indonesia</td>
<td>1001.1</td>
</tr>
<tr>
<td>Lao PDR</td>
<td>526.6</td>
</tr>
<tr>
<td>Mongolia</td>
<td>5793.3</td>
</tr>
<tr>
<td>Nepal</td>
<td>19.2</td>
</tr>
<tr>
<td>Pakistan</td>
<td>166.9</td>
</tr>
<tr>
<td>Philippines</td>
<td>570.4</td>
</tr>
<tr>
<td>Sri Lanka</td>
<td>490.1</td>
</tr>
<tr>
<td>Thailand</td>
<td>2964.9</td>
</tr>
<tr>
<td>Vietnam</td>
<td>983.2</td>
</tr>
</tbody>
</table>

**Source:** own elaboration based on data from UNCTADstat.

**Econometric Methodology**

All of the ten independent variables previously presented potential inward FDI factors:

\[
 FDI_{it} = f (FM_{it}, MS_{it}, WL_{it}, LC_{it}, NR_{it}, OP_{it}, XO_{it}, HC_{it}, IN_{it}, ES_{it})
\]

The empirical analysis of the impact assessment concerning free market institutional systems is based on our estimation of a panel-econometric model of host-country determinants of inward FDI across emerging Asian economies. The estimated regression model takes an eclectic view, reflecting standard host-economy level FDI determinants from the OLI and other theoretical frameworks. However, before we estimate the panel-data model
we derive the appropriate specification. Thus, we first assess the empirical (statistical) relevance of the variables to be included as regressors.

Through an initial correlation analysis we found that MS does not show a significant association with our FDI variable, whilst the correlation coefficient of ES is rather low. Consequently, those variables are excluded from the econometric analysis. Next multicollinearity diagnostics (correlation matrix and variance inflation factors) are performed, which show that OP and XO are highly correlated. From those we retain only the former, and confirm that after excluding XO there is no collinearity problem with our covariates. Based on the above-mentioned tests, we consider the remaining seven variables in the panel-data regression model, which can be generally represented as follows:

\[
(2) \quad FDI_{it} = \alpha + \beta_1 FM_{it} + \beta_2 WL_{it} + \beta_3 LC_{it} + \beta_4 NR_{it} + \beta_5 OP_{it} + \beta_6 HC_{it} + \beta_7 IN_{it} + \gamma_i + u_{it}
\]

\(i = 1, 2, \ldots, 13.\)
\(t = 1995, 1996, \ldots, 2014.\)

The dependent variable is the inward FDI stock per capita in the host country \(i\) at time \(t\), \(\alpha\) is the constant, the betas (\(\beta_1\) to \(\beta_7\)) are the regression slope coefficients to be estimated, \(\gamma_i\) is the individual country-specific effect, and \(u_{it}\) is the stochastic error term. To assess the relative importance and impact of the various determinants on inward FDI, the model, as shown in equation (2), refers to a standardized regression analysis. Here the estimated regression coefficients, which are known as standardized or beta coefficients, show how many standard deviations the FDI variable changes as a response to one standard deviation shock in an independent variable.

As several critical data issues are usually encountered in a panel-data setting, we perform further specification and diagnostic tests to derive the appropriate panel-econometric framework. It is revealed that the data are non-stationary in levels, but stationary in first differences. Moreover, there is evidence of heteroscedasticity, serial correlation, country fixed-effects, and endogeneity (reverse causality).

To derive reliable results, the empirical modelling explicitly takes into account those issues. Regarding endogeneity, we expect that FDI impacts some of our explanatory variables. For instance, the inflow of foreign companies (FDI) might improve the free market institutional system over the time, raise economic welfare, increase wages, and lead to further openness of the economy. On the other hand, FDI is less likely to have a significant direct effect on education level, public infrastructure, and the availability of natural resources in the host-country.

To account for endogeneity, we first apply the instrumental variables (IV) two-stage least squares (2SLS) estimator, utilizing a parsimonious specification approach. The instruments used are the first time-lag of the endogenous explanatory variables plus the ES variable, which is revealed to be a good instrument (relevant and exogenous), as it is
correlated with the endogenous variables and uncorrelated with the residuals. This is also confirmed by other tests after the regression, as explained below.

It is worth mentioning that the IV approach is a GMM (general methods of moments) type of estimation (when time-lagged instruments are used), though it does not exploit all available moment conditions. As in our panel-data set the time-dimension \((T)\) is very long, the various GMM estimators (differenced, one-step, two-step, level, or system), which use all available moments, are not appropriate in this case [Blundell, Bond, 1998]. Furthermore, studies have shown that the estimation efficiency increase of the more sophisticated GMM methods compared to standard IV estimation is only modest when \(T\) is large [Loshkin, 2008; Judson, Owen, 1999]. The IV approach (with its parsimonious instrument set) also avoids the problem of too many instruments, and is less likely to encounter weak instruments [Judson, Owen, 1999].

Moreover, in order to check our results for robustness, in addition to the IV model, we rely on a regression analysis in which all the explanatory variables are included with a one year time lag \((t – 1)\) to account for the endogeneity issue in this alternative way. With a very large \(T\) (and relatively small \(n\)), as in our case, a standard fixed-effects (within transformation) model is not suitable. Thus, we specify the model as a Prais-Winsten cross-section time-series regression, which is suitable in a long \(T\) setting and controls for autocorrelation and heteroscedasticity. In summary, in both regression models the dataset is made stationary by the first-difference transformation, which is also the way with which country-specific fixed effects are controlled in the regressions. Endogeneity and the other statistical issues discussed above are taken into account as well.

**Empirical Results and Discussion**

The econometric results derived from the two alternative regression analyses are reported in Tables 1 and 2. In both models time-specific fixed effects (year dummies) are not included, given that Wald test of joint significance indicates year effects are not statistically significant. Thus, the regression models should be specified without time dummies. Turning first to the instrumental variables (IV 2SLS) model, it is evident that a host-country’s support of a free market institutional system has a positive and statistically significant effect on inward FDI performance (at the 1% level as evidenced by the p-value).

The estimated beta regression coefficient indicates that a positive one standard deviation change in the FM index (an improvement in free market institutions) leads to an increase of about 0.2 standard deviations in the FDI variable. Considering that our dependent variable refers to relative FDI flow per capita, the magnitude of the impact is considerable. In fact, when translated into US dollars (the underlying measurement unit of the dependent variable), the positive effect of an improvement in the free market institutional system amounts to an increase of about $155 in inward FDI per capita in the host economy. To
put this into perspective, most countries in our research exhibit rather low value of FDI in per capita terms. The associated increase in FDI due to FM represents a sizable effect. In terms of the relative importance of FDI factors, FM exhibits the fourth-highest beta coefficient. The most important determinant (with the highest impact) is found to be a host-country’s welfare level and demand, with a beta coefficient value of 0.6. This finding suggests that market-seeking FDI motives are important in emerging economies in Asia. Human capital (with a positive effect) and labour cost (with a negative sign, as expected) are shown as the two next most important host-country level factors of inward FDI performance.

**TABLE 1.** IV 2SLS regression for impact of free market institutional system on FDI

<table>
<thead>
<tr>
<th>Explanatory variables</th>
<th>Beta coefficient</th>
<th>t-test</th>
<th>p-value</th>
<th>Regression statistics</th>
</tr>
</thead>
<tbody>
<tr>
<td>Free Market Institutions ($FM_{it}$)</td>
<td>0.2069</td>
<td>2.75</td>
<td>0.006</td>
<td>F-test = 23.520</td>
</tr>
<tr>
<td>Welfare / Demand ($WL_{it}$)</td>
<td>0.6037</td>
<td>4.73</td>
<td>0.000</td>
<td>P&gt;F (p-value) = 0.000</td>
</tr>
<tr>
<td>Labor Cost ($LC_{it}$)</td>
<td>–0.2284</td>
<td>–2.82</td>
<td>0.005</td>
<td>R² = 0.641</td>
</tr>
<tr>
<td>Natural Resources ($NR_{it}$)</td>
<td>0.1716</td>
<td>2.70</td>
<td>0.007</td>
<td>Kleibergen-Paap = 55.831</td>
</tr>
<tr>
<td>International Trade Openness ($OP_{it}$)</td>
<td>0.1343</td>
<td>2.63</td>
<td>0.008</td>
<td>χ² (2) p-value = 0.000</td>
</tr>
<tr>
<td>Human Capital ($HC_{it}$)</td>
<td>0.4254</td>
<td>4.37</td>
<td>0.000</td>
<td>Hansen J statistic = 0.549</td>
</tr>
<tr>
<td>Infrastructure ($IN_{it}$)</td>
<td>0.1775</td>
<td>3.59</td>
<td>0.000</td>
<td>χ² (1) p-value = 0.459</td>
</tr>
</tbody>
</table>

Source: own elaboration. Author’s econometric results based on data and estimation methodology described in previous sections.

**TABLE 2.** Prais-Winsten regression for impact of free market institutional system on FDI

<table>
<thead>
<tr>
<th>Explanatory variables</th>
<th>Beta coefficient</th>
<th>t-test</th>
<th>p-value</th>
<th>Regression statistics</th>
</tr>
</thead>
<tbody>
<tr>
<td>Free Market Institutions ($FM_{it-1}$)</td>
<td>0.1858</td>
<td>2.62</td>
<td>0.009</td>
<td>Wald-test = 458.540</td>
</tr>
<tr>
<td>Welfare / Demand ($WL_{it-1}$)</td>
<td>0.5409</td>
<td>7.48</td>
<td>0.000</td>
<td>χ² (7) p-value = 0.000</td>
</tr>
<tr>
<td>Labor Cost ($LC_{it-1}$)</td>
<td>–0.2074</td>
<td>–3.37</td>
<td>0.001</td>
<td>R² = 0.686</td>
</tr>
<tr>
<td>Natural Resources ($NR_{it-1}$)</td>
<td>0.1271</td>
<td>2.60</td>
<td>0.009</td>
<td></td>
</tr>
<tr>
<td>International Trade Openness ($OP_{it-1}$)</td>
<td>0.1094</td>
<td>2.28</td>
<td>0.023</td>
<td></td>
</tr>
<tr>
<td>Human Capital ($HC_{it-1}$)</td>
<td>0.4198</td>
<td>6.34</td>
<td>0.000</td>
<td></td>
</tr>
<tr>
<td>Infrastructure ($IN_{it-1}$)</td>
<td>0.1706</td>
<td>3.86</td>
<td>0.000</td>
<td></td>
</tr>
</tbody>
</table>

Source: own elaboration. Author’s econometric results based on data and estimation methodology described in previous sections.

Generally, the explanatory fit of the model is satisfactory and the instrumental variables satisfy the relevance and exogeneity conditions. The instruments used are relevant.
(there is no weak instrument problem) as we can clearly reject the null hypothesis of weak instruments (not correlated with endogenous variables) according to the Kleibergen-Paap rk LM under-identification test. The instruments are also valid (not correlated with the error term), and thus exogenous, as we cannot reject the null hypothesis of the Hansen J test that the over-identifying restrictions are valid.

Turning to the econometric results of the Prais-Winsten model, in which the regressors have been included with a one year time-lag, it is apparent that in general the findings are very similar, though the estimated standardized regression coefficients are slightly smaller for most explanatory variables. The free market institutional system is again found to exert a positive and significant effect on FDI with a beta coefficient value of over 0.18. Although the beta dropped somewhat, FM in this model once again appears to be the fourth most important host-country location factor of FDI out of the seven explanatory variables. To a lesser extent, the size of FM’s impact is still noticeable and significant, especially in the context of emerging economies. As in the IV model, determinants of FDI performance such as, a country’s welfare and domestic demand, human capital, and labour cost are associated with the strongest impact.

In summary, both regression models suggest that a host-country’s support of a free market institutional system significantly affects inward FDI performance in emerging Asian economies during the period 1995–2014. Moreover, the magnitude of the impact is amongst the four highest, surpassing those of trade openness, natural resources, and infrastructure.

Conclusions

By constructing our FM index and tracing free market institutional system trends across thirteen emerging economies in the South, South-east, and East Asian regions, our study shows the importance and extent of market-based institutions in those countries over a period of twenty years. We provide evidence of the effects of free market institutions on inward FDI performance. Our findings show that generally, in most countries the quality and efficiency of the market related to institutional system is low. Depending on a country, there has been, however, a considerable improvement in such systems over time. Furthermore, our econometric analysis reveals that a free market institutional system is a significant host-country determinant of inward FDI performance in selected emerging Asian economies. We also found that free market institutions, while not the most important FDI determinant, have a relatively sizeable impact which exceed those of several traditional factors. This suggests that a host country’s domestic economic and market-related institutional framework should not be ignored and that more efforts to improve its quality and efficiency are desirable.
Based on our empirical findings, certain economic policy implications arise for developing and emerging economies in Asia. Given the significance of the FM index, economic reforms that foster all forms of private property rights, increase the efficiency and timeliness of business regulations, promote a competitive and efficient labour market, eliminate government induced distortions and controls with regard to market prices and trading, remove barriers and disincentives to domestic and foreign investment, and modernize and liberalize the financial market, would result in more efficient market-related institutional system. In turn, this improved institutional environment should facilitate private business transactions, stimulate entrepreneurial activities, and raise a host-country’s foreign investment climate.

Aside from existing location advantages, the focus of economic policy makers should also be on developing a supportive free market institutional framework to attract FDI. This may be a particularly relevant host-country characteristic for emerging economies in Asia in the future as competition for inward investment in that region is likely to intensify. In that case, a high-quality institutional environment is a location advantage, making a host-country more favourable and competitive for inward FDI. Furthermore, FDI in services, which is steadily rising in importance, may well be more sensitive to, and dependent on, a well-functioning, efficient free market system. The implication is that emerging Asian economies with more efficient free market institutions are likely to attract more FDI in the coming years.

