Journal *of* Economic *and* Social Studies

Volume 4

Number 1



Print ISSN: 1986 - 8499 Online ISSN: 1986 - 8502

Spring 2014

PUBLISHER

International Burch University *Address:* Francuske revolucije bb. Ilidža 71210 Bosnia and Herzegovina

Phone : + 387(0) 33 944 400 Fax : + 387(0) 33 944 500

Editor Associate Editor	Teoman DUMAN Kursad OZLEN	jecoss@ibu.edu.ba teoman.duman@ibu.edu.ba
Editorial Assistants	Nataša TANDIR Mersid POTURAK Merdžana OBRALIĆ	
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ISSN (Print)	1986 - 8499	
ISSN (Online)	1986 - 8502	
Frequency	Biannually	
Current Volume	4/2014	
Indexing and Abstracting :	Econlit (Journal of Eco Ebscohost Academic Se Pro Quest LLC ASOS Index (Sosyal Bi Index Copernicus Journ	nomic Literature) earch Complete limler İndeksi) nal Master List

STATEMENT OF PURPOSE

Journal of Economic and Social Studies (JECOSS) aims to develop scientific knowledge in the areas that include, and are related to Economics, Business Administration, Public Administration, Political Studies, International Relations, Labor Economics and Industrial Relations, Econometry, Sociology and Psychology. As an international social sciences journal with interdisciplinary feature, it will set a ground to bring social science communities across disciplines identified above with a view for sharing information and debate. The journal publishes refereed articles and technical research notes that build on theory and contemporary scientific knowledge. Articles submitted to JECOSS will be peer-reviewed and expected to report previously unpublished scientific work. Submitted manuscripts should follow journal guidelines and should not be under consideration elsewhere.

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Determination of Firm Growth: A Study of Rural SMEs in Bosnia-Herzegovinaⁱ

Selma Delalić

Centre for Economic Development and Research Sarajevo, Bosnia-Herzegovina delalic@cedar.ba

Nermin Oručⁱⁱ

International University of Sarajevo Sarajevo, Bosnia-Herzegovina oruc@cedar.ba

Abstract: Rural development is identified as one of Keywords: Rural the key areas of intervention in Bosnia and Herzegovina (BiH). The main drivers of rural development can be small sized companies run by rural entrepreneurs, and intervention should be focused on enabling environment for their growth. The paper presents analysis of the factors determining growth in employment by small rural businesses in BiH, using quantitative data from original survey conducted in 2012. The direction and magnitude of different factors were further analyzed through qualitative data analysis. Findings from this research identify the key obstacles affecting growth of rural businesses, primarily related to infrastructure, access to finance, access to market, and availability of "soft" skills. The paper proposed possible ways of intervention in reducing these obstacles in order to promote rural development in BiH.

Entrepreneurship, Firm Growth, Development, regression

JEL Classification: Q12, D92, L25

Article History

Submitted: 06 Jun 2013 Resubmitted: 27 August 2013 Accepted: 16 September 2013

Selma Delalić, Nermin Oruč

Introduction

BiH as a developing and transition country faces severe obstacles in economic development, especially in rural areas, where majority (above 60%) of the population is located (Ministry of Foreign Trade and Entrepreneurship, 2008). Without proper and sustainable rural entrepreneurship development, there are further difficulties for strengthening economic development. This paper investigated the factors that hamper larger involvement of population in rural businesses in the framework of the model of determinants of growth of firms in rural areas. The focus is on micro and small businesses, run by rural entrepreneurs.

Entrepreneurship has an important overall role in the economic and rural development, building stronger than ever relations in rural areas. Entrepreneurship, as a dynamic force for growth, employment creation, and life quality improvement (Petrin, 1994), has been considered a key element in rural development and sustainable economic development. The more entrepreneurial region is, the more it outperforms neighbouring economic regions. Acknowledging the central role entrepreneurship has in economic rural development and properly developing conducive entrepreneurship environment (Sherief, 2005), leads to the rural entrepreneurship network that creates a positive business climate and behaviour, decreasing significantly important rural poverty and generates employment, particularly for youth. For the successful and productive environment, it is highly important to understand the factors that influence rural entrepreneurship, which include productive interventions by the state (Petrin, 1994), diversification of products, entrepreneurship promotion and marketing, knowledge transfer and sharing, supply chains and a net of cooperatives and large companies (Rongsen, 1998).

Although rural areas in Bosnia and Herzegovina are characterized by small arable parcels per capita, of less than 2 ha of arable land per farm (Volk, 2008), consisting of approximately 250.000 firms, presenting twenty five per cent of the businesses (Volk, 2008), agriculture is very important and persistent way of rural entrepreneurship. Still, large defragmentation and disintegration of small producers, has kept producers mostly related to subsistence agriculture, leading to diminished productivity and inefficiency. This highlights the need to identify the most prominent obstacles to rural entrepreneurship and draft a precise, comprehensive and successful rural entrepreneurship strategy to create sustainable rural development, to generate employment and spur innovation. Paper is further organized in five main sections. The next section presents review of the theoretical and empirical literature on factors determining growth of rural businesses. Third section describes the methodology used in the analysis of factors influencing growth of rural businesses in BiH, where the empirical model and data used in the analysis are explained. The fourth section presents results of the empirical estimation of the models. Finally, section five concludes and provides a list of policy recommendations for improving entrepreneurial activities in rural areas as of BiH.

Literature Review

Growing empirical evidence in the literature on rural entrepreneurship (Volk, 2008), supports the hypothesis that there is a positive correlation between governance, rural entrepreneurship and rural development, where goal oriented policy, transparent support and efficient law framework play an important role.

Literature identified the main factors affecting growth of rural businesses. These factors can be broadly divided into "internal" factors (such as characteristics of entrepreneurs, characteristics of the business) and "external" factors (such as population trends, availability of natural resources, government support, characteristics of the labour and good market, quality of the supply chain, and availability of finances).

Risk taker, innovator, motivated, opportunity taker, inspired, owner, are all features of the entrepreneur (Martin and Osberg, 2007). Successful entrepreneurs are performing and combining those determinants on the daily basis. Entrepreneurs have a special set of cognitive capacities Schiebold (2011) and attitude (De Mel, Mckenzie and Woodruff, 2010), that makes them unique, as those have direct impact on the success of the business. Cognitive abilities are influenced by the level of education, as more educated are proactive in all areas of the business and in technology development. Norms, values in behavioral contest which are shaped by culture, inevitably have its impact on the entrepreneurship performance (Schiebold, 2011). Personal traits, attitude and strong motivation of entrepreneurs are sufficient (Che Rose, Kumar and Lim, 2006), to overcome impediments for start-up and growth of the entrepreneurship. Although the lack of educated labor force tends to be one of the most influential factors in developed countries such as the United Kingdom, Smallbone et al. (2006) and Goetz and Freshwater (2000) point out on historical data, which show how family background used to be compensated for the lack of knowledge.

In Nigeria, research by Ajibefun and Daramola (2003) found out that the education level of the owner has highly influenced efficiency of the business and affects the growth of the business. This puts education on the level of high priority variables for

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technical and organizational effects. Nevertheless, in combination with the age of the owner, education and age have a parabolic shape as two variables, meaning that efficiency of the business performance first rises then declines as owner ages. Although young owners lack experience, they should be given trainings and encouragement to become entrepreneurs. Okurut (2008) stresses out the positive impact of education and business knowledge on the microbusiness performance, while a combination of rural entrepreneurship and female ownership decreases business success. There seems to be a positive link between number of start-up firms and educated owners (Acs and Armington, 2005), not referring solely to secondary degree education.

Gianneti and Simonov (2009), assert that substantial entrepreneurial activity is to be influenced by positive entrepreneurial climate in the close regions, giving a special place to social interactions, as one of the main entrepreneurial drivers, that also enhance faster learning through social effect. The usage of many proxies makes this finding challenging in general application and opens a door to new entrepreneurial climate insights. Schields (2005), acknowledges the importance of culture and social factors and family relations, placing higher influence on successful rural entrepreneurship management, linking individuals to rural community development.

External opportunities and threats play important role in rural entrepreneur's activity, where entrepreneurs creativity and motivation comes into play, if businesses are planning to survive. Characterized by constant depopulation, rural areas and rural entrepreneurs face a challenge more than ever before, in striving to attract skilled and educated labor, on one hand, and maintain supply of products that should correspond to demand in the market. The logical consequence to this is generally lower firm entry rate in rural areas than in urban areas (Plummer and Headd, 2008, Yu et al., 2008).

It is important to note, that successful rural development is highly influenced by institutional support. This does not exclude the possibility of regional development itself, but slows the pace of development in a fast competitive global area and drives down any further motivation and success. Institutional support consists of formal and informal rules. Formal (codes of conduct) are written in the legal framework, directly applying (Schiebold, 2011) to the business performance, while informal are shaped in norms, cultural values (Shirley, 2008).

Infrastructure plays prominent role in its impact on rural entrepreneurship success, such as road, broadband access and access to water (Walzer, 2009). The more

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developed infrastructure, the more successful rural entrepreneurs we have (Okurut, 2008). Access to utilities, such as electricity, communication, markets and road, contributed to the growth of the microbusinesses in rural Kenya (Kirubi, 2006). Infrastructure refers to physical and non-physical. Physical infrastructure refers to roads or energy. Non-physical infrastructure consists of market structure. Infrastructure plays an important link of rural entrepreneurs in the urban market. Neglected by institutions in the rural development planning and investment, due to its substantial cost issue, infrastructure is one of the main impediments in transitional countries. Due to the characteristic of rural areas in the sense of their remoteness, additional challenges to rural development are transportation costs (Smallbone, 2006) and infrastructure, affecting entrepreneurship base (Ahmad and Hoffman, 2006).

One of the limiting factors is a small local market that influences differently rural entrepreneurship sectors (North and Smallbone, 1996), pushing rural entrepreneurs to export markets from its very first establishment (Smallbone et al, 1993, Dabson 2011). This clearly provides insight into the importance of external and institutional support of rural firms. The evidence from the different research sources, indicate the ability of rural firms to overcome the influence of rurality and to adapt to exporting market conditions, more successfully than their urban counterparts (Gale, 1998). The pace of this adoption is facilitated by the level of the country's development and opens a door to export markets, institutional and policy support (Wyer and Smallbone, 1999) in developing and post transitional countries.

Short supply chain as a constraining factor, has been recognized by France, in the new strategy for rural entrepreneurship development and is highly welcomed by Member States and drafted in New EU Rural Development Policy 2011 (NRN 2011). Rural businesses are often involved in the chain with the middlemen (Alsos et al, 2011), who by charging its margin, raises the price of the product and in one or another way affects the pace of sales. Shortening the chain, by introducing direct sales to customers, through farm shops, road stands, online sales, fair sales (Alsos et al, 2011) and other forms, reduces costs and allows producers to interactively engage in sales. Yet, Verghaegen and Van Hylenbroeck (2001) acknowledge another angle to this issue, stressing out that direct sale to producers, require marketing and sales skills as a prerequisite and may take valuable time. As this might be true, for remote rural enterprises, we believe that short supply chain has possibility to contribute in general through various ways.

To some extent, the external factors are more interlinked with lacking and skillful labor force (Petrin, 1994), whose decreasing motivation to rural employment is

compensated with a growing propensity to urban market opportunities. This leads to faster ageing of the rural population that influences the possibility of dynamic rural enterprise growth. Even Dabson (2001), points out on the significance of population in the rural area, that creates demand for rural products, without which rural products cannot decrease overhead costs, due to large production.

BiH agriculture is still behind regional countries Croatia, Serbia and Macedonia, on the competitiveness scale (Zekić et al, 2009), due to low productivity level, crop yields, inefficient and obsolete production techniques and broken links between production and supply chains. Volk (2008) asserts that agricultural enterprises in Bosnia and Herzegovina, face serious obstacles to their development and production, where the most cited are related to obsolete technological processes, subsistence farming, poor irrigation techniques, deficient capitalization level, marginal production innovation, dependence on the inputs and natural production. BiH agricultural demand dominates the domestic agro-supply, despite Bosnian natural and climate advantages and leads to large agro-import.

Methodology

Model

Extending the model developed by Headd (2000) by business characteristics of rural entrepreneurship, and combining it with the recent research findings as presented in the literature review, we developed the following baseline model specification:

$$y_i = \beta_0 + \beta_j \sum OC_{ij} + \beta_k \sum BC_{ik} + \beta_l \sum CSF_{il} + u_i$$
(1)

This specification is estimated by three models, with alternative specification of the dependent variable. In the first model, it is expresses as average annual change in number of employees (aace). In the second, it is average annual growth in number of employees (aage), while in the third model it is expressed as a dummy variable taking value of 1 if number of employees increased (successdv). Due to such specifications of the dependent variable, the first two models were estimated by OLS method, while probit was used for the third one (with a dummy variable). The choice of employment increase is based on recent empirical studies on determinants of growth of firms, where employment was found as more appropriate than sales data, which are commonly underreported in surveys. Additional motivation for the choice of employment data is that they are more informative, as employment generation

should be the most important objective of rural development activities in BiH, rather than growth of output.

The main independent variablesⁱⁱⁱ are factors determining growth of rural businesses, a presented in Equation (1) are:

OC – list of demographic characteristics of the owner, such as age, sex, education level, migration experience,

BC – characteristics of the business (age of business, whether it was established by current owner of inherited, export orientation, etc.), including industry (5 types of businesses) and region dummies (3 regions)

CSF - a list of 21 critical success factors (obstacles), expressed as dummy variables indicating that interviewed owner answered that she/he is, in running the business, facing these obstacles frequently.

The list of critical success factors was prepared base on previous qualitative research, conducted by authors for the World Bank in 2012. In order to reach the best possible specification of the reduced model, we decided not to rely only on test-statistics from the hypothesis testing of statistical significance of coefficients from the estimated model for selection of the success factors, but also to identify the most influential factors by using descriptive statistics results^{iv}. Then, the list of the most important factors was included into the model, and it was further reduced by excluding some of the insignificant variables related to owner's or business characteristics.

Female owners are found to be in minority and face various obstacles due to gender issue, especially in complying with financial requirements (Papadaki and Chami, 2002) by financial institutions, although it has no implications to firm survival rate (Cooper et al, 1994). Age of the entrepreneur is shown to be positively related to some extend and as owner ages, it becomes less dynamic affecting the business performance (Selaman et al., 2011).

Family business presents a healthy ground for young entrepreneurs, who are in a position to learn from their family on rural entrepreneurship from the very beginning, to learn about processes and resources (Walzer, 2009). Although in advanced position, empirical evidence shows that businesses started from owners' own interest (not inherited) are more successful in the long term (Walzer, 2009). High growing entrepreneurships are negatively related to family businesses (Bjuggren et al., 2010).

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Beneth and Smith (2002), emphasize how the remoteness of rural areas contributes to decreasing tendency of access to trainings and knowledge transfer, associated with larger costs of services, inadequate training support, and obsolete knowledge. The more distant enterprises have a transportation cost as a significant part of the price calculation and it directly reduces its margins and profit (Walzer, 2009). Geographic location (Bosworth, 2011) is unprecedently defining the type of products harvested or services provided in the rural area of one country. The comparative advantage for the purpose of efficient production is important, but the geography provides no crucial obstacle to rural firms.

Financing is ever growing obstacle, very sensitive in the aspect of rural entrepreneurship in the context of credit collateral and credit history. It is extended to difficulties in loan procedures and documentation (Nurbani et al., 2010). Confessing the fact that start-up in general have financial issues, as is supported by the research of Nurbani et al. (2010), even providing the access to various financial schemes does not guarantee success.

Data and Descriptive Statistics

Since there are no available data for the purpose of analysis presented in this paper, a survey among 300 entrepreneurs in BiH was conducted. The sampling frame used for sample selection consists of various sources, of over 1.300 entities, as there is no single database of rural entrepreneurship existing in Bosnia and Herzegovina. From the database we have selected 300 rural businesses for our sample. Response rate was 70 percent, so we have ended up with 210 respondents. For selection of rural entrepreneurs, we applied settlement based definition of rurality, where rural businesses are the ones operating in villages.

The predominant form of rural businesses is micro and small business, where they account for 90 percent of all rural establishments (Buss and Yancer, 1999) and nearly two-thirds of all rural jobs, making them a vital part of the rural economy (McDaniel, 2001). Almost 75 percent of rural small businesses have fewer than 20 employees, accounting for a quarter of rural jobs, but only a fifth of rural payrolls (McDaniel, 2001). Therefore, we decided to focus on micro and small (0-49 employees) businesses in our research.

The sampling selection procedure applied here was two stage stratification. First stage stratification was stratification of businesses according to their type. All businesses were grouped into five large groups (fruits, vegetables, rural tourism, rural retail, other businesses) and the number of businesses from each of these strata were

selected into the sample according to their share in the sampling frame. In the second stage, we divided entire BiH into three regions, characterized by diverse characteristics of rural businesses present there. The regions are Northern Bosnia, Central Bosnia, and Herzegovina (southern part of the country). From each area, number of businesses selected into the sample was according to the proportion of the businesses in each type of business (first stage strata) from each region based on their share in the sampling frame. This way, we assured coverage of all types of businesses and representativeness of businesses predominantly located in a particular region, since it is expected that different types of businesses in different regions face obstacles (e.g. transportation) at a different extent.

Descriptive analysis of data reveals some interesting findings, informative for the further econometric analysis. Entrepreneurs are mostly men (in 86.95% of cases), 47.8 years old on average, have a secondary education level (in 57.76% of cases), with 19 years of total experience and 12 years of experience in the sector of their business. Businesses are mostly established (82,43% cases) from the owner's interest and only a few are inherited (11.2%) from the family, and are using the owner's asset (in 87.14% of cases). Successful rural businesses have written contracts (60%) with one or two crucial customers (68%). Rural businesses are mainly established by one owner, using owner's savings and in a few cases, by using a combination of bank credit and owner savings. It employs 9 employees currently, have a 10% in growth employment, and a 4.5% growth in sales annually, on average, with a large standard deviation. It has written contracts (in 59.52% of cases) and sells to 2 different groups of customers.

The rate of the rural business progress can be seen in a positive change in the number of employees. Rural businesses in BiH on average employ one worker for every two years of a business existence. Ninety two percent of businesses are growing but the rate of its progress is very slow, particularly including average age of the business. Rural businesses are 7 km away from the closest bank or microcredit affiliates and 5 km away from the road. Supply of water, electricity, internet and access to the road are supplied in the 97% of cases on average, with no impediments. Rural businesses mostly have signed contracts and we have a situation where a group of business who signed no contract, in 48.57% of cases had no success, and businesses that signed a contract, by 22.11% faced the same situation. What makes those two groups distinct, is an uneven distribution of success. Micro businesses are burdened with the costs of transportation (51.41%).

More than 68% of rural businesses which answered that their business faces complicated administrative procedures are micro businesses (employing 1 up to 10

employees), who are successful, employing 2 to 5 additional workers. Out of those, 43% are those faced with this obstacle the most and have zero employment growth, meaning zero success. Real interest rate as an obstacle, has an impact on micro businesses ("the slow growers") in 62.4%, affecting businesses that employ 1 to 5 employees the most.

What is interesting is the nature of relations among owner's total experience, intention to expand the business and a written business plan. Almost 55% of owners do not have a written business plan. Of those who do have, 15th and 20th year of the business is crucial in planning. Owners express their intention and motivation to expand the business, but plan their activities every 10 years on average. Education of the owner does not particularly affect his/her motivation to write a business plan. Owner of the successful business in 82.24% of cases had the intention to expand the business, and 72.2% of them had a written business plan. Only those established by the pure interest of the owner (77.14%) using owners' savings as a starting capital (63.7%) is the most successful (77.14%).

Results

The results of regression analysis of three alternative specifications of the reduced model from Equation (1), with different dependent variable, are presented in the table below (t-statistics in parentheses):

Variables	Model 1 OLS	Model 2 OLS	Model 3 Probit
Dependent	Average annual change in employees	Average annual growth in employees (%)	= 1 if number of employees increased
Age of owner	-0.012	-1.223	0.006
Age of owner	(-0.92)	(-0.94)	(-0.40)
If any an ensider in musul areas	-0.455*	-44.64*	-0.304
II owner resides in fural areas	(-1.83)	(-1.76)	(-1.14)
Ourser has torright advantion	0.331	33.876	0.326
Owner has tertiary education	(-1.43)	(-1.43)	(-1.26)
Pusings und inherited	0.586	58.858	1.344**
business was innerited	(-1.51)	(-1.5)	(2.33)

Table 1. Results of various models

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Business was started by using own	0.691*	69.649*	0.414
savings	(2.42)	(2.38)	(-1.38)
	0.463*	46.973*	0.713**
Owner receives remittances	(-1.77)	(-1.76)	(2.09)
E	0.901**	90.491**	0.015
Exports	(3.16)	(3.13)	-0.05
Tawas and contributions	-0.36	-36.583	0.779*
Taxes and contributions	(-1.01)	(-1.01)	(2.32)
Leek of support by local such arisis	-0.699*	-69.314**	-0.967**
Lack of support by local authorities	(2.45)	(2.35)	(2.68)
Lich costs of the parts	-0.784**	-78.964**	-0.033
righ costs of transport	(2.32)	(2.30)	(-0.1)
Evenance rate velatility	-0.325	-31.567	-0.258
Exchange fate volatility	(-1.26)	(-1.19)	(-0.83)
Large competitors	0.262	27.125	0.294
Large competitors	(-1.06)	(-1.06)	(-1.09)
Difficult to obtain loop	0.717**	70.756**	0.908**
Difficult to obtain loan	(2.37)	(2.23)	(2.93)
Constant	1.202	120.627	-0.679
Constant	(-1.67)	(-1.65)	(-0.91)
Observations	135	132	166
R-squared	0.25	0.25	

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Source: Calculation done by authors

** statistically significant at 1% level, * statistically significant at 5% level

The results presented in the table above show that the most important factors affecting growth of a rural firm in BiH are lack of support by lower levels governments (institutional factor), high transportation costs (infrastructural factor), and difficulties in obtaining a loan (access to finance factor). Some other success factors, such as presence of large competitors, large taxes and contributions, or exchange rate volatility, appeared as statistically significant factors in one of the three models, but the significance was not consistent across the models. In addition, significant variables affecting growth of rural businesses are, according to the estimation results from Table 1, export orientation of a business, if business was established by using own savings, if owner has tertiary education, and if owner receives remittances from abroad.

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The models were tested for standard OLS assumptions and no significant problems were identified. It was assumed that the high level of multicolinearity could be expected; however, the results of the correlation and variance inflation factor analysis did not suggest significant degree of colinearity between these variables^v.

Possible endogeneity of the set of variables for critical success factors was identified. Less successful entrepreneurs could be more likely to report more significant obstacles. However, appropriate instruments were not available in the dataset, and it can be assumed that any possible endogeneity problem, arising from the correlation between these variables and the error term, was reduced by inclusion of a set of demographic characteristics of the owner. Exclusion of these variables would increase the endogeneity bias.

Conclusions

The results of the rural entrepreneurship survey reveal that the main factors affecting success of rural enterprises in Bosnia and Herzegovina are related to financial, institutional and infrastructural constraints. The model has shown almost each factor to have a similar level of impact on the rural success, which means we need to work on those factors simultaneously, without prioritizing one over another.

Institutional factors, primarily related to the business climate, severely affect growth of rural businesses, as any other. BiH is well known as a country which has lowest rating with regards to business climate in Europe, and is among the worst in the world. Average number of days for starting a new business, according to the World Bank's Doing Business reports, is more than 70 days. The government needs to start implementing necessary reforms of administrative procedures, improve functioning of their services to businesses, including better targeting and coverage of subsidies, and to make other improvements of business climate (e.g. reducing tax burdens to businesses). These reforms, as we saw from the results presented, will help rural entrepreneurs to grow faster, but would also increase entrepreneurial activities by other people in BiH as well as attract more foreign investments. All these would result in increase of employment, which is highest in Europe and should be one of the goals at the top of the agenda of the BiH government.

The results also show that rural entrepreneurs expect more support from local than state level government. This should be taken into account in evaluation of the results of government at different level, as well as for design of strategies for rural development and related activities. Support by the local government is particularly expected in the activities related to improvement of local infrastructure, such a local roads, access to water, and access to phone and internet. Successful businesses have a need for a source of finance, on a regular basis, especially when it comes to buying new machines and facilities or refurbishing old ones, and investing in new skills. In addition, easier access to start-up funds for new entrepreneurs would have positive influence on boosting entrepreneurial activities in rural areas. Such a support by the government would be directly transformed into the employment growth.

Finally, besides the results provided above, additional research of rural entrepreneurship is necessary for better understanding of this issue, which is of extreme importance for BiH. Since data availability is the first condition for a proper research, a census of rural businesses and establishment of comprehensive database of such businesses is the first step in this direction. Establishment of the database is also one of the key EU requirements for BiH in order to be eligible for funds available for rural development in BiH (IPARD).

References

Acs, Zoltan J. & Catherine Armington (2005). Using Census BITS to Explore Entrepreneurship, Geography, and Economic Growth. *Small Business Research Summary* No. 248, U.S. Small Business Administration, Office of Advocacy.

Ahmad, N. & A. Hoffman (2006). *A Framework for Addressing and Measuring Entrepreneurship. OECD*. Entrepreneurship Indicators Steering Group Report

Ajibefun, I.A. & Daramola, A.G. (2003). Determinants of Technical and Allocative Efficiency of Micro-Enterprises: Firm-level Evidence from Nigeria, *African Development Bank*, 353-395

Brian, H. (2000). Business success: *Factors leading to surviving and closing successfully*. Office of Advocacy, U.S. Small Business Administration, Working paper

Djankov, S., Miguel, E., Qian, Y., Roland, G. & E. Zhuravskaya (2005). "Who are the entrepreneurs in Russia?" *Journal of the European Economic Association* 3, 1-11.

Djankov, S., Qian, Y., Roland, G. & E. Zhuravskaya (2006). "Who are China's entrepreneurs?" *American Economic Review, Papers and Proceedings* 96, 348-352.

Friedman, R.E. (1987). The Role of entrepreneurship in rural development, in B.W. Honadle and J.N. Reid, *National Rural Entrepreneurship Symposium*, Southern Rural Development Centre, Knoxville, 1-6

Giannetti, M. & Simonov, A., (2009). Social Interactions and Entrepreneurial Activity. *Journal of Economics & Management Strategy*, 18(3), 665–709

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Goetz, S., & Freshwater, D. (2001). State-level determinants of entrepreneurship and a preliminary measure of entrepreneurial climate. *Economic Development Quarterly*, 15, 58–70.

Jasra, J.M., Khan A.M., Hunjra I.A., Rehman Ur A.R., & Rauf-I-Azam (2011). Determinants of business success of small and medium enterprises, *International Journal of Business and Social Science*, 2(20)

Jone, L., Sakong I. (1980). Government, business and entrepreneurship in economic development: Korean Case, Cambridge, MY: Harvard University Press

Kader, A.R., Mohd R.B.M., Azid Hj. & Che Ibrahim (2009). Success factors for small rural entrepreneurship under the one district one industry programme in Malaysia, *Contemporary Management Research*, 5(2), 147-162

Kirubi, C., (2006). *How Important is Modern Energy for Micro-Enterprise? Evidence from Rural Kenya*. Master Thesis, University of California, Berkeley.

Ma, Zh. (2002). Social-capital mobilization and income returns to entrepreneurship: the case of return migration in rural China, *Environment and Planning*, Volume 34, 1763 - 1784

MacKenzie, Lynn R. (1992). Fostering entrepreneurship as a rural economic development strategy, *Economic Development Review*, 10(4), 38-44

Malecki, E. (1994). Entrepreneurship in regional and local development, *International Regional Science Review*, 16(1&2), 119-53

Mesnard, A. & M. Ravallion (2006). "The wealth effect on new business startups in a developing economy," *Economica* 73, 367-392.

Munich, W. Lee Jr, Schrock G., Cook K. (2002). Rural Knowledge Clusters: The Challenge of Rural Economic Prosperity, US Economic Development Administration, *EDA Project Report* No. 99-07-13816

Nor, H.S., Ratna R.A.R., Salfarina A.S. (2011). Survival thorugh entrepreneurship: Determinants of successful micro-entreprises in Balik Pulau, Penang Islands, Malaysia, *British Journal of Arts and Social Sciences*, 3(1), 23-37

NRN Rural Entrepreneurship Thematic Initiative (2011). *Connecting Rural Europe,* Synthesis Paper

Okurut, F., (2008). Determinants of Microenterprise Performance in Uganda. *The IUP Journal of Agricultural Economics*, V, 77 - 87.

Osberg, S. & Roger, M., (2007). Social Entrepreneurship: The Case for Definition. *Sanford Social Innovation Review*

Determination of Firm Growth: A Study of Rural SMEs in Bosnia-Herzegovina

Papadaki, Evangelia, Bassima C.(2002). Growth determinants of microbusinesses in Canada, *Small Business Policy Branch*, 1-15

Papzan, A., Zarafshani, K., Tavakoli, M. &, Papzan, M. (2008). Determining factors influencing rural entrepreneurs' success: A case study of Mahidasht township in Kermanshah province of Iran, *African Journal of Agricultural Research*, 3(9), 597-600

Petrin, T. (1994). Entrepreneurship as an economic force in rural development, Seventh FAO/REU *International development Summer school*, Germany, 8-14 September

Plummer, L. A. & B. Headd. (2008). Rural and Urban Establishment Births and Deaths using the U.S. Census Bureau's Business Information Tracking Series. Office of Advocacy, U.S. Small Business Administration, Working paper

Rongsen, L., (1998). Enterprises in Mountain-specific Products in Western Sichuan, China. In *ADB/TA 3150-PRC*: A Study on Ways to Support Poverty Reduction Projects, *Final Report*, October 2000. 7

Schiebold, M., (2011). Towards a Framework of Success Determinants for Micro-Entrepreneurs: The Case of SwissWaterKiosk in Mozambique. Bachelor Thesis, *University of St. Gallen.*

Schields, J.F. (2005). Does rural location matter? The significance of rural settings for small and medium businesses, *Journal of Development Entrepreneurship*, 10(1), 49-63

Sherief, R.S. (2008). Entrepreneurship as an economic force in rural development, *Africa Economic Analysis*. Retrieved March 7, 2012, from www.AfricaEconomicAnalysis.org

Smallbone, D. (2006). Fostering entrepreneurship in rural areas, Chapter 5, OECD. Retrieved March 7, 2012, from http://www.oecd.org/dataoecd/53/19/42203059.pdf

Volk, T. (2008). Agriculture in Western Balkan Countries. Studies on the Agricultural and Food Sector in Central and Eastern Europe. IAMO. Leibniz-Insitut fur Agrarentwitcklung in Mittel und Osteuropa

Wyer, P. & D. Smallbone. (1999). Export activity in SMEs: a framework for strategic analysis. *Journal of Academy of Business Administration*, 4(2), 9-24

Appendix 1. Description of the variables

Variable	Desciption	Survey
Orrenor's characteristics		Question
O male	-1 if owner is male	Δ 1
O_age	1 if owner born in rural area	A2
	=1 if owner lives in rural area	
O_{1CSI}	1 if owner has primary education	A5
	=1 if owner has secondary education	A5
O_sec	=1 if owner has tertiary education	A5
O_{term}	Vers of total experience of the owner	A6a
	Vears of experience in that sector of the	ЛОа
O_exp-s	owner	A6c
O duration migr	Vears spent abroad	A7
O_duration_inigr	Tears spent abroad	11/
Business characteristics		
B age	Age of business	B1
fruits	=1 if business is in fruits sector	B3
Vegetables	=1 if business is in Vegetables sector	B3
Tourism	=1 if business is in Tourism sector	B3
retail	=1 if business is in retail sector	B3
other	=1 if business is in other sectors	B3
north	=1 if business located in northern region	
south	=1 if business located in southern region	
owners	Number of o wners	B2
	1=firm has long-term contract with	D 1(
contract	customer	B16
Empl1	Number of employees now	B3a
Empl2	Number of employees at start-up	B3b
inherited	=1 if business inherited	B5b
established	=1 if business established by owner	B5a
assets	-1 if own assets used in business	B8
saving	Dummy variable, 1= savings, 0=other	B11
rem	=1 if receives remittances	B12
	Dummy variable,	D17
export	1=if firm exports, 0=No	D1/
соор	1=member of a cooperative	B19
Obstacles		

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Ci_1	=1 if facing obstacle 1, "Complicated procedures for obtaining subsidies", frequently	C1
Ci_2	=1 if facing obstacle 2, "Lack of support by the government", frequently	C2
Ci_3	=1 if facing obstacle 3, "High taxes and contributions", frequently	C3
Ci_4	=1 if facing obstacle 4, "Lack of local community support", frequently	C4
Ci_5	=1 if facing obstacle 5, "Difficulties in obtaining standards, certificates, etc.", frequently	C5
Ci_6	=1 if facing obstacle 6, "Other institutional", frequently	C6
Cii_7	=1 if facing obstacle 7, "High transportation costs", frequently	C7
Cii_8	=1 if facing obstacle 8, "No access to water", frequently	C8
Cii_9	=1 if facing obstacle 9, "No access to phone,	C9
	internet, etc., frequently	
Cii_10	=1 if facing obstacle 10, "Other infrastructural", frequently	C10
Cii_10 Variable	=1 if facing obstacle 10, "Other infrastructural", frequently Desciption	C10 Survey Question
Cii_10 Variable Ciii_11	=1 if facing obstacle 10, "Other infrastructural", frequently Desciption =1 if facing obstacle 11, "Lack of trained labour force", frequently	C10 Survey Question C11
Cii_10 Variable Ciii_11 Ciii_12	=1 if facing obstacle 10, "Other infrastructural", frequently Desciption =1 if facing obstacle 11, "Lack of trained labour force", frequently =1 if facing obstacle 12, "Other skill related", frequently	C10 Survey Question C11 C12
Cii_10 Variable Ciii_11 Ciii_12 Ci_13	=1 if facing obstacle 10, "Other infrastructural", frequently Desciption =1 if facing obstacle 11, "Lack of trained labour force", frequently =1 if facing obstacle 12, "Other skill related", frequently =1 if facing obstacle 13, "Difficulties in selling the products", frequently	C10 Survey Question C11 C12 C13
Cii_10 Variable Ciii_11 Ciii_12 Ci_13 Civ_14	=1 if facing obstacle 10, "Other infrastructural", frequently Desciption =1 if facing obstacle 11, "Lack of trained labour force", frequently =1 if facing obstacle 12, "Other skill related", frequently =1 if facing obstacle 13, "Difficulties in selling the products", frequently =1 if facing obstacle 14, "Low price of products offered by resellers", frequently	C10 Survey Question C11 C12 C13 C14
Cii_10 Variable Ciii_11 Ciii_12 Ci_13 Civ_14 Civ_15	=1 if facing obstacle 10, "Other infrastructural", frequently Desciption =1 if facing obstacle 11, "Lack of trained labour force", frequently =1 if facing obstacle 12, "Other skill related", frequently =1 if facing obstacle 13, "Difficulties in selling the products", frequently =1 if facing obstacle 13, "Difficulties in selling the products", frequently =1 if facing obstacle 14, "Low price of products offered by resellers", frequently =1 if facing obstacle 15, "Too volatile exchange rates", frequently	C10 Survey Question C11 C12 C13 C14 C15
Cii_10 Variable Ciii_11 Ciii_12 Ci_13 Civ_14 Civ_15 Civ_16	=1 if facing obstacle 10, "Other infrastructural", frequently Desciption =1 if facing obstacle 11, "Lack of trained labour force", frequently =1 if facing obstacle 12, "Other skill related", frequently =1 if facing obstacle 13, "Difficulties in selling the products", frequently =1 if facing obstacle 14, "Low price of products offered by resellers", frequently =1 if facing obstacle 15, "Too volatile exchange rates", frequently =1 if facing obstacle 16, "High degree of competition", frequently	C10 Survey Question C11 C12 C13 C14 C15 C16

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	=1 if facing obstacle 18, "Remote from the		
Civ_18	larger groceries or discount center",	C18	
	frequently		
C: 10	=1 if facing obstacle 19, "Other market	C10	
Civ_19	related", frequently	019	
C 20	=1 if facing obstacle 20, "High interest	C 20	
Cv_20	rates", frequently	C20	
0.21	=1 if facing obstacle 21, "Difficulties in	C21	
CV_21	obtaining a loan", frequently	C21	
C 22	=1 if facing obstacle 21, "Other finance	C 22	
Cv22	related", frequently	CZZ	
Stratification variables			
	Categorical variable for type of business (=1		
type	fruits, =2, vegetables, =3 retail, =4 tourism,	D 2	
	=5 other types; for Albania first 4 for four	Б3	
	types with largest share, 5 for the rest)		
	Categorical variable for region (=1 centre,		
region	=2 north, =3 south)		

¹ This paper was prepared in the framework of the Regional Research Promotion Programme in the Western Balkans (RRPP), which is run by the University of Fribourg upon a mandate of the Swiss Agency for Development and Cooperation, SDC, Federal Department of Foreign Affairs. The views expressed in this paper are those of the authors and do not necessarily represent opinions of the SDC and the University of Fribourg.