Notes

1 Author’s email address: klimis.vogiatzoglou@hoasen.edu.vn
2 For further information and detailed description of the underlying measures and data, see the methodology appendix on pages 467–479 in the Heritage Foundation [2016].
3 Those cover all relevant issues in areas such as private property rights, business regulations, labor market regulations, and freedoms and institutional framework related to international trade, domestic and foreign investment, and the financial sector.
4 We have calculated the FM index according to our methodology as outlined in section 3 for a sample of developed countries, and found that many of those countries exhibit an index value around 80.
5 Among our two measures of relative FDI performance, inward FDI stock per capita exhibits a higher correlation with the independent variables as compared to inward FDI stock as a percentage of GDP. Although similar regression results are obtained with the second measure, the estimated impact of the determinants is smaller.
6 Dependent variable is inward FDI stock per capita. Kleibergen-Paap rk LM statistic and Hansen J statistic refer to the under-identification test and over-identification test for the instrumental variables, respectively.
7 Dependent variable is inward FDI stock per capita. Prais-Winsten model with cross-section specific AR(1).
References


### Appendix

<table>
<thead>
<tr>
<th>Variable</th>
<th>Definition</th>
<th>Data source</th>
</tr>
</thead>
<tbody>
<tr>
<td>FDI</td>
<td>Inward FDI stock per capita (constant 2005 prices) in US dollars; deflated using GDP deflator.</td>
<td>Own elaboration based on data from: UNCTADstat, Interactive database, United Nations Conference on Trade and Development; World Development Indicators (WDI) database, World Bank;</td>
</tr>
<tr>
<td>FM</td>
<td>Free Market Institutional System Index, as defined in ‘Section 3’ and calculated with a subset of data used for the EFI.</td>
<td>Own elaboration based on data from: Database on Economic Freedom, The Heritage Foundation.</td>
</tr>
<tr>
<td>LC</td>
<td>Real Wage (constant 2005 prices) in US dollars: calculated from nominal wage data from ILO in local currency units and deflated to constant 2005 prices using the country’s GDP deflator from WDI and then converting in US dollars using exchange rates from IFS, IMF.</td>
<td>Own elaboration based on data from: ILOSTAT database, International Labor Organization (ILO); World Development Indicators (WDI) database, World Bank; International Financial Statistics (IFS) database, International Monetary Fund (IMF).</td>
</tr>
<tr>
<td>NR</td>
<td>Natural resources rents (% of GDP).</td>
<td>World Development Indicators (WDI) database, World Bank.</td>
</tr>
<tr>
<td>OP</td>
<td>International trade (% of GDP).</td>
<td>World Development Indicators (WDI) database, World Bank.</td>
</tr>
<tr>
<td>HC</td>
<td>Human capital: Enrolment in tertiary education per 100,000 inhabitants.</td>
<td>World Development Indicators (WDI) database, World Bank.</td>
</tr>
<tr>
<td>IN</td>
<td>Infrastructure: It is a 0–100 index, calculated as the average of two infrastructure related variables, &quot;Secure Internet servers (per 1 million people)&quot; and &quot;Rail line density&quot;, both of which have been rescaled to a 0–100 range. A higher index value indicates better infrastructure.</td>
<td>Own elaboration based on data from: World Development Indicators (WDI) database, World Bank.</td>
</tr>
<tr>
<td>ES</td>
<td>Macro-economic stability: It is a 0–100 index, calculated as the average of two stability related variables, &quot;External debt stocks (% of GNI)&quot; and &quot;Inflation&quot;, both of which have been rescaled to a 0–100 range and reversed, so that a higher index value shows a higher degree of economic stability.</td>
<td>Own elaboration based on data from: World Development Indicators (WDI) database, World Bank.</td>
</tr>
</tbody>
</table>

Source: own elaboration.
Comparative Models of Capitalism in the Areas of Financial System and Corporate Governance – the Diversity of Capitalism Approach Perspective

Abstract

This article presents and assesses the methodology and results of a comparative analysis conducted by Bruno Amable in financial systems and corporate governance in the context of current policy and regulatory challenges. The article, which is based on a literature review and game theory examples, first describes and evaluates the methodology and final classification given by Amable. The role of Amable’s core concept; namely, institutional complementarity, is underlined. A game theory application in comparative institutional studies is then presented, including the author’s own “institutional game.” Finally, we assess Amable’s achievements in financial systems and corporate governance, concluding that they are valuable, innovative and useful despite some (perhaps justified) criticisms of the framework Amable used. In particular, the value of introducing institutional complementarity into comparative studies should not be underestimated. The analysis presented here suggests that Amable’s methodology may also be applicable when designing current financial reforms in the EU, especially European Capital Markets Union (CMU), because it can broaden policy maker’s horizons and promote consistent solutions.

Keywords: financial markets, banking, institutional complementarities
JEL: B52, G21, G23
Introduction

The Diversity of Capitalism (DoC) is a vital modern concept in economics and political science. It refers primarily to comparative studies. Broadly viewed, DoC is a part of New Institutional Economics (NIE) – an increasingly popular heterodox economics school. Institutions, their role in economic development, and the conditions required for institutional change are at the centre of the debate in Europe and United States [Amable, 2003]. The institutional scheme of the economy (including financial system) is now perceived as a source of comparative advantage [Hall, Soskice, 2001; Schneider, Paunescu, 2012; Johnston, Hancke, Pant, 2013]. Comparing the economic performance of different countries from the perspective of NIE therefore seems crucial when designing efficient economic policies.

This article describes and assesses the results of a comparative analysis conducted by Bruno Amable in financial systems and corporate governance [Amable, 2003]. After introducing the topic, core definitions are presented. The key concept, institutional complementarity is described in the next section of the paper. We also apply selected game theory concepts to analyse institutional interlinkages in the economy before presenting our conclusions.

Core Definitions

A widely used2 definition of financial system is “the collection of markets, institutions, instruments, regulations and techniques, through which the financial securities are traded, interest rates are determined, and financial services are produced and delivered around the world” [Rose, Marquis, 2011, p. 3]. This definition presents the financial system holistically from a global perspective. According to another definition, a financial system is composed of four links: “financial instruments; financial markets; financial institutions; and the principles according to which the first three operate” [Pietrzak, Polański, Woźniak, 2008, p. 20].

Representatives of NIE stress different aspects of the financial system. They refer directly to the definition of institutions as a rule and sanction mechanism, which leads them to consider a financial system as a “bundle of external and internal institutions that apply specifically to the financial markets.” Following this logic, one can claim that “the financial market3 is (…) the playing field for agents, while the financial system itself provides the rules of the game” [Engerer, Schrooten, 2002, p. 9]. The value of shares and conditions for loans in bank-based systems are settled by agents, and the financial system provides them with the rules and procedures for executing transactions. This approach
underlines the importance of game rules, playing fields and interlinkages between players. Corporate governance, from the perspective of institutional comparative studies, relates to the structure of rights and responsibilities among parties with a stake in the company [Aoki, 2001].

Amable’s Research on Financial System and Corporate Governance

Amable analysed countries in different institutional areas, focusing on:
1) product market competition;
2) labour market (wage-labour nexus and labour-market institutions);
3) financial intermediation sector and corporate governance;
4) social protection; and
5) education system [Amable, 2003].

After analysing those areas, Amable distinguished five types of capitalism that are characterized by certain features related to complementarity [Amable, 2003]. An analysis of financial systems is essential to presenting a complete comparative assessment of different types of capitalism. According to Amable, the variety of financial systems is much more sophisticated than a simple dichotomic distinction between bank-based and market-based ones. In light of many papers [Matysek-Jędrych, 2007; Allen, Gale, 2001] as well as the theory related to the Variety of Capitalism [Hall, Soskice, 2001], Amable’s broad empirical research and classification seems to be quite innovative. Many papers compare two models, namely bank-based and market-based ones.

Financial Systems and Corporate Governance in Amable’s Final Results

Amable presents 5 main models of modern capitalism in terms of their financial systems and corporate governance practices. Those models are characterized by a unique set of institutional complementarities and interlinkages. Compared to previous works [Hall, Soskice, 2001]5, Amable’s classification seems more complex and insightful [Borowski, Maszczyk, Olipra, 2015; Maszczyk, 2015]. This is because of the scope of analysis and (quite interesting) cluster method, which creates a multidimensional analysis scheme – even if some detailed assumptions may need improvement. In particular, although Amable’s cluster method appears valid, such detailed assumptions as the contradiction between foreign bank concentration and bond market capitalization is controversial and may not be justified.
In subsequent research [Amable, 2003], a simplistic dual vision of capitalism types was often rejected. The analysis conducted by Amable was useful for European public policies classification [Sapir, 2006], and introduced an advanced, sophisticated, comparative view that went beyond the dichotomy of Liberal Market Economies (LME) and Coordinated Market Economies (CME) and therefore should be deemed as a significant contribution.

Amable’s first model is market-based (Anglo-Saxon) capitalism. Countries included in this group are: Australia, Canada, United States and the United Kingdom. These economies are characterized by a market-based financial system and shareholder-based corporate governance. Direct company financing obtained through market channels plays a major role. Bank credit is of lesser importance. In the United States, the economy is only 25% bank-financed, while in Europe this fraction is about 75–80%. In the literature one can find recommendations to shift towards a market-based system, especially in the context of stricter capital regulations for banks and potential deleveraging after the financial crisis [Wehinger, 2012]. This is a sophisticated, multi-level and crucial issue for modern debate in Europe. Different aspects need to be considered – from bank size to their complex business models, which contain both depository-lending and investment banking.

In the Anglo-Saxon model banks act more as brokers and market makers for different financial instruments issued by companies. Fees and other remuneration linked to organizing equity or debt issuance represent a substantial part of banking system income. Bank credits, although present in those economies, are less developed. The profitability of the banking sector in a market-based economy is not dependent on net interest margin (the difference between interest income obtained by banks from borrowers and interest paid out to the lenders – e.g., depositors).

Company ownership is dispersed because most large and medium-sized enterprises are publicly traded. This creates an opportunity to develop investment funds, pension funds and other institutional investors. Pension funds may play a significant role in financial markets because the pension system is a capital-oriented one. Institutional investors provide services to their clients and sufficient liquidity levels to financial markets. Capital market transactions, such as mergers and acquisitions, as well as Initial Public Offerings, are frequent and well developed. Constant valuation in the stock market and, in particular – mergers and acquisitions – allows swift, effective corporate governance. The financing of risky, innovative projects is provided by venture capitalists. Innovations are supported by specialized investment funds that seek high potential businesses while accepting substantial risk.

In market-based capitalism – as previously noted – banks are often involved in capital market transactions that can boost their profitability in comparison to the deposit-lending model of banking. Although the banking business model is becoming more similar among different countries, this is still the case. If we look at the ROE of the banking sector before and after the global banking crisis of 2007 (Figure 1), we can state that banks in market-based economies are more profitable than in European countries.
The value of ROE in Poland (Figure 2) is similar to observed in European Continental countries. It also shows indirectly the “traditional”, i.e. depository-lending, character of the Polish banking sector. Those features make the Polish banking sector less risky and less vulnerable to market shocks. Low interest rates, however, may affect the Polish financial system in a severe way, as its profitability is mainly based on net interest margin.
Classification of Poland’s financial system is not the topic of the article. Nevertheless, it is worth mentioning here that Amable’s framework does not work properly when applied to Poland and other post-socialist economies. The developing capitalism model that we observe in Poland is not consistent with any of the types identified by Amable, and constitutes a hybrid type [Romanowska, 2016], sometimes classified as a dependent market economy [Nölke, Vliegenthart, 2009]. Regarding financial systems and corporate governance, the literature [Romanowska, 2016] indicates that Poland presents elements of Mediterranean, Social-democratic, and Continental models. Some restrictions on market functioning and efficient corporate governance, the poor quality of the business environment, and the prevailing role of foreign capital and underdeveloped equity financial markets are among the elements of the Polish hybrid type of capitalism in the financial system area [Romanowska, 2016].

Amable’s works focuses particularly on European Continental capitalism. The financial system is a vital pillar of that type of capitalism, which is characterized by mature transformation based on bank credits and loans. In comparison to the banking sector, financial markets are underdeveloped. In countries representing this type of capitalism (e.g., Germany, France, Austria, Norway) one can expect financial intermediaries (i.e. banks) to play an active role in strategy making, monitoring and corporate governance in the corporate sector. The diminishing uncertainty of the European banking system is – according to Amable – able to provide real economy with patient capital. As a result, it may help companies develop long-term, stable strategies and “invest” in social compromises and collaborative industrial relations.

Amable implies that funding stability is a major advantage of the European system over a market-based system. But Amable does not appear to sufficiently justify this statement in his work. Moreover, there are some counterexamples. Firstly, institutional investors (especially pension funds) can provide companies with stable capital, which they often invest in dividend “blue chips” companies. Moreover, when financing innovative ventures banks are not interested in granting loans due to high risk. It may be that private equity funds or business angel activities (as capital investors) are the primary solutions for start-up companies. The implicit – and not fully justified – assumption that bank credit is a more stable source of financing companies may undercut this part of Amable’s research.

The remaining three types defined by Amable are: Social-democratic, Mediterranean and Asian capitalism. They are not presented here, since Tables 1 and 2 compare Amable’s capitalism models and complementary interlinkages.
TABLE 1. **Financial intermediation and corporate governance – Summary of Amable’s analysis**

| Market-based (Anglo-Saxon) Capitalism | Social-democratic capitalism | Continental European capitalism | Mediterranean capitalism | Asian capitalism*
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Australia, Canada, United Kingdom, United States</td>
<td>Denmark, Finland, Sweden</td>
<td>Switzerland, Netherlands, Ireland, Belgium, Norway, Germany, France, Austria</td>
<td>Greece, Italy, Portugal, Spain</td>
<td>Japan, Korea</td>
</tr>
<tr>
<td>– well-developed minority shareholder rights protection;</td>
<td>– bank-based system;</td>
<td>– low minority shareholder rights protection;</td>
<td>– bank-based system;</td>
<td>– bank-based system;</td>
</tr>
<tr>
<td>– free market as an effective corporate control mechanism (stock selling, mergers and acquisitions)</td>
<td>– market is not seen as a coordination mechanism or tool for corporate control and corporate governance;</td>
<td>more stakeholder-oriented corporate governance;</td>
<td>– corporate governance of relatively low quality; based especially on informal and family relations with a meaningful role of banks;</td>
<td>– low minority and external shareholder rights protection;</td>
</tr>
<tr>
<td>– shareholder-oriented corporate governance;</td>
<td>– high ownership concentration among companies;</td>
<td>– high ownership concentration in the corporate sector;</td>
<td>– high ownership concentration in the corporate sector;</td>
<td>– high ownership concentration in the corporate sector;</td>
</tr>
<tr>
<td>– dispersed ownership of companies;</td>
<td>– concentrated banking sector that plays a significant role in financing companies, low level of financial market development, but with a significant role of institutional investors in the real economy</td>
<td>– non-market corporate control mechanism and corporate governance based on long-term relations with the participation of a highly concentrated banking sector;</td>
<td>– meaningful bank participation in management and corporate governance;</td>
<td>– meaningful bank participation in management and corporate governance;</td>
</tr>
<tr>
<td>– sophisticated and well-developed financial markets</td>
<td></td>
<td>– relatively underdeveloped financial markets and crucial role of bank credit in financing enterprises</td>
<td></td>
<td>– financial markets and capital transactions (mergers and acquisitions) rather underdeveloped compared to the Anglo-Saxon model</td>
</tr>
<tr>
<td>– significant role of institutional investors, for example pension funds;</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>– substantial role of venture capital / private equity funds, especially in innovative project financing</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*Source: Amable [2003].
The Role of Complementarity

The key issue that Amable brings to comparative studies of capitalism is a focus on complementarity. The concept of complementarity appears in the institutional economics literature [Aoki, 1994] and focuses on the diversity of capitalism [Amable, 2003].

While there is no optimal institutional structure model for the economy, the different roles of institutions and governments are features that distinguish various market economies. The consistency of arrangements driving product markets, labour markets, financial systems, corporate governance, the welfare system and education determines the actual quality of the institutional environment in a given country. Studies of complementarity were a crucial step that laid the groundwork for Amable’s classification of capitalism’s types.

Amable provides several definitions of complementarity; the first refers to dynamic stability. Specifically, institutional complementarity occurs when an institution (its existence and features) in one area reinforces the effectiveness of other institutions [Amable, 2003]. The second definition underlines economic performance. Two institutional forms are complementary when they facilitate better functioning of the entire economic system; pushing it to local optimum and changing the institutional combination will create worse economic outcomes (e.g. in terms of GDP growth) [Amable et al., 2005]. Table 2 presents the main channels of complementarities [Amable, 2003]. Another, recent subject of much institutional research is innovation, particularly its interlinkages with other dimensions [Allen, 2013], including the financial system and corporate governance [Tadasse, 2006].