ⁱⁱ Career Integration Fellow of the CERG-EI, Prague

ⁱⁱⁱ Detailed description of each variable included in estimation is provided in Appendix 1.

 $^{^{\}rm iv}$ Here, we used Pearson's $\,\chi^2$ statistics.

 $^{^{\}rm v}$ All correlations were below 0.5 and all VIF factors were below 10, while the average VIF was below 4.

Is a Regional Trade Agreement with Balkan Countries Applicable for Turkey? A Time Series Analysis

Gelengul Kocaslan

Faculty of Economics Istanbul University Istanbul, Turkey kocaslan@istanbul.edu.tr

Oguzhan Ozcelebi

Faculty of Economics Istanbul University Istanbul, Turkey ogozc@istanbul.edu.tr

Suna Mugan Ertugral

Faculty of Economics Istanbul University Istanbul, Turkey mugan@istanbul.edu.tr

Abstract: Statistics of Central Bank of the Republic of Turkey (CBRT) and World Bank (WB) imply that the foreign trade volume of Turkey with its major trade partners in the Balkans (Bulgaria, Greece and Romania) may have a positive effect on Turkey's economy even under the circumstances of the recent financial crisis. In this respect, on the basis of Vector Error Correction (VEC) model, Granger causality analysis has been performed to make inferences about the consequences of a possible regional trade agreement of Turkey with Bulgaria, Greece and Romania on the real economic activity in Turkey. Thereby, it is aimed to determine whether it is reasonable for Turkey to make a regional trade agreement with Bulgaria, Greece and Romania. Empirical findings reveal that Turkish economy may benefit from a regional economic integration with these Balkan countries.

Keywords:

Regional Trade Agreements, Balkan Countries, Causality Analysis

JEL Classification: F10, F14, F15.

Article History

Submitted: 11 Jun 2013 Resubmitted: 17 September 2013 Accepted: 26 September 2013 Gelengul Kocaslan, Oguzhan Ozcelebi, Suna Mugan Ertugral

Introduction

Economic growth and competitiveness depend on the realization of investments and gross fixed capital formation and accordingly increasing economic growth may lead to an expansion of international trade. Besides, historical and cultural connections promote trade relations.

Turkey, as a Balkan country, has historical, cultural and political ties with other Balkan countries and economic relations have been growing especially after the collapse of the Eastern Bloc. As shown in Table 1, foreign trade volume of Turkey with its major trade partners (Bulgaria, Greece and Romania) in the Balkans has been increasing gradually from 1990. Thus, GDP of Turkey may be affected positively by the increasing foreign trade volume with Bulgaria, Greece and Romania.

Table 1.	Foreign	Trade	Volume	of	Turkey	with	Bulgaria,	Greece	and	Romania
(Million	\$) and GI	DP Gro	owth Rate	es ('	%)					

Years	Foreign Trade Volume of Turkey with Bulgaria	Foreign Trade Volume of Turkey with Greece	Foreign Trade Volume of Turkey with Romania	GDP Growth Rate of Turkey (%)	GDP Growth Rate of Bulgaria (%)	GDP Growth Rate of Greece (%)	GDP Growth Rate of Romania (%)
1990	42	268	286	9,27	-9,12	0,00	-5,60
1991	216	221	304	0,72	-8,45	3,10	-12,90
1992	297	234	429	5,04	-7,27	0,70	-8,84
1993	329	239	452	7,65	-1,48	-1,60	1,51
1994	329	274	404	-4,67	1,82	2,00	3,97
1995	585	411	670	7,88	2,86	2,10	7,16
1996	520	521	755	7,38	-9,03	2,36	4,01
1997	585	729	753	7,58	-1,65	3,64	-6,10
1998	581	690	813	2,31	4,86	3,36	-4,79
1999	529	694	669	-3,37	1,96	3,42	-1,20
2000	718	869	1.000	6,77	5,70	4,48	2,10
2001	693	742	873	-5,70	4,20	4,20	5,70
2002	889	903	1.228	6,16	4,70	3,44	5,10
2003	1.311	1.348	1.829	5,27	5,50	5,94	5,20

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2004	1.848	1.759	2.925	9,36	6,70	4,37	8,40
2005	2.369	1.851	4.069	8,40	6,40	2,28	4,17
2006	3.231	2.648	5.019	6,89	6,50	5,51	7,90
2007	4.012	3.213	6.757	4,67	6,40	3,54	6,00
2008	3.992	3.581	7.535	0,66	6,20	-0,21	9,43
2009	2.506	2.765	4.474	-4,83	-5,50	-3,14	-8,50
2010	3.199	2.997	6.048	9,16	0,40	-4,94	0,95
2011	4.097	4.123	6.677	8,50	1,70	-7,10	-0,37

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Source: Central Bank of the Republic of Turkey and World Bank

In this study, we examine whether regional integration between Turkey and Balkan countries (Bulgaria, Greeceⁱ and Romania) may promote the real economic activity in Turkey, whereupon it is attempted to determine whether it is reasonable for Turkey to make a regional trade agreement with Bulgaria, Greece and Romania. Thus, we examined the causal relations among GDP of Turkey and foreign trade volume of Turkey with Bulgaria, Greece and Romania using Vector Error Correction (VEC) model framework.

Theoretical Considerations and Previous Research

Various researches have investigated the welfare implications of regional trade agreements and their impact on the global economy. Beginning with contributions by Viner (1950) and Meade (1955), regional integration arrangements have been widely studied in economic analysis. Viner (1950) concluded that regional integration might be predominantly trade diverting and therefore welfare reducing. Thus, regional integration arrangements have failed to yield universally applicable policies. However, economic theory says that a regional integration agreement can be structured in a way that creates gains for the member countries without harming any nonmembers (McMillan, 1993, p. 2). Viner (1950) also suggested that the theory of second best implying that reducing tariffs under a regional integration arrangement moving in the direction of Pareto optimality does not guarantee an improvement in welfare for individual countries or the world economy as a whole (DeRosa, 1998, p. 21). According to the economic theory, it is possible for regional agreements to avoid harm to outsiders while improving their own welfare. Chang-Winters (2002) found that preferential trade agreements reduced trade diversion and harmed nonmembers by reducing the prices of imports from nonmembers. It is denoted that the neoclassical Ricardian model is failed to provide an adequate empirical framework to explain the growth of open economies (Robinson, 1999, p. 10).

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Although regional trade agreements are questioned whether they increase welfare, research on regional trade agreements show that trade creation greatly exceeds trade diversion and increase welfare for all members. Regional trade integrations represent trade diversion by shifting production from an efficient nonmember country to a less efficient member country. According to the Kemp-Wan theorem; if a regional integration arrangement promotes exports from nonmember countries to the members, the welfare of nonmember countries and the world economy as a whole must improve (Robinson, 1999, p. 2).

Any change in trade policy produces gainers and losers. Member countries' welfare increase as new members join the regional trade agreement providing evidence that there are gains from expanding the regional trade agreements (Robinson, 1999, p. 15). Meade (1955) admitted the possibility of not only spillover effects of regional integration arrangements on non-member countries, but also feedback effects of international adjustments to the formation of regional integration arrangements on member countries themselves (De Rosa, 1998, p. 22). Empirical studies about foreign direct investment also demonstrated a positive incidence of regional integration on foreign direct investments (Montout-Zitouna, 2005, p. 2). In contrast to Viner (1950) and Meade (1955) who emphasized the association of gains from regional integration arrangements with scale economies, Corden (1972) set down that scale economies and market structure was not linked formally (De Rosa, 1998, p. 39). Bhagwati-Panagariya (1996) and Schiff (1996) concerned in the economic size of countries joining a regional integration arrangement and found that a small country is expected to gain more from joining a large regional integration arrangement than a small regional integration arrangement. Frankel, Stein-Wei (1995) concluded statistically significant results on the effects of economic size, distance and the existence of a regional trade agreement between partners on bilateral trade (Frankel, Stein-Wei, 1995, p. 73).

Baldwin-Venables (1995) described the domino theory of regionalism suggesting that countries seek to join regional trade agreements because of the fear of exclusion (Robinson, 1999, p.1). Regionalism is expected to result in economic integration of neighboring countries; (Oman 1996, van Liemt 1998) adopted technology, politics, institutions and culture besides neighborhood defining integration. Neighbor countries whose relative resource endowments are highly complementary are expected to expand their trade relations significantly by forming a regional trading bloc in order to derive particularly large benefits (DeRosa, 1998, p. 34). Cairncross (1997) emphasized that the impetus from these driving forces is transmitted via reductions of transaction costs, in other words, via a decline of economic distance between the countries involved (Boden-Soltwedel, 2010, p. 2). Bhagwati (2004) and

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Schulze-Ursprung (1999) provided evidence that these reductions of transaction costs are expected to change income level, employment and growth rates. However, transaction costs are difficult to determine because of their heterogeneity. The most concise concept of economic integration defines economic integration to be the inverse of transportation (Boden-Soltwedel, 2010, p. 2). Krugman (1993) considered natural trading blocs among neighbor countries and found that low transportation costs contribute to welfare gains when these countries in a regional trade agreement.

Empirical Analysis

For understanding the nature of any non-stationarity among the different series and improving longer term forecasting over a model, VEC models can be used. Within VEC model framework, Granger causality analysisⁱⁱ has been performed for determining whether Turkey's foreign trade volume with Bulgaria, Greece and Romania is useful in forecasting GDP of Turkey. Analysis is carried for the period from the first quarter of 1990, after liberalization of the capital account of Turkey in 1989 to the fourth quarter of 2011. Data is on quarterly basis and following variables are used: the log of GDP for Turkeyⁱⁱⁱ; gdp_t^{tr} , the log of foreign trade volume with Bulgaria, Greece and Romania^{iv}; $ftbul_t^{tr}$, $ftgre_t^{tr}$ and $ftrom_t^{tr}$. All series are in levels and derived from CBRT and OECD databases.

Unit Root Tests for the Time Series

For determining whether the variables used in the empirical exercise are stationary or not, we employ the most widely used unit root tests in the econometric literature namely the Augmented Dickey-Fuller (ADF). Since critical values of the test depend on the deterministic terms which have to be included, Pantula principle proposed by Pantula (1989) is followed^v.

Since all series included in the empirical analysis have a nonzero mean and a linear trend, unit root tests are implemented with constant and trend terms and for determination of the lag length of ADF test, Akaike Information Criteria (AIC) is employed. At the 1 percent significance level; all series in levels form are non-stationary, whereas all series are stationary in first-differences. All series are regarded as integrated of order 1; thus we explored the possibility of cointegration relationship among the series.

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Variables	ADF Test Statistic	Number of Lagged Differences
gdp_t^{tr} (c, t)	-2,68	1
$\Delta ~ g d p_t^{tr}$ (c)	-8,84	0
$ftbul_t^{tr}$ (c, t)	-2,00	9
$\Delta ftbul_t^{tr}$ (c)	-5,05	8
$ftgre_t^{tr}$ (c, t)	-3,43	1
$\Delta ftgre_t^{tr}$ (c)	-14,50	0
$ftrom_t^{tr}$ (c, t)	-2,02	8
$\Delta ftrom_t^{tr}$ (c)	-3,58	8

Table 2. Augmented Dickey-Fuller Tests

VEC Model

The Concept

The general framework of VEC model is based on a VAR(p) model with deterministic terms as represented below;

$$y_{t} = A_{1}y_{t-1} + \dots + A_{p}y_{t-p} + D_{t} + u_{t}$$
(1)

where $y_t = (y_{1t} \dots y_{Kt})'$ is a vector of endogenous variables with K elements, A_i is the parameter matrix. u_t is an unobservable white noise process that has positive covariance matrix $E(u_t u'_t) = \Sigma_u$ (Lütkepohl, 2007, p. 88). Within the VAR model framework in (1), Equation (2) can be specified as a VEC model.

$$\Delta y_{t} = \Pi y_{t-1} + \Gamma_{1} \Delta y_{t-1} + \dots + \Gamma_{p-1} \Delta y_{t-p+1} + u_{t}$$
(2)

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In (2), Δy_t does not contain stochastic trends by the assumption that all variables can be at most I(1). Thus, the long-run part Πy_{t-1} contains I(1) variables and it must be I(0). Π can be written as a product of $(K \times r)$ matrices α and β with $\mathrm{rk}(\alpha) = \mathrm{rk}(\beta) = r$; $\Pi = \alpha\beta'$ when $\mathrm{rk}(\Pi) = r$. By premultiplying $\Pi y_{t-1} = \alpha\beta' y_{t-1}(\alpha'\alpha)^{-1}\alpha'$, $\beta' y_{t-1}$ is obtained. Thus, $\beta' y_{t-1}$ is I(0) and contains cointegrating relations. Π is the cointegrating rank of the system since $r = \mathrm{rk}(\Pi)$ linearly independent cointegrating relations exist among the components of y_t . β is a cointegration matrix, whereas the loading matrix α contains the weights attached to the cointegrating relations in the individual equations of the model. Finally, Γ_i are referred as the short-run parameters (Lütkepohl, 2007, pp. 89-90).

For the determination of whether or not the linear combination of these variables are I(0), we employed the widely used in the literature - Johansenn cointegration test - as represented below;

$$\mathbf{y}_t = D_t + \mathbf{x}_t \tag{3}$$

where $D_t = \mu_0 + \mu_1 t$ is the deterministic part with a linear trend term and x_t has a VAR representation as in equation 2. If $\mu_1 = 0$, $y_t - \mu_0 = x_t$ and thus (3) has the VEC form (Lütkepohl, 2007, pp. 111-112).

$$\Delta y_{t} = \Pi (y_{t-1} - \mu_{0}) + \sum_{j=1}^{p-1} \Gamma_{j} \Delta y_{t-j} + u_{t}$$
(4)

Within the framework of (4), the pair of hypothesis below is tested to determine the cointegrating rank of the system (JMulTi 4.23 Help System).

$$H_0 = (r_0): rk(\Pi) = r_0$$
 versus $H_1 = (r_0): rk(\Pi) > r_0$ $r = 0..... K - 1$ (5)

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Series: gdp_t^{tr} , $ftbul_t^{tr}$, $ftgre_t^{tr}$, $ftrom_t^{tr}$					
No. of Included Lags (Levels): 9					
Null Hypothesis	%95 Critical	%90 Critical			
		Value	Value		
r = 0	56,46	63,66	70,91		
<i>r</i> = 1	36,17	42,77	48,87		
<i>r</i> = 2	16,84	25,73	30,67		

Table 3.	Johansen	Cointegration	Test
	2	U	

Table 3 indicates that there exists one cointegrating relation both among the variables $(gdp_t^{tr}, ftbul_t^{tr}, ftgre_t^{tr}, ftrom_t^{tr})$. Thus, causality relations among these variables are investigated within VEC model framework for making inferences about the effects of foreign trade volume of Turkey with Balkan countries on GDP of Turkey.

Granger-Causality Analysis

Granger (1969) has introduced a causality concept that has become quite popular in the econometrics literature. Accordingly, y_{2t} is to be causal for a time series variable y_{1t} if the former helps to improve the forecasts of the latter. For testing this property, a bivariate VAR(p) process of the form below can be considered (Lütkepohl, 2007, p. 144-145).

$$\begin{bmatrix} y_{1t} \\ y_{2t} \end{bmatrix} = \sum_{i=1}^{p+2} \begin{bmatrix} \alpha_{11,i} & \alpha_{12,i} \\ \alpha_{21,i} & \alpha_{22,i} \end{bmatrix} \begin{bmatrix} y_{1,t-i} \\ y_{2,t-i} \end{bmatrix} + CD_t + \begin{bmatrix} u_{1t} \\ u_{2t} \end{bmatrix}$$
(6)

The null hypothesis that y_{2t} is not Granger-casual for y_{1t} is tested by;

$$\alpha_{12,i} = 0, \quad i = 1, 2, ..., p+1.$$
 (7)

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Accordingly, y_{2t} is not Granger-causal for y_{1t} if its lags do not appear in the y_{1t} equation. Granger-causality can also be investigated in the framework of the VEC model (Lütkepohl, 2007, p. 146).

$$\begin{bmatrix} y_{1t} \\ y_{2t} \end{bmatrix} = \alpha \beta' \begin{bmatrix} y_{1,t-1} \\ y_{2,t-1} \end{bmatrix} + \sum_{i=1}^{p-1} \begin{bmatrix} \gamma_{11,i} & \gamma_{12,i} \\ \gamma_{21,i} & \gamma_{22,i} \end{bmatrix} \begin{bmatrix} \Delta y_{1,t-i} \\ \Delta y_{2,t-i} \end{bmatrix} + u_t$$
(8)

Equation (8) is equivalent to $\gamma_{12,i} = 0$ (i = 1, ..., p - 1) and the element in the upper right-hand corner of $\alpha\beta'$ is also zero. If r = 1, α and β are (2×1) vectors and $\alpha\beta' = \begin{bmatrix} \alpha_1 \\ \alpha_2 \end{bmatrix} \begin{bmatrix} \beta_1 & \beta_2 \end{bmatrix} = \begin{bmatrix} \alpha_1\beta_1 & \alpha_1\beta_2 \\ \alpha_2\beta_1 & \alpha_2\beta_2 \end{bmatrix}$. In this case, $\alpha_1\beta_2 = 0$ needs to be checked besides $\gamma_{12,i} = 0$ and there must be Granger-causality in at least one direction since α and β both have rank one (Lütkepohl, 2007, p. 146).

On the other hand, y_{2t} is said to be instantaneously causal for y_{1t} if knowing the value of y_{2t} in the forecast period helps to improve the forecasts of y_{1t} . More precisely, y_{2t} is said to be instantaneously non-causal for y_{1t} if

$$y_{1,t+1|\Omega_t} = y_{1,t+1|\Omega_t \cup y_{2,t+1}}$$
(9)

where Ω_t is the set of all the relevant information in the universe and \cup denotes union. y_{2t} is instantaneously causal for y_{1t} , if and only if u_{1t} and u_{2t} are correlated (Lütkepohl, 2007, p. 146).

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Table 1. Granger Gausanty Tests	Table 4.	Granger	Causal	lity	Tests
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Series: gdp_t^{tr} , $ftbul_t^{tr}$, $ftgre_t^{tr}$, $ftrom_t^{tr}$		Series: gdp_t^{tr} , $ftbul_t^{tr}$, $ftgre_t^{tr}$, $ftrom_t^{tr}$			
No. of Included Lags (Levels): 10		No. of Included Lags (Levels): 10			
H_0 : $ftbul_t^{tr}$, $ftgre_t^{tr}$ and $ftrom_t^{tr}$ do		${\cal H}_{_0}$: No instantaneous causality between			
not Granger-cause gdp_t^{tr}		$ftbul_t^{tr}, ftgre_t^{tr}, ftrom_t^{tr}, gdp_t^{tr}$			
Test Statistic	p-value- F	Test Statistic	p-value- χ		
3,54	0,00	16,17	0,00		
Optimal lag lengths of the model are determined by the AIC.					

In our empirical exercise tests for causality are based on the estimation of the VEC(10) model with the time series vector $y_t = (gdp_t^{tr}, ftbul_t^{tr}, ftgre_t^{tr}, ftrom_t^{tr})'$. Table 4 exposes that the two non-causality hypothesis can be rejected since the p-values of the tests are smaller than 0,05, both Granger-causal and instantaneous-causal relations among $ftbul_t^{tr}, ftgre_t^{tr}, ftrom_t^{tr}, gdp_t^{tr}$ is detected, revealing that increases in the foreign trade volume of Turkey with Bulgaria, Greece and Romania may lead to an expansion in the domestic real activity of Turkey, which in turn promote economic development.

Conclusion

Our findings reveal that making a regional trade agreement with Bulgaria, Greece and Romania may provide a strong competitive effect and increasing returns for Turkey. Besides, Turkey may benefit from spillover and feedback effects that may occur from a regional trade agreement with these countries. On the other hand, there may be limitations to signing the trade agreement among Bulgaria, Greece, Romania and Turkey since Greece is an existing member of the Euro area. However, there have been ongoing debates whether Greece should leave the Euro and return to the drachma. Thus, signing regional trade agreement with Bulgaria, Romania and Turkey may be an alternative to the Euro area and be advantageous for Greece. Since Greece has a relatively higher inflation rate than Bulgaria, Romania and Turkey; by signing a regional trade agreement, Greece may purchase goods from Bulgaria, Romania and Turkey at lower prices, which in turn have a positive impact on inflation. Furthermore, for overcoming the negative effects of the economic recession, Bulgaria, Greece and Romania may benefit from a possible regional trade agreement since increased competition may lead to the rationalization of production Is a Regional Trade Agreement with Balkan Countries Applicable for Turkey? A Time Series Analysis

and the removal of inefficient duplication of plants and may cause firms to cut prices and expand their sales.

References

Baldwin, R. E. & Venables, A. J. (1995). *Regional Economic Integration*. In: Handbook of International Economics, Vol. III (eds. G. Grossman & K. Rogoff), Chapter 31. Amsterdam: Elsevier.

Bhagwati, J. & Panagariya, A. (1996). *Preferential trading areas and multilateralismstrangers, friends or foes?* In: The economics of preferential trade agreements, (eds. J. Bhagwati, A. Panagariya), 1-78. Washington, D.C.: The AEI Press.

Bhagwati, J. (2004). In defense of globalization Oxford: Oxford University Press.

Boden, C. K. & Soltwedel, R. (2010). European economic integration in econometric modelling – concepts, measures and illustration. *Kiel Working Paper*, No. 1661, 1-24.

Cairncross, F. (1997). The death of distance: How the communications revolution will change our Lives. Boston: Harvard Business School Publ.

Chang, W. & Winters, L. A. (2002). How regional blocs affect excluded countries: The price effects of Mercosur. *American Economic Review*, 92, 889-904.

Frankel, J., Stein, E. & Wei, S. (1995). Trading blocs and the Americas: The natural, the unnatural and the Super-Natural. *Journal of Development Economics*, 47, 61-95.

Geldi, H. K. (2012). Trade effects of regional integration: A panel cointegration analysis. *Economic Modelling*, 29, 1566-1570.

Gould, D. M. (1998). Has NAFTA changed North American trade? *Federal Reserve Bank of Dallas Economic Review*, 12-23.

Granger, C. W. J. (1969). "Investigating causal relations by econometric models and cross-spectral methods". *Econometrica* 37, 424-438.

Hoon Oh, C. & Rugman, A. M. (2012). Regional integration and the international strategies of large european firms. *International Business Review*, 21, 493-507.

Gelengul Kocaslan, Oguzhan Ozcelebi, Suna Mugan Ertugral

Kemp, M. & Wan, H.Y. (1976). An elementary proposition concerning the formation of customs union. *Journal of International Economics*, 6, 95-97.

Krueger, A. O. (1999). The preliminary effects of NAFTA. *World Economy*, 23, 761-75.

Krugman, P. (1993). *Regionalism versus multilateralism: Analytical notes.* In: New Dimensions in Regional Integration (eds. De Melo, Jaime & A. Panagariya), 58-79. Cambridge: Cambridge University Press.

Lütkepohl, Helmut, (2007), *"Vector autoregressive and vector error correction models"* In: Applied time series econometrics, (eds. Lütkepohl, Helmut and Markus Kratzig) New York: Cambridge University Press.

Martin, R. L. (2004). *A study on the factors of regional competitiveness* A draft final report for the european commission directorate-general regional policy.

McMillan, J. (1993). *Does regional integration foster open trade? Economic theory and GATT's Article XXIV*. In: Regional integration and the global trading system (eds. K. Anderson & R. Blackhurst, 1-30. London: Harvester Wheatsheaf.

Meade, J.E. (1955). The theory of customs unions. Amsterdam: North-Holland.

Minniti, A. & Parello C. P. (2011). Trade integration and regional disparity in a model of scale-invariant growth. *Regional Science and Urban Economics*, 41, 20-31.

Montout, S. & Zitouna, H. (2005). Does north-south integration affect multinational firms' strategies? *Review of International Economics*, 13, 485-500.

Oman, Ch. (1996). The policy challenges of globalisation and regionalisation. OECD Policy Brief, No. 11.

Pantula, S.G. (1989). Testing for unit roots in time series data. *Econometric Theory*, 5, 256-271.

Robinson, S. & Thierfelder, K. (1998). Trade liberalization and regional integration: The search for large numbers. *TMD Discussion Paper*, No. 34, 1-21.

Schiff, M. (1996). Small is Beautiful: Preferential trade agreements and the impact of country size, market share, efficiency, and trade policy. *Policy Research Working Paper 1668.* International Trade Division, The World Bank. Washington, D.C.

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Schulze, G. G. & Ursprung, H.W. (1999). Globalisation of the economy and the nation state. *World Economy*, 22, 295-352.

Van Liemt, G. (1998). *Labour in the global economy: Challenges, adjustment and policy responses in the EU.* In: Globalisation of labour markets. Challenges, adjustment and policy responses in the EU (eds. Memedovic, Kuyvenhoven, Molle). London: Dordrecht.

Viner, J. (1950). *The customs union issue.* New York: Carnegie Endowment for International Peace.

ⁱ Greece is a member of the Euro area, however in the wake of the political and economic problems in Greece, there have been ongoing debates whether the country should leave the Euro and return to the drachma.

ⁱⁱ For the details of the test, see (Granger, 1969, pp. 424–438)

ⁱⁱⁱ GDP series are extracted from OECD's database, expressed as indices and seasonally adjusted with base year 2005 = 100.

^{iv} Foreign trade volumes are obtained from CBRT's database.

^v Accordingly, if a linear trend term is needed in the test for y_t , only a constant term should

be used for Δy_t 's test; if just a constant is necessary in the test for y_t , Δy_t 's test is carried out with no deterministic terms (Lütkepohl et al., 2007, pp. 54-55).
Measurement of the Competitiveness of Turkey: EU Countries, 1980-2010 Period Comparison

Mehmet Mercan

Faculty of Economics and Administrative Sciences Hakkari University Hakkari, Turkey *mercan48@gmail.com*

Abstract: Nowadays, in the new world order caused by economic globalization, technological and political changes in world economy result in changes in the competitiveness of the countries. Everyday, countries intensify their effort to gain, develop and protect their power to compete with other countries. Today, even the most developed countries are trying to strengthen their competitiveness in order to enlarge their share in the Turkey desires to increase its world economy. competitiveness in all sectors in order to raise the welfare level of its people and to speed up its economic growth. Turkey endeavors to increase its competitiveness against EU, who is one of the most important economic partners of Turkey, in all sectors. In this study, the period of 1980-2010 is used to measure the competitiveness of Turkey towards the EU countries and aims to achieve predictions for the future, and the watermark.

Keywords: Globalization, Competitiveness, International Trade, Turkey, EU.

JEL Classification: F12, F14, F15

Article History

Submitted: 10 August 2012 Resubmitted: 19 July 2013 Resubmitted: 02 August 2013 Resubmitted: 11 August 2013 Accepted: 27 August 2013

Introduction

The common objective for all the countries in the changing world order is to provide competition conditions and increase the prosperity. However, competition is a multidimensional fact. Competitiveness of the countries and companies is depended on various factors. The importance of competitiveness has increased after the rapid change and development with the globalization in every sense. Studies about competition and competitiveness in countries also have increased.

Since competition and competitiveness are handled by various discipline in various aspects, there is no a common definition or measurement technique. However, if we want to classify in general, there are two points of view in the measurement of compititiveness. The first one is the studies carried out in micro (business and industry) level. The second one is the macro (country) point of view. While the competition among businesses inside the country and the effects of this competition on national and international market is emphasized in micro level approach, the status of the country in international competition is emphasized in macro approach. Competitiveness means that while countries try to increase the incomes of their citizens under the conditions of free and established market, at the same time they can present their products and services to the international markets and become successful. The definition mostly attributed in macro approach is this one (Çivi et al., 2008).

We can put in order the three basic characteristics of competitiveness according to the study results like this: The first one is that the main objective of having competitivenessis to provide an increase the living standards in the country and the prosperity of the citizens. This prosperity increases can be provided by paying attention to the activities like investment and production, increasing the cooperation between all institutions and paving the way for specialization. The second one is that the country should focus on its specific features, abilities and potentials in order to catch the opponent countries in producing the products and services and distributing them. The third one is that numerous indicators are used to analyze the competitiveness of the country. For instance, international market share, trade balance of the country, production, employment, openness i.e. (Çivi et al., 2008).

The competitiveness of Turkey with 15 basic countries of EU between 1980 and 2010 periods was tried to be measured by the globalization index measuring the competitiveness. It was aimed to make predictions for the future according to the upcoming results.

This study consists of four sections. In the first section literature scaning was carried out. In the second section data set and method was presented and explained. In the third section there are analysis results. In the fourth section a general evaluation will be carried out and recommendations will be made.

Literature Review

Theoretical foundations of international competitiveness date back to the period of classical economics. There are several numbers of approaches such as the Theory of Competitive Advantage Approach, Double Diamond Approach, and Nine Factors Model Approach for international competitiveness. The issues such as the definition of international competitiveness concept, assessment, explaining the determiners for this concept and stating the economic relations of it ranges according to the chosen approach. So there is no generally accepted approach for international competitiveness (Kibritçioğlu, 1996:112). In theoretical context, there is no certain consensus about international competitiveness and the factors affecting it and also it is not possible to say that the explanations are complementory each other (Yapraklı, 2011).

The concept of international competitiveness is one of the significant facts of the globalization process. The concept of international competitiveness in literature is handled and tried to be defined in three different ways as in firm, sector and international level (Kesbiç and Ürüt, 2004: 56-59).

Neither there is a generally accepted approach for the definition of the concept of international competitiveness, nor there is an approach for assessment and determining the factors affecting it. In international economy literature, macroeconomical, microeconomical and commercial approaches are generally used in order to assess the competitiveness in international trade. Among these approaches, the commercial approach is based on the theory of international foreign trade and it searches the foreign trade performance of sector/country. As a part of commercial approach, international competitiveness can be calculated via the Revealed Comparative Advantage Index which was built up by Balassa in 1965 (Wziatek-Kubiak, 2003: 2-4). In order to assess international competitiveness many indices are also used in literature such as The Relative Export Advantage Index, The Relative Import Influence Index, The Relative Trade Advantage Index, Intra-industry Trade Index, Specialization in Export Index, Similarity in Export Index, Relative Competition Advantage Index, i.e. (Altay and Gürpınar, 2008: 262-267).

When we deal with the factors affecting the international competitiveness, many factors are used such as micro and macro economical, price and out of price, within

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firm and non-firm, structural, qualitative, social and political, i.e. In economy literature, many qualitative and quantitative factor affecting the competitiveness are handled, but price- oriented factors are usually emphasized for the ease of finding data and assessment. In other words, in the factors affecting the international competitiveness and its assessment issues there are versatile studies in economy literature. However, depending on the time, as a result that developing countries began to compete more than with developed countries, studies on the efficiency of the factors affecting the international competitiveness began to increase. In this sense, many economic variables were handled and labor cost, foreign exchange rate, market volume (GDP) and openness were mostly used variables.

So we can clasify the studies in four main titles (Yaprakli 2011: 377-379): First group studies searched the relationship between the labor costs and competitiveness. As a determiner for competitiveness labor cost is the contraversial field. Studies about the effect of the cost of labour on the international competitiveness was performed by Fagerberg (1988), Jorgenson and Kuroda (1991), Guerrieri and Meliciani (2005). As a result of these studies, it was found out that the high price level in the labor costs meant high productivity and qualified labour employment. This result is the indicator of the efficient source usage and productivity-cost advantage and it affects the international competitiveness positively. On the other hand, Agrawal (1995), Wang (2002), Omel and Varnik (2009) and Du Toit (2010) found out in their studies that high labor costs had a negative effect on the competitiveness. As a conclusion, we can not say that there is a certain consensus about the effect of labor cost on the international competitiveness.

The other variable used to measure the factors affecting the international competitiveness was intended for assessing the relationship between market volume and international competitiveness. The common view about this issue is that: Expansion of market volume increases the competitiveness. Studies about this issue was carried out by Fagerberg (1988), Kim and Marion (1997), Esterhuizen (2006), Mu and Zhang (2010) and Feinberg and Weymouth (2011). As a conclusion of these studies it was identified that Gross Domestic Products of the countries was a significant factor for international competitiveness. Also the expansion of market volume increases the international competitiveness by benefiting from scale economies and providing efficient source usage. However, it was found out that GDP was not enough to explain the international competitiveness in the studies on developed and developing countries by Cho, Moon and Kim (2008).

Another variable used to measure international competitiveness was foreign exchange rate. In the studies measuring the effect of foreign exchange rate on international competitiveness by Yoshitomi (1996), Zawalinska (2005) it was identified that the increase in the exchange rate affected the international competitiveness positively. However, in the studies by Safin and Rajtar (1997), Du Toit (2010) it was identified that the increase in the exchange rate affected the international competitiveness negatively. As a result, it is necessary to present the certain effect of the foreign exchange rates about increasing or decreasing the competitiveness. If the positive effect's is bigger than the negative effect, the increase in foreign exchange rates affects the competitiveness positively; if the negative effect's is bigger than the positive effect, it affects the international competitiveness negatively.

Also in some studies measuring the international competitiveness openness was used. Openness degreee of a country is usually measured by the proportion of its GDP to its foreign trade volume (export+import) (Kazgan, 1988: 116). In the studies by Fagerberg (1988), Feinberg and Weymouth (2011) and Egbetokun (2011), it was found out that there was a positive effect between openness and international competitiveness. This result was obtained by the country's becoming more competitive due to the reasons such as efficient resource distribution, production increase and technology transfer while the openness degree increased.

Globalization Index in our study is based on Çoban and Çoban (2004: 167). The method used in the Çoban and Çoban's (2004) study, based on Human Development Index of United Nations Development Plan (UNDP). In the study by Çoban and Çoban (2004), competitiveness of Turkey and European Countries between 1970 and 2001 periods was analyzed by GI (Globalization Index) developed by A.T. Kearney Consulting Company. Even when country experiences took into consideration, it was found in the study that competitiveness of Turkey increased remarkably and accession to the EU would affect this process positively.

Data Set and Methodology

In this study a comperative competitiveness of Turkey with EU countries between 1980 and 2010 periods was to be expressed with the help of GI (export + import / GDP), globalization index in goods and services. The data set in the analyses which was consisted of total export, total import, foreign direct investments, population, the number of incoming and outgoing tourists to the country, domestic loan volume, the number of internet users and GDP series in terms of countries was collected from the World Bank database (World Bank, 2012).

The issues such as economic integration, political links, technology and personal communication which are considered to be a factor for the globalization can be expressed parametrically with the help of globalization index called shortly as KFP

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and used to measure the international competitiveness of the countries (Çoban and Çoban, 2004). With the use of globalization index the issues such as international affairs and policies, commercial and financial movements, human mobility, thougts and international data flow can also be embodied. So competitiveness can be explained more significantly (A.T. Kearney, 2001).

Globalization Index is originally based on the HDI (Human Development Index) developed by UNDP (United Nations Development Programme). At first step the variables to be used in the index are identified and then quantitative measurements of the variables involved are carried out. The obtained quantitative valuesafter these two steps are normalized to clear the problems which can be seen in various variables identified with different modules. For example, before normalizing the two variables such as avarage life span (year) and GDP in human development index, the second one approaches nearly one hundred times of the first one. At last, the aggravated sum of normalized variables which gives a numerical result for each country is checked out.

In the globalization index consisting of 11 variablesⁱ the weights of variables used in index calculations are drown up in Table-1 (Lockwood, 2001: 5).

Category	Variable Name	Variable Definition	Weights
Globalization in	Commerce	(Export +Import)/GDP	1
Goods and Services	Convergence	GDP according to Nominal GDP/PPP*	1
Financial	Income	(Loans + Depths)/GDP	1
Globalization	Foreign Direct Investments (FDI)	(Incoming FDI + Outgoing FDI)/GDP	2
	Portfolio Invetments (PI)	(Incoming PI + Outgoing PI) / GDP	2
Globalization in Personal	Tourism	(Incoming Tourists Number + Outgoing Tourist Number) / Total Population	1
Communications	Telephone	International Phone Call to and for per Individuals (Minute)	2
	Transfer payments	(Loans + Depths)/GDP	1
Internet	İnternet Users	Internet Users/ Total Population	2/3
(Personal Connections)	İnternet Sites	Number of Servers for Each One Million People	2/3
	Security Servers	Number of Security Servers for each one million people	2/3

Table 1. The Variables in Globalization Index

*PPP: Purchasing Power Parity

When Table 1 is observed, we can see that globalization index was calculated by considering four categories as globalization in goods and services, financial globalization, globalization in personal communication and internet connection. The degree of economic integration is calculated by combining the data about international trade, foreign direct investments and capital flows, wages for foreign workers and workers exchange rates in globalization index. Also the index embodies the international technological communication by regarding the number of internet users, internet sites and security servers.

Analysis Results

Competitiveness of Turkey with EU countries was comperatively analyzed by means of globalization index developed by A.T.Kearney Consulting Company in this study.

Index values calculated by us and given in Appendix-1 were also displayed in Table 2, Figure 1 and Figure 2 with a summary like approach reflecting the globalization trend in terms of competitiveness.

There are periodical avarages of globalization values of the countries between 1980-2000 and 2001-2010 periods in Figure 1 indicating the development of globalization index in terms of periods.

Rank	nk Countries 1980-2000 Term		Countries 2001-2010 Term		Change (%)	
1	Denmark	6.799	Denmark	16.59	Denmark	143.9
2	Sweden	6.218	Sweden	14.18	Portugal	139.1
3	Luxembourg	4.639	Ireland	7.566	Turkey	130.8
4	EU	3.929	Austria	7.132	Sweden	128.1
5	Belgium	3.467	Luxembourg	7.033	Ireland	119.1
6	Netherlands	3.462	EU	6.885	Austria	106.2
7	Austria	3.458	Netherlands	6.096	Greece	101.3
8	Ireland	3.452	Belgium	5.381	Spain	98.54
9	Germany	2.870	Portugal	4.982	United Kingdom	97.79
10	France	2.772	Finland	4.972	Finland	86.17
11	Finland	2.670	United Kingdom	4.844	Netherlands	76.09
12	United Kingdom	2.449	Germany	4.678	EU	75.21
13	Spain	2.344	Spain	4.655	Italy	72.17
14	Italy	2.286	France	4.558	France	64.37
15	Portugal	2.083	Italy	3.935	Germany	62.96
16	Greece	1.922	Greece	3.872	Belgium	55.21
17	Turkey	1.014	Turkey	2.342	Luxembourg	51.59

Table 2. Development of Globalization Index and Change in Terms of Periods

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As we can see Table 2 and Figure 1, Denmark is in the first in both periods in EU countries. Sweden is the second in both periods, too. Considering the periods of 1980 and 2000 Luxemburg, Belgium and Holland follow Denmark and Sweden in turn. When considering the periods of 2001 and 2010 Ireland, Austria, Luxemburg and Holland follow Denmark and Sweden in turn. Another remarkable point in Table 2, 12 countries in 1980-2000 terms and 10 countries in 2001-2010 term remained below the EU avarage. In the studies by Çoban and Çoban (2004); Austria holds its fourth place in both of the periods between 1970-1985 and 1986-2001. According to the periods of 1970 and 1985 Denmark, Sweden, Finland, Germany, England, Greece and Italy receded for a row in the period of 1986 and 2001. The ninth country of the period between 1970 and 1985 France climbed up to tenth place. The twelfth country of the period of 1970 and 2085 France climbed up to tenth place in the periods of 1970 and 2085 France climbed up to tenth place in the periods of 1970 and 2085 France climbed up to tenth place in the periods of 1986 and 2001.



Figure 1. Development of Globalization Index in Terms of Periods

In the studies by Çoban and Çoban (2004) again, we can see that Denmark is again the first in the periods of 1970 and 2001. Ireland, Holland, Austria and Denmark followed this country in turn. In the periods involved the countries having important roles in EU such as Germany, England, France and Italy were quitely in back rows. Also when the avarages are taken into consideration, EU countries avarages are 3.55 in the periods of 1970 and 1985; 4.23 in the periods of 1986 and 2001 and 3.89 in the periods of 1970 and 2001.Turkey, which is in the developing countries category and the arguments about EU membership has increased recently, was in the last

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place in all three periods. However, when the figure in Appendix-2 is observed, we can see an increase trend in globalization index of Turkey since 1996 when Customs Union happened. This means that accession of Customs Union affected the competitiveness of Turkey positively.

The changing of index values indicated on Figure 1 in terms of periods are as in Figure 2.



Figure 2. Change of Index Values In Terms of Periods (%)

According to Figure 2 the changing rate avarages of the periods of 1980-2000 and 2001-2010 is 0.75 in EU countries and this means that globalization index of EU countries increased in the rate of 75 % in the periods involved.

When the change in terms of periods in globalization index for Turkey is observed, it was found remarkable increases. The involved change rate was 1.31 between 1980-2000 and 2001-2010 periods. This means that globalization index of Turkey has increased in the rate of 131% from 1980 to 2010. These increase rates are above the avarages of both EU and EU countries (exclude Denmark and Portugal) and they indicate that competitiveness of Turkey has remarkable increased in time.

Results and Policy Implications

Competativeness of Turkey with EU countries was comperatively analyzed by means of globalization index developed by A.T. Kearney Consulting Company in this study as the periods of 1980 and 2010 are considered.

Periodical avarages of index values in the period of 1980-2000 and 2001-2010 are taken by the globalization index. As a result, it is observed that Denmark is the first country in both periods. Sweden is the second in both periods, too. Considering the periods of 1980 and 2000 Luxemburg, Holland and Belgium follow Denmark and Sweden in turn.

Turkey, which is in the developing countries category and the arguments about EU membership has increased recently, was in the last place in all three periods. However, when the figure in Appendix-2 is observed, we can see an increase trend in globalization index of Turkey since 1996 when Customs Union happened. This means that accession of Customs Union affected the competitiveness of Turkey positively.

When we observe the changing rate avarages of the periods of 1980-2000 and 2001-2010 is 0.99 in EU countries and this means that globalization index of EU countries increased in the rate of 99 % in the periods involved.

When the change in terms of periods in globalization index for Turkey is observed, it was found remarkable increases. The involved change rate was 1.72 between 1980-2000 and 2001-2010 periods. This means that globalization index of Turkey has increased in the rate of 172 % from 1980 to 2010. These increase rates are above the avarages of both EU and EU countries and they indicate that competitiveness of Turkey has remarkable increased in time.

Çoban and Çoban's (2004) studies contains the periods of 1970 and 2001 and our study contains the periods of 1980 and 2010. When Çoban and Çoban's (2004) study and ours are evaluated together, it can be said that competitiveness of Turkey has remarkably increased in the periods used in the analysis and the accession in EU would affect this process positively as the experiences of the countries considered.

According to the results of both studies, we can say that Turkey which has a young and active population is in a good position in terms of international competitiveness and follow right policies in its foreign trade and it increases its competitiveness every year. The only recommendation can be focusing on the production and export of the capital-intensive products and products with high foreign trade incomes in the increasing competitiveness.

References

Agrawal, N. (1995). Indonesia: Labor Market Policies and International Competitiveness, *Policy Research Working Paper*, W. P. No: 1515, 1-39.

Altay, B. & Gürpınar, K. (2008). Revealed Comperative Advantages and Some Competitiveness Indices: A Practice on Turkish Furniture Industry, Afyon Kocatepe University, *İ.İ.B.F. Dergisi*, X(5), 257-274.

Cho, D. S., Moon, H. C. & Kim, M. Y. (2008). Characterizing International Competitiveness in International Business Research: A MASI Aapproac toNational Competitiveness, *Research in International Business and Finance*, 22, 175-192.

Çivi, E., Erol, İ., İnanlı, T. & Erol, E. D. (2008). Uluslararası Rekabet Gücüne Farklı Bakışlar, *Ekonomik ve Sosyal Araştırmalar Dergisi*, 4(1), 1-22.

Çoban, O. & Çoban, S. (2004). The Measurement of Competitivenessof Turkey by Globalization Index: A Comparison with EU Countries, 1970-2001, *Kırgızistan-Türkiye Manas University Social Sciences Journal*, 10, 163-174.

Du Toit, J. P. (2010). Factors Influencing The Long-Term Competitiveness of Selected Commercial Milk Producers in East Griqualand, South Africa, *Unpublished PhD Thesis*, University of KwaZulu-Natal, Pietermaritzburg.

Egbetokun, A. A. (2011). The Outcomes and the Drivers: Exploring how Openness Influences Innovation in Developing Countries. Retrieved July 20, 2012, from http://final.dimeeu.org/ files/Egbetokun_E6.pdf.

Esterhuizen, D. (2006). An Inquiry into the Competitiveness of the South AfricanAgribusiness Sector, *Unpublished PhD Thesis*, University of Pretoria, South Africa.

Fagerberg, J. (1988). International Competitiveness, *The Economic Journal*, 98(391), 355-374.

Feinberg, R. & Weymouth, S. (2011).National Competitiveness in Comparative Perspective: Evidence from Latin America. Retrieved July 20, 2012, from http://faculty.msb.edu/sw439/ documents/Competitiveness_RFSW.pdf.

Guerrieri, P. & Meliciani, V. (2005). Technology and International Competitiveness: The Interdependence between Manufacturing and Producer Services, *Structural Change and Economic Dynamics*, 16(4), 489-502

Jorgenson, D. W. & Kuroda, M. (1991), Productivity and International Competitiveness in Japan and the United States, 1960-1985, *NBER Discussion Papers*, W.P.No: 8442, 29-57.

Kazgan, G (1988). Openness Growth in Economy, 2. Press, Altın Kitaplar, İstanbul.

Kearney A. T. / Foreign Policy Globalization Index (2001). Foreign Policy, Washington, D.C., *Carnegie Endowment for International* Peace. Retrieved Sept. 3, 2003, from http://www.atkearney.com.

Kesbiç C. Y. & Ürüt S. (2004). Rekabet Gücü ve Global Rekabette Türkiye'nin Yeri, *Finans-Politik&Ekonomik Yorumlar Dergisi*, 483.

Kibritçioğlu A. (1996). A Conceptual Approach to International Competitiveness, MPM, *Productivity Journal*, 96(3), 109-122.

Kim, D. & Marion, B. (1997). Domestic Market Structure and Performance in Global Markets: Theory and Empir ical Evidence from US Food ManufacturingIndustry, *Review of International Organization*, 12, 335-354.

Lockwood, B. (2001). How Robust is The Foreign Policy/Kearney Index of Globalization?, Center for the Study of Globalization and Regionalisation (CSGR) *Working Papers* University of Warwick, WP No: 79/01.

Mu, Q. & Zhang, S. (2010). Factor Analysis of International Competitiveness of the Iron and Steel Industry in China, *The Sixteenth Annual International Sustainable Development Research Coference*, 30 May-1 June 2010, Hong Kong. Retrieved Sept. 16, 2012, from http://www.kadinst.hku.hk/ sdconf10/Papers_PDF/p163.pdf.

Omel, R. & Varnik, R. (2009). International Competitiveness of Estonian Cereal Production, *Economic Science for Rural Development*, 20, 140-146.

Safin, M. & Rajtar, J. (1997). Recent Comparative Advantages of Polish Agri-food Products: Results of the DRC Computer Spreadsheet Analysis, In: Tangermann S.et al. (der.), Analysis of Polish Agriculture and Food Economy's Competitiveness and Complementarity in Regard to EEC/EU over the TimeSpan 1990-1995 and the Forecast until 2002, GFA, Kompak, Fapa: Warsaw, 1-20.

Yapraklı, S. (2011). Makroeconomic Factors Affecting International Competitiveness: A Practice on Turkish Production Industry, *Selçuk University İİBF Social ve Economic Researces Journal*, 16(2), 373-403.

Yoshitomi, M. (1996). On The Changing International Competitiveness of Japanese Manufacturing Since 1985, *Oxford Review of Economic Policy*, 12(3), 61-73.

Wang, R. Z. (2002). Determinants of International Competitiveness-An Empirical Study of The Progress, Difficulties, Models, *Statistical Research*, No.4, 20-24.

WorldBank (2013). Retrieved Jan. 1, 2012, from www.worldbank.org

Wziatek-Kubiak, A. (2003). Critical Synthesis, Review of the Main Findings, Methodologies and Current Thought on Competitiveness of Accession Countries. Mapping of Competence, *Center for Socail and Economic Research*. Retrieved Aug. 30, 2012, from http://www.case.com.pl.

Zawalińska, K. (2005). Changes in Competititiveness of Farm Sector in Candidate Countries Prior to The EU Accession: The Case of Poland. Retrieved July 15, 2012, from http://ageconsearch.umn.edu/ bitstream/24520/1/cp05za01.pdf

ⁱ Vide infra for the involved variables: http://www.atkearney.com (03.09.2003).

Social Innovation in the Public Sector: The Case of Seoul **Metropolitan Government**

Lauren O'Byrne

lobyrne@knights.ucf.edu

Michael Miller mike.miller@knights.ucf.edu

Ciara Douse ciara.douse.ucf@knights.ucf.edu

RupaVenkatesh rupa.venkatesh@knights.ucf.edu

Naim Kapucu

School of Public Administration University of Central Florida Orlando, FL 32816 USA kapucu@ucf.edu

Abstract: Innovation is being utilized as an important governance Keywords: Social tool for improving government functions. The purpose of this research Innovation, Sustainable is to identify social innovation programs and initiatives in Seoul, Innovation, Seoul South Korea, through a review of literature on social innovation and Metropolitan a case study of the Seoul Metropolitan Government (SMG). This research suggests that the SMG fosters social innovation through a variety of metropolitan examples and such innovation projects help to partnership sustain metropolitan governance and develop opportunities and collaboratives. This study contributes to the literature on social innovation in the public sector by looking at the motivations for innovation, the culture to facilitate innovation, collaboration as a tool for innovation, and finally how to sustain innovation. The study also emphasizes how collaboration with the civil society and the private sector helps to promote social innovation through creativity, leadership and sustainability. Other metropolitan governments can benefit from exploring the social innovations presented in this study because the examples demonstrate a way for government to become more effective and efficient by using innovation as a tool for governance.

Government, Partnerships for Innovation

JEL Classification: H10Article History Submitted: 16 January 2013 Resubmitted: 08 February 2013 Accepted: 25 March 2013

Lauren O'Byrne, Michael Miller, Ciara Douse, Rupa Venkatesh, Naim Kapucu

Introduction

The concept of innovation is not new to government. Although scholars only began focusing on innovation in the public sector within the past decade (Bartlett and Dibben, 2002; Borins, 2002; Fernandez and Rainey, 2006; Gonzalez and Healey, 2005), innovative ideas in the public sector have permeated public administration's history, from the New Public Management movement of the early 1980's to the New Public Service movement (Denhardt and Denhardt, 2000). Innovation is important and an essential tool for improving public services (Albury, 2005). This study focuses on social innovation in the public sector through a case study of the Seoul Metropolitan Government (SMG), South Korea. Social innovation in this study is defined as the successful implementation of activities, such as ideas, practices, or objects, through new collaborations and partnerships, in ways that positively impact society by improving the delivery of public services. Social innovation in the public sector incorporates a new framework that allows for collaboration not only with other public organizations but also with its citizens (Baxter et al., 2010).

The importance of social innovation is something that should be taken advantage of in democratic nations. The opportunities that collaborations and partnerships create to share each other's resources are significant in many governments that are burdened by severe budget deficits among other resource constraints. With a lack of new revenue streams, pooling each other's assets, including human and social capital, is critical. The research looks at what is meant by social innovation in the public sector and provide examples from SMG. The purpose of the study is to identify examples of social innovation in SMG, and consider how collaborative strategies with the civil society and the private sector may promote social innovation through creativity, leadership, and sustainability. Also, factors for innovation will be examined and suggested, as well as barriers that may cause threats to discovering innovative strategies for SMG.

Technology is considered a viable resource for innovation in the public sector (Borins, 2002). Over 50% of Seoul's citizens utilize the Internet (Holzer and Kim, 2002) and innovative technology will continue to advance Seoul's civil society and public sector performance. In fact, Seoul has recognized that government service is being rapidly changed by advances in technology and has already initiated social innovation programs pertaining to technology (Kim, 2009). This study focuses on identifying a variety of social innovation strategies designed to transform public services in South Korea, as well as reviewing results of these services (Calista et al., 2010).

To get a full understanding of SMG's innovative strategies, the following research questions were examined as part of the study: What is the recent economic and political context for the social innovation of SMG, at the national and metropolitan levels, and in terms of globalization of urban competitiveness? What are the benefits of social innovation? What is the significance of creativity (including technological innovation, entrepreneurship, and artistic/cultural forms) for urban governance, competitiveness, and development? How are social innovation programs sustained over time? What are the motivations behind social innovation in SMG? How will Seoul's citizens benefit from the innovative programs? Why should the public sector collaborate with the nonprofit and private sectors to help in social innovation?

Literature suggests that there are some governance factors that may influence the promotion of social innovation, such as leadership, partnerships/empowerment, diffusion of innovation, culture of innovation, sustainability, resources for innovation, champions of innovation and successful implementation (Abramson and Littman, 2002; Bartlett and Dibben, 2002; Borins, 2002). This study contributes to the literature on social innovation in the public sector by looking at the motivations for innovation, the culture to facilitate innovation, collaboration as a tool for innovation, and finally how to sustain innovation. Lessons learned in this study can be used in other metropolitan settings in other regions of the world.

Literature Review and Background

Ample literature of the past decade has given a renewed focused on innovation in the public sector (Bartlett and Dibben, 2002; Borins, 2002; Fernandez and Rainey, 2006; Goldsmith, 2010; Gonzalez and Healey, 2005). This section begins with discussing the motivations for innovation in the public sector, specifically addressing SMG, South Korea. Following is a section addressing the need for a culture of innovation, including how to foster innovation and what the barriers to innovation may be. Next is a section on collaboration, and includes the importance of collaboration with a focus on public-private collaborations in SMG, South Korea. Finally, sustaining innovation is addressed, and will include policies and procedures for innovation as well as funding for research and innovation.

Innovation is a deliberate act spurred by public interest and put into action by the public sector, the private sector, and non-profit organizations. The concepts of social innovation have been implemented in numerous countries around the world and continue to evolve over the years (Goldenberg et al., 2009). When considering innovation, the idea can be applied across industries and has recently been embraced by the public and private sector alike (Lichenthaler, 2011). The idea of innovation

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involves the use of "purposive inflows and outflows of knowledge to accelerate internal innovation, and expand the markets for external use of innovation, respectively" (Lichenthaler, 2011, p. 76). Research conducted on the impact of innovation in industry has highlighted the importance of innovation and strengthened awareness (Lichenthaler, 2011).

Motivations for Innovation

As private sector companies strive to increase profits in the face of mounting challenges, they have turned to innovation as a means to confront the challenges and attain a positive outcome (Hippel, 1988). For example, the multi-billion dollar company Proctor and Gamble was able to utilize innovation to implement a new design effort for potato chips. When the initial new design effort was being considered, the costs and timeframe to implement the new design were high, so the company utilized innovation, Proctor and Gamble was able to partner with another company to implement the new design and eventually made their North American Pringle's business record double-digit growth within two years. The strategies pertaining to open innovation as utilized by Proctor and Gamble have resulted in billions of dollars in revenue (Hudson and Sakkab, 2006).

The growth of social innovation has resulted in the concept being considered a legitimate public policy affecting public policy on social and economic issues. Social innovation is embraced by the United States government and the Canadian government to address emerging social challenges (Goldenberg et al., 2009). While the idea of social innovation sounds progressive, there are facts behind the motivations of government to actually consider, plan, and implement a social innovation program. The successes in other countries and the obstacles encountered may help shape motivational forces involved with implementing social innovation in Seoul, South Korea.

As governments throughout the world have initiated major reforms due to the call for reductions in the work force, reduction of state influence through organization, and the reform of public enterprises, Seoul has followed along the same path. This path came to light after the 1997 economic crisis in Korea, which resulted in leaving the governments within Korea to deal with severe financial burden. The reforms in Korea have been primarily aimed at addressing main weaknesses of the Korean government including centralization, lack of transparency, rigidity and low competitiveness. Korean President Dae Jung Kim set the following objectives for carrying out their restructuring program: build a small but efficient government, Social Innovation in the Public Sector: The Case of Seoul Metropolitan Government

create a highly competitive government, and create a customer-oriented government (Kim, 2000).

Culture of Innovation

Innovation is not an option for governments today that in the current economy have been forced to downsize, privatize, reengineer, and improve customer service (Kim, 2000). This means that adapting to a culture of innovation is essential. The degree to which organizations function and have the ability to reform is vastly dependent upon the organization's culture (Raadschelders, 2009). Research has identified several different organizational functions that may foster innovation, as well as functions that may serve as barriers to innovation.

Organizational aspects like leadership, openness, trust, and access foster a culture of innovation (Ahmed, 1998). Leadership paradoxically requires flexibility, empowerment, control, and efficiency (Khazanchi et al., 2007), making it difficult to establish the boundaries of a good innovative culture. Through empowerment, however, managers can help their subordinates develop new skills, foster trust, and reduce potential resistance to innovation (Khazanchi et al., 2007).

Other factors of organizational and societal cultures may also foster innovation. Cultures that have champions for innovation may sometimes have a culture that encourages innovation. One study, however, found that there might be some type of interactions among the type of champion and specific cultural factors (Bartlett and Dibben, 2002). For example, Bartlett and Dibben (2002) found that "a champion working without a sponsor and doing so in a culture which focuses more on creativity than implementation is less likely to see innovations through to successful implementation" (p. 114). Champions may work with different organizational areas, such as promoting e-government. In fact, the ability of an organization to develop IT capacity, including IT resources, financial resources, and e-government resource knowledge has been shown to support e-government innovation (Kim, 2009).

One of the strongest indications of innovations is the availability of resources (Kim, 2009). Both the organizational culture and the culture of SMG that has resources at its disposal may be more apt to embracing attitudes of innovation. The culture that is most accepting of innovation is one that adopts the attitude of "we can innovate" rather than "we do not have the means to innovate." This idea can be seen in Bartlett and Dibben's (2002) literature on the ideas of including a champion and sponsor as a means to public entrepreneurship.

There are instances in which organizations or certain organizational cultures may limit the opportunity for innovation. These barriers to social innovation include short term budgets and planning, poor risk/change management skills, few rewards or incentives to innovate, technologies constraining organizational arrangements, overly relying on certain sources of innovation, reluctance to close failing programs, culture of risk aversion, and pressures and administrative burdens (Albury, 2005).

Some research has identified ways to combat these barriers. A culture that is open to new ideas, allows and empowers communities, citizens, and staff, and fosters learning can increase the likelihood of having a culture of innovation. In addition, organizations that are forward looking and proactive, and try to enable risk taking may also increase the likelihood of an innovative culture. Other ways to combat barriers include good management practices, clear communication, sound implementation processes, clear drivers, strong incentives, and the involvement of the private and/or nonprofit sector through collaborations (Baxter et al., 2010).

Collaboration for Innovation

Partnerships are used in the public sector to enhance their administration as well as create good governance. Forming successful partnerships is considered a characteristic of good governance. Before collaborations encompassed South Korea's public sector, SMG made a difficult but needed transition from centralization to decentralization in the mid 1980's. After this hurdle was crossed, plans to partner with nonprofit organizations were SMG's next movement (Holzer and Kim, 2002).

Collaboration in South Korea enables their public sector to foster other organizations' innovative ideas and apply it to their own administration (Baxter, 2012). Seoul Metropolitan Government's goals are to increase public engagement by partnering with NGOs and NPOs, and maximize networks with public and private partnerships to improve Seoul's environment. This study will look at innovative examples of how Seoul developed successful partnerships with nonprofit organizations as well as other private and public organizations.

Civic engagement is a prominent influence of South Korea values. SMG are continually searching for new ways to educate citizens and increase their participation. One of their methods of doing so is collaborating with NGOs, NPO, and public-interest organizations to develop new ways engage citizens. Studies suggest that NGO's and NPOs address more prevalent issues, such social support for the poor, than government agencies (Lowry, 2008). In fact, civil society organizations seem to steer public servants in the right direction when it comes to participation. For example, when the democratic evolution began in the mid 1980's,

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effective public interest groups were formed by the younger generation to close the gap between citizens' uncertainty in participation and education. Their mission was to empower citizens to participate in public debate and decision-making, defend human rights, and protect public use (Kim, 2011).

SMG has taken the initiative of maximizing private and commercial partnerships to provide a safer environment for citizens. Since Seoul's population has increased vastly over the years, their environmental needs continue to affect citizens' quality of life (Cohen, 2009). The challenges of urban renewal developments were reasons SMG formed public and private partnerships to ameliorate Seoul's environment. For example, to restore Seoul's attractiveness, SMG collaborated with Fraunhofer, Europe's largest research and development institute, to discover the Cheonggyecheon Restoration project. During the First World War, Cheonggyecheon's area functioned as a sewer waste for local neighborhoods. Soon enough, the roads in the Cheonggyecheon roads were covered by rivers, which damaged small businesses in surrounding areas and housing units for the lower class. However, in 2002, SMG decided to restore the Cheonggyecheon area by dismantling the roads and recovering what was lost. Overall, partnering with Fraunhofer's researchers was an effective project that both SMG and citizens can benefit from.

Lastly, forming collaborations with public organizations is another example used for innovation. Consider the housing concerns for lower class citizens in South Korea. SMG formed joint development projects with public organizations to assist in developing concrete ideas that may advance housing opportunities for the lower class. In the late 1980s', five year housing plans were created in urban areas to make up for the massive housing destructions for the less fortunate. In 1983, South Korea adopted the innovative idea of launching joint-development plans for lower and middle class citizens. For instance, SMG developed housing renewal projects for various income groups through collaboration with homeowners' associations and construction companies. Popular construction companies handled housing expenses and homeowners were responsible for the area developments (Ha, 2003). In order for SMG to remain effective in building successful collaborations, sustainable concepts must be addressed.

Sustainability of Innovation in Public Sector

The concept of sustainability relies on the policies to be able to sustain its positive benefits over a long period of time without burdening future generations. In order for the public sector to successfully implement innovative policies, it must have policies in place that can allow for such innovation to take place for those areas. If social innovation is not supplemented by policies that allow for its continued successes, then its citizens will only enjoy its benefits in the short term rather than the long term. Currently, scientific research is geared towards traditional areas such as science and technology but fail to recognize the need for supportive policies in social areas such as education, health, and social welfare (Baxter et al., 2010).

These areas also require funding sources to be readily available. However, the recent economy does not allow the government this luxury. This is where collaborating with the private and nonprofit sectors would benefit the public sector in making up the differences in terms of monetary resources by joining together the power of the public sector's human capital. Healthy Outlook is an example of the partnership between the public and private sectors in order to realize a common goal of mitigating the health risks of the chronically ill. By joining forces with the already existing data sets of the public sector with the existing skills of the private firm, Medixine, this goal was met (Baxter et al., 2010). Solutions to complicated social issues involve an integrated approach, which involves more collaboration between policy areas. Again, this includes the public sector working with the private sector who can supply the revenue sources or already existing technologies that the public sector to sustain innovation over a greater period of time.

Governance capacity is the ability to build relationships with different sectors within government and nontraditional partners in order to work more effectively towards a common goal. Effective governance capacity is necessary in order to build long lasting relationships to ensure that innovative practices are continued. In addition, mutual understanding of what each party's responsibilities is important as well. The most sustainable way is to formally create rules that define the roles. The Ouseburn Trust in Great Britain is an example of the government opening the opportunity for the public, specifically to "change agendas and practices such as the decisions over planning permission in the valley" (Gonzalez and Healy, 2005, p. 2062). It does this by allowing the trust to sit on the Advisory Committee that makes these decisions, equaling its members to the number of elected city officials. Though the Trust's powers are limited, it does allow the opportunity for the government to encourage new ideas from a sector of society that traditionally does not have a direct role in making decisions. It is also the recognition that government may not have all the answers and should build its capacity of finding all possibilities to a solution.

Public participation is another important tool for social innovation that can lead to sustainability. Citizens are more likely to be involved in their government if they feel they can have a direct impact on its creation, especially in terms of policy. The fostering of this sense of responsibility and pride can lead to societal stability as civil unrest decreases. Porto Alegre, Brazil institutionalized participatory budgeting after the poor districts revolted against the government for being underrepresented. After allowing these districts to be involved in the allocation of monetary resources, renovations in public schools and roads were underway in the poor districts as this was ranked as top priorities (Novy and Leubolt, 2005). The idea that citizens are allowed to have a direct say in resource allocation so that government is meeting the needs of those that are traditionally underrepresented is a huge step in creating trust between civil society and government.

Rather than exploring the adoption of social innovation in governance as a whole, this study seeks to utilize different dimensions that have been shown through the literature to enhance innovations in focusing on why the SMG is seen as an innovative government. Each dimension discussed, obtaining motivations for innovation, adopting a culture of innovation, collaborating to innovate, and working to sustain innovation may lead to the outcome of sustainable social innovation is seen in Figure 1, the conceptual framework to this study. The conceptual framework is based on previously literature, suggesting what leads to increased social innovation. Based on the conceptual framework, the research explores how and why SMG innovates and works to sustain innovation in their government structure.



Figure 1. Conceptual Framework for Social Innovation

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Context of the Study

The South Korean government is a republic with shared powers among the president, legislature, and courts, and has three different branches of government: the executive, judicial, and legislative. The economy has seen a fairly remarkable growth in the past decades. In 2010, the GDP was approximately \$1.459 trillion. In addition, South Korea oversees around \$270 billion in annual expenditures. This growth has helped the country move past the Korean War and into the Organization for Cooperation and Development (OECD). Now, South Korea is the seventh largest trading partner to the United States and holds the 15th largest economy in the world. South Korea is known for electronics manufacturing, telecommunications, automobile productions, chemicals, shipbuilding, steel, and overall innovations.

South Korea has nine provinces, seven of which are administratively separate cities. As the capital, Seoul is the largest city with around 10.5 million people. Seoul makes up the SMG, and is known to have several innovative urban governance strategies, such as their bus system (Kim and Dickey, 2005). The bus system reform of 2004 serves as only one example that researchers in this study draw their conclusions on for SMG's social innovations. Other examples include: SMART Seoul, Han River, Seoul International Business Advisory Council, the 2013 pilot project, and the SIBAC meeting.

Like the US, the Korean administrative values are typically viewed as Weberian and bureaucratic top-down systems (Raadschelders, 2009). The Korean government has followed the traditions of NPM and been faced with demands for the government to operate more like a business (Kim, 2000). An example of this may be often seen in the negative public opinion of bureaucracy and civil servants, which stands out over good public service (Goodsell, 2004). The negative public opinion of these views, though administration has progressed over the years, may limit the culture and opportunity for innovation among public organizations. Korean and US governments alike must find ways to improve public opinion in order to create an increased culture of innovation. One way that has been shown to create public value is to develop ways to put together resources to support e-government development strategies (Kim, 2009).

Method

A literature review was conducted using scholarly books and journal articles, and materials obtained from the SMG field study, including briefings, field visits, focus groups, and interviews with members of SMG. The field visit afforded researchers first-hand experience communicating and interacting with government members,

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and includes SMG discussions on innovations that are a valuable part of this research. Specifically, the key issues addressed in the literature review were studied throughout the fieldwork of lectures, site visits, observations, and interactions and interviews with key SMG officials. Keywords used in the literature review search included: social innovation, metropolitan governance, sustainable innovation, Seoul metropolitan government, leadership, and partnership for innovation.

Results and Discussions

Based on a field visit to the SMG, researchers have explored data collected on SMG from researchers, policy makers, and government staff through information sessions, as well as first hand conversations with these individuals, and through field visits throughout Seoul. Findings indicate several instances of social innovation throughout the SMG, which are discussed in four sections below: motivation, culture, collaboration, and sustainability. Examples seen in the field study of how Seoul is socially innovative are presented in Table 1 and discussed in the following sections.

Seoul Innovations	Descriptions		
SIBAC Meeting	Culture of leadership		
2013 pilot project	Culture of creativity and increased citizen participation		
Han River	Governance sustainability		
Seoul International Business Advisory Council (SIBAC)	Building governance capacity		
SMART Seoul	Technology Innovation		

Table 1. SMG Innovations

Motivation

The motivations for SMG to implement social innovation are numerous, but they ultimately rest with becoming a more competitive global city and raising the quality of life levels for current residents of Seoul. The previous research endeavors completed by other countries such as Canada and by private companies like Proctor and Gamble provide motivation to implement social innovation projects because positive results have been attained in the past. Seoul's strong desire to improve the quality of life for their citizens and to increase their competitiveness as a global city have led to the implantation of social innovation programs. The culture of Korea and the cohesiveness of the Korean population and specifically the population in Seoul also highlight the region's strong beliefs towards working for the good of all people, which is a key aspect of social innovation.