Amable focuses on one example of complementarity interlinkage. The crucial institutional arrangement that interacts with industrial relations and labour markets is the financial system [Amable et al., 2005; Amable, 2003]. This approach is also presented in other works [Hall, Soskice 2001]. Wage bargaining methods are related to historical conditions that would likely be difficult to change in the short-term. The combination included in the model is limited to: centralized and decentralized wage bargaining on the one hand, and bank-based and market-based financial systems on the other hand. Complementarity occurs when central wage bargaining is accompanied by a bank-based financial system, as well as when decentralized wage bargaining is followed by markets-based financing. This conclusion assumes that centralized wage bargaining supports long-term strategies. In that case, companies seek stable financing and (probably) employees with specific skills and education. Stable financing may be provided by banks, because their decisions are theoretically long-term and independent of current stock prices.
TABLE 2. **Institutional complementarity with the financial system for different models of capitalism**

<table>
<thead>
<tr>
<th>Product market</th>
<th>Social-democratic economies</th>
<th>Continental European capitalism</th>
<th>South European capitalism</th>
<th>Asian capitalism</th>
</tr>
</thead>
<tbody>
<tr>
<td>Anglo-Saxon (market-based) capitalism</td>
<td>High level of competition requires quickly reacting financial markets</td>
<td>Long-term strategies of companies require „patient” financing</td>
<td>Moderate competitive pressure creates room for stable finance-industry relations that are associated with the banking system</td>
<td>Low competitive pressure fits well with stable finance-industry relations</td>
</tr>
<tr>
<td>Labour market</td>
<td>A flexible labour market is consistent with quick, effective evaluation through financial markets</td>
<td>Employment protection requires „patient” capital</td>
<td>Employment protection limits strict short-term-profit constraints</td>
<td>Employment stability requires a lack of short-term constraints</td>
</tr>
<tr>
<td>Social protection</td>
<td>Underdeveloped public-funded social protection leaves space for capital market-based tools</td>
<td>Welfare state system decreases demand for market-based investment tools</td>
<td>Well-developed welfare system restricts the need for individual risk diversification</td>
<td>Low welfare expenditure may increase demand for individual risk diversification; however, informal and family relations are of a substantial importance here</td>
</tr>
<tr>
<td>Education system</td>
<td>Private education system creates a niche for market-based financing offers for students</td>
<td>Stable employment perspectives call for more specific educational backgrounds</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Source: Amable [2003].

Amable’s research [Amable et al., 2005] provides an interesting and sophisticated view of this issue. Using a simple game theory model, he reaches conclusions related to the dynamics of trade union – manager relations. However, while Amable’s results are consistent with the aforementioned ideas, they reveal a broader view. The primary outcome of the model is that the first agent – game participant – who breaks the cooperative deal (between trade unions and management or shareholders) due to increased pressure by financiers is the weaker player. The weaker player, in turn, is one whose remuneration would be more
influenced. Secondly, one claims that strong trade unions (central wage bargaining and long-term cooperative relations between unions and management) are complementary with less developed financial markets. On the other hand, strong and influential financial markets are complementary with relatively weaker trade unions. In that case, employment conditions are negotiated individually and the position of workers is not protected. Both described combinations lead to a substantial probability of company survival. Given the above-mentioned dynamic stability definition of complementarity and Amable’s analysis it appears that strong and well-developed financial markets may discourage cooperative strategies in inter-company relational settlements.

Although the presented model is convincing, the results may be hampered by the previously mentioned lack of sufficient proof that direct financing obtained through financial markets has to be more volatile than banking credit. It seems that the differentiated nature of financial markets should be included in the analysis. Financial markets are a mechanism for companies to obtain equity and debt, but a more detailed analysis is needed here. A good example of a fairly stable equity financing obtained through market channels is private equity, venture capital funds, and business angels’ activities. Those investors provide companies with long-term financing and accept a high level of risk in exchange for a higher expected return. In general, pension funds are also interested in long-term capital investments.

Institutional Games

From a methodological perspective, it is worth mentioning that game theory is widely used to present complementarity [Amable, 2003]. While this method may not illustrate all potential institutional interlinkages in detail [Aoki, 2016], in general it is useful for such research.

Nash equilibrium is defined as a list of strategies, one for each player, in which no player can unilaterally change his strategy and obtain a better payoff [Turocy, von Stengel, 2001]. In other words: a set of strategy profiles that are the best answers to each other. If we link this to the definitions of complementarity presented in this article, equilibrium from game theory depicts exactly the situations when institutional “choices” of particular agents are optimal at given “choices” of partners. Finding Nash equilibrium in the “institutional game” allows us to assume that the system should be stable and none of the agents has an incentive to initiate institutional change.

Table 2 presents the most vital complementarities to financial system analysis. One can extend the game analysis proposed by Amable towards different vital complementarities. Below is an illustrative example of a sequential game, where an analysis of Nash equilibrium and Reinhard Selten's subgame perfect equilibrium is presented. The game
refers to interlinkages underlying complementary relations between the financial and education systems in a particular country.

The game described below is another example of game theory application in institutional studies. It shows the interpretation of Selten's perfect equilibrium in the institutional context, which goes marginally beyond the framework used by Amable. It also illustrates the core idea of complementarity. Though simplistic, it may be a useful step to creating more complex models of finance-education interlinkages.

Game participants:
1. Companies ("C") that may choose between two strategies: looking for direct financing through market channel ("M") or through bank credit ("B").
2. Potential workers ("W") that may choose between two options: a general or a specific education path. This leads to four strategies in sequential game: GG, GS, SG, SS. The first letter depicts the decision, if companies chose M. The second letter shows the decision when the first actor plays B. Following that rule, the strategy defined as GS means: workers choose general education if companies are financing themselves through market channels and specific education if banks prevail in the financial system of particular country.

In the presented version of the game one can assume that the choice of financial system precedes the education framework decision. This may fit well in reality, because an education scheme may be more easily reformed than a financial system. This is, however only an assumption and the game may also be structured in other ways.

Those players should be treated as a personification of processes that take place in the economy with the involvement of other actors; the government as a coordinator. The payoff matrix (presented in the Scheme 1 and Scheme 2) shows that general education brings better results in countries with financial systems based on a market channel [Amable, 2003]. That is why [M;GG] and [M;GS] are more beneficial for players than [M;SG] and [M;SS]. Choosing specific education in a country where companies are using bank credit is more beneficial due to the player’s expected long-term involvement in one profession, job, or employer. This is illustrated in the game (Scheme 1 and Table 3) by the fact that [B;GS] and [B;SS] are more favourable for agents in comparison with [B;GG] and [B;SG].

It bears emphasis that the numbers presented in the schemes indicate the direction of differences between particular payoffs. They cannot be compared directly; for example, in this conceptual presentation two is bigger than one, but not necessarily two times bigger. Moreover, higher payoffs in the projected game for market-based financial systems over bank-based systems are an assumption made for the sake of presentation. In the real world, the issue of which equilibrium would be better in terms of payoffs is a very complex problem related to the history ("path dependence") and detailed features of institutions. This cannot be easily verified or even presented with formal models. Despite some limitations imposed by these assumptions, using numbers to indicate the payoff matrix makes the analysis easier and more intuitive.
The game is based on the same stable bank credit financing idea that Amable assumes [Amable, 2003]. The game is therefore consistent with what Amable achieved in the field of complementary interlinkages. Confirmation of the assumption of “stable credit financing” in the context of institutional comparative studies may be an area of potential future scientific contribution. Empirical studies face difficulties identifying one financial system (connected with complementary corporate governance) that supports better long-term growth [Levine, 2001]. The case of financing stability may be similar. Despite that, the lack of empirical or theoretical justification for assumed long-term and stable bank financing seems controversial, especially given the significance of this assumption to final analytical outcomes. Amable does not convince the reader that market-based financing is on average more volatile than banking credit.

**SCHEME 1. Financial system – education complementarities – game in the extensive form**

```
C

<table>
<thead>
<tr>
<th>Markets (M)</th>
<th>Banks (B)</th>
</tr>
</thead>
<tbody>
<tr>
<td>W</td>
<td>W</td>
</tr>
</tbody>
</table>


Source: own elaboration.
```

**TABLE 3. Financial system – education complementarities – game in the strategic form**

<table>
<thead>
<tr>
<th>Companies’ strategies</th>
<th>Workers’ strategies</th>
</tr>
</thead>
<tbody>
<tr>
<td>GG</td>
<td>GS</td>
</tr>
<tr>
<td>7,6</td>
<td>7,6</td>
</tr>
<tr>
<td>Markets</td>
<td>3,2</td>
</tr>
<tr>
<td>3,2</td>
<td>3,2</td>
</tr>
<tr>
<td>Banks</td>
<td>4,1</td>
</tr>
<tr>
<td>4,1</td>
<td>4,1</td>
</tr>
<tr>
<td>6,5</td>
<td></td>
</tr>
</tbody>
</table>

Source: own elaboration.

The sequential game has three Nash equilibria, namely: [M;GG], [M;GS], [B;SS]. [M;GS] and is a perfect equilibrium (aforementioned Selten’s definition), because it leads to the equilibrium in each subgame. This game concept corresponds well with the essence of institutional complementarity and depicts the best educational system in relation to the previously made choice referring to financial systems.
Summary. Criticism, Limitations of Amable’s Research and Further Research Directions

Amable presented an interesting method of cluster analysis applied to financial systems and corporate governance – we reviewed and compared those results here. In general, we favour building wider classifications of capitalism. Such classifications could offer more complex and accurate views in comparison to the dichotomic differentiation presented among others by Hall and Soskice [Hall, Soskice, 2001]. However, one should limit the number of classification categories to avoid describing particular countries and losing actual scientific contributions. There are still areas of improvement in Amable's analysis. Firstly, there is no convincing justification for differences between the European Continental model and the Social-democratic model in terms of finance.

Financial systems in many of the articles cited above are presented as variations of two extreme ideal models: bank-based and market-based. Creating a five-type classification may have facilitated the presentation of all institutional areas. In the case of financial systems, “partial” objection between markets and banks may be sufficient. Having said that, we recognize that the aim of Amable's work was to analyse whole economic systems – not only finance. Another issue worth mentioning is Amable's overly simplistic description of Asian economies and Asian financial systems.

Our analysis of Amable’s method suggests that it is an appropriate tool for assessing types of modern capitalism. There are, however, several limits imposed by one assumption. The contradiction between foreign bank concentration and bond market capitalization does not have a strong theoretical or economic justification. The problem of rising volume of obligations (especially sovereign bonds) in bank balance sheets now goes far beyond comparative studies. This is a rather common dilemma for different economies that refers simply to a rising interdependence between the fiscal sector and stability of banks. A substantial part of the recent regulatory reforms in the EU (banking union) is aimed at stopping this adverse feedback [EC, 2015d] [BIS, 2012]. The problem also applies to other financial systems outside Europe.

Complementarity is Amable’s most valuable contribution. Building classifications based on particular complementary interlinkages allows one to see the whole picture as far as macroeconomic reforms are concerned. Application of game theory principles in an institutional analysis is consistent with the observation that there is usually no best solution for institutional choices, they are interconnected and – moreover – final equilibrium states may not be Pareto optimal. This opens a wide space for sophisticated research programs aimed at defining desirable and achievable institutional states for economies in particular countries or regions. Despite the advantages offered by Amable's approach, there is area for improvement. Empirical evidence for assuming that banks provide companies with more stable financing than markets is needed.
Taking into consideration specific features of the financial system and corporate governance analysis, we would also stress the homogenization trend. Business finance models have become increasingly similar to each other not only from an international perspective, but also in terms of different financial sectors (banks, investment funds, insurers) [Wagner, 2008]. The institutional shape of a financial system depends on more than only “path dependence” and complementary linkages with other institutional areas in the country. There are also strong international connections that influence domestic institutions. Legal and cultural aspects are valid as well. Those issues show that many theses may be still a subject of research in comparative studies.

Although Amable’s framework may be criticized for several assumptions or interpretations, the value of introducing institutional complementarity into comparative studies should not be underestimated. Research on connections between institutional complementarities and economic policy facilitate effectiveness, and assessing the potential application of Amable’s methodology to current financial EU reforms (especially CMU) [EC, 2015a; 2015b; 2015c] may constitute an interesting step in future research in this area.

Notes

1 Author’s e-mail address: pp46309@doktorant.sgh.waw.pl; ppisany@gmail.com
3 From now on, in our article the term “financial markets” is used in a narrower sense and refers to ways of obtaining financing by companies through issuing financial instruments on the market (excluding bank’s credit).
4 In our article the terms “model of capitalism” and “type of capitalism” are treated as synonyms.
5 Hall and Soskice distinguished: Liberal Market Economies (LME) and Coordinated Market Economies (CME). According to them LMEs are: the United States, United Kingdom, Australia, Canada, New Zealand, and Ireland. CMEs are: Germany, Japan, Switzerland, the Netherlands, Belgium, Sweden, Norway, Denmark, Finland, and Austria. Moreover, Hall and Soskice underline the fact that particular countries (namely: France, Italy, Spain, Portugal, Greece and Turkey) cannot be classified in either category and are too diversified to be treated as a separate model.
6 In 2013 bank assets equaled 334% of GDP in the European Union. The same indicator was 86% for the United States and 196% for Japan (NBP, 2014). For Poland the relation has remained low (below 100%) in comparison to other European countries. Only in Romania and Lithuania was the indicator lower [Liikanen Report, 2012]. As can be seen from the aforementioned example, the financial sector represented by banks is substantial but differentiated by relative size. This poses – for politicians and economists – the potential dilemma of TBTF (Too-Big-To-Fail). A striking example of this threat is that assets of one bank often exceed the GDP of a home (headquarters) country. This is the case of Nordea, ING, Santander, HSBC, Barclays, and RBS. Also, Deutsche Bank and BNP Paribas are worth mentioning.
in the list of systemic institutions even if their assets do not yet exceed, respectively, German and French GDP [Liikanen Report, 2012]. The crucial scientific questions nowadays are: what is the optimal size of the financial sector and leverage in the economy and how to assess the optimal size of employment in the financial sector [ASC, 2014; Arcand et al., 2012]. These vital questions are not directly related to the main topic of this article.

However, it is worth noting that in the United States – being the most obvious example of market-based capitalism – dependence on banks is relatively smaller than in Europe. However, it is too early to claim here that the US financial system is less vulnerable to TBTF problem than in Europe. Many regulatory initiatives (for example banking union and CMU) are now being undertaken in the European Union to address this issue.

The sophisticated business model of a bank with strong lending (traditional) business and investment activities is characterized by a potentially higher maturity and liquidity risk. The risk was reinforced by rising leverage and eventually brought substantial vulnerability to the system. Universal banking has become popular in western economies (Europe and the United States), which is underlined as a source of growing financial system weakness [Wilmarth, 2009].

A current view in the literature posits that types of capitalism in Asia are much more sophisticated. In [Witt, Redding, 2013] the following classification of Asian capitalism types is presented: (post) socialist, advanced city, emerging Southeast Asia, advanced Northeast Asia, and Japanese. It seems that in Amable's view [2003] the narrow and simplistic vision of Asian economies is a given.

An important issue behind differentiation between Anglo-Saxon and European capitalism is the presence of the common law in countries with latter type. Common law is connected with stronger protections of individual investors than that provided in statutory (civil) European legal acts [Ahlering, Deakin, 2007].

See also further research by Aoki [2001].

A subgame perfect equilibrium (or subgame perfect Nash equilibrium) is a refinement of a Nash equilibrium used in dynamic games. A strategy profile is a subgame perfect equilibrium if it represents a Nash equilibrium of every subgame of the original game. It is vital to mention that a common method for determining subgame perfect equilibria in the case of a finite game is backward induction [Osborne, 2004].

In particular, in the case of non-sequential game with the same payoff matrix one can find two points of equilibrium: [M,G] and [B,S]. Mixed strategies, however mathematically possible, are not taken into account because the aim of the game is to focus on interlinkages between defined types of capitalism. When it comes to financial system choice the interpretation would be quite intuitive – a certain part of enterprises finance themselves on the market and the rest use a bank credit (structure of companies' sector liabilities). In terms of showing the state of education system, mixed strategies would not work so well. However, it is worth noting that game theory offers a significant number of tools that may be used to analyse institutional complementarity.

There are multiple definitions of path dependence. According to [David, 2000, p. 5] this term should be associated with „a process … [that – PP] is one whose asymptotic distribution evolves as a consequence (function of) the process's own history”. For institutional comparative studies one can claim that this is the concept that institutions have been formed through a unique process that is valid for their current shape and functioning.

Research aimed at exploring the relationship between economic performance and financial structure – the degree to which a country's financial system is market-based or bank-based. Game theory, specifically, the prisoner dilemma, may also be useful in illustrating suboptimal equilibrium points; for example, in the case of the Mediterranean model. This type was not, however, the topic of my article.
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Internationalization of the Entrepreneurial Activity
of Social Purpose Organizations

Abstract

The objective of this paper is to analyse and identify patterns of international entrepreneurial activity of social purpose organizations. The article utilizes international social entrepreneurship literature to develop an understanding of the international activity of social entrepreneurs and to identify factors that differentiate their activity. A cluster analysis was conducted to identify patterns of international social entrepreneurial activity, which included: the subject of activity, the types of beneficiaries, the scope of activity, and the legal type of organization. As a result, a survey sample of 55 international social ventures was divided into 3 homogeneous groups. The groups were (1) solution providers, (2) entrepreneurial charities, and (3) intermediaries. The results of the analysis show the diversity of the international activities of social entrepreneurs, although only a portion of them operate internationally. These findings contribute to a greater understanding of social entrepreneurs’ motivation and the paths of their internationalization activity.

Keywords: non-profit organization, social entrepreneur, internationalization, cluster analysis

JEL: L26, L31
Introduction

Selected processes related to business activity apply to social purpose organizations. One of them is economization of activity. Many organizations use business models and tools to generate a surplus, which is used to meet social needs. Others use business tools directly to solve social problems (such as unemployment or social exclusion by offering employment opportunities). One type of these organizations is social enterprises. In some countries special regulations and legal forms have been implemented to enable this kind of activity. Social entrepreneurs usually strive to help people or groups in their local communities, focusing on local problems. But some of the social problems are universal by nature and are present in many communities, and are sometimes global. Some solutions invented by social entrepreneurs are applicable in different places and may be adopted within many communities. Through communication technology and social networks, social activity has become increasingly international.

The objective of this paper is to examine the types of entrepreneurial activities internationalization in organizations that prioritize social goals, and to identify and describe some patterns of their internationalization. A cluster analysis is utilized and the survey sample includes social enterprises conducting entrepreneurial activity, as well as traditional non-profit organizations (such as charities or foundations), that resemble for-profit enterprises at least in a portion of their activities.

The structure of the paper is as follows: first, the social entrepreneurship concept is briefly described. Next, that concept is presented in the context of internationalization. Then, some examples of international social ventures described in the literature are demonstrated and the patterns of international social entrepreneurial activity are identified. To do so, a cluster analysis is conducted within a group of 55 social entrepreneurs. Finally, the results are discussed in the context of previous studies, limitations are pointed out, and recommendations for future research are suggested.

Entrepreneurial Activity with Social Goal

There is an emerging body of literature on social entrepreneurship and the internationalization of enterprises. Social entrepreneurship is still a relatively new field of knowledge, and its definition is still evolving. Some authors, such as Bornstein and Davis [2010, p. 1], define social entrepreneurship broadly, as “a process by which individuals build or transform institutions to advance solutions to social problems”. Yunus [2008, p. 14] states, that “any innovative initiative to help people may be described as social entrepreneurship”. Mair and Marti [2006, p. 37] are more specific, defining social entrepreneurship as “a process involving the innovative use and combination of resources to pursue opportunities
to catalyse social change and/or address social needs”. Zahra et al. [2009, p. 519] perceive social entrepreneurship in a similar way, proposing that it “encompasses the activities and processes undertaken to discover, define, and exploit opportunities in order to enhance social wealth by creating new ventures or managing existing organizations in an innovative manner”. Kerlin [2006, p. 259] has identified several aspects that distinguish social entrepreneurship in the US and Europe, such as focus (revenue generation in the US versus social benefit in Europe), common organisational type, legal framework (which is lacking in the US and “underdeveloped but improving” in Europe), and spectrum of activity (all non-profit activities in the US versus human services in Europe), among others. She found that there are many types of social enterprises, but just a few operate in Europe. Dees and Anderson [2006] have distinguished two schools of thought emerging from the practices of social entrepreneurs in the US. The first is the social enterprise school which focuses on “earned-income activity by non-profits” [p. 44]. The second is the social innovation school, which is rooted in an economic understanding of the term ‘entrepreneur’ as value creators who revolutionize patterns of production, and is identified with innovations that lead to social change [p. 45].

One of the most common definitional elements of social enterprises is an emphasis on social goals. Peredo and McClean [2006, p. 63] propose “the continuum of social goals”, wherein at one extreme enterprise goals may be exclusively social and, at another social goals may be among (but subordinate to) the goals of an enterprise. Furthermore, social ventures explicitly emphasize social impact and change capabilities, which further distinguish them from for-profit enterprises. Comparing social ventures with for-profit ones, which also may have a social impact, for-profits do not invest in social impact and social system change capabilities as a core business [Zahra et al., 2014].

Parallel to the ongoing discussion on social entrepreneurship definitions, attempts to implement regulations in this area have been undertaken in some countries. As a result, different legal forms of social enterprises exist. In some countries the status of a social enterprise may be related to a limited range of activities. They may refer to the labour market and be expected to solve problems connected with the access of disadvantaged groups of people to that market. Researchers gathered in the European Research Network define social enterprises as “organizations with an explicit aim to benefit the community, initiated by a group of citizens and in which the material interest of capital investors is subject to limits. Social enterprises also place a high value on their autonomy and on economic risk-taking related to ongoing socio-economic activity” [Defourny, Nyssens, 2006, p. 5]. The model proposed by the European Research Network distinguishes three sets of criteria (three economic and entrepreneurial, three social, and three related to the participatory governance) according to which entities and initiatives are classified as parts of a social economy. The economic criteria comprise a continuous activity, producing goods and/or selling services, a significant level of economic risk, and a minimum amount of paid work. Social criteria include the explicit aim of benefiting the community, initiatives launched by
groups of citizens or civil society organisations, and a limited profit distribution. Finally, the dimension of participatory governance is characterized by a high degree of autonomy, decision-making power not based on capital ownership, and the involvement of various parties affected by the activity [Defourny, Nyssens, 2012, pp. 12–15].

In EU documents the term ‘social enterprise’ is used to refer to the following types of businesses: (1) those for which the social or societal objectives of the common good are the reason for the commercial activity, often in the form of a high level of social innovation; (2) those where profits are mainly reinvested to achieve a social objective; and (3) those where the method of organisation or ownership system reflects their mission, using democratic or participatory principles or focusing on social justice [European Commission, 2011, p. 2].

In this paper, the broad approach to social entrepreneurship is applied. Accordingly, social entrepreneurs can act both within traditional non-profit organizations (e.g. charities, associations, foundations) and social enterprises (regardless of legal form). These variations can each be called “social purpose organizations”. The broad approach partially addresses the inconsistency of laws, regulations, and legal forms that developed in different countries and their reference to (and, in some countries, very limited) fields of activity. Some social entrepreneurs operate in countries where social entrepreneurship is a novelty concept, not yet reflected in the legal system, and act as charities or business enterprises. To conclude, when examining international social entrepreneurial activity, the diversity and incomparability of local regulations should be taken into account.

**Internationalization of Entrepreneurial Activity**

One process faced by the non-profit sector is internationalization, which also has an impact on the entrepreneurial activity of social purpose organizations. The internationalization process has been observed in business and examined by researchers representing business schools. In the business context, international entrepreneurship is defined as a process of creatively discovering and exploiting opportunities that lie outside a company’s domestic market in pursuit of competitive advantage [Zahra, George, 2002]. International entrepreneurs are described as “actors (organizations, groups, or individuals) who discover, enact, evaluate, or exploit opportunities to create future goods or services and who cross national borders to do so” [Oviatt, McDougall, 2005, p. 540]. Since social entrepreneurs may be guided by a collectivistic (rather than individualistic) sensibility, and they inherently value collaboration and consensus-building [Hemingway, 2005], they can be expected to look for potential partners, including those located abroad. Social entrepreneurs are expected to be sensitive to social problems regardless their location (in their local area, or abroad), although most of them are “community-based organizations” [Austin et al., 2006]. Therefore, the phenomenon of internationalization occurs also in social entrepreneurship.
To support the development of the theory of internationalization of social entrepreneurial activity, the international entrepreneurship and social entrepreneurship body of knowledge could be applied. However, most definitions of social entrepreneurship focus on local-level problems and activity, and are inapplicable to the international context.

Chen [2012] combines social exchange theory with international new venture theory to provide a framework to analyse international social ventures and identify the conditions for sustaining them. Desa [2012] examines the relationship between institutional theory and resource mobilization in international social entrepreneurship and shows how regulatory, political, and technological institutions affect resource-mobilization in social ventures. Tukamushaba, Orobia and George [2011] propose a conceptual model integrating entrepreneurial intention knowledge in order to explain international social entrepreneurial behaviours and why some individuals can seize international opportunities. They define international social entrepreneurship as “the process of creatively discovering and exploiting social entrepreneurial opportunities overseas with the application of business expertise and market-based skills, with innovative social goods and services, either with or without profit orientation, but with the pivotal objective of creating societal value rather than shareholder wealth in the overseas territories where the enterprise functions” [Tukamushaba et al., 2011, p. 286]. Marshall [2011, p. 185] defines an international for-profit social entrepreneur as “an individual or group who discover, enact, evaluate and exploit opportunities to create social value through the commercial exchange of future goods and services across national borders”. He further develops this definition by underlining that “the social mission obtains primacy (or at the very least, parity) with other goals, and profitability through commercial transactions and the conduct of trade across borders are explicit” [p. 185]. He underscores that the international for-profit social enterprises analysed by him are “committed to a global social issue and maintain a fundamental belief in the market as a transformational mechanism to address the social issue” [p. 196]. Chen [2012, p. 133] finds that many social ventures are international by their very nature, and that “some ventures have been established with funding from sponsors in developed countries in order to benefit people in less-developed countries or else are global ventures that aim to serve a need that exists in several countries”. Some social problems are also universal, occur in many locations, and are expected to be solved there. Some solutions introduced by social entrepreneurs may be implemented to address different challenges in different locations, stimulating the internationalization of entrepreneurial social activities. When social entrepreneurs observe a social need abroad that can be met, they try to meet it (e.g., microcredits offered by Grameen Bank to very poor people for self-employment projects that generate income [Grameen, 2016]).

Examples of international activities of social entrepreneurs described in the literature are presented in Table 1.

Table 1 shows the diverse international activities performed and organised by social enterprises. One goal of this paper is to identify the patterns of these activities.
<table>
<thead>
<tr>
<th>Social enterprise</th>
<th>Scope of activity</th>
<th>Source</th>
</tr>
</thead>
<tbody>
<tr>
<td>GoodWeave International</td>
<td>Helps inhibit exploitative labour brokers in the carpet-weaving industry.</td>
<td>Martin and Osberg [2015]</td>
</tr>
<tr>
<td>Kiva</td>
<td>A platform that enables small-scale lenders in wealthy countries to lend to small-scale borrowers in poor countries.</td>
<td></td>
</tr>
<tr>
<td>Impact Investment Exchange Asia (IIEA)</td>
<td>A platform for social enterprises to raise capital efficiently; IIEA operates the Impact Incubator and Impact Partners platforms to help social enterprises access impact investment capital in private transactions and Impact Exchange, the world’s first social stock exchange.</td>
<td>Wajszczak [2016]</td>
</tr>
<tr>
<td>Benetech</td>
<td>An incubator of technology social ventures, serving beneficiaries in many countries in diverse domains including human rights, literacy, and disability access.</td>
<td>Desa [2012]</td>
</tr>
<tr>
<td>Vestergaard Frandsen</td>
<td>European international company that specializes in disease control along with complex emergency response products; the company is directed by a unique humanitarian entrepreneurship business model, wherein humanitarian responsibility is its core business and the business model is based on ‘profit for a purpose’.</td>
<td>Agrawal and Gugnani [2014]</td>
</tr>
<tr>
<td>BeadforLife</td>
<td>Selling jewellery in the U.S. market made of paper beads by women in Uganda; these producing women began exploiting their domestic market only after first selling abroad.</td>
<td>Tukamu-shaba et al. [2011]</td>
</tr>
<tr>
<td>MayaWorks</td>
<td>Distributing a large variety of Mayan handicrafts; the profit is used to provide poor women in Guatemala with economic power through an income generating businesses.</td>
<td>Rarick et al. [2011]</td>
</tr>
<tr>
<td>Speak Shop</td>
<td>Improving the quality of life for Guatemalan Spanish tutors and enhancing cross-cultural understanding by offering an on-line Spanish tutoring service.</td>
<td>Marshall [2011]</td>
</tr>
<tr>
<td>Tropical Salvage</td>
<td>Is committed to finding alternatives to destructive forest practices and provides work to un- and under-employed craftsmen in Indonesia by manufacturing furniture.</td>
<td></td>
</tr>
<tr>
<td>Guayaki</td>
<td>Building the capacity of the indigenous peoples to provide livelihoods for themselves by restoring the Amazonian rainforest and producing Yerba mate beverages.</td>
<td></td>
</tr>
<tr>
<td>Flores del Sur</td>
<td>Providing employment and job training to female heads of household living in extreme poverty in one of Chile’s poorest regions by producing fresh flowers (primarily high-quality carnations) grown in a distinctive variety of colours.</td>
<td>Chen [2012]</td>
</tr>
<tr>
<td>Arzu</td>
<td>Providing sustainable income to Afghan women by selling their rugs; Arzu weavers receive basic health care and above-market compensation for their rugs in international markets; Arzu also focuses on educating weavers’ families.</td>
<td></td>
</tr>
<tr>
<td>TransFair USA</td>
<td>Helping small farmers in 58 countries by certifying their products as fair trade and signing agreements with more than 700 U.S. companies to source fair trade products.</td>
<td></td>
</tr>
<tr>
<td>“Studio for Social Creativity”</td>
<td>Providing the conceptual and practical basis for promoting development in Israel’s northern periphery, a region characterized by socio-economic stagnation as well as deep social divisions.</td>
<td>Friedman and Desivilya [2010]</td>
</tr>
</tbody>
</table>

Source: own elaboration, based on sources indicated in the third column.
Dimensions of International Social Entrepreneurial Activity

The activities of international social entrepreneurs are quite diversified. To identify their different patterns, many dimensions have to be considered; the basic one being the subject of activity. The cases reviewed above show that international social entrepreneurs operate in diverse types of activities – some in manufacturing, others in education, or finance. Diversity is driven by the nature of pursued opportunities. Boschee [2006] notes that international social ventures may be entrepreneurial in relation to financial, social, and environmental opportunities. Another dimension is the scale of activity – some social entrepreneurs operate globally, while others focus on particular markets. The scale of activity is affected by the nature of the social problem, resource availability, and the entrepreneur’s motivation. The next differentiating factor is how internationalization evolves – some social ventures may start at a local level and gradually expand into foreign markets. Other social ventures are designed as social „born-globals” [Marshall, 2011].

Some attempts to classify international social entrepreneurial activities are described in the literature. Marschall [2011] organizes international for-profit social enterprises through mission primacy (commercial and social) and geographic scope (domestic and international). Zahra et al. [2009] distinguish social entrepreneurs according to how they discover social opportunities (i.e. search processes), determine their impact on the broader social system, and assemble the resources needed to pursue these opportunities. This concept is useful in the internationalization context.

Literature discerns the factors influencing the international development of social ventures. Spear [2006] points out three interacting factors influencing the development of social enterprises internationally: demand side factors (i.e., services wanted by the public from social enterprises as customers); supply side factors (essentially, the supply of social entrepreneurs) and contextual and institutional factors that impact the relationship between the two. Borzaga and Defourny [2001] suggest the following factors explain variations of social enterprise activities among countries in Europe: the development level of economic and social systems, the characteristics of the welfare systems, the role of the traditional third sector, and the nature of the underlying legal systems. Chen [2012] highlights the importance of social exchange structures and socially embedded resources in the success of international social ventures.