Motivation to engage in social innovation was observed first-hand at the annual SIBAC conference hosted in Seoul in October of 2012. SIBAC, which had 21 members in 2011, focuses on presenting economic policy issues to the Seoul mayor and an effort to make Seoul a more competitive global city. Seoul Metropolitan Government was motivated to engage in innovation and formed SIBAC in 2001 to further their plan to bring international business leaders to the table to exchange ideas and offer different perspectives to improve Seoul. SMG has also implemented the Seoul Global Resource center, which is a center dedicated to assisting the growing foreigner population in Seoul. The implementation of such a resource for foreigners highlights SMG's quest to innovate by bringing in members from the international community to help make Seoul a more competitive global city.

Culture of Innovation

As seen in the literature review, a culture that fosters leadership helps create and maintain innovation (Ahmed, 1998; Albury, 2005). Researchers witnessed a number of examples of such actions of leaders taking initiative to innovate within SMG. One prime example is the way that Park Won-soon, Mayor of Seoul, pushed innovation through his leadership in the SIBAC meeting. The formation of SIBAC was made possible by the support of Korean culture, which facilitated the leadership and motivation to engage in social innovation.

One way that Seoul creates an innovative culture is by creating a culture of creativity within the city itself. A lack of creativity hinders the full use of technology and resources that are needed to become innovative. A goal of Seoul is to be a "cultural city being created together with citizens." In the global era of Seoul, the creative culture is made up of city management, citizen's life, and activities. The city management is focused on life with human dignity, and the urban economy is based on creativity, and other capabilities. According to materials gathered in Seoul, the long-term vision is to supplement, fulfill, and develop jointly with its citizens. This is accomplished in Seoul by considering both people-oriented humanism and communication. This means that people are placed before other values, and they are the highest standard for human measurement. In addition, communication means moving from a closed system with its citizens, to that of an open communication net. Other ways to create an innovative culture is by creating a culture that fosters growth. Seoul has a creative cultural industry, and prides itself on their job creation culture. In addition, Seoul establishes a foundation for local community activities by increasing residents' cultural space for communication and operations. Currently, Seoul is working to increase and expand the village space for cultural activity use in the community and working to support citizens' participation in community media. Some of the ways they are planning to do this are through opening town art workshops and book cafes, operating village cultural classrooms, as well as building and supporting a media center pilot project that will begin in 2013.

Collaboration for Innovation

Some challenges Seoul faces are the innovative use of information technology (IT) required responding to emerging urban issues, such as citizen participation, housing, and low economic growth. The use of IT is an evident factor that is used to transform Seoul into a world-class city. Seoul proposed SMART SEOUL 2015 to improve the competiveness in civic engagement and crisis interventions. According to Lee Changhee, Manager of Information Planning, Seoul Metropolitan Government introduced four strategic imperatives designed to enhance Seoul's technology and improve the access of technology throughout Seoul. First, SMG's vision is to become recognized as a city that utilizes technology. Some of the interesting gestures SMG considered are to offer one million citizens hands-on training by 2015, and free Wi-Fi around the city to make Internet access easily accessible. Second, on and off-line interactions with the help of Internet Addiction Prevention Education, which focuses on students, teachers, and parents, is another vision SMG believes will empower citizens to engage more with their fellow citizens, especially educators.

Additional strategies Changhee mentioned were to advance living infrastructure through CCTV, which are innovative camera systems that monitors traffic and public safety. The use of CCTV is expected to reduce crime rates by ten percent by 2015. In addition, living structures are anticipated to increase through the use of Love PC campaign, which targets low-income families and social welfare facilities. Lastly, Smart Seoul 2015's aim is to make Seoul an innovative economic and global culture hub through open governance, which provides citizens with comprehensive open data regarding living concerns or issues, such as air or water quality.

Sustainable Innovation

One of Seoul's most important resources is the Hangang (or Han) River, which flows through the center of the City and was named as the most important landmark Lauren O'Byrne, Michael Miller, Ciara Douse, Rupa Venkatesh, Naim Kapucu

of Seoul in a 2011 survey. It is a remarkable what Seoul has done in such a short time as the city's needs have evolved. During the 1900s-1950s, the main purpose for the river was for transportation needs and its water supply. From 1968-1979, Seoul turned Han River into a development project to allow citizens to reside near the river and also started restoring the purity of the water. After the City received its bid to host the 1988 Olympics, 9 parks were created along the River. As a result, 8 ecological parks remain. Recognizing that the Han River's purpose changes as the city itself evolves and new policies are created around this need is an example of sustainability. Policies should be dynamic since the progression of a city does not remain static.

Seoul has continued plans for Han River to restore it to its original appearance. Part of this vision is to incorporate eco-friendly management practices to reduce the barriers preventing access to its environment. In addition, along with the theme of the new government under Mayor Won Soon, Seoul wants to promote its city's rich culture using the Han River by creating culture programs and leisure activities. Encouraging the public to participate in these types of activities fosters national pride and a sense of unity. Knowing that the government is center to enhancing quality of life by creating parks and programs for its citizens to enjoy creates good will towards the government from its citizens. This adds to the social stability of the city.

Finally, the SIBAC 2012 is an example of SMG building its governance capacity by inviting prominent international business leaders to Seoul to share with the Mayor ideas on how he can further develop his city economically. This year's theme was entitled "Seoul as a Role Model in Triple Partnership: Business, Government, Citizens." The title in itself is a testament to SMG's interest in building its governance capacity by being open to hearing advice from the private sector but also keeping its citizens actively engaged. The private sector can lend innovative ideas, as well as funding sources, to SMG while SMG must ensure that its citizens' needs are being met and that there is public support for these projects.

Briefly mentioned by several presenters, most notable Mr. Sang oh Shim (Deputy Director of Low-income and Homeless Assistance), there seems to be a gap of services to elderly citizens. Traditionally, their children took care of their parents when they became old and moved them into their own place of residence. However, culture is changing where this is no longer taking place and SMG officials have recognized a need to address this issue. Researchers see this is an opportunity to create innovative strategies to provide for one of their most vulnerable citizens, the elderly. Based on the success of SIBAC, a similar conference regarding the rapidly Social Innovation in the Public Sector: The Case of Seoul Metropolitan Government

aging population may be beneficial to not only Seoul but also to other governments across the globe, that are facing similar issues.

Conclusion

This research contributes to previous research by providing an understanding of the social innovation initiatives in Seoul, South Korea, and how social innovation projects in SMG have led to or are leading to sustainable metropolitan governance. In addition, considering social innovation techniques in other governments may have practical applications in other nations with similar resources or similar capabilities and access to innovation.

The various facets of social innovation implemented by SMG including Han River sustainability, formation of SIBAC, 2013 Pilot Project, and SMART Seoul all touch on Seoul's quickly evolving economic and political status. As far as significance for creativity for urban governance, competitiveness, and development, this can be seen in the innovative, creative culture of the SMG. Seoul is consistently looking at ways to build and increase community cultural space, as well as space that can be used for arts and even citizen participation in community media. The pilot project in 2013 for constructing and supporting media centers throughout Seoul for citizen participation is just one example of the creativity for urban governance, competitiveness, and development. Social innovation programs are sustained over time by not only meeting short-term needs but also recognizing that long-term needs also need to be incorporated into any plans. The motivations behind social innovation in SMG rest on previous successes by other organizations with innovation programs, increasing global competitiveness, and increasing the quality of life for Seoul residents. It is clear the benefits that Seoul's citizens receive from numerous programs and initiatives that have been discussed throughout this paper. One example is the cultural space and access to citizen participation initiatives that the government is working on with the pilot project. Another example is the access and convenience of several of these initiatives for citizens, which can be increased by collaboration between public and nonprofit sectors.

Collaborating with public and private organizations is needed to transform Seoul into a competitive city. Seoul's Mayor recognizes that there is a dire need for SMG to become receptive to hearing how global competitive organizations enhance their services that both citizens and administration will benefit from. SMG held the SIBAC meeting to gain insight of the outcomes of forming successful collaborations with the private and public sector. One of the keynote speakers, Nicholas Walsh, Vice Chairman of Chart, emphasized that partnering with both sectors are more Lauren O'Byrne, Michael Miller, Ciara Douse, Rupa Venkatesh, Naim Kapucu

capable of diminishing social challenges. Although Seoul is progressing, they continue to face hurdles in affordable housing for lower class, public education, and their environment. However, with the help of global competitive organizations and their ideas, Seoul will prevail and become a world-class city, where both Seoul's administration and citizens can benefit from (SIBAC, 2012).

The benefits seen in SMG from social innovation include benefits for the governance structure, the citizens, and the networks in which Seoul is involved. Continuing to utilize innovation as a tool for governance within Seoul has made the city more competitive, and contributed to it being among the seventh largest trading partner to the US and hold the 15th largest economy in the world. South Korea is also known for its overall innovations. The considerations of the SMG throughout this paper have demonstrated a prime example of why the city has helped the nation to be considered innovative.

Certainly this research is not without its limitations. Researchers did not have limitless information to the governance projects and initiatives presented throughout this paper. In addition, many research presentations were transcribed to English from Korean, which presented a language gap in communicating with governance officials and presentations of information. We are not attempting to argue that Seoul is the number one metropolitan government that other governance structures should be modeled after. Instead, researchers are suggesting that there are several innovations within the SMG that other metropolitan governments may consider when pursuing social innovations as a governance tool. Moving forward, researchers suggest that Seoul continue to motivate for innovation, continue to create a culture of innovation, and continue to partner and collaborate among their own sector and across sectors. Sustaining innovation among the SMG will be done through each of these, as well as through policies and procedures for sustainability and governance capacity to foster new ideas.

Acknowledgements: The field research put forth by the authors of this paper would not have been possible without the leadership and assistance of the Seoul Metropolitan Government and the University of Seoul.

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References

Abramson, M. A. & Littman, D. (2002). *Innovation*. New York, NY: Rowman & Littlefield.

Ahmed, P. K. (1998). Culture and Climate for Innovation. *European Journal of Innovation Management*, 1(1), 30-43.

Albury, D. (2005). Fostering Innovation in Public Services. *Public Money and Management*, 25(1), 51-56.

Baxter, D., Schoeman, M., Goffin, K. & Micheli, P. (2010). *Public sector innovation: the role of commercial partnerships.* Bedfordshire, UK: Cranfield School of Management.

Bartlett, D. & Dibben, P. (2002). Public Sector Innovation and Entrepreneurship: Case Studies from Local Government. *Local Government Studies*, 28(4), 107-121.

Borins, S. (2002). Leadership and Innovation in the Public Sector, *Leadership and Organization Development Journal*, 23(8), 467-476.

Calista, D., Melitski, J., Holzer, M. & Manoharan, A. (2010). Digitized Government in Worldwide Municipalities between 2003 and 2007. *International Journal of Public Administration*, 33 (12-13), 588-600.

Cohen, A. M. (2009). Seoul: Model of Sustainability. The Futurist, 11-12.

Fernandez, S. & Rainey, H. G. (2006). Managing Successful Organizational Change in the Public Sector. *Public Administration Review*, 66(2), 168-176.

Goldenberg, M., Kamoji, W. Orton, L. & Williamson, M. (2009). Social innovation in Canada: An update. Canadian Policy Research Network. Retrieved December 13, 2012 from http://www.cprn.org/documents/51684_EN.pdf.

Goldsmith, S. (2010). *The Power of Social Innovation: How Civic Entrepreneurship Ignite Community Networks for Good.* San Francisco, CA: Jossey- Bass.

Gonzalez, S. & Healey, P. (2005). A Sociological Institutionalist Approach to the Study of Innovation in Governance Capacity. *Urban Studies*, 42(11), 2055-2069.

Goodsell, C. T. (2004). *The Case for Bureaucracy: A Public Administration Polemic*. Washington, DC: CQ Press.

Ha, S. K. (2004). Housing poverty and the role of urban governance in Korea. *Environment and Urbanization*, 16, 139.

Hagen, K. (2002). Civil Society and Democracy in South Korea. *The Good Society*, 11(2), 40-45.

Hippel, E. V. (1988). *The Sources of Innovation*. New York, NY: Oxford University Press.

Lauren O'Byrne, Michael Miller, Ciara Douse, Rupa Venkatesh, Naim Kapucu

Holzer, M. & Kim, B.J. (2002). *Building Good Governance: Reform in Seoul.* The National Center for Public Productivity & Seoul Development Institute.

Hudson, L. & Sakkab, N. (2006). Connect and develop: Inside Proctor and Gamble's new model for innovation. *Harvard Business Review*, 84(3), 58-66

Khazanchi, S. Lewis, M. W. & Boyer, K. K. (2006). Innovation-supportive culture: The impact of organizational values on process innovation, *Journal of Operations Management*, 25, 871-884.

Kim, P. S. (2000). Administrative Reform in the Korean Central Government. *Public Performance & Management Review*, 24(2), 145-160.

Kim, P. S. (2011). Civic engagement, politics and policy in South Korea: Significant developments but a considerable way to go. *Public Administration and Development*, 31(2), 83–90.

Kim, S. (2009). A Case of Local E-Government Performance in South Korea: Do Leadership and Management for Results Matter. *International Public Management Review*, 10(1), 170-199.

Lichtenthaler, U. (2011). Open innovation: Past research, current debates, and future directions. *The Academy of Management: Perspectives*, 1(25), 75-93.

Lowry, C. (2008). *Civil Society Engagement in Asia: Six Country Profiles*. Asia Pacific Governance and Democracy Initiative (AGDI). Retrieved January 16, 2013 from http://www.eastwestcenter.org/fileadmin/resources/research/PDFs/Combined_country_r eviews.pdf.

Novy, A. & Leboult, B. (2005). Participatory budgeting in Porto Alegre: Social innovation and the dialectical relationship of state and civil society. *Urban Studies*, 42, 2023-2069.

Raadschelders, J. C. N. (2009). Trends in the American Study of Public Administration: What Could They Mean for Korean Public Administration? *The Korean Journal of Policy Studies*, 23(2), 1-24.

Seoul International Business Advisory Council (SIBAC). (2012). Retrieved from http://english.seoul.go.kr/gtk/news/news_view.php?idx=15711.

U.S. Department of State. (n.d.). Background note: on South Korea. Retrieved December 7, 2012 from http://www.state.gov/r/pa/ei/bgn/2800.htm

Effect of Foreign Direct Investments on the Domestic Investments of Developing Countries: A Dynamic Panel Data Analysisⁱ

İsmet Göçer

Faculty of Economy Adnan Menderes University Aydın, Turkey *igocer@adu.edu.tr*

Mehmet Mercan

Faculty of Economics and Administrative Sciences Hakkari University Hakkari, Turkey mehmetmercan@hakkari.edu.tr

Osman Peker

Faculty of Economics and Administrative Sciences Adnan Menderes University Aydın, Turkey *opeker@adu.edu.tr*

Abstract: Foreign Direct Investments (FDI) are regarded as a significant source of investment in developing countries. However, FDI may affect domestic investments in different aspects. They can enforce the domestic firms to crowd out or crowd in of the sector.

In this study; the effects of FDI on developing countries was examined by means of dynamic panel data analysis for 30 developing countries using 1992-2010 period data. According to the empirical analysis results; FDI have crowding in effects in Asian, Latin American and Caribbean countries, although they have crowding out effects in the African developing countries. *Keywords:* FDI, Crowding in - Crowding out Effects, GMM.

JEL Classification: E22, *F21*, *P33*.

Article History

Submitted: 27 June 2012 Resubmitted: 19 January 2013 Resubmitted: 29 July 2013 Accepted: 15 August 2013 İsmet Göçer and Mehmet Mercan and Osman Peker

Introduction

FDI is an investment involving a long term relationship that control of a resident entity in one economy reflects a lasting interest and in that enterprise resident in an economy other than that of the foreign direct investor (OECD, 1992). FDI refers to the net inflows of investment to acquire a lasting management interest, 10 percent or more of voting stock, in an enterprise operating in an economy other than the investor (World Bank, 1999). These kinds of investments involve setting up the factory; purchasing a domestic firm and privatisation, joint venture with a local firm, licensing agreements and purchases real estate.

FDI have significant effects on economies. It can provide a country with access to new markets, cheap production, new technology, alternative products, labour and management skills and financing (Sun, 1996; Barelli and Pain, 1997; Sun, 1998; Jayaraman, 1998; Borensztein, Gregoria and Lee, 1998 and Javorcik, 2004).

FDI has recently begun to play a major role in the internationalisation of business. FDI reached this volume due to liberalisation policies, new economic integrations, trade acts, tariff liberalisation, thanks to new information technology that negates communication and remote management costs.

FDI may have different effects on host country economies. It may cause crowding out or crowding in of domestic firms from the sector. The purpose of this study is to analyse these effects on developing countries. These effects will be analysed via the dynamic panel data analysis method using the 1992-2010 period data from 30 developing countries.

Theoretical Framework

The impacts of the FDI on domestic investments are determined by the complementarity and substitution features. While FDI producing substitute goods, it may cause crowding out, especially of inefficient domestic firms; conversely FDI will cause crowding in of domestic investment that produces complementary goods orit will use row material from the domestic market (Van, 1977; Buffie, 1993).

If FDI have got crowding out effects on domestic investments, a unit FDI leads to an increase of total investment in the host country smaller than one unit. Conversely, if FDI have got crowding in effects on the domestic investment, one unit of FDI increase will lead to more than one unit increase of total investment in the host country. If the effect is neutral, a unit FDI increases causes a unit increases on total investment (Misun and Tomsik, 2002). Crowding out effects of FDI may take place when foreign and domestic firms are in the same industry. When FDI comes to a sector that includes intensive domestic activities, domestic firms can not with stand the resulting competition and they will be crowded out of the sector (Driffield and Hughes, 2003). If the FDI go towards the indigenous sectors, which there are less investment in this sector, through increase in the volume of trading and market in this sector, they will be crowding in the domestic firms in this sector (De Mello, 1999).

FDI positively effects domestic investments by means of its investments to factor markets, because they increase revenues of domestic firms and factory owners (Cardoso and Dornbusch, 1989). The positive externality and the spreading tendency of FDI empower domestic investors (Kim and Seo, 2003). To sum up, foreign investment by creating new markets, increasing the demand for inputs, supply new technologies will create spillover effects and domestic investment will stimulate the economy (Cotton and Ramachandran, 2001: 1).

Conversely, FDI increases wages and the price of inputs in the host country and this causes a decrease in the use of input and employment and leads to crowding out (Apergis, Katrakilidis and Tabakis, 2006). When the technological differences between foreign and domestic investors are on a large scale and there are few skilled labour; FDI will enforce the domestic firms to crowd out (Kokko, 1994; Aitken and Harrison, 1999).

For analysis of crowding in and crowding out effects of FDI, we can begin with a simple modelⁱⁱ where investment (INV) in a country is the sum of domestic investment ($INV^{t/2}$) and FDI;

$$INV = INV^d + FDI \tag{1}$$

Domestic investment depends on the Gross Domestic Product (*GDP*) and domestic interest rate (*INT*). The model maybe arranged as follows:

$$INV^d = \alpha_0 + \alpha_1 GDP + \alpha_2 INT \tag{2}$$

By replacing (2) in (1) a model for total investment was obtained:

$$INV = \alpha_0 + \alpha_1 GDP + \alpha_2 INT + FDI$$
(3)

In the equation (3) it is assumed that FDI haven't got any macroeconomic externalities on domestic investment. Therefore, FDI have a neutral effect. Since the equation (3) is rearranged in order to determine the effect of externalities:

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$$INV = \alpha_0 + \alpha_1 GDP + \alpha_2 INT + \alpha_3 FDI$$
(4)

While investors are investing not onlythe current year, but also look at the past years' economic growth rate. Therefore the investment dynamic process can expand as follows:

$$INV_{i,t} = \alpha_i + \sum_{j=0}^p \beta_j FDI_{i,t-j} + \sum_{j=0}^p \gamma_j INT_{i,t-j} + \sum_{j=0}^p \varphi_j GDP_{i,t-j} + \sum_{j=1}^p \psi_j INV_{i,t-j} + \varepsilon_{i,t}$$
(5)

Here p is the optimum lagⁱⁱⁱ. Weather long term crowding in and crowding out effects will be tested with this relevant coefficient:

$$\beta_{LT} = \frac{\sum_{j=0}^{p} \beta_j}{1 - \sum_{j=1}^{p} \psi_j}$$
(6)

If $\beta_{LT} > 1$, means that FDI have a crowding in effect on domestic investment that a unit of FDI can bring more than one unit of total investment. If $\beta_{LT} < 1$, it means that FDI have a crowding out effect on domestic investment that a unit of increase in FDI to the total increase in investment is less than one unit.

There have been many studies on the FDI effects on domestic investment in the economy literature. These studies have reached different conclusions. Lubitz (1966) determined a significant effect of FDI on domestic investments in Canada and found that; \$1 of FDI led to \$3 of capital formation in the host country. Similarly, Van Loo (1977) studied Canada with 1948-1966 period data and found that; \$1 of FDI led to \$1.4 of capital formation in the host country. Borensztein, et al, (1998), tested these effects on 69 developing countries for the 1970 to 1989 period and foundedthat FDI has encouraged domestic investments. Jomo (1997) studied for Indonesia, Malaysia and Thailand the mainly microelectronics-related toys and other consumer goods and determined that FDI has crowding in effects in these industries. Massimiliano and Massimiliano (2003) tested the relationship between economic growth, domestic investment and FDI inward in Korea for the 1970 to 1989 period. They found that FDI has some positive effects on domestic investments. Ang (2009) studied the impact of FDI on domestic investment for Malaysia through VAR analysis using 1960-2003 periods and found that; \$1 FDI increase domestic investments \$1.25. Therefore, FDI involves crowding in effects in the Malaysian economy. Gan and Gao (2010) studied the impact of FDI on domestic investment for China via panel data analysis methods using 1992-2007 period data and found that: \$1 FDI increase the domestic investment in central region \$4.08 and \$5.88 in Shanxi region. So, FDI have got crowding in effects in China economy.
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Agosin and Machado (2005), studied of the impact of FDI on domestic investments and found FDI don't have a positive effect on domestic investment. Apergis, Katrakilidis and Tabakis (2006), with a panel study involving 30 countries found that; FDI have crowding in effects in the single-variable model, but have crowding out effects in the multivariate model. Lin and Chuang (2007) tested the effects for the Taiwan economy and found FDI crowding out to little domestic firms and crowding in the big domestic firms.

Agosin and Mayer (2000) conducted an econometric study on the effects of FDI on domestic investments. This study covers the 1970-1996 period data for 39 developing countries by means of panel data analysis. They found that; while there was crowding in effects in Asia and Africa countries, while there was crowding out effects in Latin American countries. Driffield and Hughes (2003) found FDI have crowding in effects. According to Backer and Sleuwaegen (2003), in the context of occupational choice models, FDI declines the power of local entrepreneurs. However, FDI increases domestic investments through networking, chains and learning effects. Acar et al. (2012) have seen that FDI have crowding out effects in MENA countries.

FDI in Developing Countries

Global FDI flows increased from \$54 billion in the 1980's to \$1.524 trillion in 2011. Emerging regions, such as East and South-East Asia and Latin America experienced strong growth in FDI inflows (UNCTAD, 2012). FDI has changed course and has been directed towards developing countries in recent years. Table 1 shows the distribution of FDI in the economies.

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	World	Developing Economies	Share of Developing Economies	Transition Economies	Share of Transition Economies	Developed Economies	Share of Developed Economies
1980	54	7	14	0	0	47	86
1990	207	35	17	0	0	173	83
2000	1403	258	18	7	1	1 1 38	81
2005	983	332	34	31	3	619	63
2006	1 462	429	29	55	4	978	67
2007	1 971	573	29	91	5	1 307	66
2008	1 744	658	38	121	7	965	55
2009	1 185	511	43	72	6	603	51
2010	1 244	574	46	68	5	602	48
2011	1 524	684	45	92	6	748	49

Table 1. Distribution of the FDI in Economies (Billion \$)

Source: UNCTADSTAT.

According to Table 1, while FDI in flows are increasing in developing countries, they are decreasing in developed countries. Developing and transition economies together attracted more than half of global FDI flows. Most FDI attracting developing countries in 2011 are shown in Table 2.

YEAR	1980	1990	2000	2006	2007	2008	2009	2010	2011
China	57	3 487	40 175	72 715	83 521	108 312	95 000	105 735	123 985
Hong Kong	710	3 275	61 937	45 060	54 341	59 620	52 393	71 069	83 155
Brazil	1 910	989	32 779	18 822	34 585	45 058	25 949	48 438	66 660
Singapore	1 236	5 575	16 484	29 348	37 033	8 588	15 279	38 638	64 003
India	79	237	3 588	20 328	25 350	42 546	35 649	24 640	31 554
Mexico	2 099	2 633	18 110	20 052	29 734	26 295	15 334	18 679	19 554
Indonesia	180	1 092	-4 495	4 914	6 928	9 318	4 877	13 304	18 906
Chile	213	661	4 860	7 298	12 534	15 150	12 874	15 095	17 299
Saudi Arabia	-3 192	312	183	17 140	22 821	38 151	32 100	28 105	16 400
Turkey	18	684	982	20 185	22 047	19 504	8 411	9 071	15 876

Table 2. Most FDI Attracting Developing Countries (Million \$)

Source: UNCTADSTAT.

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According to Table 2, China was the best FDI attracter among developing countries in 2011. China and Hong Kong's share is 13.5% of the world. Other countries are following them. Turkey attracted \$15.8 billion FDI in 2011.

Empirical Analysis

Data Set

A balanced panel of 570 annual observations from 30 developing countries over the period of 1992-2010 was used in this study. The sample of countries represents all major regions in the world as FDI attracting in 2010. It includes 11 countries from Latin America^{iv} and the Caribbean, 9 from Asia^v and the Pacific, 8 from Africa^{vi} and 2 from economies in transition^{vii}. Investment (*INV*), Gross Domestic Product (*GDP*), Foreign Direct Investment (*FDI*) and Interest Rate (*INT*) are the study variables. All data currency is US dollars. *INV* represents investment to GDP ratio; *FDI* represents FDI to GDP ratio; *G* represents growth of real GDP.The data set was obtained from the World Bank, UNCTAD and IMF.

Method

For this study data set included in the dynamic processes, the dynamic panel data analysis method was used. The dynamic panel data analysis method takes into consideration the dynamic structure between the dependent and independent variables (Baltagi, 1995). In addition, use of panel data in estimating ensures control for missing or unobserved variables and relationships allow identification of country-specific effects (Arellano-Bond, 1991; Matyas and Sevestre, 1996). The dynamic panel allows dynamic effects to be introduced into the model and allows feedback from current or past shocks (Hsiao, 1986). A simple equation of dynamic panel data model is (Hsiao, 2003: 75):

$$y_{it} = \delta y_{i,t-1} + \beta x_{it} + \mu_i + u_{it}$$
(7)

for i=1,2,...,N; and t=1,2,...,T. δ is a scalar, x_{ii} is kx1, μ_{ii} denotes the *i* th individuals effect and u_{ii} is the error term of regression.

In this study, among dynamic panel data estimation methods the Generalised Method of Moments (GMM) technique was used. GMM procedures are more efficient than other estimators (Arellano and Bond, 1991). The resulting GMM estimat or is asymptotically efficient (Baltagi, 1995). GMM estimators use all possible lagged values of dependent and independent variables as instrumental

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variable (Arellano and Bond, 1991). There are three GMM methods; level GMM, difference GMM and system GMM. System GMM was used in this study.

The crucial point here is that variables must be endogenous in order to use GMM. For this reason, before beginning the analysis, a test of endogeneity is required. For this purpose; Durbin's score (1954) and Wu-Hausman (Wu, 1974; Hausman, 1978) tests can be used. These hypotheses would be expressed as:

Ho: Variables are exogenous

H1: Variables are endogenous

If H_0 is rejected, variables are endogenous. In this case, using the GMM is suitable.

The Sargan test used to determine whether instrumental variables of the GMM are suitable (Greene, 2003). These hypotheses would be expressed as:

*H*₀: Moment conditions are valid.

*H*₁: Moment conditions are invalid.

The hypothesis tested with the Sargan-J statistic. This statistic will be asymptotically chi-squared (χ^2) with *m-k* degrees of freedom. *m* is the number of instrumental variables and *k* is the number of the parameter. If the null hypothesis is accepted, instrumental variables are suitable.

Arellano and Bond (1991) developed an autocorrelation test for GMM. The Arellano–Bond test for autocorrelation is actually valid for any GMM regression on panel data (Roodman, 2009). These hypotheses would be expressed as:

Ho: No Autocorrelation

*H*₁: Autocorrelation

Panel Unit Root Test

Panel unit root testing is more widely accepted for only the time dimension of time series unit root tests, since it covers the data of both time and cross-sectional size (Im, Pesaran and Shin, 1997; Maddala and Wu, 1999; Taylor and Sarno, 1998; Levin and Lin, 1992; Hadri, 2000; Choi, 2001; Levin, Lin and Chu, 2002; Breuer and Wallace, 2002; Carrion-i-Silvestre, 2005; Pesaran, 2006; Beyaert and Camacho,

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2008). At the same time, the addition of the cross-sectional size of the analysis increases the variation in the data.

The first problem encountered in the panel unit root tests is whether each crosssection is independent or not. Panel unit root tests are divided into first generation and second generation tests. While Breitung (2000), Hadri (2000) and Levin, Lin and Chu (2002) based their studies on the assumption of a homogeneous model; Im, Pesaran and Shin (2003), Maddala and Wu (1999), Choi (2001) based their studies on the assumption of a heterogeneous model.

In this study; the Im, Pesaran and Shin (2003) (IPS) test will be used, since the countries aren't homogeneous. The IPS test is based on this model:

$$\Delta Y_{it} = \delta_i Y_{i,t-1} + \sum_{j=1}^{p_i} \beta_{ij} \Delta Y_{i,t-j} + \gamma X_{it} + \varepsilon_{it} \quad for \ i = 1, 2, ..., N \ and \ t = 1, 2, ..., T \) \ (8)$$

 δ_i is an error correction model. If $|\delta_i| < 1$ series is trend stationary. IPS unit root test was applied and obtained results shown in Table 3.

	Variables	Test Statistics	Prob. Values
	INV	-1.92**	0.02
Whole Papel	FDI	-2.04**	0.02
Whole Panel	GDP	-7.34*	0.00
	INT	-1.85**	0.03
	INV	-9.31*	0.00
Asia	FDI	-2.22**	0.01
Asia	GDP	-5.97*	0.00
	INT	-9.16*	0.00
	INV	-3.071*	0.001
Latin America and the	FDI	-2.976*	0.001
Caribbean	GDP	-6.701*	0.000
	INT	-4.435*	0.000
	INV	-1.503***	0.066
Africa	FDI	-6.216*	0.000
Annca	GDP	-4.551*	0.000
	INT	-2.223*	0.001

Table 3. IPS Unit Root Test

*Note:*In panel unit root tests Schwarz criterion is used and length was1 taken (*), (**) (***) indicating stationarity and significance levels 1%, 5%, 10% respectively.

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According to the Table 3, all series are stationary in level values. This means that analysis performed in this series is reliable and equation (6) can be used.

The Endogeneity Test

In this study, the Durbin (score) (1954) and Wu (1974)-Hausman (1978) endogeneity test was used. Hypotheses of these tests are as follows:

Ho: Variables are exogenous

H1: Variables are endogenous

Endogeneity test was applied by Stata 11 and obtained results are presented in Table 4.

Table 4. Results of Endogeneity Test

	Durbin (score)	Wu-Hausman	
Whole Panel	Chi2(1) = 5.21978 (0.0223)	F(1,474) = 5.2112(0.0229)	
Asia	Chi2(1) = 0.9697 (0.03248)	F(1,138) = 0.9355(0.0335)	
Latin America and the Caribbean	Chi2(1) = 0.066635 (0.01796)	F(1,170) = 0.064387(0.018)	
Africa	Chi2(1) = 1.2594 (0.02618)	F(1,122) = 1.21237(0.0273)	

Note: The values in parentheses are probabilities.

According to Table 4, H_0 was rejected and concluded that the variables were endogenous. So it was decided that the GMM method should be used.

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Dynamic Panel Data Analysis

Dynamic panel data analysis was made using equation (5) via GMM and long term relevant coefficient was calculated by equation (6). The results are presented in Table 5.

	Coefficient (eta_{LT})	Wald Test	Sargan Test	AR(1)	AR(2)
Whole Panel	0.79	Chi2(15)=2988.13 (0.00)	Chi2(163)=16.2065 (1.00)	-1.0542 (0.2918)	-1.2794 (0.2008)
Asia	4.67	Chi2(8)=138.59 (0.00)	Chi2(93)=93.84468 (0.4560)	-2.0323 (0.0421)	1.1558 (0.2478)
Latin America and the Caribbean	1.34	Chi2(10)=1456.39 (0.00)	Chi2(142)=165.362 (0.8801)	-2.5289 (0.0114)	-2.17 (0.320)
Africa	0.81	Chi2(15)=874.63 (0.00)	Chi2(118)=132.7087 (0.1677)	-1.5791 (0.01143)	1.3003 (0.01935)

Table 5. Results of Dynamic Panel Data Analysis

Note: The values in parentheses are probabilities. The White Period method was used to correct the standard errors. Since there are few transition countries, their individual analysis was not applied.

According to Table 5; as a result of the Wald tests, it was seen the model is meaningful. According to the Sargan tests, it was decided that instruments are suitable. In autocorrelation tests, there are no second order autocorrelation problems in these models. Based on these findings, analysis results are significant and reliable.

Long term investment coefficients found for the whole panel were 0.79, for Asia 4.67, for Latin American and the Caribbean 1.34 and for Africa 0.81. The seresults show; in a developing country, \$10f FDI increases total investments \$0.79 in the home country. This value smaller than 1. Therefore, FDI has a crowding out effect in these developing countries. However, in Asian countries \$10f FDI increases total investments \$4.67 in the home country and FDI has crowding in effects. \$10f FDI increases total investments \$1.34 in Latin American and Caribbean countries and FDI has crowding in effects. However in African countries \$10f FDI increases total investments \$0.81 and it has a crowding out effect.

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Conclusions

There are different opinions about the effects of FDI on domestic investment in economics literature. Some economists admit that FDI reduces domestic investment and it has crowding out effects. In other words, FDI increases domestic investment and it has crowding in effects. The main purpose of this study is to analyse these effects in developing countries.

For this purpose, using data from 1992-2010 for 30 developing countries, a dynamic panel data analysis was performed. According to the empirical results; FDI increases domestic investment and has crowding out effects in developing countries. \$1 increase in FDI leads to an increase of \$0.79 total investment for these countries. This result is similar to Chudnovsky, Lopez and Porta (1996); Agosin and Machado (2005) and Lin and Chuang (2007). In analysis carried out for country groups, different results were obtained. In Asian countries, \$1 FDI increases total investments by \$4.67 in the home country and FDI has crowding in effects. \$1 FDI increases total investments \$1.34 in Latin American and the Caribbean countries and FDI has crowding in effects. These results are compatible with Lubitz (1966); Van Loo, (1977); Borensztein, et al, (1998), Massimiliano and Massimiliano, (2003); Ang, (2009) and Gan and Gao (2010). However, in African countries \$1 FDI increases total investments by \$0.81 and it has a crowding out effect.