To conclude, there are many factors that differentiate international social entrepreneurial activities. One factor is not sufficient to fully classify them. There are many two-dimensional matrixes containing possible variables, all of which classify international social entrepreneurs differently. An example of such classification is presented in Table 2. In this study, we make no assumptions about the number of factors. However, we contend that the two-dimensional classifications is not sufficient in the case of differentiated populations in international social enterprises. The process of selecting dimensions that
distinguish international social enterprises included two steps. First, seven variables were selected from the literature review and social enterprises previously listed. Second, these variables were initially tested with a survey sample to differentiate the surveyed units, yielding four for further scrutiny. These are: subject of activity; type of beneficiary; scope of activity; and type of organization.

**TABLE 2. Example of two-dimensional matrix classification of international entrepreneurial social activity**

<table>
<thead>
<tr>
<th>Scope of activity</th>
<th>Scope of problem</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Local problem</td>
</tr>
<tr>
<td>Local activity</td>
<td>(no international) community-based social enterprises</td>
</tr>
<tr>
<td></td>
<td>global problem solved by local social enterprises</td>
</tr>
<tr>
<td></td>
<td>(“think globally, act locally”)</td>
</tr>
<tr>
<td>Cross-border activity</td>
<td>local problem solved by social enterprises from abroad</td>
</tr>
<tr>
<td></td>
<td>global problem solved by global social enterprises</td>
</tr>
</tbody>
</table>

*Source: own elaboration.*

**Research Method**

When examining entrepreneurial social activity in the international context, a key problem is the lack of a relevant database. There are no statistics or evidence containing the category “international social enterprises”. Moreover, ‘international activity’ has not been identified as a separate category in previous social enterprises research. In this survey, we rely on Forbes’ annual lists of “30 Under 30 Social Entrepreneurs” from 2013–2016 for our data. The social entrepreneurs on these lists are people who use business tools to solve major problem, and “are directing their talent and conviction to better the world” [Carlyle, 2015]. Such an understanding of social entrepreneurship is in line with the US tradition of social entrepreneurship (and its ‘social enterprise’ and ‘social innovation’ schools). Although Forbes’ description is too imprecise to be considered a definition, it does adequately describe social entrepreneurship as an international phenomenon characterized by a diversity of organizational and legal forms, goals, and activities.

The wide focus group included 150 entrepreneurs, 120 from U.S. and 30 from Europe, of which 55 operate internationally and only these were selected to be further cluster analysed. To better define and understand selected social ventures, the descriptions of their activities provided by Forbes, as well as their respective webpages, were analysed. Every organization (founded or led by a “Forbes’ entrepreneur”) was assessed in terms of: (1) the subject of their activity: selling products, providing free solutions, helping start social enterprises, cooperating with social enterprises, funding of target groups; (2) type
of beneficiary: individuals or organizations; (3) scope of activity: one or more markets; and (4) legal type of organization: charity/associations, foundations, social enterprises, business enterprises (with a predominate social aim). The characteristics of the surveyed group are presented in Table 3.

**TABLE 3. Characteristics of international social entrepreneurs from Forbes’ “30 under 30” lists**

<table>
<thead>
<tr>
<th>Dimension</th>
<th>Sub-dimension</th>
<th>Percentage share of the sample</th>
</tr>
</thead>
<tbody>
<tr>
<td>subject of activity</td>
<td>selling products</td>
<td>35%</td>
</tr>
<tr>
<td></td>
<td>providing free solutions</td>
<td>27%</td>
</tr>
<tr>
<td></td>
<td>helping to start a social enterprise</td>
<td>11%</td>
</tr>
<tr>
<td></td>
<td>cooperating with social enterprises</td>
<td>11%</td>
</tr>
<tr>
<td></td>
<td>providing funds to a target group</td>
<td>16%</td>
</tr>
<tr>
<td>type of beneficiary</td>
<td>individuals</td>
<td>73%</td>
</tr>
<tr>
<td></td>
<td>organizations</td>
<td>27%</td>
</tr>
<tr>
<td>scope of activity</td>
<td>one (foreign) market</td>
<td>40%</td>
</tr>
<tr>
<td></td>
<td>more than one market</td>
<td>60%</td>
</tr>
<tr>
<td>legal type of organization</td>
<td>charity/association</td>
<td>15%</td>
</tr>
<tr>
<td></td>
<td>foundation</td>
<td>36%</td>
</tr>
<tr>
<td></td>
<td>social enterprise</td>
<td>22%</td>
</tr>
<tr>
<td></td>
<td>business enterprise</td>
<td>27%</td>
</tr>
</tbody>
</table>

Source: own elaboration, based on www.forbes.com

As presented in Table 3, 40% of surveyed organizations operate within a single market. Operations are considered international when an entrepreneur comes from another country and operates abroad (to solve a problem on a foreign market).

The method that we use to classify multidimensional groups is a cluster analysis. In this paper, the cluster analysis was conducted in two stages. First, an agglomerative hierarchical clustering, using Ward’s algorithm and squared Euclidean distances, was employed. Ward’s method was chosen because it produces more interpretable clusters as compared to other algorithms [Sharma, Wadhawan, 2009, p. 12]. Using the four variables presented previously, objects were classified into relatively homogeneous groups. By a visual inspection of dendrograms three possible cluster solutions were identified, which provided a taxonomy in terms of accuracy (more than three clusters would diminish the size required for statistical analysis). Furthermore, a non-hierarchical technique, k-means cluster analysis, was used to obtain the cluster description. Finally, three clusters were analysed, which included, respectively, 21, 19 and 15 objects². Their description (number of objects, mean and standard deviation) is presented in Table 4.
TABLE 4. **Mean (and standard deviation) of variables for three final clusters**

<table>
<thead>
<tr>
<th>Variables</th>
<th>Cluster 1 (19 objects)</th>
<th>Cluster 2 (21 objects)</th>
<th>Cluster 3 (15 objects)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Subject of activity</td>
<td>1.16 (0.37)</td>
<td>2.14 (0.65)</td>
<td>4.6 (0.51)</td>
</tr>
<tr>
<td>Type of beneficiary</td>
<td>1.37 (0.49)</td>
<td>1.09 (0.30)</td>
<td>1.4 (0.51)</td>
</tr>
<tr>
<td>Scope of activity</td>
<td>1.68 (0.48)</td>
<td>1.62 (0.59)</td>
<td>1.8 (0.41)</td>
</tr>
<tr>
<td>Legal type of organization</td>
<td>3.58 (0.51)</td>
<td>1.81 (0.51)</td>
<td>2.53 (1.12)</td>
</tr>
</tbody>
</table>

*Source: own elaboration.*

The values presented in Table 4 show the differences among selected clusters and permit the identification of dimensions that differentiate selected clusters. However, each cluster description requires a qualitative analysis of its structure and characteristics.

**Types of International Social Entrepreneurs**

In our subject group the following types of international social entrepreneurs were clustered:
1. solution providers (19 entrepreneurs),
2. entrepreneurial charities (21 entrepreneurs),
3. intermediaries (15 entrepreneurs).

Although the names of some of the clusters mentioned above are known to represent the business world, they also represent entrepreneurs who focus primarily on a social mission, albeit operating similarly to their business counterparts.

Solution providers are social or business ventures selling products that provide solutions to social problems (e.g. the lack of drinkable water or very limited access to health care services). They usually export their products into markets where the social needs occur, and provide solutions directly to individuals facing these problems or to other social ventures that strive to solve social problems. An example of this cluster is the Drinkwell System – a network of entrepreneurs that generate income by selling clean drinking water that can improve the health, wealth, and productivity of the world’s poorest populations. Drinkwell uses a micro-franchise model to establish local water businesses in India, Laos, and Cambodia. “By providing affected villagers with water filtration technology and business tools, Drinkwell taps into the entrepreneurial spirit within these communities to create jobs, generate income, and improve health outcomes” [Drinkwell, 2016]. Another example of this group is Coolar. It offers an innovative cooling system that enables doctors to preserve lifesaving medicine, such as vaccines, in a reliable and eco-friendly way by providing refrigerators that run independently from the power grid and are close to carbon
neutral [Coolar, 2016]. Coolar does not directly serve people who are in need but provides a solution to other ventures or individuals who support those in need.

Entrepreneurial charities are non-profit organizations (working as associations or foundations) that provide solutions directly to individuals facing social problems. Their effectiveness depends not only on donations but also on the implementation of their sometimes highly innovative ideas to meet social needs. To solve the problem of poverty, some of them facilitate new businesses by providing resources directly to individuals that want to become entrepreneurs. An example of this behaviour is OneDollarGlasses – an association from Germany that provides simple technology for manufacturing glasses locally in poor regions. The lightweight glasses consist of a flexible spring steel frame and prefabricated lenses, costing approximately 1 USD to produce [OneDollarGlasses, 2016]. Another example is the Local Food Lab – a start-up academy for social entrepreneurs building a healthier food system. It has worked intensively to help 75 start-ups get to market, to scale operations, and to raise capital. It also offers free (or low-cost) online resources to 2,500 entrepreneurs in 51 countries, and has provided in-person training and events to 1,500 entrepreneurs [Carlyle, 2015].

Intermediaries are placed in the value chain of other social ventures, of whom some represent social enterprises or individuals on an external market (sometimes the home market of intermediary). They usually import goods manufactured in developing countries to help increase the incomes of entrepreneurs from those countries through access to foreign markets, and utilize profits to provide social services to entrepreneurs or their local communities. Some intermediaries are positioned between donors and beneficiaries – providing support and also offering some additional value, e.g. enabling donors to measure the social impact of their donation. One representative example of this cluster is Nisolo located in Nashville, TN, and Trujillo, Peru. Nisolo helps talented shoemakers from Peru to grow by gaining access to the global shoe market. They started a fashion label that committed – first and foremost – to ethical production and the well-being of producers. Nisolo supports the employment of over 50 people, facilitates international market access for its producers, pays the trade wages that are higher than fair level, offers skills training, and provides safe working conditions. The results are: “consistent employment, an average income increase of 300% per producer, improved living conditions, inaugural access to education and savings, and above all, dignity and empowerment” [Nisolo, 2016]. Another example is Impact Foundation, which helps donors maximize the impact of their charitable giving. Impact Foundation allows donors to put charitable giving in an Impact Fund, which directs investments and grants according to the investment and program guidelines established by Impact Fund’s board of directors [Impact Foundation, 2016]. This innovative way of managing charitable funds enables different social initiatives to be supported worldwide.
Discussion

Although our cluster analysis is limited to a particular group of social entrepreneurs, its results correspond to the wider literature review. The results of the cluster analysis confirm the international nature of some social ventures, e.g. those established in less-developed countries with funding from sponsors in developed countries and those focused on needs that exist in many countries (as stated by Chen [2012]) and, furthermore, reveals more possibilities of internationalization. Most of the surveyed objects are examples of social “born-globals”, which were examined by Marshall [2011]. The results reflect the problem of resource mobilization explored by Desa [2012], as well as the significance of the perception of feasibility investigated by Tukamushaba et al. [2011]. The results of the analysis provide examples and patterns of gaining resources internationally and achieving social goals by crossing borders.

Our analysis confirms that the factors identified by Spear [2006], and Borzaga and Defourny [2001] are important in characterizing the development conditions of social entrepreneurship. Moreover, dimensions utilized by Marschall [2011] and Zahra et al. [2009] for distinguishing social enterprises are partly reflected in the research, although other factors (e.g. subject of activity) were proved to be relevant for differentiating and classifying international social entrepreneurs. The selected clusters reflect the diversity of opportunities for social entrepreneurs (as suggested by Boschee [2006]), as they include entrepreneurs focused on different aspects of social problems (e.g. many intermediaries focus mostly on economic issues, whereas the focus of solution providers is on technological issues).

Finally, the results of our cluster analysis suggest an extended definition of international social entrepreneurship. A frequent way to create social value is the cross-border extension of value chains of social ventures and supportive cooperation within these chains; for example intermediaries, which specialize in supporting other social ventures in internationalization. Further research is needed to explore international social value chains and the processes of creating social value in order to reflect them when defining international social entrepreneurship.

This study employed the database created by journalists and practitioners, which reflected their perceptions, rather than the opinions of scientists and academics. On the one hand, this limits the results (since selection criteria are not precisely defined and do not refer to theory). On the other hand, it contributes to the theory by delivering a new approach and examples related to the field. The Forbes’ list was utilized as the only available database and, despite its limits, offers sufficient data for a preliminary study of the internationalization of social entrepreneurship. However, the surveyed sample needs to be developed for advanced studies in the future. The Forbes’ list represents mostly US context (most of the entrepreneurs are somehow connected with the US market, and are
being assessed based on the understanding of social entrepreneurship specific for the US). The study contributes to the interference of different concepts (e.g., analysing concepts that were proposed in the US from the European perspective), and through this, supports theory development. However, future studies may require a database representing different traditions of social entrepreneurship.

The results of our analysis could be questioned depending on assumed definitions of social enterprise. The Forbes list is rooted in the US tradition of social entrepreneurship and, consequently, some clustered entities did not meet formal conditions required in other countries to qualify as “social enterprises”. Moreover, some of them do not meet requirements expressed in certain social enterprise definitions (e.g. regarding profit distribution). Despite that, they are on Forbes list, where social impact seems to be a priority. That refers, especially, to several “solution providers” (for example, to Coolar), as well as to some intermediaries. From a legal perspective, the sample employed in the presented studies consists of entities that are not “social enterprises” in some countries. Other limitations of our results stem from the number of organizations listed (being statistically insufficient) and the quality of data (brief depiction of each enterprise based mainly on entrepreneurs’ self-descriptions; in many cases the information was incomplete concerning the four dimensions of clustering, and additional data was provided by enterprise web-pages). These limitations suggest the need to develop a database of international social enterprises that will include international activity as one social entrepreneurship survey subject (that used to focus more on a local level).

Among Forbes’ social entrepreneurs, 37% operate internationally (in the European sub-group: 50%). An interesting question concerns the level of internationalization in specific countries, considering activity performed by social enterprises. Examination of such activity in Poland shows that there are few social enterprises operating internationally. Examples are: the social cooperative „Pomorzanka” from Starogard Gdański, which produces seat covers for Lufthansa Airlines [Netka, 2015], the social cooperative “Szklany Świat” from Krośniece which exports Christmas ornaments [Luber, 2012], and the social cooperative “Emaus” from Krężnica Jara (near Lublin), which occasionally exports its products (benches made of wood) to local communities in Switzerland [Spółdzielnia Socjalna Emaus, 2016]. Some signs of internationalization could be identified in social enterprises operating in incoming tourism services, which sell their products to foreign tourists (an example is „U Pana Cogito” Pension in Krakow [Koral, 2010]). Comparing these cases with the total number of social entrepreneurs operating in Poland, it can be stated that Polish social entrepreneurs are less international than those listed by Forbes. However, Forbes’ list gathers the most successful or spectacular social entrepreneurs. It is plausible that the share of social entrepreneurs acting internationally is lower than among those listed by Forbes. Estimating the scale of international involvement of social enterprises would require an additional survey (worldwide and on country level).
The clusters formulated from the study have been identified within specific groups of social enterprises and are related to this sample, although they may also be appropriate in other samples. For example, cases presented in the literature (listed in Table 1) may be identified with proposed clusters (e.g. Vestergaard Frandsen as a solution provider, the Studio for Social Creativity as an entrepreneurial charity and MayaWorks as an intermediary). However, utilization of the same methodology in another sample may result in other clusters. For example, Polish social enterprises listed above represent one more pattern of internationalization of entrepreneurial social activity not reflected within clusters derived from Forbes’ social entrepreneurs. This pattern could be described as “exporting social enterprises” and is similar to a basic pathway to the internationalization of business enterprises. It involves gradually expanding the market of the manufacturing company, including internationalization (usually after supplying the domestic market). This pattern was not identified within Forbes’ social entrepreneurs, where the most spectacular and innovative initiatives are listed, and “exporting social enterprises” are apparently not perceived as either spectacular or innovative.