The findings of the study suggest that; differences in results among different country groups related with the FDI policies implemented, trade openness ratio, human capital adequacy and to the extent that domestic firms are ready for international competition. For example, it is a fact that Asian countries, including China, have been providing tax advantages, easing administrative procedures for foreign investors and establishing free trade zones in order to accelerate economic development improve the capital and technology capacity and attract more FDI. Owing to such policies, foreign investments have been attracted and domestic firms have been protected.

As a result, FDI has a significant effect on the total investment level in developing countries. If a country wants to accelerate its development process it should take the necessary measures to improve factors such as taxes and social security contributions, as well as inflexibilities in the labour market to attract more FDI.

Effect of Foreign Direct Investments on the Domestic Investments of Developing Countries: A Dynamic Panel Data Analysis

References

Acar, S., Eris, B. & Tekce, M. (2012). The effect of foreign direct investment on domestic investment: evidence from MENA countries, *European Trade Study Group* (*ETSG*) 14th Annual Conference, September, Leuven.

Agosin, M.R. & Mayer, R. (2000). Foreign investment in developing countries: does it crowd in domestic investment? *UNCTAD Discussion Paper*, No. 146.

Agosin, M.R. & Machado, R. (2005). Foreign investment in developing countries: does it crowd in domestic investment? *Oxford Development Studies*, 33(2), 149-162.

Aitken, B.J. & Harrison, A.E. (1999). Do domestic firms benefit from direct foreign investment? Evidence from Venezuela. *American Economic Review*, 89, 605–618.

Ang, J.B. (2009). Do public investment and FDI crowd in or crowd out private domestic investment in Malaysia? *Applied Economics*, 41, 913–919.

Apergis, N., Katrakilidis, C.P. & Tabakis, N.M. (2006). Dynamic linkages between FDI inflows and domestic investment: a panel cointegration approach, *Atlantic Economic Journal*, 34, 385-394.

Arellano, M. & Bond, S. (1991). Some tests of specification for panel data: Monte Carlo evidence and an application to employment equations, *Review of Economic Studies*, 58, 277–297.

Backer K.D. & Sleuwaegen, L. (2003). Does foreign direct investment crowd out domestic entrepreneurship? *Review of Industrial Organization*, 22, 67-84.

Baltagi, B.H. (1995). *Econometric analysis of panel data*, New York: John Wiley and Sons.

Beyaert, A. & Camacho, M. (2008). TAR panel unit root and real convergence, *Review of Development Economics*, 12(3), 668-681.

Borensztein, E., Gregoria J.D. & Lee, J.W. (1998). How does foreign direct investment affect economic growth? *Journal of International Economics*, 45(1), 115-138.

Bowsher, C. (2002). Modelling security market events in continuous time: intensity based, multivariate point process models, *Economics Papers*, W22, Economics Group, Nuffield College, University of Oxford.

İsmet Göçer and Mehmet Mercan and Osman Peker

Breitung, J. (2000). *The local power of some unit root tests for panel data*, In B. Baltagi (ed.), Nonstationary Panels, Panel Cointegration, and Dynamic Panels, Advances in Econometrics, 15, 161-178.

Breuer, B., Mcnown R. & Wallace, M. (2002). Series-specific unit root test with panel data, *Oxford Bulletin of Economics and Statistics*, 64, 527–546.

Buffie, E.F. (1993). Direct foreign investment, crowding out, and underemployment in the dualistic economy, *Oxford Economic Papers*, 45, 639-667.

Cardoso, E.A. & Dornbusch, R. (1989). *Foreign private capital flows*, Ed. H.B. Chenery and T.N. Srinivasan, Handbook of Development Economics, Vol. 2, Amsterdam.

Carrion-i-Silvestre, J.L. (2005). Health care expenditure and GDP: are they broken stationary? *Journal of Health Economics*, 24, 839–854.

Choi, I. (2001). Unit roots tests for panel data, *Journal of International Money and Finance*, 20, 229–272.

Chudnovsky, D.B., Lopez A. & Porta, F. (1996). La nueva inversison extranjera directa en la Argentina: privatizaciones, mercado interno e integracion regional, Retrieved October 12, 2012, from http://cdi.mecon.gov.ar/biblio/doc/cenit/dt15.pdf

Cotton, L. & Ramachandran, V. (2001). Foreign direct investment in emerging economies, *Wider Discussion Paper*, 82, 1-27.

De Mello, L.R. (1999). Foreign direct investment-led growth: evidence from time series and panel data, *Oxford Economic Papers*, 51, 133-151.

Driffield, N. & Hughes D. (2003).Foreign and domestic investment: regional development or crowding out? *Regional Studies, Taylor and Francis Journals*, 37(3), 277-288.

Durbin, J. (1954). Errors in variables, *Review of International Statistical Institute*, 22, 23–32.

Driffield, N. & Hughes, D. (2003). Foreign and domestic investment: regional development or crowding out? *Regional Studies*, 37, 277-288.

Effect of Foreign Direct Investments on the Domestic Investments of Developing Countries: A Dynamic Panel Data Analysis

Gan, X. & Gao, K. (2010). A study on FDI's crowd-out and crowd-in effect on Shanxi's domestic investment-based on panel data model, *2nd International Conference onNetworking and Digital Society (ICNDS)*, (978-1-4244-5162-3), 1, 616-619.

Greene, W.H. (2003). *Econometric analysis*, 5th Ed. Upper Saddle River, N.J.: Prentice- Hall.

Hadri, K. (2000). Testing for stationarity in heterogeneous panels, *Econometrics Journal*, 3,148-161.

Hahn, J. (1997). Efficient estimation of panel data models with sequential moment restrictions, *Journal of Econometrics*, 79, 1–21

Hausman, J. (1978). Specification tests in econometrics, *Econometrica*, 46(6), 1251-1271.

Hsiao, C. (1986). Analysis of panel data. Cambridge: Cambridge University Press.

Hsiao, C. (2003). *Analysis of panel data*, 2nd Edition. Cambridge: Cambridge University Press.

Im, K., Pesaran H. & Shin, Y. (1997). Testing for unit roots in heterogeneous panels, Mimeo, Department of Applied Economics, University of Cambridge.

Im, K., Pesaran H. & Shin, Y. (2003). Testing for unit roots in heterogeneous panels, *Journal of Econometrics*, 115, 53–74.

Javorcik, B.S. (2004). Does foreign direct investment increase the productivity of domestic firms? in search of spillovers through backward linkages, *The American Economic Review*, 94(3), 605- 627.

Jayaraman, T.K. (1998). Foreign direct investment as an alternative to foreign aid to South Pacific Island Countries, *Journal of the South Pacific Society*, 21(3-4), 29-44.

Jomo, K.S. (1997). *Southeast Asia's misunderstood miracle*, Colorado and Oxford:Westview, Boulder.

Kim, D.D. &Seo, J.S. (2003). Does FDI inflow crowd out domestic investment in Korea? *Journal of Economic Studies*, 30(6), 605-622.

İsmet Göçer and Mehmet Mercan and Osman Peker

Kokko, A. (1994). Technology, market characteristics and spillovers, *Journal of Development Economics*, 43(2), 279-293.

Levin, A. & Lin, C. (1992). Unit root tests in panel data: asymptotic and finitesample properties, *Discussion Paper, 92-23*, University of California, San Diego.

Levin, A., Lin C. & Chu, J. (2002). Unit roots tests in panel data: asymptotic and finite sample properties, *Journal of Econometrics*, 108, 1-24.

Lin, H.L. & Chuang, W.B. (2007). FDI and domestic investment in Taiwan: an endogenous switching model, *The Developing Economies*, 45(4), 465–490.

Lubitz, R. (1966). United States direct investment in Canada and Canadian capital formation, 1950-1962, *Ph.D. Dissertation*, October, Cambridge, MA: Harvard University.

Maddala, G.S. & Wu, S. (1999). A comparative study of unit root tests with panel data and a new simple test, *Oxford Bulletin of Economics and Statistics*, 61, 631-652.

Mandel, M. & Tomsik, V. (2001). Monetary and fiscal policy mix in the Czech Republic: empirical verification of the principle of effective market classification, *Eastern European Economics*, 39(4), 6-24.

Massimiliano D.D.K.K & Massimiliano, J.S.S. (2003). Does FDI inflow crowd out domestic investment in Korea? *Journal of Economic Studies*, 30(6), 605-622.

Matyas, L. & Sevestre, P. (1996). *The econometrics of panel data*, 2nd Edition, Dordrecht: Kluwer Academic Publishers.

Misun, J. & Tomsik, V. (2002). Does foreign direct investment crowd in or crowd out domestic investment? *Eastern European Economics*, 40(2), 38–56.

OECD, (1992). Detailed benchmark definition of foreign direct investment, Second Edition, Paris.

Pesaran, H. (2006). A simple panel unit root test in the presence of cross section dependence, *Cambridge University Working Paper*, No. 0346.

Roodman, D. (2009). How to do xtabond2: an introduction to difference and system GMM in Stata, *The Stata Journal*, 9(1), 86–136.

Effect of Foreign Direct Investments on the Domestic Investments of Developing Countries: A Dynamic Panel Data Analysis

Sun, H. (1996). Direct foreign investment and linkage effects: the experience of China, *Asian Economies*, 25(1), 5-28.

Sun, H. (1998). Macroeconomic impact of direct foreign investment in China: 1979-1996, *The World Economy*, 21(5), 675-694.

Taylor, M. & Sarno, L. (1998) . The behaviour of real exchange rates during the Post-Bretton Woods period, *Journal of International Economics*, 46, 281-312.

UNCTAD (1999). Indirect impact: does FDI "crowd out" or "crowd in" domestic investment? *World Investment Report,* New York and Geneva.

UNCTAD (2011). Non-equity modes of international production and development, *World Investment Report*, New York and Geneva.

UNCTAD (2012). Towards a new generation of investment policies, *World Investment Report*, New York and Geneva.

Van, L.F. (1977). The effect of foreign direct investment on investment in Canada, *The Review of Economics and Statistics*, 59, 474 481.

World Bank, (1999). World Development Report, Oxford: Oxford University Press.

Wu, D.M. (1974). Alternative tests of independence between stochastic regressors and disturbances: finite sample results, *Econometrica*, 42(3), 529-546.

¹This study is a mostly renewed and developed version of the same name study, which was presented in the 3rd International Symposium on Sustainable Development (ISSD) at International Burch University, 31 May-2 June 2012, Sarajevo.

ⁱⁱAgosin and Mayer (2000); Misun and Tomsik (2002) has been followed here and the model has been extended by the authors with interest rate.

ⁱⁱⁱ In this study; following to Misun, and Tomsik (2002) lag was taken 3.

^{iv} Argentina, Brazil, Chile, Colombia, Costa Rica, Dominican Rep., Mexico, Panama, Peru, Uruguay, Venezuela.

^vChina, Indonesia, S. Korea, Malaysia, Qatar, Singapore, Thailand, Turkey, Vietnam.

^{vi} Algeria, Angola, Congo, Egypt, Ghana, Libyan, Morocco, Nigeria.

^{vii}Russian Fed., Ukraine.

Conflict and the Freedom of the Press

Jayoti Das

The Love School of Business Elon University Elon, NC 27244 *dastina@elon.edu*

Cassandra E. DiRienzo

The Love School of Business Elon University Elon, NC 27244 cdirienzo@elon.edu

Abstract: Using data from 146 countries, this study empirically tests the relationship between conflict and press freedom. Holding all else constant, the results indicate that the relationship between conflict and press freedom is best described as nonlinear such that the greatest conflict is observed at an intermediate level of press freedom. It is theorized that while past research has found that greater press freedom serves to reduce conflict, governments with a tightly controlled press can also observe lower levels of conflict as these government can use their control to censored information, images, and messaging to minimize conflict and unrest. *Keywords:* Conflict, Press Freedom, Nonlinear, Cross-Country

JEL Classification: 057, F50

Article History

Submitted: 15 December 2012 Resubmitted: 17 December 2012 Resubmitted: 2 July 2013 Accepted: 24 July 2013

Introduction

Conflict borne from ideological, economic, political, or religious differences and disagreements has plagued societies for as long as records have been kept. Today, those with access to the internet, television, radio, or newspapers, can seek regular updates from a variety of news media regarding the status of local, national, and/or international conflicts as it is unfolding. The updates provided by news media can portray a sense of continued suffering and loss, or perhaps offer hope that a

resolution and ceasefire is near. As Puddephatt (2006) discusses, attitudes and opinions toward a particular conflict, as well as its likely outcome, can be strongly influenced by the news media. In other words, the approach and perspectives a news media outlet takes in sharing and disseminating information on a conflict can shape public opinion and, in extreme cases, influence the outcome.

History offers several examples of news media influencing public opinion and inciting violent conflict as well as pleading for conflict resolution. As Puddephatt (2006) describes, media sources served as agents for extreme nationalism during the wars in the Balkans that continually fueled tensions, resulting in the collapse of former Yugoslavia. Further, Puddephatt (2006) notes the role of some Rwandan media sources in directly inciting genocide as well as offering other examples such as the Soviet Union and the Nazis who used their control over the media to create weaker societies that they could more easily manipulate. Recently, according to the, the Radio and Television Supreme Council (RTÜK), the Turkish government radio and television regulating body, fined a number of Turkish news channels for "harming the physical, moral and mental development of children and young people" by broadcasting coverage of the Gezi Parki Uprisings in Taksim Square, Istanbul, Turkey (Hürriyet Daily News, June 12, 2013). Sixty-two Turkish journalists were later imprisoned for ignoring government warnings to cease broadcasting and publishing information regarding the uprisings.

Alternatively, several international media outlets have recently called upon the global community to act to resolve the conflict in Syria. Over the past several decades, international media has become increasingly involved in exposing the conflicts and suffering in several Sub-Saharan countries and have continually pressed for international aid and support. Given the power of media to influence public opinion by either fueling tensions or calling for resolution and peace, the question arises as to how this power is affected by press freedom. In other words, what is the relationship between freedom of the press and conflict?

Pal (2011) finds empirical evidence that unregulated media can reduce different forms of socio-political instability, suggesting that a free media can serve to promote peace. Pal (2011) theorizes that unregulated national media has a greater ability to share news on an international stage and this international exposure can lead to external pressure on governments to act in the best interest of their citizens, which includes resolving conflicts. Fish and Kroenig (2006) offer evidence that conflict is negatively associated with more democratic nations; considering that greater freedom of the press is generally found in more democratic nations, this study offers further evidence that greater press freedom is associated with a more peaceful nation.

Nonetheless, it should be noted that in some countries where media is highly regulated, such as China, Singapore, Qatar, North Korea, and United Arab Emirates, there is also relatively low levels of conflict. While past research has generally found that greater press freedom is associated with a more peaceful state, one can also point to several examples of countries with highly regulated press freedom that experience relatively low levels of conflict. It is suggested here that while a free media can serve to reduce conflict by calling on the international community and external forces to resolve conflicts, a government that controls the media can also manage the message and control public opinion in an effort to minimize or even prevent uprisings. The primary objective of this study is to test the hypothesis that the relationship between press freedom and conflict is not linear; rather it takes an inverted U-shape such that the least conflict is observed when press freedom is both highly unregulated and regulated, but peaks at some intermediate level of freedom. It is theorized that while greater press freedom can lead to less conflict as the media is free to expose the sources of the conflict and call upon domestic and international leaders to resolve issues, a government that regulates the media also controls the information that is disseminated and the messaging, which can prevent conflict from initiating. Thus, it is when the press freedom is at some intermediate level and the media cannot fully reach out to external sources, nor can the government fully control the message, that nations observe the greatest conflict. This hypothesis is tested using a cross-country data set of 146 countries, while controlling for other factors known to affect conflict.

Conflict and Media Freedom

Puddephatt (2006) states that role the media takes in a given conflict depends on a multitude of complex factors, including the degree of independence the media has relative to those in power. In regards to an unregulated press, the benefits of a free media are widely recognized. As Norris and Zinnbauer (2002) discuss, societies with widespread access to an independent free press tend to also enjoy governments with greater administrative efficiency, improved social and economic conditions, and less corruption. Bhathangar (2000) also notes that with greater access to unrestricted information such as the Internet there is also greater transparency and accountability throughout all facets of the government. It is widely accepted that nations with a free, unregulated media tend to be more economically and politically stable, enjoy greater efficiency and transparency, and experience lower levels of corruption (Ades and Di Tella, 1999; Treisman, 2000; and Wei, 2000). Further, as Pal (2011) finds, through its ability to share news on an international stage, an unregulated media has the ability to expose corruption and sources of contentious issues, putting pressure on governments to act in the best interest of their citizens, which includes working

to prevent conflicts from occurring as well as resolving conflicts that do arise. Thus, an additional benefit of a free media is that is serves to reduce conflict.

Nevertheless, it cannot be overlooked that some countries with highly regulated media also experience low levels of conflict. As noted above, countries such as China, Singapore, Qatar, North Korea, and United Arab Emirates, among others, have comparatively restricted media, but also enjoy relatively fewer uprisings and conflict. It is argued here that governments with control over the media can regulate the messages and images to mask potential sources of contention, thereby reducing the need or desire for uprisings. Further, through the use of propaganda, a regulated press can be used to promote national identity and image to dissuade internal uprisings against the government. In other words, if the government has control of the images, messages, and actual content of the news shared with its citizens, it has the ability to minimize uprisings and other sources of conflict.

Given the theoretical arguments presented for both highly unregulated and regulated media to be able to reduce conflict, it is hypothesized that, after accounting for the other factors known to affect conflict, the greatest conflict will be observed at some intermediate level of press freedom. At this intermediate level, the media is not fully able to expose, nor disseminate information on potential sources of contention, nor fully exercise its ability to call on external sources for assistance. Further, without tighter controls, the government is not able to regulate all messaging and imaging. In other words, *in regards to minimizing conflict*, the benefits of an unregulated media as well as a highly regulated media cannot be observed. Thus, it is hypothesized that:

H₁: Controlling for other factors known to affect conflict, press freedom has an inverted U-shape relationship with conflict such that countries with an intermediate level of press freedom experience the greatest levels of conflict.

Data Measures and a Preliminary Analysis

Conflict

Conflict is a broad term that can be used to describe a wide range of disagreement and contention that may or may not include violent acts. In this study we use the 2012 Peace and Conflict Instability Ledger data (PCI), published by the Center for International Development and Conflict Management in the 2012 Peace and Conflict report created by Hewitt et al. (2012), to define and measure conflict at the country level. The PCI data is based on an analysis of the drivers of internal war and regime collapse and provides the estimated risk of a country experiencing major bouts of political instability or armed conflict in the three year period from 2010 to 2012. As discussed in the 2012 Peace and Conflict report, the risk estimates are obtained from a forecasting statistical model that uses the most current data for several variables that have been identified as strongly correlating with the onset of political instability and armed conflict. To define political instability within each country, Hewitt et al. (2012) considers events such as revolutionary wars, ethnic wars, adverse regime changes, and genocides over the period 1955 to 2006. Hewitt et al. (2012) state that while this set of events is notably heterogeneous, the onset of any one of these events has been identified as being a precursor to a period of time in which the government's ability to deliver critical services and exercise meaningful authority is hampered.

To identify the underlying factors that lead to wars, adverse regime changes, and genocides and create the PCI data, Hewitt et al. (2012) used approximately 60 years of data over the period 1955 to 2006 and performed a series of empirical studies. The results of these analyses indicated that instability can emerge from a combination of five factors; institutional consistency, economic openness, infant mortality rates, militarization, and neighborhood security. Institutional consistency captures the degree to which political institutions are mixed in regards to democratic and autocratic features and, all else equal, countries with a greater mix are more likely to experience political instability. Economic openness considers the extent to which a country is integrated into the global economy and countries that are more economically open and globally connected have been found to experience less instability. Infant mortality rates serve as a measure of a country's overall level of economic development, social welfare, and its ability to deliver critical services to its citizens. As noted in Hewitt et al. (2012), there is significant research to suggest a strong relationship between a high infant mortality rate and the likelihood of future instability. Further, militarization, or access to weapons stock and military skill and training, is also accounted for as Hewitt et al. (2012) state that instability is most likely in countries where the opportunities for armed conflict are the greatest. Finally, neighborhood security is included as Hewitt et al. (2012) note that the likelihood of political instability within a country increases when a neighboring country is currently experiencing instability. Thus, the PCI data is based on these five factors as indicators of future conflict, which is defined as internal war and regime collapse, or political instability.

The PCI data is available for 163 countries and provides a risk score for each country. The risk score represents the relative risk, compared to the average member of the OECD, of experiencing instability over the next three years. From the 2012

dataset, the countries with the highest PCI data, or greatest risk of instability, are Afghanistan, the Democratic Republic of Congo, Burundi, Guinea-Bissau, and Djibouti with risk scores of 36.4, 29.8, 24.5, 23.9, and 23.5, respectively. On the other end of the spectrum, the countries with the smallest PCI values, or least risk, are Austria, Denmark, Finland, Ireland, Netherlands, Norway, Slovenia, and Sweden, which all have risk scores of 0.2. Indonesia, Sri Lanka, and Niger have risk scores that are near the average of the PCI data with values of 5.2, 5.2, and 5.3, respectively.

Press Freedom

The 2009 Freedom of the Press (FP) index published by Freedom House is used to measure the media and press freedoms that are afforded by a country. A free and unregulated press represents an unrestricted and uncensored flow of information through all forms of press and news media. According to Freedom House (2009), a free press plays an important role in supporting a healthy democracy and stable government, all of which serves to minimize conflict. The FP index is used in this study rather than other measures of quality of government or personal freedoms, as the focus of this analysis is on press freedom, or the degree to which the news media is unrestricted to disseminate information. Past research such as Brunetti and Weder (2003), Chowdhury (2004), and Serra (2006) have also used the FP index to proxy press freedom and freedom of information.

Published annually, the FP index is based on a set of 23 survey questions completed by overseas correspondents, international visitors, reports from human rights and press freedom organizations, governments and multilateral bodies, as well as experts in geographic and geopolitical areas, domestic and international news media, among others (Freedom House, 2009). According to Freedom House 2009, the survey questions are designed to assess the legal, political, and economic environments in which the media operates and considers issues such as the legal and constitutional guarantees of press freedom, penalties for libel, penal codes, editorial independence of the media, intimidation and threats to journalists, the existence of competitive pressures leading to biased press reports and investigations, among many others factors deemed to affect the freedom of the press. Each country receives an FP value, which represents the overall quality of the legal, political, and economic environment in which the media operates, and the index ranges from 0, most free, to 100, least From the 2009 FP data, Finland, Norway, Sweden, and Belgium were free. recognized as having the greatest levels of press freedom with FP values of 10, 11, 11, and 12, respectively, while Eritrea, Libya, Myanmar, Uzbekistan, Turkmenistan,

and North Korea were ranked as least free with FP values of 94, 94, 94, 94, 96, and 97, respectively.

Preliminary Analysis

In order to explore the possible non-linear relationship between conflict and freedom of the press, a scatter plot with a fitted polynomial line between the two indices is shown in Figure 1. As shown in Table 1, the coefficients in the fitted polynomial model are statistically significant at 99% confidence and the model has an Adjusted R^2 value of 0.164. A linear model was also estimated and, while the coefficient on FP is statistically significant, the Adjusted R^2 value was notably lower at 0.073. These results offer some preliminary evidence that a non-linear, U-shaped relationship between conflict and press freedom may exist. However, before this relationship can be tested and more thoroughly explored, the other factors known to affect conflict need to be accounted for and the following section describes the control variables employed.





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	Coefficient Estimate	Std Err	t Stat	<i>p</i> -value	Adj. <i>R</i> ²
Intercept	1.43	1.156	1.24	0.2175	0.073
FP	0.08**	0.020	3.71	0.0003	
	Coefficient Estimate	Std Err	t Stat	<i>p</i> -value	Adj. <i>R</i> ²
Intercept	-6.25**	2.1000	-2.978	0.0033	
FP	0.450**	0.0900	5.037	< 0.0001	0.164
FP^2	-0.004**	0.0008	-4.291	<0.0001	

Table 1. Conflict and Freedom of the Press Estimated Linear and Polynomial Models

p* <0.05; *p*<0.01

Control Variables and Descriptive Statistics

Democracy

While the PCI data does consider the degree to which a country's political institutions are mixed in terms of democratic and autocratic features, the data does not include the overall level of democracy within a country, which is commonly controlled for in conflict studies. Specifically, in a cross-sectional analysis of 140 conflict-stricken and non-conflict stricken developing countries, Kim (2006) finds that nondemocratic political systems with little to no political freedoms were less capable of managing and resolving events of crisis and conflict. In a panel data analysis of 179 countries over the period 1968 to 2003, Bloomberg and Hess (2005) also find that the level of violent terrorist activities generated within a country is negatively related to the degree of democracy. In a comprehensive study exploring the robustness of previous findings on the determinants of terrorism, Gassebner and Luechinger (2011) find that a strong and impartial judicial system and respect of physical integrity rights, which are common characteristics of a more democratic society, are associated with lower levels of terrorism. Further, in a study exploring the determinants of socio-political instability, Pal (2011) uses a panel data from 98 countries over the period 1994 to 2005 and controls for the level of democracy. Given these findings and the general consensus within the literature that greater democracy is generally associated with less conflict and violence and greater stability, democracy is controlled for in this analysis.

The 2010 Economist Intelligence Unit's (EIU) Index of Democracy is used to proxy the level of democracy within a country and has been used in many studies, such as Sung (2004) and Kaufmann et al. (2009), to approximate country democracy. The EIU is a broad measure of democracy and is based on five categories; electoral process and pluralism, civil liberties, the functioning of the government, political participation, and political culture. On each of these five categories, countries are scored on a scale of zero to ten and the EIU index is the un-weighted average of the five scores. Thus, the EIU data ranges from zero to ten and countries with scores closer to ten represent the highest levels of democracy.

Diversity

Ethnic and linguistic diversity has also been linked to various measures of conflict, violence, and unrest as past research has generally found that greater ethnic and linguistic diversity measures tend to be associated with greater conflict and civil disturbance. Specifically, Kim (2006) finds that more ethnically homogeneous countries were less likely to experience internal conflict and Buhaug et al. (2008) find that politicized ethnicity is a major determinant of internal conflict. In a cross-country study exploring the determinants of terrorism, Abadie (2005) finds that greater levels of linguistic diversity increased the likelihood that a country will experience terrorist attack.

The 1985 Ethnolinguistic Fragmentation (*ELF*) Index, originally developed by Taylor and Hudson (1972), is used to measure country ethnic and linguistic diversity. The index measures the probability that two randomly selected individuals from a particular country will belong to different ethno-linguistic groups. Thus, the index ranges from zero to one such that countries with values close to zero are very homogeneous in regard to ethnic and linguistic diversity. While other measures of diversity are available, the *ELF* index has been used in many studies, such as Easterly and Levine (1997), Mauro (1995), La Porta et al. (1999), and Alesina et al. (2003), which have explored the impact of diversity on a variety of country factors.

Education

The level of education has also been found to significantly affect conflict and violence associated with terrorism. In regard to terrorism, Azam and Thelen (2008) use a panel data set of 176 countries from 1990 to 2004 and find that terrorist attacks are negatively related to the level of education. Further, in a cross-country study over the period 1997 to 2004, Bravo and Dias (2006) conclude that terrorism is more likely to occur in countries with lower levels of education, which coincides

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with Krueger and Laitin's (2008) findings that education levels are linked, albeit weakly, to terrorism. Further, in his study exploring the determinants of socio-political instability, Pal (2011) also controls for the level of education.

The 2009 Education Index (EDI), one of the three sub-indices that make-up the Human Development Index that is published by the International Human Development Program, is used to measure the average level of education in a country. The EDI is based on the mean years of schooling of adults and the expected number of years of schooling for children. The data is normalized and is scaled on a zero to one range such that values closest to one represent countries with the greatest education attainment.

Geographical Characteristics

Country geographic characteristics such as the geographical size of the country, its average elevation, and the proportion of the country in a tropical climate have also been identified as significant conditions that can contribute to the likelihood of civil unrest, violence, terrorism, and other forms of conflict. When countries are more difficult to traverse; for example, they have large tropical forests or mountainous terrains, these regions can provide terrorist and other rebel groups with secluded areas to operate and train. Further, geographically large countries tend to have more dispersed populations, which can lead less societal cohesiveness and unity. Considering that conflict will be more predominate in less unified societies, by extension, larger geographical countries can then be more likely to experience conflict. Further, previous empirical research supports these relationships. In a crosscountry study using data over the period 1960 to 1999, Collier and Hoeffler (2004) find that the risk of civil war is higher in more mountainous countries and countries with more unequally distributed populations. Further, Abadie (2005), Buhaug et al. (2008) and Fearon and Laitin (2003) also find that rough terrain is a significant determinant of internal and external country conflict. Finally, Pal (2011) also controls for geographical characteristics in his analysis exploring the determinants of socio-political instability.

The geographical characteristics of country land area, average elevation, and the percentage of the tropical area are controlled for in this analysis. These data are provided by the World Bank and country area (*Area*) represents the size of country measured in square kilometers (in millions), elevation (*Elev*) represents the average elevation of the country above sea level in meters, and tropical area (*Trop*) measures the proportion of the country land area that experiences tropical weather.

Economic Development

The level of economic development is commonly controlled for in studies exploring conflict, terrorism, or other forms of violence and civil unrest as Tures (2003) states that developed countries are less likely to experience conflict as they have achieved a level of wealth to satisfy their domestic population. In regards to civil wars and unrest, Collier and Hoeffler (2004) and Fearon and Laitin (2003) find that less economically developed countries are more likely to experience civil war and unrest. Further, in an analysis exploring the relationship between democracy and civil war and violence, Gleditsch and Ruggeri (2010) control for the level of economic development as does Pal (2011).

The level of economic development is measured by the natural log of 2009 GDP per capita (*LnGDPPC*), which is available through the World Bank.

Descriptive Statistics

The data described above is available for 146 countries and this sample is used explore the relationship between conflict and press freedom, as measured by the *PCI* and *FP* data, respectively, as well as test H₁. Table 2 provides a summary of the data used as well as the descriptive statistics. The most recent 2012 *PCI* data is used and, given that the effect of the control variables cannot be expected to occur immediately, the control variables are lagged by approximately two years with the one exception of the 1985 *ELF* data. The 1985 data is the most recent data available for *ELF*; however, this data is still considered accurate as ethno-linguistic diversity is relatively constant through time. Further, through a series of preliminary analyses, the relationship between the *PCI* data and the other variables is best described as linear in the log of *PCI*. Thus, the descriptive statistics reflect the natural log of the *PCI* data, *LnPCI*.

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Variable	Proxy (Name, Year Reported)	Mean	St. Deviation	N
Conflict	Peace and Conflict Instability (<i>LnPCI</i> , 2012)	0.89	1.40	163
Press Freedom	Freedom of the Press (FP, 2009)	51.48	23.56	162
Democracy	Economist Intelligence Unit (<i>EIU</i> , 2010)	5.38	2.21	161
Diversity	Ethno-linguistic Fragmentation Index (<i>ELF</i> , 1985)	0.47	0.27	161
Education	Education Index (<i>EDI</i> , 2009)	0.63	0.21	158
Land Area	World Bank (<i>Area</i> , NA)	829,760	2,062,539	154
Avg. Elevation	World Bank (<i>Elev</i> , NA)	629.38	565.03	154
Tropical Area	World Bank (<i>Trop</i> , NA)	0.47	0.48	154
Economic Development	GDP per Capita, World Bank (<i>LnGDPPC</i> , 2009)	7.67	1.56	157

Table 2. Variable Summary and Descriptive Statistics

A Pearson correlation matrix of all of the variables used in the analysis is presented in Table 3. Considering that greater LnPCI values are associated with higher levels of conflict, the correlations have the expected signs. Specifically, LnPCI is negatively and significantly correlated with EIU, EDI, and LnGDPPC. The negative and significant correlation values indicate that, on average, less conflict stricken countries tend to be more democratic and have higher levels of education and economic development. The LnPCI is also positively and significantly correlated with FP, ELF, Elev, and Trop. These correlations suggest that, on average, less conflict stricken countries tricken countries tend to have greater press freedoms, are more ethno-linguistically homogeneous, and have higher average elevations and a greater proportion of land

area that experience tropical weather. While conflict as proxied by LnPCI is significantly correlated with the geographical characteristics of average elevation and tropical weather, it is not significantly correlated with country land area.

	LnPCI	FP	EIU	ELF	EDI	Area	Elev	Trop	LnGDPPC
LnPCI	1								
FP	0.43**	1							
EIU	-0.49**	-0.89**	1						
ELF	0.45^{**}	0.10	-0.22**	1					
EDI	-0.76**	-0.48**	0.63**	-0.43**	1				
Area	-0.02	0.04	0.05	0.05	0.11	1			
Elev	0.32**	0.21**	-0.17*	0.09	-0.12	0.04	1		
Trop	0.56**	0.26**	-0.30**	0.47**	-0.65**	-0.09	-0.12	1	
LnGDPPC	-0.84**	-0.51**	0.61**	-0.45**	0.81**	0.13	-0.26**	-0.55**	1

Table 3. Correlation Matrix

*p <0.05; **p<0.01

Regression Analysis

To explore the relationship between conflict and press freedom, the following preliminary regression model (Model 1) using FP and the control variables is first estimated:

 $LnPCI = \beta_o + \beta_1 FP + \beta_2 EIU + \beta_3 ELF + \beta_4 EDI + \beta_5 Area + \beta_6 Elev + \beta_7 Trop + \beta_8 LnGDPPC + \varepsilon$ (1)

As shown in Table 4, the Adjusted R^2 of 0.7572 and significant F test statistical offer statistical support for this preliminary model. All of the coefficients on the control variables are significant and have the expected signs with the exception of the coefficients on *EIU* and *Area*. Interestingly, the coefficient on *FP* is not significant, indicating that when country democracy, ethno-linguistic diversity, education, economic development, and geographical characteristics are accounted for, a linear relationship between press freedom and conflict is not statistically significant.

	Coefficient Estimate	Std Err	t Stat	<i>p</i> -value
Intercept	4.266**	0.76	5.58	< 0.0001
FP	0.004	0.006	0.80	0.4247
EIU	0.096	0.070	1.38	0.1710
ELF	0.526*	0.265	1.98	0.0494
EDI	-1.683**	0.583	-2.89	0.0045
Area	0.00000005	0.0000003	1.80	0.0746
Elev	0.00032**	0.00011	2.84	0.0052
Trop	0.378**	0.180	2.10	0.0038
LnGDPPC	-0.490**	0.069	-7.07	< 0.0001
$A_{di} D^2 = 0.757$	$72E_{c+a+}$ 57.22 ^{**}	** <0.05.*	******	

Table 4. Regression Results Model 1 Dependent LnPCI

Adj. $R^2 = 0.7572F$ stat = 57.33^{**} * p < 0.05; **p < 0.01

To test the hypothesis that the relationship between conflict and press freedom is nonlinear such that the relationship between *LnPCI* and *FP* has an inverted U-shape, Model 2 is estimated, which includes the squared *FP* term:

 $LnPCI = \beta_o + \beta_1 FP + \beta_2 FP^2 + \beta_3 EIU + \beta_4 ELF + \beta_5 EDI + \beta_6 Area + \beta_7 Elev + \beta_8 Trop + \beta_9 LnGDPPC + \varepsilon$ (2)

As shown in Table 5, the Adjusted R^2 increases to 0.8019. Further, a partial F test indicates that the addition of the squared FP term offers statistically significant explanatory power to the model. The coefficients on the control variables are significant and have the expected sign with the one exception of EIU, which remains Perhaps the most interesting result from Model 2 is that the insignificant. coefficient on FP is positive and significant and the coefficient on FP^2 is negative and significant. These results suggest that, after controlling for democracy, ethnolinguistic diversity, education, economic development, and country geographical characteristics, there is a nonlinear relationship between conflict and press freedom. The nonlinear relationship indicates that, after controlling for other factors known to affect conflict and instability, conflict is minimized when the press is highly free and tightly controlled, but peaks at an intermediate level of press freedom, which supports H_1 . Previous research suggests that an unrestricted press is able to expose issues that could potentially result in conflict and call upon the global community to resolve conflict. It is theorized here that a highly restricted press allows government official to regulate all messaging and imaging, which can be managed such that conflict is minimized. Thus, it is at an intermediate level of press freedom, when the media is not able to disseminate fully unrestricted information and the government

is not able to fully control all messaging and imaging, that the greatest levels of conflict and instability are observed. Using the estimated results, LnPCI is maximized when FP is approximately equal to 54.6, which is found by solving for the first order condition and using the estimated results from Model 2.