The clusters presented in this paper are the result of both research methodology and our assumptions. In the case of multidimensional analysis different classifications within the same sample are possible depending on dimensions, possible priorities, and the algorithm used to cluster the units. The resulting clusters vary in some dimensions but are similar to each other in others (in different configurations, depending on particular clusters). For example, some entrepreneurial charities are similar to solution providers when we bear in mind the activities they are engaged in but differ as to legal structure.

Conclusions

The objective of this paper was to investigate the internationalization of social entrepreneurial activity. This field of research is at its early stages of development and the dominant research method is the case-study. In this paper the cluster analysis was conducted to find patterns of international activity. The clustering was based on four dimensions. Although the research sample was relatively small, 3 homogenous patterns were identified, showing the variety of internationalization in the surveyed group of organizations.

This study contributes to the social entrepreneurship literature through its proposed classification of the international activity of social entrepreneurs and by offering criteria for distinguishing social entrepreneurs in an international context. Since it is based on sampling, the research results should not be viewed as a final classification of international social entrepreneurs.

Future studies may be developed by relying on a larger sample with more variables to identify internationalization patterns. The gaps in this area that need to be addressed
include the following aspects: the development of a theoretical framework supporting social ventures in their internationalization, the scope of their international activity, the efficiency of this activity, and how the knowledge about entrepreneurial processes applies to international social entrepreneurship. Identifying attributes of entrepreneurship (e.g. pro-activeness, innovativeness, risk-taking) that play a dominant role in international social entrepreneurial initiatives, the degree to which social entrepreneurship can be supported by a theory of international entrepreneurship, and how social entrepreneurship theory may support the development of international entrepreneurship theory [Zahra et al., 2014] are also questions awaiting answers. Because some of these questions involve the reasons and determinants of internationalization of entrepreneurial social activity and the constraints faced by social entrepreneurs in the internationalization process, those answers may be helpful for decision-makers.

Internationalization within the social entrepreneurship realm is an ongoing process. We can expect that more and more social entrepreneurs will become international, as there are many reasons to do so.

Notes

1 Author’s email address: rkusa@zarz.agh.edu.pl
2 The cluster analysis was performed with STATISTICA software [StatSoft, Inc. (2014). STATISTICA (data analysis software system), version 12. www.statsoft.com].

References


Abstract

The long-term survival and competiveness of the airline business is strongly connected to the quality of service offered by airline operators and their ability to satisfy and build long-term relationships with customers. This study investigates the relationship among service quality, customer satisfaction and loyalty in the Nigerian airline industry. The cross-sectional survey research design was chosen in order to collect the primary data, using a structured questionnaire. Convenience sampling was adopted to draw a sample of 800 respondents. The data collected were analysed using correlation and multiple regression analysis. The findings of this study largely support the hypothesized relationships proposed in the conceptual framework. The results specifically reveal that perceived service quality is positively related to both passengers’ satisfaction and loyalty. The relationship between passenger satisfaction and loyalty towards the airlines was also found to be positive. The mediating effect of customer satisfaction between perceived service quality and customer loyalty is also found to be positive and partially supported. On the basis of the findings of this study, we conclude that perceived service quality does influence passenger satisfaction, and by extension, loyalty to the airlines. Thus, improvement of service quality is an adjuvant factor to sustainable differentiation and competitiveness in the airline industry. We therefore, recommend that airline operators develop and implement market-oriented service strategies to identify customers’ needs and expectations in order to serve them better. Additionally, airline operators should measure service quality regularly to assure that...
they are keep meeting passengers’ expectations, and consider customizing their products and services (as needed) to enhance customer satisfaction and loyalty.

**Keywords:** perceived service quality, customer loyalty, passenger satisfaction, flight experience, customer expectation, air transportation

**JEL:** M19, Z13

### Background to the Study

The airline industry, often referred to as air transportation, is one of the foremost services industries that significantly contributes to the economies of developed and developing nations. Wensveen [2007], describes the airline industry as a business activity that transports people and goods by air from one location to another. Ashgate [2011] categorizes airline services into intercontinental, continental, regional, or domestic; and the nature of airline operation may be based on scheduled services or charter flights. In general, the aviation business is divided into domestic (64% of air traffic) and international (36%). The industry is projected to generate 713.6 billion USD in the next few years [Datamonitor, 2011] and according to the Air Transport Action Group-ATAG (2014), supports 1.1 million employment opportunities and generates 34.5 billion USD in Africa (the latter being equivalent to 1.7% of Gross Domestic Product (GDP). The Nigerian airline industry, according to Amba and Jonathan [2013], contains four major elements: passengers traffic, freight traffic, mail traffic, and aircraft movements.

Research on airline service quality and its impact on customer satisfaction and loyalty is a topical issue that has caught the attention of researchers and practitioners because of its potential to influence airline profitability and competitiveness [Saha, Theingi, 2009]. Despite the lack of holistic quality measurements, service quality is still measured from the customers’ perspective [Sein, Chey, 2013] because, according to Rhoades and Waguespack [2004], its value is inherently subjective. Parasuraman, Zeithaml and Berry [1988] suggested the SERVQUAL model for measuring quality as perceived by customer. SERVQUAL is founded on five dimensions, often labelled as RATER (reliability, assurance, tangible, empathy, and responsiveness). According to Parasuraman, et al. [1988], consumers evaluate service quality by comparing expectations with perceptions based on the five dimensions mentioned above. Reliability refers to the capability of a business organization to perform the promised service correctly and dependably. Responsiveness is the willingness or readiness to offer prompt service. Assurance relates to the level of employee knowledge and courtesy that inspires customer confidence of their expectations that will be met. Tangible is the physical appearance and representation of the service, equipment and other customers in service facility. And empathy refers to employee caring and individual knowledge/ attention to understand customer needs.
Undoubtedly, passenger satisfaction with airline service quality is intricately connected with the way its service quality is being evaluated [Donnett, Ineson, Stone, Colgate, 2000; Rahim, 2015]. Therefore, to build and sustain customer satisfaction, a high level of service quality should be delivered by airline operators [Smith, Swinehart, 2001]. In reviewing service marketing literature, customer satisfaction has been viewed primarily within the expectation-disconfirmation paradigm, which conceptualizes customer satisfaction as the process in which customers assess satisfaction with a product or service [Oliver, 1980]. According to Ahmad [2007], a customer is satisfied (when perceived performance is at least the same or higher than expected) or dissatisfied (when perceived performance is less than expected).

According to Clemes, Gan, and Ka [2008], as service quality increases the probability of customer satisfaction increases and vice-versa. In airline operations, the body of evidence indicates that service quality perceptions, as well as satisfaction obtained through service encounters are essential to enhancing customer loyalty [An, Noh, 2009]. Literally, loyalty denotes customer propensities towards the service company and its product/service. A fundamental motive for pursuing customer loyalty emanates from the universal belief that keeping loyal customers is of more strategic benefit to business organisations than recruiting new ones because: (1) it is cheaper to serve existing customers (2) loyal customers are less price sensitive, and (3) the purchase frequency of loyal customers is high [Dowling, Uncle, 1997].

**Statement of the problem**

Service quality in airline industry is relatively more challenging to measure than in other service industries (i.e. financial sector), in which system and work processes consist of distinct but inter-related tasks [Ghazal, Suchita, 2014]. According to Chang and Keller [2002], airline services are executed concurrently and their delivery involves many entities (such as airport authorities), and a host of other third parties (e.g. caterer, security operatives and aviation services providers, etc.). Accordingly, a unified effort is required to coordinate the multiplicities of processes needed to deliver superior service quality in the airline industry [Chang, Keller, 2002].

A review of literature about service marketing reveals that the direction of causality and relationships among service quality, customer satisfaction and loyalty is an important, unresolved subject matter characterized by inconsistencies and controversies. For instance, Oliver [1993] and Auh and Johnson [2005], have viewed service quality and customer satisfaction as complementary or divergent constructs. Other researchers further established the causal reciprocity of service quality and customer satisfaction, which creates further confusion [Salazar, Paulo, 2004; Wang, Chich-Jen, 2006]. Similarly, the claim that customer satisfaction leads to loyalty appears even less convincing [Egan, 2004; Pritchard, Silvestro, 2005]. Although a number of researchers have examined the relationship among perceived
service quality, customer satisfaction and loyalty in the airline industry internationally [Faheed, 1998; Saha, Theingi, 2009], to the best of the author’s knowledge no study has yet investigated these relationships in the Nigerian airline industry. Similarly, a large number of existing studies have mainly been inspired by the SERVQUAL framework to analyse customer perceptions of service quality, which has been found to be inadequate in the airline context; hence, the growing debate to enhance its robustness [Gilbert, Wong, 2003; Jin-Woo, Rodger, Cheng-Lung, 2005; Pakdil, Aydin, 2007].

Correspondingly, a review of service marketing literature reveals that a sizeable number of previous research on service quality in Nigeria paid a relatively large amount of attention to banks and the telecommunications industry [Olatokun, Nwonne, 2012; Gambo, 2013; Moguluwa, Ode, 2013]. Surprisingly, in the few works concerning the Nigerian airline industry [Ckiwendu, Ejem, Ezenwa, 2012; Geraldine, Chikwendu, 2013; Olaniyi, Onwuka, Agu, 2014], the researchers paid scant attention to the SERVQUAL model. More importantly, most of these studies used firm as against industry level analysis in their studies.

Considering this focus and the expected faster growth rate of air transportation in developing countries [Netjasov, Janic, 2008; Japan Aviation and Development Company-JADC, 2012], it appears that the sector has been given relatively less research attention than it merits.

This study seeks to partially address the gap in the service quality literature by investigating the interrelationships among service quality, customer satisfaction and loyalty in the Nigerian airlines industry. This study focuses on the following specific objectives: (1) investigating the relationship between perceived service quality and passenger satisfaction in the Nigerian airline industry, (2) examining the effect of perceived service quality on customer loyalty in the Nigerian airline industry, (3) studying the influence of passenger satisfaction on customer loyalty in the Nigerian airline industry, and (4) determining if passenger satisfaction could mediate the relationship between perceived service quality and customer loyalty in the Nigerian airline industry.

**Research Hypotheses**

The following hypotheses are proposed for this study:

1. Perceived service quality, comprised of seven sub-dimensions (reliability, responsiveness, assurance, customization, employees, facilities, and flight pattern), is not significantly related to passenger satisfaction in the Nigerian airline industry.

2. Perceived service quality consisting of the same seven sub-dimensions has no effect on customer loyalty in the Nigerian airline industry.

3. Passenger satisfaction has no effect on customer loyalty in the Nigerian airline industry.

4. Passenger satisfaction will not significantly mediate the relationship between perceived service quality and customer loyalty in the Nigerian airline industry.
Theoretical and Literature review

Service Quality Theory

The prevailing model for measuring service quality is the SERVQUAL model conceived by Parasuraman, Zeithaml, and Berry [1985]. The SERVQUAL model is a multiple-item measure that can be used to identify and deduce customer perceptions and service expectations. It is considered to be reliable and valid for evaluating service quality in a number of industries. To develop the SERVQUAL scale, Parasuraman et al. [1985] gathered empirical data from five different service industries: appliance renovation and maintenance companies, retail banking, long distance telephone, security, brokerage, and credit cards. The SERVQUAL model initially acknowledged ten dimensions of service quality (tangible, reliability, responsiveness, communication, credibility, security, competence, courtesy, understanding, knowing customers, and access). Subsequently, these ten dimensions were suppressed into five (reliability, responsiveness, tangible, assurance and empathy).

The SERVQUAL model hinges on gaps in service quality, which addresses differences in service quality expectations and perceptions. Hutton and Richardson [1995] state that the broader the gap, the lesser the perception of quality appears in consumer minds, and vice-versa. According to Sheth and Desmukh [2004], SERVQUAL is most often applied to evaluate the presence and degree of Gap-5, which expresses the difference between customer expectations and perceptions of service quality. Mohammed [2006] notes that of the five service quality Gaps, only Gap 5 can be examined exclusively from the customer's viewpoint; that is, analyses of other Gaps require information from the service provider.

Notwithstanding its effectiveness and application, several scholars have documented some limitations of the SERVQUAL model and presented alternative models to measure service quality [Espinoza, 1999; Brady, Cronin, 2001; Ladhari, 2008]. These academics criticized SERVQUAL because service quality perception is contingent on numerous unique factors that are industry specific; hence, no single measurement model universally applies across industries. In particular, Cronin and Taylor [1992] claimed that SERVQUAL describes the level of customer satisfaction with a product or service and not service quality. These scholars therefore developed the SERVPERF model in 1992 to evaluate customers' overall feeling towards service delivery [Cronin, Taylor, 1992]. Other notable service quality models developed to solve the shortcomings of SERVQUAL are: the synthesized service quality model [proposed by Brogowicz, Delene, Lyth, 1990]; the attributes service quality model [developed by Haywood-Farmer, 1988]; and the pivotal, core and peripheral model [promoted by Philip, Hazlett, 1997], among others. Gilbert and Wong [2003] refined the five SERVQUAL dimensions into seven (reliability, responsiveness, assurance, customization, employee, facilities, and flight pattern). Until now, there has been no conclusive method for measuring service quality; however, researchers agreed
that the SERVQUAL dimensions are multifaceted and were vital elements in any study of service quality [Brady, Cronin, 2001].

Conceptual Framework

The conceptual framework guiding this study is presented in Figure 1.

FIGURE 1. A Conceptual Framework Showing the Relationship Among Service Quality, Passenger Satisfaction and Loyalty

The conceptual framework proposes the following interrelationships: perceived service quality is used as an independent variable with seven sub-dimensions: reliability, assurance, responsiveness, employees, facilities, customization and flight patterns; customer loyalty is the dependent variable, while passenger satisfaction mediates the relationship between the independent (perceived service quality) and dependent variable (customer loyalty).

Defining Service Quality

Service quality is a construct that has stimulated significant interest and debate in the service marketing literature due to the complications in both defining and measuring it, with no general consensus emerging from them. As a result, many scholars have labelled service quality as an ‘elusive’ and ‘indistinct’ concept that is problematic to operationalize and measure [Parasuraman et al., 1988; Bolton, Drew, 1991; Cronin, Taylor, 1992]. Service
quality is the appraisal that customers make between their expectations and perceptions of the service received [Parasuraman et al., 1985]. According to Lewis and Booms [1983], service quality is a company’s ability to deliver a service in a way that meets and exceeds customer expectations. Roberta, Pascale, and Amal [2006] state that consumers use intrinsic and extrinsic signals when forming opinions about product or service quality. That evaluation is often based on extrinsic attributes (such as packaging, advertising etc.) and intrinsic features (such as colour, size, flavour or aroma etc.). Athiyaman [1997] claims that perceived service quality is the overall evaluation of the goodness or badness of a product or service offered to customers.

**An overview of Customer Satisfaction**

Business performance in terms of product/services quality leads to customer satisfaction [Huang, Feng, 2009]. There are two basic conceptualizations of customer satisfaction: transaction specific and cumulative [Boulding, Kalra, Stealin, Zeithaml, 1993]. Transaction specific satisfaction relates to a particular product or service encounter, while cumulative satisfaction is the general evaluation of the entire service encounter process. In simple terms, customer satisfaction is a way of cultivating and meeting customer preference and expectations in order to enhance value creation. Bearden and Teel [1983] view customer satisfaction as a distinct form of consumer attitude that relates to the extent consumers like or dislike the service after using or experiencing it. According to Dewulf, Odekerken-Scroder, and Iacobucci [2001], customer satisfaction is the state of the consumers’ mind with the product/service of a company and their appraisal of their working relationship with the enterprise. Parker and Mathews [2001] view customer satisfaction as a process and an outcome of the consumption experience. From this viewpoint, customer satisfaction as a process is a comparative appraisal between the service delivered and prior expectations. The outcome approach, on the other hand, is the end-state satisfaction emanating from the consumption experience.

**Customer Loyalty and its Dimensions**

Customer loyalty is the customer’s mind-set regarding the company, its products and service, which generate a favourable attitude toward a business organisation, a commitment to repurchase the company’s product (or services) and a tendency to recommend the product (or services) to others [Pearson, 1996]. According to Ahmad [2007], service marketing academics support the assessment of customer loyalty from three perspectives: behavioural loyalty, attitudinal loyalty, and a composite approach of the two. From a behavioural perspective, loyalty is usually defined in terms of a purchase measure over a specific time period [Ahmad, 2007]. While empirical evidence for behavioural loyalty is strong and extensive, it is somewhat ambiguous for attitudinal loyalty [Uncles, Dowling, Hammond, 1998]. Attitudinal loyalty has been viewed as the tendency to continue a relationship with an organization demonstrated through repurchase intentions [Czepiel,
Gilmore, 1987]. According to Ahmad [2007], attitudinal loyalty, is the consumer’s psychological attachment to a particular organization and or its product/service. Notwithstanding the popularity and advantages associated with the attitudinal components of loyalty, Jacoby and Chestnut [1978, p. 57] argued that “when loyalty is restricted to either behaviour or attitude alone, it seems incomplete”. Moreover, a focus of attention on either (behavioural or attitudinal) may fail to address the causal interrelationship between a consumer’s brand attitude and behaviour [Oliver, 1997].

Drawing their conclusion from the above-stated claims, Dick and Basu [1994] argued that while there are merits in both conceptualizations of loyalty (either behavioural or attitudinal), a complete understanding is only achieved when consumers’ attitudes and behaviour are both examined through a composite approach. Composite loyalty, according to Dick and Basu [1994] is the integration of attitudinal and behavioural measures to address some of the shortcomings associated with adopting behavioural or attitudinal measures alone. The major shortcoming of the composite loyalty approach is that the quantified scores utilized in measuring behavioural and attitudinal components may have different measurements [Chi, 2005]. Therefore, views on loyalty have largely oscillated between uni-dimensional and two-dimensional perspectives [Bennett, Liliana, 2002]. However, consensus on whether it has two or three dimensions is lacking, and the measurement of these dimensions has been inconsistent [Jones, Shirly, 2007].

Are Customer Satisfaction and Service Quality Complimentary or Divergent Constructs?

One of the foremost debates in service marketing literature is the controversy over whether customer satisfaction and service quality are complimentary or divergent concepts [Bolton, Drew, 1991]. Conventionally, customer satisfaction and service quality have been regarded as synonymous constructs [Saha, Theingi, 2009]. However, in contrast to the perception of the traditional paradigm, which equates the two concepts, the notion that service quality and customer satisfaction are distinctive has achieved wider acceptance among researchers. Kandampully [1998] states that service quality has become the most prominent differentiator of service organisation. According to Kasper, Helsdingen and Gabbott [2006], service quality is a multifaceted, ephemeral construct that refers to some attribute of what is delivered, whereas satisfaction or dissatisfaction denotes customer reactions to that offer. Although, both customer satisfaction and service quality are concepts emerging from the comparison of expectation and performance [Parasuraman et al., 1988], and are indeed strongly interwoven, the two constructs are not fundamentally the same [Bolton, Drew, 1991].

The predominant view is that service quality is the logical antecedent for customer satisfaction, but some studies have reported contrary findings [Oliver, 1997; Egan, 2004]. For instance, Parasuraman, Zeithaml, and Berry [1991] claimed that customer satisfaction is a post-purchase decision while service quality is not. On the other hand, satisfaction
in the service marketing literature relates to expectations for goods that connote “would”, while service quality expectations represents “should”. Parasuraman et al. [1985] claimed that customer satisfaction is a situation- or encounter-specific, while quality is more holistic, and established over a longer period of time. According to Oliver [1993], service quality may be described as having more cognitive content, and customer satisfaction may be more deeply loaded with affect. According to Nor and Wan [2013], service quality is a cognitive concept while satisfaction is a cognitive and affective construct. Therefore, the main point of departure between the two concepts is that service quality is a form of attitude that appraises performance in the long run, whilst customer satisfaction relates to transaction-specific measure [Cronin, Taylor, 1994].

Relationship among Service Quality, Customer Satisfaction and Loyalty

A rich body of literature over several decades has documented relationships among service quality, customer satisfaction and loyalty [Cronin, Brady, Hult, 2000; Tian-Cole, Crompton, Wilson, 2002; Lee, Graefe, Burns, 2004]. Nevertheless, evidence of the relationships among the three constructs has been ambiguous, leaving the extent/direction of their relationships largely unsettled [Nor, Wan, 2013]. In other words, individual study findings varied extensively in terms of statistical significance, direction, and magnitude of service quality effects on customer satisfaction and loyalty. An in-depth review of the service marketing literature reveals that service quality, customer satisfaction and loyalty are connected to each other. According to Kuo, Wu, and Deng [2009], service quality has a direct effect on how customers’ appraise a company and their willingness to patronize that service provider in subsequent transactions. Similarly, many studies in diverse industries have documented a positive relationship between service quality and customer satisfaction, as well as the tendency of repeated patronage [Baker, Crompton, 2000; Bou-Llusar, Caminson-Zornoza, Escrig-Tena, 2001; Lai, 2004].

Correspondingly, Danher and Mattsson [1998] posit that high customer satisfaction and service quality will most likely lead to improved customer loyalty and willingness to recommend the service provider. Oliver [1980] claims that customer loyalty (e.g. repurchase intentions, willingness to engage in positive word-of-mouth communication) is a function of customer satisfaction, which also relates to a cognitive comparison of expectations prior to consumption and actual purchase experience. Furthermore, customer satisfaction, according to Mpingajira [2008] and Lo, Osman, Ramayah, and Mosahab, [2010] mediates the relationship between service quality and customer loyalty. According to Cronin and Taylor [1992], service quality and customer satisfaction are prerequisites of customer loyalty. Correspondingly, Bitner [1990] submits that positive word-of-mouth becomes more widespread as customer satisfaction levels with service quality rises.
Research Methodology

Research Design

This study used cross-sectional survey research design, using a quantitative research approach. Essentially, the cross-sectional survey involves data collection from a sample that accurately represents the population to which generalization is made [Cooper, Schindler 2011]. The choice of this approach is based on the fact that it facilitates prediction of behaviour from a population that is too large to observe in a direct manner [Bordens, Abbot, 2002], and provides a basis for ascertaining the nature and degree of relationship between study variables [Kerlinger, 1986]. The epistemological perspective guiding this study is an objective way of looking at social reality; hence, this study is positivist in nature.

Population and Sampling Procedure

The target population of this study consists of all domestic air passengers departing from Murtala Muhammed Terminal One and Murtala Muhammed Airport Two flying with any functional domestic airline to any destination in Nigeria. The airlines are: Arik Air, Aero Contractors, First Nations Airways, Overlands Airways, Dana Air, Medview Airline, Discovery Air, and Azman Air Services Limited. A multi-stage sampling technique was used in this study. The first stage was to categorize flight schedules into three groups (i.e. morning, afternoon and evening flights). Thereafter, traffic frequency was used to assign a proportional quota to the three flights schedules; that is, morning flights (40%), afternoon flights (35%), and evening flights (25%) – in order to distribute the survey instrument to the respondents. Preliminary investigation by the researcher revealed that flight traffic is highest in the morning, which justifies use of quota sampling. In the second stage, a judgmental (also referred to as purposive) sampling was used to select respondents that can provide accurate information relevant to the study. In this study, infants, air travellers that cannot read nor write, and passengers with obvious health challenges were excluded. Lastly, convenience sampling was used to distribute the questionnaire to those that are accessible. The multi-stage approach was adopted to enhance the representativeness of the sample.

A targeted sample of 800 air passengers at the departure lounge of the selected airline was surveyed (representing 100 respondents per airline). One hundred passengers per airline (despite varying customer traffic) was chosen to obtain a balanced sample selection, insofar as a sample based on customer traffic could bias or shift the estimate from the real value. More importantly, the study is interested in the aggregate view (industry level) as against firm level analysis.
Research Instrument and Response Rate

The data collection instrument used for this study is a self-administered structured questionnaire. In general, the questionnaire ensures a higher level of anonymity and uniformity of response [Cooper, Schindler, 2011]. The questionnaire items were adapted from previous related/validated studies, and ask questions that respondents can easily understand and answer. The questionnaire items essentially capture pre-flight, in-flight and other airline related services. As previously noted, the questionnaire was distributed before flight departure. However, possible inflight issues were incorporated in the responsiveness and employee dimensions of the modified SERVQUAL model adapted in this study. Moreover, it has been shown that air passengers do not differentiate between in-flight or ground services, but view the air travel experience as a whole [Ekaterina, 2012]. Constructs have been operationalised using 7-point Likert scales, ranging from strongly disagree (1) to strongly agree (7).

The desired sample size for this study was 800. However, 639 questionnaire were distributed, and 620 returned. In total 98 returned questionnaires were rejected (28 copies had multiple responses, 46 were incomplete, and 24 respondents had insufficient flight experience – i.e., less than three flights trip within the September, 2013 to September, 2014 period). Five hundred three questionnaires were usable for statistical analysis, yielding a 78.72% overall response rate.

Reliability and Validity Assessment

To ensure rigour and generalisation of the research findings, both validity and reliability were assessed. Cronbach’s alpha was computed to assess reliability, while content validity was examined for validity. To obtain content validity, the researcher adapted the approaches suggested by Cooper and Schindler [2011]; that is, identifying existing scales from the relevant literature and seeking opinions from a panel of experts, including senior academics from the marketing and non-marketing departments within the University of Lagos. Additionally, the researcher contacted two aviation experts at the Murtala Muhammed Terminal 2 Airport, Lagos State to evaluate the questionnaire's suitability in the airline context. Based on their feedback, several items were eliminated or modified to improve the comprehensibility and clarity of the research instrument.

A pilot study was also conducted to assess the reliability of the survey instrument (questionnaire), involving 30 respondents (air passengers) with similar attributes and knowledge about the phenomena being investigated. While different views have been put forward about the level of acceptance of the reliability measure, Hair, Black, Babin, and Anderson [2010] argued that an alpha value of 0.60 and higher are acceptable. The alpha values for all the variables and constructs are above the cut-off point of (α=0.60).

Thus, all measurement scales are deemed reliable.
Statistical Tools/Analytical procedures

Data obtained from the questionnaire were compiled in an Excel format and analysed using the Statistical Package for Social Science SPSS (21) software program, at a 5% level of significance pursuant to Pearson correlation analysis and multiple linear regression analysis. A preliminary analysis was initially run to ensure that all multivariate assumptions (normality, homoscedasticity, linearity, test for independence of the error terms, and multi-collinearity) were met.

Results of Data Analysis

Testing of Hypothesis One

Perception of service quality comprising our seven sub-dimensions (reliability, responsiveness, assurance, customization, employees, facilities, and flight pattern) has no influence on passenger satisfaction in Nigerian airline industry.

### TABLE 1. Correlation Matrix – Relationship Among Service Quality, Passenger Satisfaction, and Customer Loyalty

<table>
<thead>
<tr>
<th></th>
<th>Mean</th>
<th>SD</th>
<th>1</th>
<th>2</th>
<th>3</th>
</tr>
</thead>
<tbody>
<tr>
<td>Service quality</td>
<td>3.23</td>
<td>0.342</td>
<td>1</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Passenger satisfaction</td>
<td>3.22</td>
<td>0.365</td>
<td>0.843**</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>Customer loyalty</td>
<td>3.17</td>
<td>0.302</td>
<td>0.674**</td>
<td>0.729**</td>
<td>1</td>
</tr>
</tbody>
</table>

** Correlation is significant at the 0.01 level (2-tailed), N=503

Before testing hypothesis one, a correlation analysis was conducted among service quality, passengers’ satisfaction and customer loyalty to determine the nature and direction of relationships among them. As shown in Table 1, the means of the three variables ranged from 3.17 to 3.23, while standard deviations ranged from 0.302 to 0.365. Table 1 shows that zero-order correlations among the three variables are positive and statistically significant. The inter-correlation between service quality and passenger satisfaction was \( r = 0.843 \) \( p < 0.01 \); between service quality and customer loyalty \( r = 0.674 \) \( p < 0.01 \) and between passenger satisfaction and loyalty \( r = 0.729 \) \( p < 0.01 \). The strong positive relationship documented in this study indicates that passenger satisfaction and customer loyalty will increase if service quality is high and vice-versa. These findings are in line with the results reported by Smith and Swinehart [2001], Boshoff and Gray [2004] and Hanum [2013]. As noted by Sureshchandar, Rajendran and Anantharaman [2002], notwithstanding the strong correlation between service quality and customer satisfaction, the two variables are
different from the customer’s point of view and, as such, cannot be interpreted to mean an absolute causal relationship [Howel, 2007]. Hence, a regression analysis was used to predict the direction and extent of relationships among the three variables (perceived service quality, customer satisfaction and customer loyalty) in the subsequent analyses.

**TABLE 2. Regression Analysis of Service Quality with Passenger Satisfaction**

<table>
<thead>
<tr>
<th></th>
<th>Beta (β)</th>
<th>t-value</th>
<th>p-value</th>
<th>R</th>
<th>R²</th>
<th>F-value</th>
<th>F-sig</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Model 1</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Constant</td>
<td>3.690</td>
<td>0.000</td>
<td></td>
<td>0.843</td>
<td>0.711</td>
<td>1232.781</td>
<td>0.000</td>
</tr>
<tr>
<td>Service Quality</td>
<td>0.843</td>
<td>35.111</td>
<td>0.000</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Model 2</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Constant</td>
<td>7.257</td>
<td>0.000</td>
<td></td>
<td>0.948</td>
<td>0.899</td>
<td>631.215</td>
<td>0.000</td>
</tr>
<tr>
<td>Reliability</td>
<td>0.643</td>
<td>14.774</td>
<td>0.000</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Responsiveness</td>
<td>0.498</td>
<td>14.441</td>
<td>0.000</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Assurance</td>
<td>0.778</td>
<td>8.485</td>
<td>0.000</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Customization</td>
<td>0.035</td>
<td>0.538</td>
<td>0.591</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Employees</td>
<td>0.075</td>
<td>1.158</td>
<td>0.248</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Facilities</td>
<td>0.970</td>
<td>8.369</td>
<td>0.000</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Flight patterns</td>
<td>0.885</td>
<td>15.070</td>
<td>0.000</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Model 1: Predictors: (Constant), Service quality.
Model 2: Predictors: (Constant), Reliability, Responsiveness, Assurance, Customization, Employees, Facilities, and Flight Patterns.
Dependent Variable in Model 1 and 2: Passenger Satisfaction.
Note: Significant at the 0.05 level.

As displayed in Table 2, Model 1 demonstrates a robust fitness of $R = 0.843$, $R^2$ of 0.711 and F-value of 1232.781. The model shows that the value of t-statistics is significant at 0.000 ($t = 35.111$, $p < 0.05$) with about 71% of the variation in passenger satisfaction explained by service quality. Furthermore, the inclusion of service quality dimensions individually in Model 2 (Table 2) further improved the $R^2$ to 0.899.

All service quality dimensions have a positive and significant relationship with passenger satisfaction ($p < 0.05$), with the exception of customization ($β = 0.035$, $t = 0.538$, $p = 0.591$) and employees ($β = 0.075$, $t = 1.158$, $p = 0.248$) that is not significant since ($p > 0.05$).

This means that if these dimensions with significant beta coefficients (reliability, assurance, responsiveness, facilities and flight pattern) are emphasized more strongly; air passengers will experience a higher level of satisfaction. Overall, this indicates that service quality is a good predictor and explains some of the variation in passenger satisfaction. Hence, the results fail to support hypothesis one, which hypothesized that perception of service quality has no influence on passenger satisfaction in the Nigerian airline industry.
Therefore, hypothesis one is rejected and the study concludes that service quality has an influence on passenger satisfaction in the Nigerian airline industry.