	Coefficient	Std Err	<i>t</i> Stat	
	Estimate			<i>p</i> -value
Intercept	2.330**	0.771	3.02	0.0030
FP	0.072**	0.013	5.52	< 0.0001
FP^2	-0.00066**	0.00012	-5.65	< 0.0001
EIU	0.040	0.064	0.63	0.5327
ELF	0.492^{*}	0.240	2.06	0.0418
EDI	-1.346*	0.530	-2.54	0.0122
Area	0.000000057^{*}	0.00000026	2.23	0.0274
Elev	0.00027^{*}	0.0001	2.59	0.0105
Trop	0.330*	0.163	2.03	0.0445
LnGDPPC	-0.394**	0.065	-6.09	< 0.0001
Adj. $R^2 = 0.801$	9F stat = 66.23**	*p <0.05; **p<0.	.01	

Table 5. Regression Results Model 2 Dependent *LnPCI*

To further explore the nonlinear relationship, the estimated *PCI* values are calculated using the estimated regression results from Model 2 and evaluating all of the independent variables at their means with the exception of *FP*. Figure 2 illustrates the estimated values of *PCI* against the *FP* values that range from zero, completely free press, to 100, completely restricted press.



Figure 2. Estimated PCI values and FP

As noted above, conflict is estimated to peak when FP is approximately 54.6 when all other control variables are held at their mean values. Examples of countries with FP values close to 54.6 are Bangladesh, Republic of Congo, Kenya, Senegal, Turkey, and Uganda, which all have an FP value of 54 and PCI values of 12, 2.7, 11.5, 8, 6.1, and 10.7, respectively. With the exception of the Republic of Congo, each of these countries has an above average PCI value. It is important to note; however, that a country with an FP value close to 54.6 will not necessarily also have a high PCI value as the other control variables, diversity, education, economic development, and geographical characteristics also play an important role in determining the level of conflict and instability a country faces. Keeping this caveat in mind, Guinea Bissau, Nigeria, and Sierra Leone are examples of countries that have an intermediate level of press freedom with FP values of 52, 53, and 57, respectively, but high PCI values of 20.7, 17.8, and 23.9, respectively. Further, Finland, Norway, Sweden, Belgium, Denmark, and Switzerland are examples of countries with some of the highest levels of press freedom (10, 11, 11, 12, 13, and 13, respectively) that also have some of the lowest levels of conflict with PCI values of 0.2, 0.2, 0.2, 0.7, 0.2, and 0.3, respectively. On the other end of the spectrum, Belarus, Libya, Uzbekistan, and Turkmenistan represent the countries in the data set with the most restricted press with FP values of 93, 94, 94, and 96, respectively that also have relatively lower levels of conflict with *PCI* values of 0.6, 0.9, 1.1, and 1.3.

Summary and Discussion

Using data from 146 countries, this study empirically tested the relationship between conflict and press freedom, as proxied by the PCI and FP data, respectively. After controlling for other factors known to affect conflict within a country, the results indicate that the relationship between conflict and press freedom is best described as nonlinear. Holding all else constant, the estimated equations suggest that conflict is minimized at both the unrestricted and restricted ends of the press freedom spectrum and reaches a maximum at an intermediate level of press freedom. If the control variables are held at their mean values, conflict is estimated to peak when FP is approximately 54.6. Past research has argued that greater press freedom allows the media to freely disseminate information and expose corruption or other issues that may incite conflict; thereby creating a disincentive for officials or other parties to partake in such activities, which minimizes the potential for conflict. Further, past research has argued that a free press is able to call upon the global community to assist when conflicts do arise and this external pressure can encourage government officials to address and resolve contentious issues before conflict and unrest occurs. Nonetheless, it is theorized here that a highly restricted press could also serve to reduce conflict as a government can use its control over the media to send censored information, images, and messaging that prevents conflict and unrest. The censored media could be used to bolster national pride and create positive public opinions; all of which could serve to reduce conflict. This study offers empirical support for this hypothesis.

Nonetheless, it is not suggested here that media freedom should be restricted in an effort to reduce conflict, rather it is the authors' intention to bring awareness to the literature that governments with tight control over the media can use this power to prevent conflict and uprisings by preventing its citizens to fully understand and be aware of issues that can cause conflict and unrest. It should also be noted that a government with strong control of the media can also use this power to incite anger and provoke attacks against groups with anti-government agendas; however, the data used in this analysis suggests that the majority of governments with tight media controls do not exploit their power in this way. In terms of policy implications, it is suggested here that efforts to increase the level of education attainment and economic development as well as improve the communication between different ethno-linguistic groups as well as enhance press freedoms will all have the added benefit of reducing conflict.

It should also be noted that the results are limited to the data measures used in this analysis. While the data measures such as *FP* and *PCI* are widely used and respected,

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all such quantitative measures of qualitative issues cannot be expected to capture these factors perfectly and at least some measurement error will occur in all such studies. Thus, the results presented here need to be reviewed and considered in this light.

Finally, as an avenue for future research, one should consider the role that social media plays in either inciting or mitigating conflict. While access to social media and press freedom are likely to be highly correlated, social media is by definition an open exchange of information and ideas between individuals in virtual networks. In other words, social media allows for unregulated exchanges between individuals and groups while the traditional broadcast news is one-directional in nature and, even when the media is highly free, it typically must still adhere to broadcast rules and regulations. The power of social media has recently been observed in countries such as Turkey and Syria and the role of social media above and beyond media freedom is an interesting area for future research.

References

Abadie, A. (2005). Poverty, Political Freedom, and The Roots Of Terrorism. *American Economic Review*, 95, 50-56.

Ades, A. & Di Tella, R. (1999). Rents, Competition and Corruption. *American Economic Review*, 89, 982-93.

Alesina, A.F., Easterly, W., Devleeschauwer, A., Kurlat, S. & Wacziarg, R.T. (2003). Fractionalization. *NBER Working Paper No. W9411* (2003), SSRN: http://ssrn.com/abstract=366448.

Azam, J-P. & Véronique T. (2008). The Roles of Foreign Aid and Education in the War on Terror. *Public Choice*, 135, 375-397.

Bhatnagar, S. (2000). Social Implications of Information and Communication in Developing Countries: Lessons from Asian Success Stories. *The Electronic Journal of Information Systems in Developing Countries*, 1, 1-10.

Blomberg, B. S., Hess, G.D. & Weerapana, A. (2004). Economic conditions and terrorism. *European Journal of Political Economy*, 20, 463 - 478.

Bravo, A.B. & Dias, C. M. M. (2006). An Empirical Analysis of Terrorism: Deprivation, Islamism, and Geopolitical Factors. *Defense and Peace Economics*, 17, 329-341.

Brunetti, A. & Weder, B. (2003). A Free Press is Bad News for Corruption. *Journal of Public Economics*, 87, 1801 – 1824.

Buhaug, H., Cederman, L-E. & Rød, J.K. (2008). Disaggregating Ethno-Nationalist Civil Wars: A Dyadic Test of Exclusion Theory. *International Organization*, 62, 531-551.

Chowdhury, S. K. (2004). The Effect of Democracy and Press Freedom on Corruption: An Empirical Test. *Economic Letters*, 85, 93 – 101.

Collier, P. & Hoeffler, A. (2004). Greed and Grievance in Civil War. Oxford *Economic Papers*, 56, 563–95.

Easterly, W. & Levine, R. (1997). Africa's Growth Tragedy: Policies and Ethnic Divisions. *Quarterly Journal of Economics*, 111, 1203–1250.

Fearon, J.D. & Laitin, D.D. (2003). Ethnicity, Insurgency, and Civil War, *American Political Science Review*, 97, 75-90.

Fish, S.M. & Kroenig, M. (2006). Diversity, Conflict, and Democracy: Some Evidence from Eurasia and East Europe. *Democratization*, 13, 828-842.

Freedom House (2009). *Freedom_of the Press 2009: A Global Survey of Media Independence*. Edited by Karin Deutsch Karlekar. New York: Rowman & Littlefield Publishers.

Gassebner, M. & Luechinger, S. (2011). Lock, Stock, and Barrel: A Comprehensive Assessment of the Determinants of Terror. CESifo Working Paper No. 3550.

Gleditsch, K.S. & Ruggeri, A. (2010). Political Opportunity Structures, Democracy, and Civil War. *Journal of Peace Research*, 47, 299-310.

Hewitt, J.J. Wilkenfeld, J. & Gurr, T.R. with Heldt, B., Guest Editor (2012). *Peace and Conflict 2012 Report,* Published by the Center for International Development and Conflict Management, University of Maryland.

Hürriyet Daily News, "TV watchdog fines live streaming of Gezi protests for 'harming development of children, youth". Retrieved June 12 2013, from http://www.hurriyetdailynews.com/tv-watchdog-fines-live-streaming-of-gezi-protests-for-harming-development-of-children-youth-.aspx?pageID=238&nID=48655&NewsCatID=341.

Jayoti Das and Cassandra E. DiRienzo

Kaufmann, D. Kraay, A. & Massimo, M. (2009). Governance Matters VIII: Aggregate and Individual Governance Indicators, 1996-2008. *World Bank Policy Research Working Paper No. 4978* http://ssrn.com/abstract=1424591.

Kim, H.S. (2006). The Determinants of Internal Conflict in the Third World. *The Whitehead Journal of Diplomacy and International Relations*, Summer/Fall, 91 – 106.

Krueger, A.B., & Laitin, D.D. (2008). *Kto kogo?: A cross-country study of the origins and targets of terrorism.* In P. Keefer & N. Loayza Terrorism, Economic Development, and Political Openness. 148 - 173. New York: Cambridge University Press.

La Porta, R., Lopez-de-Silanes, R., Shleifer, A. & Vishny, R.W.. (1999). The Quality of Government. *Journal of Law, Economics, and Organization*, 15, 222–279.

Mauro, P. (1995). Corruption and Growth. *Quarterly Journal of Economics*, 110, 681–712.

Norris, P., & Zinnbauer, D. (2002). Giving Voice to the Voiceless: Good Governance, Human Development and Mass Communications. *Human Development Report Office Occasional Paper*, Background paper for Human Development Report (UNDP), 1-44.

Pal, S. (2011). Media Freedom and Socio-Political Instability. *Peace Economics, Peace Science, and Public Policy,* 17, 1-21.

Puddephatt, A. (2006). *Voices of War: Conflict and the Role of the Media*. Edited and commissioned by the International Media Support (IMS).

Serra, D. (2006). Empirical Determinants of Corruption: A Sensitivity Analysis. *Public Choice*, 126, 225 – 256.

Sung, H-E. (2004). Democracy and Political Corruption: A Cross-National Comparison. Crime, Law & Social Change, 41, 179–194.

Taylor, C., & Hudson, M. (1972). *World Handbook of Political and Social Indicators*. New Haven, CT: Yale University Press.

Treisman, D. (2000). The Causes of Corruption: A Cross National Study. *Journal of Public Economics*, 76, 399-457.

Tures, J. A. (2003). Economic Freedom and Conflict Reduction. *Cato Journal*, 22, 533-542.

Wei, S-J. (2000). How Taxing is Corruption on International Investors? *Review of Economics and Statistics*, 82, 1-11.

The Nexus between Tax Structure and Economic Growth in Nigeria: A Prognosis

Ehigiamusoe Uyi Kizitoⁱ

Department of Research and Training National Institute for Legislative Studies, National Assembly, Abuja, Nigeria. *ehiuyikizexcel@yahoo.com*

Abstract: One of the most commonly discussed issues in Economics is how tax rates relate to economic growth. An effective tax system ought to satisfy the twin purposes of raising maximum revenue as well as encourage production. In light of this, the paper examined the nexus between the Nigerian Tax System and economic growth using correlation method and Granger Causality to establish the relationship. The paper revealed that the tax system has no significant impact on growth because of the numerous challenges confronting the system. Further analysis of the components of the tax system shows that Custom Duties have more impact on economic growth than Company Income Tax, Value Added Tax and Petroleum Profit Tax. The paper also revealed a negative and insignificant relationship between Petroleum Profit Tax and Company Income Tax on the one hand, and between Petroleum Profit Tax and Value Added Tax on the other hand. Consequently, the paper recommended that the Nigerian tax system should be reformed so that it can have a significant impact on economic growth. Government should also embark on policies and programmes that will enhance the level of income of the citizens with a view to accelerating consumption, investment, employment, and tax revenue.

Keywords: Nigerian Tax System, Economic Growth, Tax Revenue, Consumption, Investment

JEL Classification: H2, O1, E0

Article History

Submitted: 11 Jun 2013 Resubmitted: 24 July 2013 Accepted: 29 July 2013

Uyi Kizito Ehigiamusoe

The importance of taxation in promoting economic growth and development as well as the survival of many nations cannot be overemphasized. Through it, government ensures that resources are channelled towards important projects in the society. According to Emmanuel (2010), many developed and developing economies around the world had experimented and proven that no nation can truly develop without developing its tax system. Consequently, many countries have embarked on tax reforms and restructuring with a view to developing a tax system that maximizes government revenue without creating disincentiveness for investment.

According to Kiabel and Nwokah (2009), within the last decade, the issue of domestic resource mobilization has attracted considerable attention in many developing countries due to unabating debt difficulties coupled with domestic and external financial imbalances. It is not surprising that many developing nations have been forced to adopt stabilization and adjustment policies which demand better and more efficient methods of mobilizing domestic financial resources with a view to achieving financial stability and promoting economic growth. A critical challenge of tax administration in the 21st century is how to advance the frontiers of professionalism, accountability and awareness of the general public on the imperatives and benefits of taxation in our personal and business lives which include: promoting economic activity; facilitating savings and investment; and generating strategic competitive advantage (Kiabel and Nwokah, 2009). If tax administration does not for any reason meet the above challenges, then there is a desperate need for reform.

One of the most commonly discussed issues in Economics is how tax rates relate to economic growth. Advocates of tax cuts claim that a reduction in the tax rate will lead to increased economic growth and prosperity. Others claim that if we reduce taxes, almost all of the benefits will go to the rich, as those are the ones who pay the most taxes. What does economic theory suggest about the relationship between economic growth and taxation? Economic theory provides an explanation for a negative relationship between taxes and economic growth. Taxes raise the cost or lower the return to the taxed activity. Income taxes create a disincentive to earning taxable income. Individuals and firms have incentives to engage in activities that minimize their tax burden. As they substitute activities that are taxed at a lower rate for activity, leading to lower rates of economic growth. In addition, government expenditures (how the taxes are spent) will also have impact on economic growth (Poulson and Kaplan, 2008).

In the case where government can finance spending out of taxation, productivity declines as the tax rate increases, as people choose to work less. The higher the tax
rate, the more time people spend evading taxes and the less time they spend on more productive activity. So the lower the tax rate, the higher the value of all the goods and services produced. Secondly, government tax revenue does not necessarily increase as the tax rate increases. The government will earn more tax income at 1% rate than at 0%, but will not earn more at 100% than at 10% due to the disincentives high tax rates cause. Thus there is a peak tax rate where government revenue is highest. The relationship between income tax rates and government revenue can be graphed on what is known as Laffer curveⁱⁱ.

The Nigerian tax system has undergone significant changes in recent times. The Tax Laws are being reviewed with the aim of repelling obsolete provisions and simplifying the main ones. Under current Nigerian law, taxation is enforced by the three tiers of government- federal, state, and local governments with each having its sphere clearly spelt out in the Taxes and Levies (approved list for Collection) (Decree, 1998). According to the Decree, notwithstanding anything contained in the Constitution of the Federal Republic of Nigeria 1999, as amended, or in any other enactment or law, the federal, state and local governments shall be responsible for collecting the taxes and levies listed in Part I, II and III of the Schedule, respectively.

Emmanuel (2010) observed that the realisation was dawned on Nigeria's government at a very critical period when its main source of revenue for decades, oil, witnessed an unprecedented crisis and decline due to general fall in the prices of oil at the international market. This affected the overall revenue of the country and the general performance of government at various levels, especially as it concerns execution of capital projects, which to a large extent, is key to national development. Consequently the federal government came up with a National Tax Policy which seeks to provide a set of guidelines, rules and modus operandi that would regulate Nigeria's tax system and provide a basis for tax legislation and tax administration in the country. The primary objective of revamping, restructuring and reforming the Nigerian tax system is to make it the main source of revenue generation for the government.

Many analysts have argued that the Nigerian tax system is repugnant to economic growth and development and that more reform is needed to reposition the system for utmost efficiency. On the other hand, some analysts have deposited that the Nigerian Tax System is an agent of economic growth due to the reforms and restructuring which took place in the system in recent times. As the arguments on the relationship between the Nigerian Tax System and economic growth continue, it becomes pertinent to examine the Nigerian Tax System and its implications on economic growth. The primary objective of this paper is to investigate the role of the Nigerian Tax System in economic growth.

Following this introduction, the remaining part of the paper is divided into four parts. Section two presents the theoretical and empirical issues. Section three contains an appraisal of the Nigerian tax system and economic growth, while section four presents the methodology adopted in the study. The fifth section presents the results of the study while the summary of major findings and conclusion are contained in the last section.

Theoretical and Empirical Issues

Theoretical Issues

According to Barro's (1979) tax- smoothening hypothesis, if the marginal cost of raising tax revenue is increasing, the optimal tax rate is a martingale. This implies that changes in the tax rate will be permanent. But a crucial question to ask about this hypothesis is whether government tax policies affect its output permanently or transitory? The endogenous growth theories posit that permanent change in a variable that is potentially influenced by government policies cause permanent change in the growth rate (Romer, 1986, 1987, 1990; Lucas, 1988; Rebelo, 1991; Grossman and Helpman, 1991; and Jones, Mannulli and Rossi, 1993). The policy effect in the endogenous growth model is contradictory to that of the neo-classical growth model (exogenous growth model) which anticipates that such changes will alter growth rate only temporary. The endogenous growth model argued that financing government activities through taxes may have impact on welfare and/or on growth (Ramsey, 1928; Solow, 1956; Cass, 1965; Feldstein, 1974).

One of the prepositions of both the old and new growth theory is that income taxes have negative impact on the rate of economic growth. The endogenous growth models predict that temporary government spending policies have positive effects on output but a zero effect for permanent spending shocks. Similarly, a permanent changes in government policies can have permanent effects on the per capita growth rate of output but neo-classical growth model predicts that such policies cannot affect the per capita level of output permanently (Haq-Padda and Akram, 2011; Kocherlakota and Yi, 1999). Tax policy can affect economic growth by discouraging new investment and entrepreneurial incentives or by distorting investment decisions since tax codes make some forms of investment more or less profitable than others or by discouraging work effort and workers' acquisition of skills (Scully, 2006).

It is necessary to note that several research works reveal an indirect relationship between tax burden and economic growth, hence, the higher the tax burdens, the lower the rate of growth, vice versa. Consequently, only optimal rate of taxation increases economic output in the future. The finding from the study conducted by Devereux and Love, (1995) using a two-sector endogenous growth model, observed

that a permanent increase in the share of government spending in income that is financed by lump-sum tax will endorse interest and the long0run economic growth rate at the cost of social welfare. They further showed that a permanent increase in government spending reduces the long-run growth rates when it is funded with an increase tax, wage income taxes, while a temporary rise increases output but has no impact on long-run growth rate (Karras, 1999; Tomljanocich, 2004; Haq-Padda and Akram, 2011).

Evan (1997) presents a procedure to examine whether fiscal policies (taxes) cause endogenous or exogenous growth (have permanent or transitory effect on economic growth). He used simple stochastic growth model that nests both endogenous and exogenous growth models and observed that growth rate should be stationary at level if growth is exogenous and difference stationary if it is endogenous when any policy variable which affect investment is difference stationary. This present study adopts tax rate as a policy variable which affects investment to check whether its effect is endogenous or exogenous on economic growth focusing on the Nigerian economy.

Overview and Challenges of the Nigerian Tax System

The Nigerian Tax System has undergone significant changes in recent times and under the current law, taxation is enforced by the three tiers of Government, namely the Federal, State, and Local, with each having its sphere clearly spelt out in the Taxes and Levies (approved list for Collection) (Decree, 1998). The Decree gives the Federal, State and Local Governments the responsibilities for collecting the taxes and levies listed in Parts I, II and III of the schedule to the Decree, respectively. Part 1 of the schedule contains taxes to be collected by the Federal Government and they include: Companies Income Taxes; Withholding tax on companies, residents of the Federal Capital Territory, Abuja and non-resident individuals; Petroleum profits tax; Value added tax; Education tax; Capital gains tax on residents of the Federal Capital Territory, Abuja, bodies corporate and non-resident individuals; Stamp duties on bodies corporate and residents of the Federal Capital Territory, Abuja; and personal income tax of members of the Armed Forces of the Federation, members of the Nigeria Police Force, residents of the Federal Capital Territory, and staff of the Ministry of Foreign Affairs and non- resident individuals.

Similarly, Part II of the Schedule presents taxes and levies to be collected by the State Government and they include: Personal Income Tax in respect of –Pay-As-You-Earn (PAYE) and direct taxation (Self Assessment); Withholding tax (individuals only); Capital gains tax (individuals only); Stamp duties on instruments executed by individuals; Pools betting and lotteries, gaming and casino taxes; Road taxes; Business premises registration fee; Development levy (individuals Only); Right of

Occupancy fees on lands owned by the State Government in urban areas of the State; and Market taxes and levies where State finance is involved. Part III of the Schedule contains taxes and levies to be collected by the local government and these include: Shops and kiosks rates; Tenement rates; On and Off Liquor Licence fees; Slaughter slab fees; Marriage, birth and death registration fees; Naming of street registration fee, excluding any street in the State Capital; Right of Occupancy fees on lands in rural areas, excluding those collectable by the Federal and State Governments; Market taxes and levies excluding any market where State finance is involved; Motor park levies; Domestic animal licence fees; Bicycle, truck. canoe, wheelbarrow and cart fees, other than a mechanically propelled truck; Cattle tax payable by cattle farmers only; Merriment and road closure levy; Radio and television licence fees (other than radio and television transmitter); Vehicle radio licence fees (to be imposed by the Local Government of the State in which the car is registered); Wrong parking charges; Public convenience, sewage and refuse disposal fees; Customary burial ground permit fees; Religious places establishment permit fees; and Signboard and Advertisement permit fees (See Taxes and Levies (Approved list for collection) Decree No 21 of 1998 Laws of the Federation of Nigeria).

Micah et al. (2012) asserted that the current tax laws were enacted by the Military regimes while the civilian regimes since 1999 are yet to enact any tax law. However, these laws have been amended on a yearly basis to correct loopholes and promote the use of taxes as macroeconomic management instruments. He identified the major tax laws in existence as of September 2003 and various related amendment to include; Personal Income Tax Act of 1993; Companies Profits Tax Act of 1990; Petroleum Profits Tax Act of 1990; Value Added Tax Act of 1990; Education Tax Act of 1993; Capital Gain Act of 1990; Customs and Excise Management Act of 1990; Minerals and Mining Act of 1999; Stamp Duties Act of 1990; and 1999 Constitution of the Federal Republic of Nigeria.

The Nigerian tax system is faced with several challenges which prevent it from optimal performance. Some of these challenges as highlighted by FRN, 1997, 2002; Ariyo, 1997; Ola, 2001; Odusola, 2002, 2003, and Micah et al., 2012; include the following:

a. Non availability of Tax Statistics: Tax statistics are not readily available in adequate quantity in Nigeria. Most of the Federal and State tax agencies such as Inland Revenue Services do not have adequate tax statistics that will enable them carry out their duties effectively. There is no adequate effort at collating, analyzing, storage, accessibility and retrieval of tax information. This, results to a serious problem of data management which does not provide much input to policy process.

b. Inability to Prioritize Tax Effort: The political economy of revenue allocation in Nigeria does not prioritize tax efforts instead anchored on such factors as equality of states, population, landmass and terrain, social development needs, and internal revenue efforts (Micah et al., 2012). Of all these factors, internal revenue effort is accorded the least percentage. This scenario act as disincentive for a proactive internal revenue drive by the three tiers of governments, instead, encourages them to continue to rely heavily on volatile oil revenue.

c. Poor Tax Administration: The Nigerian Tax System is characterized by poor tax administration because most of the tax agencies suffer from limitation in manpower, money, tools and machinery to meet the ever increasing challenges and difficulties. Micah, et al (2012) submitted that the negative attitude of most tax collectors toward taxpayers can be linked to poor remuneration and motivation. Similarly, Philips (1997) considered the paucity of administrative capacity as a major impediment to the government in its attempts to raise revenue in Nigeria. Most Inland Revenue Services in Nigeria do not have adequate tax professionals/officers. Micah et al. (2012) opined that anecdotal evidence shows that staffs are not provided with regular training to keep them abreast of developments in tax-related matters. This makes the administration of taxes in terms of total coverage and accurate assessment very weak.

d. Multiplicity of Tax: The Nigerian tax system is characterized by multiplicity of taxes and as such many individuals and corporate bodies complain of the ripple effects associated with the duplication of taxes by the Federal and state governments. This problem arose from the states' complaints about the mismatch between their fiscal responsibilities and fiscal powers or jurisdiction. To compensate, some states took the initiative of levying certain taxes, which has led to arbitrariness, harassment and even closure of businesses (Micah et al., 2012). However, the list of Approved Taxes and Levies published by the Joint Tax Board has attempted to solve this multiple taxation.

e. Regulatory Challenges: Micah et al. (2012) deposited that political risk and exchange controls pose some of the greatest business and regulatory challenges for companies doing business in Nigeria. Other challenging areas to companies include company law, protection of intellectual property, protection of investment and workforce. Political instability also poses a serious threat to business operations and by extension a serious problem to tax administration in Nigeria.

f. Structural Problems in the Economy: The potential for maximizing the benefits of taxation in Nigeria is constrained by structural problems in the economy. More than 50 per cent of the Nigerian economy is predominantly informal sector which

circumvent VAT because their operations are rudimentary and lack of adequate record keeping is low. Consequently many tax administrators resort to estimates to calculate taxes to be paid by those in informal sector which are prone to a wide margin of error or open up tax evasion opportunities (Micah et al., 2012). Similarly, Ariyo (1997) points out that the proportion of self-employed relative to the total working population is substantial, yet tax authorities have not devised appropriate means of collection effective personal income tax from this group. In fact, income from the self-employed or informal sector activities is grossly untapped. The same situation applies to income tax and excise tax.

g. Underground Economy: According to Micah et al. (2012) the hidden or underground economy is usually taken to mean any undeclared economic activity and the major issue is how Inland Revenue Authorities can tackle hidden economy. These cover business that should be registered to pay tax such as VAT but are not; people who work in the hidden economy such as the rural areas with difficult terrain and pay no tax at all on their earnings; and people who pay tax on some earnings but fail to declare other additional sources of income. The serious policy issues that may results from the growth of the underground economy in Nigeria include tax evasion and inadequate official statistics on economic growth and this faulty information may lead to incorrect economic policy decision. As argued by Micah et al. (2012), the underground economy is just one of many concerns that affects the tax system and whenever there are taxes, there will be tax evasion, and its consequences alters the way in which taxes impact on economic efficiency and income distribution.

Empirical Issues

Several studies have been conducted to investigate the relationship between tax policies and economic growth. Some of these studies suggest that tax policies have positive and significant impact on the rate of growth of output, while others observed that there is an inverse relationship between the two variables. Haq-Padda and Akram (2011) conducted a research to examine the impact of tax policies on economic growth using data from Asian economies and discovered that tax policies adopted by developing countries have no evidence that taxes permanently affect the rate of economic growth. Even though government policies can affect per capita income in the transitory path of the steady- state growth, this seems to be inconsistent with the endogenous class of growth models. The results of their study suggest that the relationship between output and the tax rate is best described by the neo-classical growth models because a higher tax rate permanently reduces the level of output but has no permanent effect on the output growth rate. Consequently, they recommended an optimal tax rate to finance the budget, with debt instrument

used in financing transitory expenditure while permanent expenditure are to be financed through taxes.

Ramot and Ichihashi (2012) used panel data from 65 countries during the period 1970 to 2006 to examine the effects of tax structure on economic growth and income inequality and discovered that company income tax (CIT) rates have a negative impact both on economic growth and income inequality. They also discovered that personal income tax rate does not significantly affect economic growth and income inequality. The authors therefore recommended the need to develop a modest design into the tax system because countries which are able to mobilize tax resources through broad-based tax structures with efficient administration and enforcement will be likely to enjoy faster growth rates than countries with lower efficiency. Also, the government should focus to reduce tax evasion, which is believed happen in the highest income group that could distort the horizontal and vertical equity in redistributing the income. Finally, very high earners or the highest income group should be subject to high and rising marginal tax rates, especially in the statutory top corporate tax rate.

Ariyo (1997) evaluated the productivity of the Nigerian tax system given the negative impact of persistent unsustainable fiscal deficits on the Nigerian economy for the period 1970-1990 to devise a reasonably accurate estimation of Nigeria's sustainable revenue profile. The results of his study showed a satisfactory level of productivity of the Nigerian tax system. The author therefore recommended an urgent need for the improvement of the tax information system to enhance the evaluation of the performance of the Nigerian tax system and facilitate adequate macroeconomic planning and implementation.

Omoruyi (1983) in his study took a comprehensive assessment of the productivity of the Nigeria tax system by evaluating the buoyancy of the tax system for the period 1960-1979. Focusing on both the indirect taxes such as import, export and excise duties, as well as direct taxes such as personal income tax and petroleum profit tax, evidence abound to support low level of productivity of the Nigerian tax system.

Widmalm (2001) discovered in his study that a negative relationship exist between personal income tax and economic growth, while corporate income tax does not correlate with growth at all. The author measured personal income tax by using the average income tax. Lee and Gordon (2005) employed the top statutory income tax rate in their estimations and proposed that the concrete tax rates that greatly affect economic growth are the top statutory Company Income Tax (CIT) rates. From their estimation, it was discovered that only the CIT rate had a significant negative impact on economic growth in all their regressions by controlling the endogeneity of

tax measures while the Personal Income Tax (PIT) rate and its progressivity did not significantly affect economic growth.

Similarly, Arnold (2008) supports the results of Lee and Gordon (2005). He found that the CIT and PIT rate could reduce the economic performance of a country and compared progressive taxes and other tax indicators such as consumption tax and property tax. Analogously, Padovano and Galli (2002) argued that average tax rates lead to several biases which in turn lead to the conclusion that taxation has no impact on growth because of the possibility of high correlation with average fiscal spending.

Poulson and Kaplan (2008) explored the impact of tax policy on economic growth in the states within the framework of an endogenous growth model from 1964 to 2004. In this model, differences in tax policy pursued by the states can lead to different paths of long-run equilibrium growth. Regression analysis was used to estimate the impact of taxes on economic growth in the states and the analysis reveals that higher marginal tax rates had a negative impact on economic growth in the states. The analysis underscores the negative impact of income taxes on economic growth in the states.

Ekeocha et al. (2012) examined the properties of the Nigeria's tax system from 1970 to 2008 particularly the bases of the company income tax, value added tax and personal income tax. The result shows that company income tax base is not persistent, volatile, but sensitive, or pro-cyclical to the state of the economy. The value added tax base is not sensitive to the current state of the economy, not persistent and relatively volatile. It was also discovered that the base of the personal income tax is so volatile, and not persistent, but sensitive to the state of the economy. The policy implication of their finding supports the recent government tax policy reform of a shift in focus in the tax system from direct taxation to indirect taxation (*Ekeocha et al 2012*).

Jibrin et al., (2012) used Ordinary Least Squares method to examine the impact of Petroleum Profit Tax on Economic Development in Nigeria for the period 2000-2010. His finding revealed that Petroleum Profit Tax has a positive and significant impact on Gross Domestic Product in Nigeria. The author therefore recommended that government should improve on the effectiveness and efficiency of the administration and collection of taxes with a view to increasing government revenue.

Enokela (2010) in his study, explore the relationship between Value Added Tax and economic growth of Nigeria using secondary data and multiple regressions. The results revealed that Gross Domestic Product (GDP) is positive and statistically significant to Value Added Tax, Government Capital Expenditure (GCE) is positive

but insignificant to Value Added Tax, and Gross Domestic Product per Capita (GDPPC) is negative and statistically significant to Value Added Tax. The researcher recommended a zero tolerance for corruption to enable the revenue generated from VAT to be channelled to appropriate developmental projects.

Emmanuel (2013) examined the effects of VAT on economic growth and total tax revenue in Nigeria using data covering 1994-2010. He formulated two hypotheses that VAT does not have significant effects on GDP and also on total tax revenue. The results of the regression analysis show that VAT has significant effect on GDP and also on total tax revenue. He therefore encouraged government to sensitize the people to enable it increase the tax rate so as to enlarge its annual revenue for economic development.

An Appraisal of the Nigerian Tax System and Economic Growth

Taxation serves several useful purposes, some of which have political, economic or social bearings. These include; generation of revenue for the sustenance of the economic and social needs of the nation; control consumers demand, encourage investment and savings, fight economic depression, inflation and deflation, guarantee equitable distribution of income and wealth, control the general trend of the national economy, and ensure a proper allocation of national resources (Asada, 2011). Unfortunately, the structure of the Nigerian tax system has not been able to achieve these important purposes of taxation because of several impediments.

Value Added Tax (VAT) was introduced in Nigeria as a substitute for sales taxes and is charged at a single rate of 5 percent on the supply of all taxable goods and services except those specifically exempted by the VAT Act. It has become one of the major sources of tax revenue for financing government expenditures. However, there are several issues emanating from the operation of VAT in the country, which has made many analysts to submit that the operation of VAT is far from what is desirable. Firstly, VAT rate in Nigeria is one of the factors contributing to the collapse of the real sector of the economy, because it disrupts the manufacturing sector by accelerating astronomical increase in the prices of goods and services. This is in addition to other teething problems already plaguing the sector such as inadequate power supply, poor transportation network, multiple taxation, etc. Even though VAT may not increase the production cost of companies, but it can increase the volume of unsold goods thereby reducing capacity utilization, increasing poverty levels, increase unemployment, discourage local and foreign investors and subject the country to economic volatility. Also, the removal of subsidy from petroleum products in January, 2012 by the Federal government has significant impact on tax revenue because this has significantly increase costs of production and distribution of

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companies leading to lower profits and the consequential lower revenue from company profit tax. Similarly, many companies and individuals will consume less, and therefore pay less VAT. If consumption among individuals and companies is reduced, this could have a knock-on effect on economic growth, profitability and employment, leading to less personal income taxes (Oyedele, 2011). Furthermore, the operation of VAT in Nigeria is capable of causing inflation because VAT is a consumption tax and as such increases the prices of goods and services. The real income of the final consumers is reduced leading to low purchasing power and further compound the poverty situation in the country.