Testing of Hypothesis Two

The perception of service quality consisting of our same seven sub-dimensions has no effect on customer loyalty in the Nigerian airline industry.

TABLE 3. Regression Analysis of Service Quality with Customer Loyalty

<table>
<thead>
<tr>
<th></th>
<th>Beta (β)</th>
<th>t-value</th>
<th>p-value</th>
<th>R</th>
<th>R²</th>
<th>F-value</th>
<th>F-sig</th>
</tr>
</thead>
<tbody>
<tr>
<td>Model 1</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Constant</td>
<td>13.190</td>
<td>0.000</td>
<td>0.674</td>
<td>0.454</td>
<td>417.173</td>
<td>0.000</td>
<td></td>
</tr>
<tr>
<td>Service Quality</td>
<td>0.674</td>
<td>20.425</td>
<td>0.000</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Model 2</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Constant</td>
<td>18.543</td>
<td>0.000</td>
<td>0.819</td>
<td>0.671</td>
<td>144.070</td>
<td>0.000</td>
<td></td>
</tr>
<tr>
<td>Reliability</td>
<td>0.263</td>
<td>6.281</td>
<td>0.000</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Responsiveness</td>
<td>0.322</td>
<td>7.053</td>
<td>0.000</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Assurance</td>
<td>0.586</td>
<td>3.535</td>
<td>0.000</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Customization</td>
<td>0.268</td>
<td>2.248</td>
<td>0.025</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Employees</td>
<td>0.040</td>
<td>0.340</td>
<td>0.734</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Facilities</td>
<td>0.208</td>
<td>5.765</td>
<td>0.000</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Flight patterns</td>
<td>0.253</td>
<td>2.386</td>
<td>0.017</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Model 1: Predictor: (Constant), Service Quality.
Model 2: Predictors: (Constant), Reliability, Responsiveness, Assurance, Customization, Employees, Facilities, and Flight Patterns.
Dependent Variable in Model 1 and 2: Customer Loyalty.
Note: Significant at the 0.05 level.

Table 3 shows the relationship between service quality and customer loyalty. Model 1 in Table 3 demonstrates a significant fitness at R value of 0.674, R² of 0.454 and F-value of 417.173. The model shows that (t = 20.425, p < 0.05), which is significant at 0.000, with about 45% of the variation in customer loyalty explained by service quality. Furthermore, the inclusion of service quality dimensions individually in Model 2 (Table 3) improved the R² to 0.671. All service quality dimensions have a positive and significant relationship with customer loyalty (p < 0.05), with the exception of employees (β = 0.040, t = 0.340, p = 0.734) that is not significant (p > 0.05). This implies that if these dimensions with significant beta coefficients (reliability, assurance, responsiveness, customization, facilities and flight pattern) are given more attention, air passengers will display more loyalty towards airlines.

In general, the regression results confirm that service quality is a good predictor and explains some of the variation in customer loyalty. Hence, the finding of this study fails
to support hypothesis two, which was that the perception of service quality has no effect on customer loyalty in the Nigerian airline industry. Therefore, hypothesis two is rejected and the study concludes that perception of service quality has an effect on customer loyalty in the Nigerian airline industry.

**Testing of Hypothesis Three**

Passenger satisfaction has no effect on customer loyalty in the Nigerian Airline Industry.

**TABLE 4. Regression Analysis of Passenger Satisfaction with Customer Loyalty**

<table>
<thead>
<tr>
<th>Predictor</th>
<th>Beta ($\beta$)</th>
<th>t-value</th>
<th>p-value</th>
<th>R</th>
<th>$R^2$</th>
<th>F-value</th>
<th>F-sig</th>
</tr>
</thead>
<tbody>
<tr>
<td>Constant</td>
<td>15.058</td>
<td>0.000</td>
<td>0.729</td>
<td>0.532</td>
<td>568.508</td>
<td>0.000</td>
<td></td>
</tr>
<tr>
<td>Customer Satisfaction</td>
<td>0.729</td>
<td>23.843</td>
<td>0.000</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Predictor: (Constant), Passenger Satisfaction.  
Dependent Variable: Customer Loyalty.  
Note: Significant at the 0.05 level.  

Table 4 shows the relationship between passenger satisfaction and customer loyalty. The regression Model demonstrates a robust fitness at R value of 0.729, $R^2$ of 0.532 and F-value of 568.508. The model shows that the value of t-statistics is significant at 0.000 ($t = 23.843, p < 0.05$), with about 53% of the variation in customer loyalty explained by passenger satisfaction. This implies that passenger satisfaction is a good predictor and explains some of the variation in customer loyalty in the Nigerian airline industry. Thus, the result fails to support hypothesis three, which states that passenger satisfaction has no effect on customer loyalty in the Nigerian airline industry. Therefore, hypothesis three is rejected and the study concludes that passenger satisfaction has an effect on customer loyalty in the Nigerian airline industry.

**Testing of Hypothesis Four**

Passenger satisfaction will not significantly mediate the relationship between perception of service quality and customer loyalty in the Nigerian Airline Industry.

To investigate the mediating effect of passenger satisfaction between perceived quality and customer loyalty, a correlation matrix was first used to explore the relationship between the two variables while controlling customer satisfaction. The output generated from this procedure is shown in Table 5.

As shown in Table 5, the top half of the table is the normal Pearson correlation matrix between perceived service quality and customer loyalty, without controlling for customer satisfaction (as indicated by “none” in the left-hand column). In this case, the correlation is (0.674, p < 0.000). The bottom half of table 5 indicates the output of the correlation
analysis when customer satisfaction is controlled. In this case, the new partial correlation is (0.161, p<0.000). Comparing the two sets of correlation coefficients indicates that controlling customer satisfaction has a significant influence on the relationship between perceived service quality and customer loyalty. After examining the pattern of correlation, a regression analysis was further run to determine the extent and direction in which passenger satisfaction mediates the relationship between the variables, as explained by change in $R^2$ value.

### TABLE 5. Correlation Matrix (Controlling Mediating Variable)

<table>
<thead>
<tr>
<th>Control Variable</th>
<th>Service Quality (SQ)</th>
<th>Customer Loyalty (CUL)</th>
<th>Customer Satisfaction (CUS)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Correlation</td>
<td>1.000</td>
<td>0.674</td>
<td>0.843</td>
</tr>
<tr>
<td>SQ</td>
<td>0.000</td>
<td></td>
<td>0.000</td>
</tr>
<tr>
<td>Df</td>
<td>0</td>
<td>501</td>
<td>501</td>
</tr>
<tr>
<td>Correlation</td>
<td>0.674</td>
<td>1.000</td>
<td>0.729</td>
</tr>
<tr>
<td><em>none</em></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>CUL Significance (2-tailed)</td>
<td>0.000</td>
<td>0</td>
<td>0.000</td>
</tr>
<tr>
<td>Df</td>
<td>501</td>
<td>0.729</td>
<td>501</td>
</tr>
<tr>
<td>Correlation</td>
<td>0.843</td>
<td></td>
<td>1.000</td>
</tr>
<tr>
<td>CUS Significance (2-tailed)</td>
<td>0.000</td>
<td>0.000</td>
<td></td>
</tr>
<tr>
<td>Df</td>
<td>501</td>
<td>501</td>
<td></td>
</tr>
<tr>
<td>Correlation</td>
<td>1.000</td>
<td>0.161</td>
<td></td>
</tr>
<tr>
<td>SQ Significance (2-tailed)</td>
<td></td>
<td>0.000</td>
<td>500</td>
</tr>
<tr>
<td>Df</td>
<td>0</td>
<td></td>
<td></td>
</tr>
<tr>
<td>CUS</td>
<td>0.161</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Correlation</td>
<td></td>
<td></td>
<td>1.000</td>
</tr>
<tr>
<td>CUL Significance (2-tailed)</td>
<td>0.000</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Df</td>
<td>500</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Cells contain zero-order (Pearson) correlations.

**Source**: Field Survey, 2014.

Table 6 shows the relationship between service quality and customer loyalty, when customer satisfaction is considered as a mediating variable. The model 1 in Table 6 suggests that customer satisfaction significantly mediates the relationship between perceived service quality and customer loyalty ($\beta = 0.205$, $t = 3.650$, $p = 0.000$). In addition, model 1 in Table 6 demonstrates the regression model result which indicates that the $t$-value statistics is significant at 0.000 ($p < 0.05$) with a robust fitness at $R$ value of 0.737, $R^2$ of 0.544 and $F$-value of 297.907. The change in $R^2$ value ($\Delta R^2$) in the regression model 1 (Table 3) and regression model 1 in (Table 6) is 9% [i.e. $54% - 45%, = 9\%$], and the beta value decreased from 0.674 to 0.205 (in model 1 {Table 3} and model 1 {Table 6}, which shows that the
strength of perceived service quality-customer loyalty relationship becomes weaker when
customer satisfaction is considered in model 1 (Table 6).

TABLE 6. Mediating the Effect of Customer Satisfaction on the Relationship between
Service Quality Perceptions and Customer Loyalty

<table>
<thead>
<tr>
<th></th>
<th>Model 1</th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Beta (β)</td>
<td>t-value</td>
<td>p-value</td>
<td>R</td>
<td>R²</td>
</tr>
<tr>
<td>Constant</td>
<td>12.609</td>
<td>0.000</td>
<td>0.737</td>
<td>0.544</td>
<td>297.907</td>
</tr>
<tr>
<td>Service Quality</td>
<td>0.205</td>
<td>3.650</td>
<td>0.000</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Customer Satisfaction</td>
<td>0.556</td>
<td>9.896</td>
<td>0.000</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Model 2</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Constant</td>
<td>16.291</td>
<td>0.000</td>
<td>0.837</td>
<td>0.701</td>
</tr>
<tr>
<td>Reliability</td>
<td>0.367</td>
<td>1.594</td>
<td>0.002</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Responsiveness</td>
<td>0.506</td>
<td>2.372</td>
<td>0.018</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Assurance</td>
<td>0.162</td>
<td>0.956</td>
<td>0.003</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Customisation</td>
<td>0.248</td>
<td>2.184</td>
<td>0.029</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Employees</td>
<td>0.081</td>
<td>0.721</td>
<td>0.471</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Facilities</td>
<td>0.679</td>
<td>3.179</td>
<td>0.002</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Flight patterns</td>
<td>0.735</td>
<td>6.012</td>
<td>0.000</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Customer Satisfaction</td>
<td>0.545</td>
<td>7.029</td>
<td>0.000</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Model 1: Predictors: (Constant), Service Quality, Customer Satisfaction.
Model 2: Predictors: (Constant), Reliability, Responsiveness, Assurance, Customisation, Employees, Facilities, and Flight Patterns.
Dependent Variable in Model 1 and 2: Customer Loyalty.
Note: Significant at the 0.05 level.

Moreover, customer satisfaction significantly mediates the relationship between all
service quality dimensions and customer loyalty (p < 0.05), with the exception of the
employee dimension (β = 0.081, t = 0.721, p = 0.471) that is not significant (p > 0.05) for
customer loyalty. This indicates that, if these dimensions with significant beta co-efficient
(reliability, assurance, responsiveness, customization, facilities, and flight pattern) are
emphasized more strongly, customer satisfaction will exhibit more tendency to mediate
the relationship between service quality and customer loyalty. Although the ΔR² value
is small, the finding of this study does not support hypothesis three. Hence, the study
concludes that customer satisfaction mediates the relationship between perceived service
quality and customer loyalty towards the airlines.
Discussion of Findings

The focus of hypothesis one was to determine the effect of perceived service quality on customer satisfaction. With an $R^2$ value of 71%, the study established that service quality shows a strong effect on customer satisfaction. The finding of this study is similar to that reported by Archana and Subha [2012], who examined the relationship between service quality and passenger satisfaction for Indian Airlines. The result also corroborates that of Jin-Woo et al. [2005], who investigated the effects of airline service quality on airline image and passengers’ future behavioural intentions among Australian international air passengers.

Hypothesis number two examined the influence of perceived service quality on customer loyalty towards the airlines. The $R^2$ value of 45% in the regression model in Table 3 demonstrates that service quality positively and significantly influences customer loyalty. This means that as service quality improves (through fulfilling each sub-dimension criterion of service quality), it will increasingly influence customer loyalty. This finding corroborates the views expressed by Hamza [2013], who reported that service quality positively affects the behavioural intentions of air travellers of Jordan’s airline services. Similarly, this study supports the view expressed by Nor, Yunus, and Wan [2013] regarding air traveller perceptions of service quality and customer loyalty in Malaysia. Likewise, a study conducted by De Meyer and Mostert [2010] among Australian air passengers provides evidence that the majority of dissatisfied air travellers have not formed a long-term relationship with the domestic airline, while satisfied customers are more inclined to form a long-term relationship.

The empirical findings in the regression model (Table 4) depicts the relationship between customer satisfaction and loyalty towards the airlines. With an $R^2$ value of 53%, it can be inferred that customer satisfaction has a significant positive relationship with customer loyalty. The finding of this study is similar to the view expressed by Mesay [2012] that passenger satisfaction plays an important role in enhancing passenger loyalty among passengers of Ethiopian airlines. This finding also supports the study conducted by Halil, Kashif, Erdogan, and Samil [2008] who confirmed that service quality is one of the major factors influencing the loyalty of North Cyprus national airline passengers. However, our finding contradicts Faheed’s [1988] result, which reported that the relationship between passenger satisfaction and loyalty towards airline is not clear among Royal Jordanian airline customers.

Regression model 1 and 2 (Table 3) reported the mediating effect of customer satisfaction on the relationship between perceived service quality and customer loyalty towards the airlines. The $R^2$ of 54% and 70% shows that customer satisfaction mediates the relationship between the two constructs. However, comparison of $R^2$ value in regression model 1 in (Table 6) indicates that the percentage change in $R^2$ value is 9% (i.e. 54%
– 45%). Therefore, based on this analysis, it can be concluded that customer satisfaction partially mediates the relationship between service quality perception and customer loyalty. Hence, hypothesis four is partially supported. This finding is consistent with the study carried out by Kalthom, Noor, and Kamariah [2007], who reported that passenger satisfaction with service quality among airline operators in Malaysia significantly increased future patronage and the probability of recommending the airline to others. Likewise, the empirical evidence from this study lends credence to Saha and Theingi [2009], who reported a significant relationship among service quality, satisfaction, and behavioural intentions among passengers of low-cost airline carriers in Thailand. Similarly, Nadiri, Kashif, Erdogan, and Samil [2008] documented that airline service quality and customer satisfaction are major factors influencing passenger loyalty in North Cyprus’s national airline. Correspondingly, a study carried out by Faheed [1998] among Jordanian air travellers indicates that overall service quality is highly related to both passenger satisfaction and loyalty, which corroborates the finding of this study.

Conclusion

This study investigated the relationships among service quality, passenger satisfaction and customer loyalty in the Nigerian airline industry. From the evidence obtained from domestic air passengers in Nigeria, we find that perceived service quality positively influences both passenger satisfaction and loyalty towards the airlines. The study also suggests that passengers satisfaction significantly influences loyalty formation in the Nigerian airline industry and partially mediates the relationship between service quality and customer loyalty. In general, the global airline business operates under exceptionally tough environments (such as: rising operating costs, declining demand arising economic depression, intense competition among others). Hence, business managers should recognize that improving service quality is crucial for gaining and sustaining business growth and competitiveness. Evidence from this study indicates that service quality stimulates passenger satisfaction, which encourages their return to the same service provider in a subsequent transaction.

Therefore, the capability of an airline to offer superior service quality by understanding customer expectations facilitates business growth and survival in airline industry. In particular, improving service quality to understand and match customer expectations influences capability to deliver relatively error-free service that pleases customers, therefore having the tendency to retain customers’ patronage, enlarge market share and, by extension, constitute a means to enhance business profitability. Simply stated, to need to build and enhance customer satisfaction, airline operators must offer quality service that meets and exceeds passenger expectation, so as to enhance customer loyalty.
Notes

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