Asada, (2011) provided evident to show that the operation of Personal Income Tax (PIT) in Nigeria remains the most unsatisfactory, disappointing and problematic of all the taxes in the tax system. Section 3 of the 1990 Decree enumerated the kinds of personal incomes chargeable to tax to include; (i) the gains or profits from any trade, business, profession or vocation; (ii) the salary, wages, fees, allowances or other gains or profits from any employment including gratuities, compensations, bonuses, premiums, benefits or other prerequisites allowed, given or granted to an employer; (iii) the gains or profits including premiums from the grant of rights for the use of occupation of any property; (iv) dividends, interests or discounts; (v) a pension, charge or annuity; (vi) any profits or gains not mentioned in the above categories. Despite this stipulation, the problem with income taxation in Nigeria is associated with the administration of the tax system bordering on tax collection, assessment, widespread corruption, and absence of competent administrators. Consequently, the problem of tax avoidance and evasion has reached an alarming proportion. It is thus important to note that the problem of tax collection lies more with direct assessment of the income and collection of taxes from the self employed rather than those under Pay-As-You-Earn (PAYE). Thus the problems of tax avoidance and evasion are more common with the self employed such as, distributors of manufactured goods, petrol dealers, contractors, doctors, and lawyers and other professionals in private practice, rather than those that derive their income from rents, dividends, interests, and properties. Infact, data or statistics had shown consistently over the years that while the self-employed paid less than 9.9% of their personal income as income taxes, employees under the (PAYE) scheme paid well over 90 percent (Asada, 2011). Asada, (2011, p. 8) observed that the

"...assessment and collection of personal income tax from taxable individuals have been difficult in this country. There is apathy not only on the part of the educated but also the uneducated. While the illiterates refuse to pay taxes because they are unaware of the purpose of taxation and therefore regard a tax collector or rather a tax officer as an instrument of oppression, the rich

ones refuse because they are not encouraged not only by the Government which wastes taxpayer's money on white elephant projects but also by the tax official who lives above his means."

An effective tax system ought to satisfy the twin purpose of raising maximum revenue and at the same time encourage production. Personal income tax is closely related to the pace of development and growth of the economy; hence, there is the need for radical handling of the PIT system in Nigeria to reduce the incidence of tax avoidance and evasion. Besides, other problems plaguing personal income tax include; fraudulent practices of tax officials; high handedness on the part of tax officials in the process of dealing with tax payers; and undue delay in remitting approved benefits to legitimately entitled tax payers; problems of wilful default; delayed payment of tax; problem of lack of co-ordination between the various government departments especially when information is required from other government departments about certain tax payers which in most cases are not forthcoming (Asada, 2011).

Petroleum Profit Tax (PPT) is the tax imposed on companies which are engaged in the extraction and transportation of petroleum products. It is particularly related to rents, royalties, margins and profit-sharing elements associated with oil mining, prospecting and exploration leases (Ekeocha et al., 2012). Government imposes Petroleum Profit Tax (PPT) to serve a number of useful purposes. Apart from providing revenue for the government, PPT also serves as instrument through which the government regulate the number of participants in the petroleum industry and gain control over public assets (Abdul-Rahamoh et al., 2013). It is an instrument for wealth re-distribution between the wealthy and industrialized economics represented by the multinational organizations, who own the technology, expertise and capital needed to develop the industry and the poor and emerging economies from where the petroleum resources are extracted (Jubrin et al., 2012). However, most of these objectives of PPT are not achieved in Nigeria because of several challenges such as lack of adequately trained tax inspectors and officials; inadequate application of technology; poor assessment of taxpayers; tax evasion and avoidance and ineffective tax laws and regulations

Companies Income Tax (CIT) is charged on the profit or gain of any company accruing in, derived from, brought into, earned in or received in Nigeria. The tax rate has been 30% and it is applied on the total profit or chargeable profit of the company but the new tax policy has reduced it from 30% to 20%. It should be noted that Oil Marketing Companies, Oil Services Companies are liable to tax under CITA at the rate 20% and Education Tax at the rate of 2% on the assessable profit. According to Owizy, (2010) Companies Income Tax has significant impact on the

economy of any nation because it serves as a stimulus to economic growth in the areas of fiscal and monetary policies. But the Nigerian case is difference because the revenue derived from CIT has been grossly understated as a result of several challenges. The factors responsible for the poor performance of CIT revenue in Nigeria include: high rate of tax evasion and avoidance by companies, poor tax administration, poor taxpayers education, inconsistent government policies, lack of adequate statistical data, inadequate manpower and corruption among tax officials.

Custom Duties constitute one of the oldest kinds of modern taxation in Nigeria having been introduced in 1860 as import duties. They are taxes on Nigeria's imports charged either as a percentage of the value of the imports or as a fixed amount contingent on quality. Imports duties are the country's highest yielding indirect tax and are administered by the Nigerian Custom Service. Like PIT, CIT and PIT, the operation of custom duties in Nigeria is characterized by multidimensional challenges. These include; porous borders, problem of smuggling, security challenges, poor custom duty administration, inadequate data, shortage of adequately trained personnel, etc. these factors have contributed to the slow rate of growth of custom duties in Nigeria.

Other taxes in the Nigeria's tax system include the Education Tax which was introduced in 1993 and is seen as a social obligation placed on all companies in ensuring that they contribute their own quota in developing educational facilities in the country to prevent the education system from total collapse due to financial crisis that had rocked the sector for years. Excise duties are an ad-valorem tax on the output of manufactured goods and are administered by the country's custom services. Stamp duty is a tax raised by requiring stamps sold by the government to be affixed to designated documents, for example, conveyance document concerning land transfers bonds, debentures, conventions and warrants (Ekeocha et al., 2012). Capital gains tax is computed at the rate of 10% of the chargeable gain or profit made from the sales of goods or assets. In 1998, gains on sale of shares and stock of all forms were exempted from capital gains tax.

Methodology

This study adopts descriptive and analytical approaches to appraise the Nigerian tax system. To examine the relationship between the components of the Nigerian tax structure (PIT, CIT, VAT, PPT and Duties) and economic growth, the study employed correlation method for the investigation. But correlation is not causation, to establish the relationship between the components of the Nigerian tax system and growth the study adopted econometric techniques such as cointegration test. This enables us establish a long-run relationship between the variables and growth and as

a basis for causality (Granger, 1986; Engle and Granger, 1987). If variables are cointegrated, it means causality exist. However, since most time series are prone to unit root problem, therefore, before carrying out cointegration test, the unit root test is conducted on the series using Augmented Dickey-Fuller (ADF) and Philips Perron test. This enables us test for stationarity of the variables under consideration.

Data for the study covered the period 1980 - 2011 and they were obtained from the Federal Inland Revenue Services (FIRS) and Central Bank of Nigeria (CBN) Statistical Bulletin, Economic Reports, and Annual Reports & Statement.

Presentation of Results

As a necessary but not sufficient condition for cointegration, each of the variables has been examined to determine whether it is stationary and, its level of stationarity. To achieve this, two set of unit root tests for stationarity are applied and these include the Augmented Dickey-Fuller (ADF) and the Philips-Perron (PP) tests (Dickey and Fuller, 1979; Phillips and Perron, 1988). The results of the Augmented Dickey-Fuller (ADF) and Phillips-Peron (PP) unit roots test results are reported in Table 1.

Variables	ADF Test Statistic		Philips-Perron	Conclusion	
v artables	Level	1 st Difference	Level	1 st Difference	
GDP	-3.269889**	-7.262526*	-4.089735*	-13.30042	I(O)
CIT	-2.929596**	-6.134331*	-4.508666*	-10.56448	I(O)
PPT	-3.589488**	-6.659538*	-6.706078*	-14.71899	I(O)
VAT	-2.723028**	-4.095043*	-3.301270**	-7.236022	I(O)
DUTIES	-3.022049**	-5.902162*	-5.274464*	-12.48892	I(O)
1 [%] Critical Value	-3.6752	-3.6752	-3.6752	-3.6752	
5 [%] Critical Value	-2.9665	-2.9665	-2.9665	-2.9665	
10 [%] Critical Value	-2.6220	-2.6220	-2.6220	-2.6220	

Table 1. Unit Root Results

Sources of data used: Central Bank of Nigeria (CBN) Statistical Bulletin, Economic and Annual Reports: World Bank National Accounts Data, CIA World Factbook.

**indicates significant at 1% or a rejection of the null hypothesis of no unit root at the 1% level*

** indicates significant at 5% or a rejection of the null hypothesis of no unit root at the 5% level

*** indicates significant at 10% or a rejection of the null hypothesis of no unit root at the 10% level

Philips-Perron (PP) tests revealed that all the components of the Nigerian tax system are stationary at one percent except VAT variable which is significant at five percent and are all integrated of order zero with intercept terms, meaning that each series is level stationary. This shows that the hypothesis the states the presence of a unit root in any of the variables under the PP tests is rejected. However, the ADF test result is not as impressive as PP tests because all the components of Nigerian tax structure are significant at five percent and integrated of order zero. The ADF also showed that the absence of a unit root in any of the tax variables. Even though both PP and ADF arrived at similar results but the PP did so at lower significant percentage level. Therefore, this give more credence to the PP test because of its validity even if the disturbances are serially correlated and heterogeneous while the ADF tests require that the error term should be serially uncorrelated and homogeneous.

Given the unit-root properties of the variables, we proceeded to establish whether or not there exists a relationship between tax variables and Gross Domestic Product using the correlation analysis. The result is presented in table 2.

	GDP	CIT	PPT	VAT	DUTIES
GDP	1.000000	0.306578	0.141539	0.043940	0.347506
CIT	0.306578	1.000000	-0.046138	0.566577	0.349796
PPT	0.141539	-0.046138	1.000000	-0.126909	0.205628
VAT	0.043940	0.566577	-0.126909	1.000000	0.282507
DUTIES	0.347506	0.349796	0.205628	0.282507	1.000000

Table 2. Correlation Matrix

Sources of data used: Central Bank of Nigeria (CBN) Statistical Bulletin, Economic and Annual Reports: World Bank National Accounts Data, CIA World Factbook.

The results of the correlation analysis presented in table 2 show a positive and statistically insignificant (weak) relationship between real GDP (growth) and Nigerian tax structure (CIT, VAT, PPT, Duties) during the period under review. The correlation theory states that any correlation coefficient that is less than 5.0 is a weak correlation while that above 5.0 is strong. But the results of the correlation matrix presented in table 2 revealed that the correlation coefficient between economic growth and CIT is 0.31, while the correlation coefficient between economic growth and PPT is 0.14. Furthermore, the correlation coefficient between economic growth and VAT is 0.04, while the relationship between economic growth and VAT is 0.35. Cross correlation among the components of tax structure showed that CIT and PPT are negatively and insignificantly related (-0.04), even though CIT is positively related to VAT (0.57) and Duties (0.35). This implies that as the growth rate of revenue from CIT increases, those of VAT and Duties will also increase, while the growth rate of revenue from PPT would be

decreasing, vice versa. The correlation matrix also revealed that PPT and VAT have negative and insignificant relationship (-0.13) whereas a positive correlation exist between PPT and Duties (0.21). This means that as the growth rate of PPT's revenue increases, VAT's revenue would be experiencing declining growth rate. A positive and insignificant relationship also exists between VAT and Duties (0.28). This implies that as the growth rate of revenue from VAT is increasing, revenue from Duties would also be rising. The way the Nigerian tax system is administered focused mainly on the generation of revenue to the detriment of using taxation as an instrument of stimulating economic growth and development; creation of conducive environment for private sector development; provision of infrastructure and basic social amenities as well as accelerating the production of goods and services.

Given that a relationship exist between the components of the Nigerian tax system and economic growth on the one hand and among the components of tax structure (CIT, PPT, VAT, Duties) on the other hand, it becomes pertinent to established the direction of the relationship. Having also established the unit-root properties of the variables, we proceeded to establish whether or not there is a long-run relationship among the tax variables by using Granger Causality method (Granger, 1986; Engle and Granger, 1987).

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Null Hypothesis	Obs	F- Statistic	Probability Value	Remarks
CIT does not Granger Cause GDP	30	1.43071	0.25805	Accept H _o
GDP does not Granger Cause CIT	30	3.62916	0.04133*	Reject H _o
PPT does not Granger Cause GDP	30	2.79415	0.08032**	Reject H _o
GDP does not Granger Cause PPT	30	1.00218	0.38135	Accept H _o
VAT does not Granger Cause GDP	30	1.96257	0.16155	Accept H _o
GDP does not Granger Cause VAT	30	0.86268	0.43422	Accept H _o
DUTIES does not Granger Cause GDP	30	0.28335	0.75564	Accept H _o
GDP does not Granger Cause DUTIES	30	2.07053	0.14721	Accept H _o
VAT does not Granger Cause CIT	30	1.26130	0.30070	Accept H _o
CIT does not Granger Cause VAT	30	2.62629	0.09220**	Reject H _o
PPT does not Granger Cause CIT	30	0.10421	0.90143	Accept H _o
CIT does not Granger Cause PPT	30	0.47002	0.63040	Accept H _o
DUTIES does not Granger Cause CIT	30	2.05660	0.14898	Accept H _o
CIT does not Granger Cause DUTIES	30	0.68207	0.51473	Accept H _o
PPT does not Granger Cause VAT	30	0.33391	0.71926	Accept H _o
VAT does not Granger Cause PPT	30	0.64127	0.53507	Accept H _o
DUTIES does not Granger Cause VAT	30	1.03461	0.37009	Accept H _o
VAT does not Granger Cause DUTIES	30	0.16600	0.84797	Accept H _o
DUTIES does not Granger Cause PPT	30	0.53125	0.59436	Accept H _o
PPT does not Granger Cause DUTIES	30	0.50671	0.60853	Accept H _o

Table 3. Causality Test Results

Sources of data used: Central Bank of Nigeria (CBN) Statistical Bulletin, Economic and Annual Reports: World Bank National Accounts Data, CIA World Factbook.

* indicates significant at 5% or a rejection of the null hypothesis of no Granger causality at the 5% level

** indicates significant at 10% or a rejection of the null hypothesis of no Granger causality at the 10% level

Table 3 presents the results of the Granger Causality tests between the components of the Nigerian tax system and economic growth. The test is carried out to capture the direction of the causation between the components of the Nigerian tax system and economic growth. In other words, it is meant to show which out of the two variables drives the other and in which direction. The results show that CIT, VAT and Duties do not granger cause economic growth, while PPT granger causes economic growth. Instead, it is GDP that granger cause CIT, whereas GDP does not granger cause PPT, VAT and Duties. Similarly, all the components of tax system do not granger causes one another, except CIT which granger causes VAT.

Summary of Major Findings, Policy Implications and Conclusion

The paper discovered that the Nigerian tax system has no significant impact on economic growth. This could be adduced to several challenges confronting the system. This finding is consistent with the findings of Ramot and Ichihashi, (2012); Haq-Padda and Akram, (2011); and Poulson and Kaplan (2008). However, this finding is inconsistent with the findings of Kusi, (1998) who opined that the tax reform succeeded in improving revenue generation, enhancing the efficiency of the tax administration and improving equity in the tax system, as well as removed market distortions and strengthened economic incentives.

Secondly, the paper also discovered that custom duties have more impact on economic growth than CIT, VAT and PPT. The reason for this revelation could be adduced to the high rate of imports in the country. As imports increases, the duties on imports will continue to experience growth, and ultimately increase output. The insignificant impact of VAT on growth is because VAT has effect on consumption which inturns has effects on investment and employment and ultimately income and output. Despite the dominance of the petroleum sector in the Nigerian economy, the growth rate of PPT revenue and its contribution to economic growth seems to be the least of the components of the tax system reviewed.

Thirdly, it was also discovered that a negative relationship exists between PPT and CIT as well as PPT and VAT. This implies that as the growth rate of revenue from PPT increases, the growth rate of revenue from CIT will continue to decline, vice versa. Similarly, as the growth rate of PPT revenue increases, the growth rate of VAT revenue declines, vice versa.

The policy implication of the above findings is that the Nigerian tax system should be reformed to engineer a system that would have a significant impact on economic growth. If this is done, the growth rate of tax revenue would increase thereby accelerating the internally generated revenue in the country and make the tax system effective. An effective tax system should satisfy the twin purpose of raising maximum revenue and at the same time encourage production.

For Petroleum Profit Tax (PPT) to have a significant impact on economic growth in Nigeria there is the need for the government to minimize or eliminate the widespread corruption and leakages that permeate the PPT's assessment, collection and administration.

The low growth rate of VAT revenue and its contribution to economic growth is a reflection of the low level of income of majority of Nigerians who purchase the

goods and services which VAT is imposed on. It becomes pertinent therefore for the government to embark on policies and programmes that will enhance the level of income of the citizens so as to raise the consumption level of the people with a view to accelerating investment, employment, output, and ultimately tax revenue.

VAT, being a consumption tax levied at each stage of consumption chain, is borne by the final consumer and is capable of increasing the prices of products thereby fuelling inflation and reducing real output. It may become necessary for the government to adopt the appropriate fiscal and monetary policies to control inflation arsing from the imposition of VAT.

To increase the rate of growth of custom duties, the government should tackle the challenges of porous borders, smuggling, security and shortage of adequately trained personnel at the agencies responsible for the assessment, collection and administration of custom duties in Nigeria.

Tax inspectors and officials should be professionally trained through on-shore and off-shore training programs with a view to equipping them with the necessary skills and expertise of tax assessment and administration.

It may also be necessary to re-visit and review some tax laws and regulations that are repugnant to the performance of the tax system so as to block and discourage the loopholes that are being exploited by taxpayers to either evade or avoid tax payments.

The revenue collection agencies should be equipped with the appropriate infrastructure and technology to effectively modernize the tax system in Nigeria to ease tax assessment, payment, monitoring and back-duty audit. To sanitize the tax system, the anti-graft agencies such as Economic and Financial Crime Commission (EFCC) and Independent Corrupt Practices and other related Offences Commission (ICPC) should be empowered to arrest and prosecute tax defaulters and corrupt tax officials to serve as deterrent to others.

Also, tax revenue should be transparently and judiciously utilized for investment and in the provision of infrastructure and public goods and services so as to accelerate economic growth, employment and wealth creation. If the government is transparent and accountable to the people in the utilization of tax revenue in providing good roads, electricity supply, social amenities and other infrastructural facilities, taxpayers such as individuals and companies would be committed to tax payments and tax evasion and avoidance will be drastically reduced.

In conclusion, if the country's drive to diversify the economy from being a monoproduct economy that depends principally on the oil sector to other sectors such as the industrial and agricultural sectors is to be achieved, there is the need to reexamine and restructure the taxes which affect the performance of these sectors and reposition them as the major drivers of the Nigerian economy.

References

Abdul-Rahamoh, O.A., Taiwo, F.H. & Adejare, A.T. (2013). The Analysis of the Effect of Petroleum Profit Tax on Nigerian Economy. *Asian Journal of Humanities and Social Sciences (AJHSS)* 1(1)

Ariyo, A. (1997). Productivity of the Nigerian Tax System: 1970–1990. *AERC Research Paper* 67 African Economic Research Consortium, Nairobi, Kenya, 1-50

Asada, Dominic (2011). *The Administration of Personal Income Tax in Nigeria: Some Problem Areas.* Department of Property and Commercial Law, University of Jos.

Barro, R.J. (1979). On the Determination of the Public Debt. *Journal of Political Economy*, 87(5), 940-971.

Cass, D. (1965). Optimum Growth in an Aggregative Model of Capital Accumulation. *The Review of Economic Studies*, 32 (3), 233-240.

Devereux, M.B. & Love, D.R. (1995). The Dynamic Effects of Government spending Policies in a Two- Sector Endogenous Growth Model. *Journal of Money, Credit and Banking*, 27(1) 232-256.

Emmanuel, M. (2010). *Nigerian Tax System: Entrenching New National Tax Policy*. Nigerian Tribune.

Emmanuel, C.U. (2013). The Effects of Value Added Tax on the Economic Growth in Nigeria. *Journal of Economics and Sustainable Development*, 4(6), 190-202

Ekeocha, P. C. Ekeocha, C. S., Malaolu, V., & Oduh, M. O. (2012). Revenue Implications of Nigeria's Tax System. *Journal of Economics and Sustainable Development*, 3(8), 206-215

Enokela, S. A. (2010). The Impact of Value Added Tax on Economic Development of Nigeria.

Haq-Padda, I. & Akram, N. (2011). The Impact of Tax Policies on Economic Growth: Evidence from Asian Economies.

Jibrin, S.M., Blessing, S.E. and Ifurueze, M.S.K. (2012). Impact of Petroleum Profit Tax on Economic Development of Nigeria. *British Journal of Economics, Finance and Management Sciences*, September, 5(2), 60-72

Jones, C.I (1995). Times Series Tests of Endogenous Growth Models. *Quarterly Journal of Economics*, 110 (2), 495-525.

Karras, G. (1999). Taxes & Growth: Testing the Neo-Classical and Endogenous Growth Models. *Contemporary Economic Policy*, 17 (3), 177-188.

Kiabel B. D. & Nwokah N. G. (2009). Boosting Revenue Generation by State Governments in Nigeria: The Tax Consultants Option Revisited. *European Journal of Social Sciences*, 8(4)

Kocherlokota, N.R. & Yi, K.M (1996). A Simple Time Series Test of Endogenous Vs Exogenous Growth Models: An Application to the United States. *Review of Economic & Statistics*, 78, 126-136.

Kusi, N. K. (1998). Tax Reform and Revenue Productivity in Ghana. *AERC Research Paper 74*, African Economic Research Consortium, Nairobi

Moffatt, Mike (2010). The Effect of Income Taxes on Economic Growth: Income Taxes - Looking at Extreme Cases. PwC Nigeria Website, December 19.

Micah, L.C., Chukwuma, E. and Umobong, A. A. (2012). Tax System in Nigeria: Challenges and the Way Forward. *Research Journal of Finance and Accounting*, 3(5), 1-14

Omoruyi, S.E. (1983). Growth and Flexibility of Federal Government Tax Revenue: 1960-1979. *Economic and Financial Review*, 21(1), 11–19.

Osoro, N.E (1993). Revenue Productivity Implications of Tax Reform In Tanzania. *AERC Research Paper*, September.

Owizy, S.O. (2010). The Problems of Companies Income Tax Administration in Nigeria: A Case Study of Federal Inland Revenue Service, Makurdi.

Oyedele, Taiwo (2011). Fuel Subsidy Removal and Tax. PwC Nigeria Website, December 19.

Poulson, B.W. & Kaplan, J.G. (2008). State Income Taxes and Economic Growth. Cato Journal, 28(1)

Ramot, I. & Ichihashi, M. (2012). The Effects of Tax Structure on Economic Growth and Income Inequality. *IDEC Discussion paper 2012*, Hiroshima University, Japan.

Romer, P. M (1990). Endogenous Technological Change. *The Journal of Political Economy*, 98(5), 71-102.

Romer, P. M (1986). Increasing Returns and Long-Run Growth. *The Journal of Political Economy*. 94(5), 1002-1037.

Solow, R. M. (1956). A Contribution to the Theory of Economic Growth. *Quarterly Journal of Economics*, 70, 65-94.

Tomljanocich, M. (2004). The Role of State Fiscal Policy in State Economic Growth. *Contemporary Economic Policy*, 22(3), 318-330.

Year	CIT (N'billion)	Growth rate of CIT (%)	VAT* (N'billion)	Growth rate of VAT	PPT (N'billion)	Growth rate of PPT	Duties (N'billion)	Growth rate of Duties	Growth rate of GDP
1980	0.56	8.9	0.41	42.6	8.6	20.1	1.41	17.8	4.20
1981	0.48	-14.3	0.65	58.5	6.3	26.7	1.88	-25.0	-13.13
1982	0.73	52.1	0.68	4.6	4.8	-23.8	1.80	-4.3	-0.23
1983	0.61	-16.4	0.87	2.8	3.7	-22.9	1.11	-38.3	-5.29
1984	0.79	29.5	0.69	20.7	4.7	28.6	0.92	-17.1	-4.82
1985	1.0	26.5	0.98	42.1	6.7	42.6	1.20	30.4	9.70
1986	1.02	2.0	1.04	6.1	4.8	-28.4	1.29	7.5	2.51
1987	1.24	21.6	0.82	-21.2	12.5	160.4	2.72	110.8	-0.70
1988	1.57	26.6	0.98	19.5	14.5	16.0	3.28	20.5	9.90
1989	1.98	41.0	1.37	39.8	24.2	66.9	4.58	39.6	7.20
1990	3.41	72.2	2.01	46.7	26.9	11.2	6.72	46.7	8.20
1991	6.8	99.4	4.9	143.7	36.2	34.6	10.72	59.5	4.76
1992	9.6	41.2	8.9	81.6	43,5	20.2	14.21	32.6	2.92
1993	18.8	95.8	16.2	82.1	50.2	15.4	24.51	68.9	2.20
1994	23.4	24.5	19.1	17.9	67.9	34.9	41.75	-80.6	0.10
1995	26.9	14.9	25.3	32.5	80.1	17.9	44.78	7.3	2.50
1996	31.4	16.7	29.4	16.2	92.8	15.8	55.0	22.8	4.30
1997	37.8	20.4	33.5	13.9	120.8	30.2	59.15	7.6	2.70

Appendix 1. The Growth Rate of GDP and Tax Structure Revenue in Nigeria 1980 -2011

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1998	40.1	6.1	39.3	17.3	140.0	15.9	65.3	10.3	1.88
1999	46.2	15.2	47.1	19.8	164.3	17.4	87.9	34.6	2.70
2000	51.1	10.6	58.5	24.2	525.1	219.6	101.5	15.5	3.50
2001	68.7	34.4	91.8	56.9	639.2	21.8	170.6	68.0	3.50
2002	89.1	29.7	108.6	18.3	392.3	38.8	181.4	6.3	3.0
2003	114.8	28.8	136.4	25.5	683.5	74.2	195.5	7.8	7.1
2004	113.0	-1.6	159.5	16.9	1183.5	78.4	217.2	11.1	6.2
2005	140.3	24.1	178.1	11.7	1104.9	-6.6	232.8	6.9	6.9
2006	244.9	74.6	221.6	24.4	2038.3	84.5	177.9	-23.6	5.3
2007	327.0	33.5	289.6	30.7	1500.6	-26.4	241.4	35.7	6.4
2008	361.9	10.7	394.4	36.2	1951.3	30	280.2	16.1	5.3
2009	568.1	57.0	468.5	18.8	1256.5	35.6	295.5	5.5	5.6
2010	654.3	15.2	549.5	17.3	3797.3	202.3	365.7	23.8	8.4
2011	700.5	7.1	649.5	18.2	3976.3	4.7	438.3	19.9	7.2

Sources: Central Bank of Nigeria (CBN) Statistical Bulletins, Economic & Annual Reports; World Bank National Accounts Data, CIA World Factbook. *Note that VAT replaced Sales tax in 1994.

¹Ehigiamusoe, Uyi Kizito is a Research Economist at the Research Division in the National Institute for Legislative Studies, National Assembly, Abuja, Nigeria.

ⁱⁱThe Laffer curve was developed in 1979 by Economist Arthur Laffer. According to Laffer's theory, changes in tax rates affect government revenues in two ways. One is immediate, which Laffer describes as "arithmetic." Every dollar in tax cuts translates directly to one less dollar in government revenue. The other effect is longer-term, which Laffer describes as the "economic" effect. This works in the opposite direction. Lower tax rates put more money into the hands of taxpayers, who then spend it. This creates more business activity to meet consumer demand.

Agricultural Productivity and Poverty Alleviation: What Role for Technological Innovation

Abdelhafidh Dhrifi

Faculty of Economic Sciences and Management, Department of Economics, University of Sousse-Tunisia Sousse-Tunisia Abdelhafidh.dhrifi@gmail.com

Abstract: The role of agriculture in economic development remains much debated. This paper takes an empirical perspective and focuses on the relationships between agriculture productivity and poverty reduction. The contribution of agriculture sector to poverty is shown to depend on its own growth performance, its indirect impact on growth in other sectors, the extent to which poor people participate in the sector, and the size of the sector in the overall economy. Bringing together these different effects and taking into consideration the role played by technological innovation, we use an aggregate annual panel data, on a sample composed of 32 Sub-Saharan Africa (SSA) countries, from 1990-2011 to estimate a simultaneous equation model that capture the interrelationship between agriculture productivity, technological innovation and poverty. Findings show first that agricultural productivity contributes significantly to economic growth and poverty in SSA. Second, technological innovation appears to have a positive and significant impact on poverty through its direct and indirect impact through agriculture productivity and growth

Keywords: Agriculture Productivity, Economic Growth, Technological Innovation, Poverty, Simultaneous Equation Model, SSA.

JEL Classification: N51, *Q10*, *Q16*.

Article History

Submitted: 11 May 2013 Resubmitted: 01 October 2013 Accepted: 22 October 2013 Abdelhafidh Dhrifi

Introduction

Around the world, agriculture is and will continue to be a major building block in the achievement of the Millennium Development Goals (MDGs). Recent statistics show that agricultural production needs to increase by 70 percent by 2050 in order to feed the world (World Bank, 2007). However, hunger and malnutrition persist in many countries, often because of slowly agricultural productivity (AP)ⁱ. The expected increases in agricultural demand, associated with population growth and increase per capita incomes, will require continued increase in agricultural growth. History shows that different rates of poverty reduction over the past 40 years have been closely related to differences in agricultural performance particularly the rate of growth of agricultural growth. In simple terms, this means that these are the countries that have managed to increase their agricultural productivity that have managed to reduce their poverty rates (Abare, 2001). According to that, agriculture remains the economic heart of most developing and developed countries.

The productive potential of agriculture is varied and depends on the natural resource endowment, geographical location, links with the rest of the economy and social dimensions of the population. Some authors expected that, success strategies from pro-poor growth in agriculture passed through improved agricultural productivity and technological innovation (Bravo-Ortega and Lederman, 2005). These efforts should focus on the improving conditions for greater access to technological innovation because it is pointed that technological change in agriculture is essential for reducing poverty, fostering development, and stimulating economic growth especially in developing countries. Thereby, the agricultural development model, in many developing countries, is based primarily on technical aspects. The objective of this model is not only physically increase the productivity of agricultural land, but also to increase participation of small and medium farmers in the production. In this context, it tries to provide farmers' technological package "designed as the main instrument to increase agricultural production and to reduce poverty.

Further, if empirical efforts showing the relationships among agricultural growth and economic growth have grown considerably over the last few years, this paper differs and focuses on agricultural sector development and poverty reduction. More specifically, the objectives of this paper are to identify the various channels through which agricultural productivity influence poverty reduction and to investigate the role played by technological innovation in determining agricultural performance. The paper utilizes aggregate annual panel data, on a sample composed of 32 Sub-Saharan Africa (SSA) countries, from 1990-2011 to estimate a simultaneous equation model that capture the interrelationship between agriculture productivity, technological innovation and poverty. In section 2, we present an overview of the

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literature on the relation connecting agriculture productivity and poverty. Section three discusses empirical model and describes the variables. Model appraisal and validation are handled in section four. The paper concludes in section five.

Literature Review

In recent years, agriculture became an important part of the livelihoods of many poor people, and it is frequently argued that agricultural productivity is a fundamental pre-requisite for poverty reduction (Byerle et al., (2005) Johnston and Mellor (1961)) account explicitly for agriculture as an active sector in the economy. In addition to labor and food supply, agriculture plays an active role in economic growth through important production and consumption linkages (DFID, 2005). On the consumption side, a higher productivity in agriculture can increase the income of the population, thereby creating demand for domestically produced industrial output. Such linkage effects can increase employment opportunities, thereby indirectly generating an increase of income. Moreover, agricultural goods can be exported to earn foreign exchange in order to import capital goods. Agriculture contributes to both income growth and poverty reduction in both developed and developing countries by generating employment and providing food at reasonable prices. It provides food, income and jobs and hence can be an engine of growth in agriculture-based countries and an effective tool to reduce poverty. It can thus facilitate development by allowing a sustained transfer of resources from agriculture to the rest of the economy, including through the supply of capital to other sectors.

The most direct contribution of agricultural growth is through generating higher incomes for farmers. Two conditions affect the influence of this on poverty. First, there is the degree to which the poor are engaged in farming. The second condition is the extent to which output growth raises incomes. In particular, if land is scarce, increased returns to agriculture may be reflected in higher land rents. In cases where the poor till land belonging to others, the capitalization of benefits into higher rents could seriously undermine the contribution to poverty reduction.

Economic literature offers four transmission mechanisms critically link changes in agricultural performance, more especially productivity increases, to progress in reducing poverty: the direct and relatively immediate impact of improved agricultural performance on incomes; impact of cheaper food for poor; agriculture's contribution to growth and the generation of economic opportunity in the non-farm sector; and agriculture's fundamental role in stimulating and sustaining economic transition, as countries shift away from being primarily agricultural towards a broader base of manufacturing and services (Allen, 1994).

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Empirical studies support the view that agricultural growth promotes poverty reduction (see the review by Thirtle et al., 2001; Hanmer and Nashchold, 2000; Irz et al, 2001; Kanwar, 2000; Matsuyama, 1992; Ravallion and Datt, 1999; Stern, 1996; Timmer, 2003; Wichmann, 1997). For example, Matsuyama (1992) shows that improving agricultural productivity has probably been the single most important factor in determining the speed and extent of poverty reduction during the past 40 years. Much of this evidence is derived from the Green Revolution in Asia. Examples from Africa are noticeably fewer. In the same context, Warr (2001) provided evidence that growth in agriculture in a number of South East Asian countries significantly reduced poverty, but this was not matched by growth in manufacturing. Gallup et al. (1997) showed that every 1% growth in per capita agricultural Gross Domestic Product (GDP) led to 1.61% growth in the incomes of the poorest 20% of the population much greater than the impact of similar increases in the manufacturing or service sectors. This result is confirmed by Stern (1996) which found a similar and significant relationship between growth in the agricultural and non-agricultural sectors during 1965-1980 for a large number of developing countries.

In terms of the role of agricultural growth in reducing poverty, Thirtle et al. (2001) concluded from cross-country regression analysis that, on average, every 1% increase in labor productivity in agriculture reduced the number of people living on less than a dollar a day by between 0.6 and 1.2%. In the same vein of studies, De Janvry and Sadoulet (2000) estimate that in Asia, a 10% increase in total factor productivity in agriculture would raise the incomes of small-scale farmers by 5%. At the same, Hazell and Haddad (2001) estimated that a 1% addition to the agricultural growth rate in India stimulated a 0.5% addition to the growth rate of industrial output, and a 0.7% addition to the growth rate of national income.

Numerous other studies reveal similar results, but emphasize the important qualification that the degree to which agricultural growth reduces poverty is usually conditional upon the initial distribution of assets (in particular land) and the initial level of inequality (Bourgignon and Morrison, 1998; Timmer, 2003; De Janvry and Saddoulet, 2000; Andersson-Djurfeldt, 2013). Lipton and Longhurst (1989) and Hazell and Ramasamy (1991) provide similar evidence.

Finally, economic literature offers three major opportunities that can transform the agriculture of a country into a force for economic growth and thereby can reduce poverty: advances in science and technology; the creation of regional markets; and the emergence of a new crop of entrepreneurial leaders dedicated to the continent's economic improvement. The following paragraph focuses on the role of technological innovation in determining the relationships between agriculture productivity and poverty reduction.

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Technological Innovation and Agricultural Performance

Having reviewed the role that agriculture can play in economic growth and poverty, we now look at the role that can play technological innovation in agriculture productivity and by consequence, in reducing poverty. Agricultural science, technology, and innovation are vital to promoting development and poverty reduction (Binswanger and Townsend, 2000). To this end, many studies on agricultural research, extension, and education have highlighted the importance of technological innovation and policies in these areas (De Janvry and Sadoulet, 2000). Thereby, technological innovation can benefit the poor in many different ways: First, it can help poverty alleviation directly by raising the incomes of poor farmers who adopt the resulting technological innovation. Second, technological change can help reduce poverty indirectly through the effects which adoption, by both poor and non-poor farmers, can have on the real income of others largely through lower food prices for consumers and increased employment and wage effects in agriculture and other sectors of economic activity through production, consumption, and savings linkages with agriculture.

Technological innovation is considered now as an integral part of the reform package needed to stimulate agricultural growth and poverty (Lopez and Valdez, 2000). More than by just spurring economic growth, technology can do much to reduce poverty and environmental damage. It can increase the supply of food and reduce morbidity and mortality, particularly in developing country. It can also increase the supply of water and, it can lower the costs and increase the supply of energy to the poor. The reason for the choice of technologies innovations, as a determinant factor of agricultural productivity is linked to the fact that growth and performance in agriculture and food sectors is central to any strategy of reducing poverty and increasing economic growth and poverty (Datt and Ravallion, 1998).

In this context, Warr (2001) used a computable general equilibrium (CGE) model, loosely styled on the case of the Philippines, to show how, in a small open economy, technical improvements in farming are likely to benefit labour, especially if the technical change is labour-using or land-saving. However, Hazell and Haddad, (2001) show that when output increase is due to technical innovation, benefits to the poor who farm, and for whom farming provides the majority of their income, may be limited for several reasons: adoption by the poor can be limited by a lack of access to inputs and to the knowledge necessary to use the technology. When technology and policies are biased against smallholders, agricultural growth can even have perverse effects on poverty (Datt and Ravallion, 1998).

In SSA countries, national and international agricultural research investments have generated a range of improved technologies, especially of modern varieties of the

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major food crops. A number of Consultative Group on International Agricultural Research (CGIAR) centers, have partnered with national programs and led major technology development efforts aimed at raising the yields of major food crops or averting yield losses that threatened the livelihoods of millions of Africans (Bravo-Ortega and Lederman, 2005).

Finally, access to technological innovation is essential if we are to make agriculture the main driver of pro-poor growth. It can make agriculture more responsive, dynamic, and competitive. Households and businesses are highly dependent on both access to technological innovation for their agricultural production and labor to produce surpluses (Wichmann, 1997).

Empirical Model Specification, Sample and Variables Descriptions

Model Specification and Descriptions of Variables

Recall that the principal objective of this study is to estimate the role of agricultural growth in reducing poverty rates. The key feature of this study centre's on the way in which agricultural growth affects poverty directly and indirectly via economic growth taking into account the role that can play technological innovation in this relationship, which has been largely ignored by the previous estimates. To accomplish this, we specify a simultaneous equations model that consists of a series of three equations describing the behavior of poverty and economic growth facing a change in agricultural growth in the presence of an improvement in technological innovation. In particular, the model consists of a poverty equation, growth equation and agriculture productivity equation.

The first endogenous variable in the model is poverty, which is measured as the household final consumption expenditure per capita to GDP over the period 1990-2011. We introduce in the poverty equation a set of control variables that are commonly used as factoring explaining poverty. We introduce the income inequality to capture the kind of distribution of income, GDP per capita growth to capture the economic development, the number of telephone mainlines per 1000 people as indicator to measure the quality of infrastructure and population growth.

The second endogenous variable in the model is agricultural. We explain this variable by a set of variables that determine agricultural growth: Agricultural irrigated land (% of total agricultural land), employees in agriculture (% of employment) and an indicator measuring the level of technological innovation measured by agricultural machinery (tractors per 100 sq km of arable land).

The third endogenous variable in the model is economic growth, which is measured as the average of growth rate of real Gross Domestic Product (GDP) per capita over

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the same period. The growth equation specification follows the commonly accepted form in the cross-country growth literature (Barro, 1991), and includes a group of economic variables that have been identified by empirical growth literature as robust determinants of economic growth, (Levine and Renelt, 1992). In addition to technological innovation, the growth equation includes other variables. The first variable is the average years of secondary schooling in the total population to capture the level of human capital, it is expected to have a positive impact on economic growth. The equation also include rate of inflation (it is introduced into the model to capture the impact of macroeconomic stabilization on poverty), trade openness to capture the degree of international openness on economic growth.

The complete model used in this paper to estimate the impact of agricultural growth on poverty is based on the model of Alen and Coulibaly (2009) and it has the following formula:

$$POV_{it} = \delta_0 + \delta_{1it}AG_{it} + \delta_2GDPG_{it} + \delta_3TI_{it} + \delta_4INQ_{it} + \delta_5POP_{it} + \delta_6TEL_{it} + \xi_{1it} \quad (1)$$

$$GDPG_{it} = \gamma_0 + \gamma_1 A G_{it} + \gamma_2 T I_{it} + \gamma_3 INF_{it} + \gamma_4 T R A D E_{it} + \gamma_5 S C H_{it} + \gamma_6 F D_{it} + \xi_{2it}$$
(2)

$$A G_{it} = \alpha_0 + \alpha_{1it} G D P G_{it} + \alpha_2 T I_{it} + \alpha_3 A I L_{it} + \alpha_4 E A_{it} + \xi_{3it}$$
(3)

Where:

POV: design poverty index which is measured by the household final consumption expenditure to GDP as a proxy of poverty (Odhiambo, 2009, 2010).

AP: the agricultural productivity measured by agriculture, value added (% of GDP).

TI: represent the technological innovation indicator measured by agricultural machinery (tractors per 100 sq km of arable land).

GDPG: the growth of GDP per capita.

INQ: represent the income inequality measured by Theil Indexⁱⁱ.

POP: represent the growth population. It is expected to have a negative effect on poverty reduction.

TRADE: defined as the sum of exports and imports as a share of GDP. It is introduced into the model to capture the degree of international openness. In this context, Matsuyama (1992) suggests that the relation between agricultural growth and overall poverty depends on the openness of a country to international trade and that agricultural growth goes hand in hand with the with the increase in household income.

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FD: is an indicator of financial development measured by domestic credit to private sector to GDP.

INF: The rate of inflation, it is introduced into the model to capture the impact of macroeconomic stabilization on poverty. Inflation is a factor worsening poverty because it has a negative impact on the real value of assets and the purchasing power of household incomes. It is measured by inflation consumer prices available in World Bank.

AIL: Agricultural irrigated land. It is expected to have a positive effect on agricultural growth.

EA: is employee's agriculture.

SCH: is the log of the average years of secondary schooling in the total population which measures human capital.

TEL: is an indicator measuring the level of infrastructure. It is measured by the average of the number of telephone mainlines per 1000 people.

How can Agricultural Growth Affect Poverty Reduction?

Poverty equation shows that a change in AP by one unit causes poverty to change by an amount equal to δ_1 . Furthermore, poverty equation shows that a change in economic growth index by one unit causes poverty to change by an amount equal to δ_2 . However, agricultural growth equation shows that a change in AP by one unit can also induce a change in the economic growth index by an amount equal to γ_1 which means that the effect of change in AP by one unit is not limited to its direct influence on poverty, but also includes the indirect impact via economic growth channel. Thus, the total impact of AP on poverty equals the sum of direct impact and indirect impact.

This effect can be calculated by finding the derivative of growth with respect to AP, which is equal to:

$$\frac{\partial Poverty}{\partial AP} = \delta_1 + \delta_2 \frac{\partial Growth}{\partial AP} = \delta_1 + \delta_2 * \gamma_1 \tag{4}$$

By the same, the total effect of technological innovation on poverty can be calculated by finding the derivative of poverty with respect to technological innovation, which is equal to: Agricultural Productivity and Poverty Alleviation: What Role for Technological Innovation

$$\frac{\partial Poverty}{\partial TI} = \delta_3 + \left(\delta_2 \frac{\partial Growth}{\partial TI}\right) + \left(\delta_3 + \delta_1 \frac{\partial AP}{\partial TI}\right) = \delta_3 + \delta_1 * \gamma_2 + \delta_3 + \delta_1 * \alpha_2 \quad (5)$$

Estimating the above complete system of equations and finding $\gamma_1, \gamma_2, \delta_1, \delta_2$, δ_3 and α_2 allows us to test whether and how agricultural growth and technological innovation affects poverty reduction.

Sample and Data Sources

Annual time series data, which covers the period 1990-2011, is utilized in this study. The data used in the study are obtained from the web site of the World Bank. The sample size and the period of our study are limited by the availability of data.

Our sample is conducted for 32 countries in Sub-Saharan Africa in which the agricultural sector contributes at least 10 percent of the gross domestic product (GDP) and where the majority of the poor depends upon agriculture for their livelihood. Although the choice of countriesⁱⁱⁱ is governed by the availability of data, the included countries broadly cover the whole of SSA.

Estimation Method

In a simultaneous equation model, like the one developed in the previous section, a dependent variable in one equation can be an explanatory variable in other equations in the model. For example, in equation (3), AP is the dependent variable, which is determined by economic growth and other variables, but at the same time AP enters the growth equation (2), as an explanatory variable. As a result, some of the explanatory variables in simultaneous equation models are endogenous and, therefore, are correlated with the disturbance terms in all the structural equations of the model. As a consequence, using Ordinary Least Square, OLS, to estimate the structural equations will result in inconsistent estimates for the model parameters. A consistent estimation for the model parameters requires using an estimation method that can deal with the endogeneity problem.

But before considering the method of the estimation, the identifiability of the model has to be checked because estimation methods that can be used in the context of simultaneous equation models are functions of identification criteria for estimating the model and the endogeneity problem. In our case, the model presented is over identified. On the other hand, our model is characterized by the presence of an endogeneity problem of order two, by definition, why the estimate by the method of least squares would be triple registered (For details on the method used, it is

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recommended to refer to the work of Bourbonnais, 2002). This estimation method is based on the principle of application of the method of least squares in three stages.

The Agriculture Sector in Sub-Saharan Africa

Although SSA countries are heterogeneous population, today remains predominantly rural (65%), assets are primarily in agriculture (60%) and rural agricultural households (95%) even though they are most often pluriactive. The rest of the working population is engaged in non-agricultural informal activities (25-30%), mainly urban, and in the formal sector industries and services (5 to10% maximum). Agricultural sector constitute the main economic mainstay of the region, and will remain so for the next fifteen years. This durable weight of agriculture is due to several factors: the lack of effective industrialization despite rapid urbanization, low prospects of development of other sectors in a highly competitive international context, a generalized pressure on labor markets makes it difficult to immigrate to developed countries.

In this regard, the situation in SSA is particularly: if its demographic transition is committed and marked by a high mobility of the population (with urbanization rate which reach 40%, the urban population was multiplied by 12 since 1960), its economic structure has changed little: low diversification; a significant weight of agricultural activities in GDP, foreign trade and especially employment. Urbanization has developed without industrialization, unlike other parts of the world.

Hence, if the potential of agriculture in sub-Saharan Africa is the engine of global growth for the majority of countries in the region and is essential for poverty reduction and food security, unexploited potential of this can significantly compromised the role that agriculture can play in reducing poverty (World Bank, 2007).

Results and Interpretations

Recall that the main aim of this paper is to test whether AP can affect poverty by positively influencing economic growth, and to evaluate the significance of any such effect taking into consideration the role of technological innovation. Thus, the parameters of interest in Table 1are: (1) The coefficient that describes the effect of AP on poverty, δ_1 . (2) The coefficient that describes the effect of economic growth on poverty, δ_2 . (3) The coefficient that describes the effect of AP on economic growth γ_1 and (4) the coefficients that describes the effect of Technological

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innovation respectively on poverty, economic growth and agricultural growth $\delta_{3},\,\gamma_{2},$ and $\alpha_{2}.$

Table 1. Simultaneous equation estimation of poverty, growth and agricultural productivity (3SLS)

Variables	Poverty	GDP Growth	Agr. Growth
AP	0.098	0.904	
	(2.62)**	(2.56)**	
GDPG	0.252		0.019
	(2.25)**		(5.63)***
TI	0.316	0.025	-0.507
	(4.19)**	(3.77)**	(-2.15)**
INQ	0,213		
	(1,94)**		
РОР	0.608		
	(0.88)		
TEL	0.321		
	(1.77)*		
INF		-0.03	
		(-0.52)	
TRADE		0.307	
		(2.69)**	
SCH		0.022	
		(2.45)**	
FD		0.016	
	-	(4.89)***	
AIL			0.451
			(2.04)**
EA			0.73
			(1.75)*
constante	0.213	-0.041	0.022
	(5.24)**	(-2.48)**	(2.76)**
Observations	704	704	704
R ²	0,431	0,383	0,294

Notes: * significant at 10% ** Significant at 5%; *** Significant at 1%.

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Table 1 report the estimation results of the simultaneous equation model using the 3SLS method for the period 1990-2011:

The first column presents the estimation results of the poverty equation. In this equation, all the explanatory variables have the expected sign and are statistically significant, expect population growth which has the right sign but is not significant. The results demonstrate that per capita income growth has a significant povertyreducing effect where a 1% increase in per capita incomes reduces poverty by 0.25%. In particular, the equation shows that the coefficient of agricultural growth, which most interests us in this estimate, it appears to be significantly positive showing the positive effects that can play agriculture on the processes of poverty reduction. A 1% change in agricultural productivity raises household final consumption expenditure by about 0.09%, confirming the important role of agriculture sector in SSA in reducing poverty rate. This result is consistent with many empirical studies on SSA (Tiffen, 2003; Diao et al. 2005, 2007 and Arega and Ousmane, 2009) that shows a significant role played by agriculture in SSA accelerating economic growth and, by consequently, reducing the poverty rate. Concerning the effect of inequality on the incidence of poverty, results shows that the coefficient of inequality measured by the Theil index is significantly negative, confirming its robustness. As an increase of this index by 1 percentage point leads to a decrease in household consumption expenditure by 0.21 point, which aggravates the poverty rate. This result seems to reinforce those obtained by various studies on the relationship between increasing inequality and poverty (Arega and Ousmane, 2009). This suggests that the most effective method to reduce the poverty rate is certainly reducing inequalities by means of a better redistribution of wealth.

As regards the impact of technological innovation on poverty rate, the equation shows that the variable has positive and statistically significant direct impacts on poverty. An increase of technological innovation by 1% leads to decrease in poverty rate by 0.31 %. Finally, infrastructural quality, as captured by telephone line per 1000 people, play significant role in poverty alleviation. This result is consistent with the study of Parker et al., (2008) which showed that people must access to infrastructure services, such as mains water, safe sanitation, mains power supplies, maintained roads and telephones. This allows us to say that it is necessary to invest considerably in infrastructure because, as account given the low population density in SSA countries, the infrastructure that connects farmers to markets is costly and investment in road infrastructures, institutions and the public sector are essential.

The second column in Table 1 presents the estimation results of the economic growth equation. We notice that all the explanatory variables have the expected sign and are statistically significant. Moreover, the results show that technological innovation, as captured by the agricultural machinery, tractors per 100 sq. km of

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arable land, play a significant role in determining economic growth and thereby in reducing poverty. The coefficient on agricultural growth is positive and statistically significant as expected. A 1% change in agricultural productivity raises GDP per capita by about 0.9%, confirming the heavy reliance of SSA economies on agricultural productivity. In this context, the World Development Report 2008 (World Bank, 2007) notes that GDP growth originating in agriculture is about four times more effective in raising incomes of extremely poor people than GDP growth originating outside the sector. The results show also that a higher level of human capital is associated with a faster economic growth rate.

The third column in Table 1 shows the estimation result of the Agricultural Growth equation. As expected, the results indicate that AP is affected positively and significantly by economic growth. A 1 % change in per capita income growth raises agriculture productivity by about 0.02. As regards, agricultural machinery has a significant impact on agriculture productivity. Employee's agriculture plays a significant role in agriculture performance. Consistent with the fact that labor is a critical constraint in Sub-Saharan African agriculture, it has the largest productivity elasticity of 0.73, implying that a 1% change in employee's agriculture raises agriculture productivity by about 0.73%. The results show that agricultural irrigated land has a positive and significant impact on agriculture growth and consequently on poverty eradication. Probably due to the dominance of rain fed, rather than irrigated, agriculture in SSA, irrigation has turned out to have insignificant effect on agricultural productivity.

Determining the Total Effects of Agriculture and Technological Innovation on Poverty Alleviation

Table 2 and 3 summarizes the results regarding the impact of AP and technological innovation on poverty: As reported in the Table 2, the results show the direct impact of AP on economic growth where an increase in AP by one point leads to a decrease in poverty by 0.098 point. Concerning the indirect impact of AP on poverty, it can be computed by the product of the coefficient of economic growth in the poverty equation and the coefficient of AP in the growth equation ($\delta_2^*\gamma_1 = 0.015$). Thus, the combined effects suggest that the total impact of AP on poverty is equal to the sum of the direct and indirect effect which is equal to 0.325 which indicates that an increase in AP by one point leads to decrease in the rate of poverty by 0.325 point.

Table 3 shows that, the elasticity presented, represent the percentage change in poverty associated with a 1% change in technological innovation. The elasticity of

poverty with respect to technological innovation is 0.18, implying that a 1% increase in technological innovation decreases poverty by 0.18%. Moreover, an improved of technological innovation by one point leads a decrease in poverty rate by 0.184 point divided between a direct effect of 0.116 point and a indirect effect via stimulating agriculture performance and economic growth by 0.068 point.

	the direct impact of agriculture on poverty	the indirect impact of agriculture on poverty	The total impact on poverty
The coefficient	δ_1	$(\delta_2 * \gamma_1)$	$\delta_1 + (\delta_2 * \gamma_1)$
The estimated coefficient	0.098	0.252*0.904=0.227	0.325

Table 2.	. The impact	of agriculture or	n poverty
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Table 3. The impact of technological innovation on poverty

	the direct impact of technological innovation	the indirect impact of technological innovation on poverty		The total impact on	
	on poverty	via economic growth	via agriculture	poverty	
The coefficient	δ_3	$\delta_1 * \gamma_2$	$\delta_3 + \delta_1 * \alpha_2$	$\delta_3 + \delta_1 * \gamma_2 +$	
The		0.002	0.066		
estimated coefficient	0.116	0.068		0.184	

Overall, the results presented above make it very clear that AP has a significant impact on poverty beyond its direct and indirect impact; an impact that works via improving the economic growth. The results also show that the indirect impact is of considerable volume and is comparable to the direct or traditional impact. More importantly, the results indicate that the indirect impact of AP on poverty is far greater than, or more than the double that of the direct impact of AP on poverty. By the same, the results presented shows that technological innovations play an important role in determining the relationships between agricultural performance and poverty and that through its direct and indirect impact via economic growth and agriculture productivity.
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Finally, we notice that the empirical results presented above are based on a sample of 32 countries, which is quite small number. The reason for using this small sample is the lack of data for some variables of some countries. As a consequence, the results might be sensitive to the sample choice. Moreover, the results might be sensitive to model specification and the choice of the controlling variables. Thus, in following research, the robustness of the results can be tested: by using a larger country sample, and second, by controlling for more poverty determinants.

Conclusion

This paper set out to tackle two very specific research questions concerning (1) the importance and magnitude of agricultural productivity on poverty alleviation (2) the relationship between technological innovation, agriculture productivity and poverty. Using an aggregate annual panel data, on a sample composed of 32 Sub-Saharan Africa countries, from 1990-2011 to estimate a simultaneous equation model that capture the interrelationship between agriculture productivity, technological innovation and poverty, our findings indicate that agricultural growth contributes significantly to poverty alleviation in SSA. The results suggest that agricultural growth would lead to a 32% decrease in poverty: this effect is divided on a direct impact of 0.98% and an indirect impact via economic growth equal to 0.22%.

As regards the effects of technological innovation on poverty, results demonstrate that 1 % change in technological innovation leads to a decrease in poverty rate by 0.18 %. This implies that SSA countries accelerating growth agriculture is fundamental to reduce poverty and allow countries to achieve economic transformation. This passes through the ability of agriculture to generate employment, to stimulate the economy through linkages, and to reduce the real cost of food accounts. It also requires that the Government must intervene to invest in new technology in order to allow farmers to benefit from the fruits of technological innovation and that, by improving agricultural productivity and consequently reducing the poverty rate.

Hence, the positive prospects for SSA agriculture will not take shape without a concerted and determined political action, especially if agricultural growth must be sustainable and result in a significant reduction in poverty. Many problems must be overcome, including the growing technological gap, the slow development of markets for inputs and outputs and services associated markets, the slow progress of regional integration, lack of governance and institutional weakness in some countries, conflict, HIV-AIDS and other diseases. Linking small farmers to markets and help them adapt to new conditions and become more productive, increase rural employment opportunities, reduce risk and vulnerability, especially climate extremes

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and fluctuations prices and improve access to resources and skills will be among the measures to be taken to ensure that agricultural and rural growth goes hand in hand with poverty reduction.

References

ABARE (2001). The impact of agricultural trade liberalization on developing countries. *ABARE Research Report No. 01.6.* Canberra: Australian Bureau of Agricultural and Resource Economics.

Alen, A. D., & Coulibaly, O. (2009). The impact of agricultural research on productivity and poverty in sub-Saharan Africa. *Food Policy*, 34, 198–209.

Allen, R. C. (1994). Agriculture during the industrial revolution, 1700–1850. In R. Floud, & D. N. McCloskey (Eds.), The economic history of Britain since 1700 (2nd. ed.). Cambridge UK: Cambridge University Press.

Andersson Djurfeldt Agnes (2013). African Re-Agrarianization Accumulation or Pro-Poor. Agricultural Growth? *World Development*, 41: 217–231.

Barro, R.J. (1991). Economic Growth in a Cross-Section of Countries. *Quarterly Journal of Economics*, 105(2), 407-443.

Binswanger, H. P. & Townsend, R. E. (2000). The growth performance of agriculture in SubSaharan Africa. *American Journal of Agricultural Economics*, 82(5), 1075–1086.

Bourguignon F. & Morrisson, C. (1998). Inequality and development: the role of dualism. *Journal of Development Economics*, 57(2), 33–57.

Bravo-Ortega, C., & Lederman, D. (2005). Agriculture and National Welfare around the World: Causality and international heterogeneity since 1960. World Bank Policy Research *Working Paper* No. 3499. Washington DC: The World Bank.

Byerlee, D. Diao, X. & Jackson, C. (2005). Agriculture, rural development, and propoor growth: Country experiences in the post-reform era. Synthesis paper for the operationalizing pro-poor growth in the 1990s project. *Washington DC: The World Bank*.

Datt, G. & M. Ravallion (1998). Farm Productivity and Rural Poverty in India. *Journal of Development Studies* 34 (4), 62-85.

De Janvry, A. & Sadoulet, E. (2000). Rural poverty in Latin America: determinants and exit paths. *Food Policy*, 25, 389–409.

Agricultural Productivity and Poverty Alleviation: What Role for Technological Innovation

DFID (2005). Growth and poverty reduction: The role of agriculture. *DFID Policy Paper*. London: UK Department for International Development.

Diao, X. Hazell, P. Resnick, D. & Thurlow, J. (2005). The Role of Agriculture in Pro-Poor Growth in Sub-Saharan Africa. *Processed. IFPRI*: Washington, D.C.

Diao, X. Hazell, P. Resnick, D. & Thurlow, J. (2007). The Role of Agriculture in Development: Implications for Sub- Saharan Africa. *Research Report 153*, International Food Policy Research Institute, Washington, D.C.

Gallup, J. Radelet. S. & Warner A. (1997). Economic growth and the income of the poor. Harvard Institute for International Development. *CAER II Discussion Paper* No. 36, HIID, Cambridge, MA.

Haggblade, S. & Hazell, P. (1991). Rural-Urban Growth Linkages in India. *Indian Journal of Agricultural Economics* 46(4), 515-29.

Haggblade, S. Hammer, J., & Hazell, P. (1991). Modeling agricultural growth multipliers. *American Journal of Agriculture Economics* 73 (2), 361–374.

Hanmer, L. & Nashchold, F. (2000). Attaining the international development targets: will growth be enough? *DFID working paper*. DFID, London.

Hazell, P. and Haddad, L. (2001). Agricultural research and poverty reduction, food, agriculture and the environment. *Discussion paper 34, IFPRI/Technical Advisory Committee of the CGIAR*, Washington, DC.

Irz, X. Lin, L. Thirtle, C. & Wiggins, S. (2001). Agricultural productivity growth and poverty alleviation. *Development Policy Review*, 19(4), 449–466.

Johnston, B.F. & Mellor, J. W. (1961). The role of agriculture in economic development. *American Economic Review* 51, 556-593.

Kanwar, S. (2000). Does the dog wag the tail or the tail the dog? Cointegration of Indian agriculture with non agriculture. *Journal of Policy Modelling*, 22(5), 533–556.

Levine, R. & Renelt, D. (1992). A Sensitivity Analysis of Cross-country Growth Regressions. *American Economic Review*, 82, 942-963.

Lipton, M. & Longhurst, R. (1989). New Seeds and Poor People. *Johns Hopkins University Press*, Baltimore, MD.

Lopez, R. & Valdez, A. (2000). Fighting Rural Poverty in Latin America: New Evidence of the Effects of Education, Demographics and Access to Land, *Economic Development and Cultural Change* 49, 197-211

Masters, W.A. Bedingar T. & Oehmke, J.F. (1998). The impact of agricultural research in Africa: aggregate and case study evidence. *Agric. Econ.* 19, 81–86.

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Matsuyama, K. (1992). Agricultural Productivity, Comparative Advantage, and Economic Growth. *Journal of Economic Theory* 58, 317-334.

Odhiambo, N.M. (2009). Finance-growth-poverty nexus in South Africa: A dynamic causality linkage. *The Journal of Socio-Economics*, 320–325.

Odhiambo, N.M. (2010). Is Financial Development a Spur to Poverty Reduction? Kenya's Experience. *Journal of Economic Studies*, 37(4).

Parker D. Colin K. & Catarina F.T. (2008). Infrastructure regulation and poverty reduction in developing countries: A review of the evidence and a research agenda. *The Quarterly Review of Economics and Finance* 48, 177–188.

Rangarajan, C. (1982). Agricultural growth and industrial performance in India. *Washington, DC: IFPRI.*

Ravallion, M. & Datt, G. (1999) When Is Growth Pro-Poor? Evidence from the Diverse Experiences of India's States. "World Bank Policy Research" *Working Paper* No. 2263.

Stern, N. (1996). Growth theories, old and new, and the role of agriculture in economic development. *Economic and Development Paper* 136. Food and Agriculture Organisation of the United Nations: Rome, Italy.

Thirtle, C. Irz, X. Wiggins, S. Lin, Lin & McKenzie- Hill, V. (2001). Relationship between changes in agricultural productivity and the incidence of poverty in developing countries. *Paper prepared for DFID*. London: Imperial College.

Tiffen, Mary (2003). Transition in Sub-Saharan Africa: Agriculture, Urbanization and Income Growth. *World Development*, 31(8), 1343–1366.

Timmer, P. (2003). Agriculture and pro-poor growth. Pro-Poor Economic Growth Research Studies. United States Agency for International Development.

Warr, P. G. (2001). Poverty reduction and sectoral growth: evidence from Southeast Asia. Paper presented at the *WIDER Development Conference on Growth and Poverty*, Helsinki.

Wichmann, T. (1997). Agricultural technological progress and the development of the dual economy. Heidelberg: Physica-Verlag.

World Bank. (2007). World Development Report 2008: Agriculture for Development. *World Bank*, Washington, DC, USA.

ⁱ Agricultural productivity is defined as agricultural value added per hectare of agricultural land where: (i) value added in agriculture measures the output of the agricultural sector less

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the value of intermediate inputs; (ii) agriculture comprises value added from forestry, hunting, and fishing as well as cultivation of crops and livestock; and (iii) agricultural land is measured as the sum of arable land, permanent cropland, and permanent pasture (World Bank, 2007).

ⁱⁱ This indicator is calculated by the University of Texas. It is available on the http://utip.gov.utexas.edu site.

^{III} The list of countries are : Benin, Botswana, Burkina Faso, Burundi, Central African Republic, Cote d'Ivoire, Djibouti, Ethiopie, Gambie, Ghana, Kenya, Lesotho, Madagascar, Malawi, Mali, Mauritania, Mozambique, Niger, Nigeria, Rwanda, Senegal, South Africa, Swaziland, Tanzanie, Togo, Uganda, Zambie and Zimbabwe.

Ahmet Baytok

Faculty of Tourism Afyon Kocatepe University, Turkey ahmetbaytok@aku.edu.tr

Hasan Hüseyin Soybali

Faculty of Tourism Afyon Kocatepe University, Turkey hsoybali@aku.edu.tr

Ozcan Zorlu

Faculty of Tourism, Afyon Kocatepe University, Turkey ozcanzorlu@aku.edu.tr

Abstract: This study aims to analyze knowledge management (KM) processes in thermal hotels in Afyonkarahisar province in Turkey. Within the scope of this research, the KM processes applied in thermal hotels have been determined through conducting questionnaire surveys. Descriptive analyses of hotel managers' views on KM processes were presented. Also, discriminant analysis was used to determine differences between participants' views based on their demographic characteristics. As a result of the study, it was found that thermal hotels highly apply KM processes. Knowledge creation is the most applied KM process among others. In addition, it was found that informal communication should be encouraged in order to improve knowledge sharing.

Keywords:

Knowledge Management, Thermal Hotels, Afyonkarahisar.

JEL Classification: D83, M15, L83.

Article History

Submitted: 06 Jun 2013 Resubmitted: 25 September 2013 Accepted: 22 October 2013

Introduction

Knowledge is the main determinant of transforming business techniques and technologies into a competitive tool. Since competitors cannot benchmark or copy possessed unique knowledge, this fact makes the knowledge significant (Tiwana, 2003: 72). Thus, knowledge and knowledge management (KM) is one of the most important asset in business, and one of the most researched subjects in academic literature.

KM is seen as an essential and important tool for companies in sustaining their existence and gaining competitive advantage (Martensson, 2000: 204; Schönström, 2005: 17; Sandhawalia and Dalcher, 2010: 313, Stapleton, 2003: 97) has been firstly coined by Dr. Karl Wiig in academic literature. It is described by American Productivity and Quality Center (APQC) as a systematic approach (integrating people, processes, technology, and content) to enable information and knowledge to be created and flow to the right people at the right time so that their work and decisions can add value to the mission of the organization (Leawitt, 2003). KM has also engendered many new concepts and categories in using knowledge to create value (Dalkir, 2005: xiii).

Nowadays, all companies gather information by interacting with their business environment; transform this information to the knowledge and run using this knowledge consonantly with their know-how, values, beliefs and internal rules (Davenport and Prusak, 2000: 52). This process, which is also named as KM processes naturally exists in organization (Shi, 2010: 12), expresses a structured coordination to effective management of knowledge (Gold, Malhotra, Segars, 2001:187) and is mainly related to how knowledge is created and used in organization (Nonaka and Takeuchi, 1995: 59). When the KM literature is reviewed, it is seen that KM processes have been categorized differently by many researchers (Alavi and Leidner, 1999; Liebowitz, 2001; Bouncken, 2002; Bryant, 2003; Holsapple, Jones and Singh, 2007; Fink and Ploder, 2011). As these categorizations are considered, KM processes can be classified as knowledge acquisition, knowledge use. These processes will be explained in detail in next section.

Contrary to its popularity in business management literature, it is seen that the number of studies on KM processes in hospitality industry is very limited. Thus, KM is a relatively new concept for hospitality management literature and much more

detailed studies need to be conducted in order to understand the KM and KM processes in hospitality industry.

In this context, this study aims to draw attention to KM in hotels by evaluating KM processes in thermal hotels. Within the scope of this research, the KM processes applied in thermal hotels have been determined through conducting questionnaires. Percentage and frequency tables are used to show participants' demographic characteristics and see participants' views about KM processes. Finally, discriminant analyses refer differences between participants' views based on their demographic characteristics.

KM Processes in Hospitality Enterprises

Tourism as a knowledge intensive industry consists of complex and dynamic network structures (Baggio, 2006). Intangible, inseparable, perishable and heterogeneous characteristics of tourism product and its compound nature make knowledge important for tourism industry. Acquiring knowledge instantly and using it in production, consumption and operational activities are rarely important in other sectors as much as tourism industry (Poon, 1993). Knowledge plays vital role in tourism industry and industry cannot fulfil its functions completely without knowledge (O'Connor, 1999). Increasing and diversifying needs and expectations of tourism demand, increased competition and efficient use of resources make knowledge important in tourism, and knowledge sharing becomes core of tourism business (Pollack, 1995).

Hospitality enterprises are mainly service producers. For the achievement of final products, hospitality companies collaborate with a variety of service industries like travel agencies, tour operators, transporters, entertainment, shopping. Thus hospitality industry have knowledge-based or knowledge intensive service processes (Kahle, 2002). Moreover, the industry is knowledge-intensive as a result of the nature of service product, where the service delivery occurs as a result of interaction between customers and employees, and where it is required that employees are acknowledged about customers' needs in order to achieve customer satisfaction (Kahle, 2002; Kotler, Bowen and Makens, 1999; cited by Hallin and Marnburg, 2007:3). In addition, knowledge management is important for hotel chains which have to deliver an overall quality standard in geographically distributed hotels (Medlik, 1990: 153; cited by Bouncken, 2002: 27).

Possible application areas of knowledge management systems in hospitality and tourism are business planning (process of planning capacities, quality standards and

prices of additional services), service operations (hotel facilities planning, event scheduling) quality improvement (e.g. managing customer complaints) and reaction on emerging cases (Gronau, 2002). And, possible knowledge sources can be contents of files on a server, intranet pages, directory of business relevant persons, e-mail traffic that is guided to specialists for certain situations (e.g. for technical maintenance (Gronau, 2002). Bounken (2002: 30) classifies this knowledge stated in sources as task- specific, task-related, transactive memory and guest-related knowledge for hotels. Hoteliers should always seek, use and value knowledge like professionals in other business sectors. Thus knowledge existing in hospitality enterprises should be managed in the scope of strategic manner with certain processes. Cooper (2006) classifies knowledge management processes in hotels as knowledge stocks and mapping, knowledge capturing, knowledge codifying, knowledge flow and knowledge transfer. And, Bouncken (2002) classifies those processes as knowledge identification, acquisition and development of knowledge, knowledge accumulation, retrieval and distribution, and knowledge controlling. On the other hand we classify KM processes, in accordance with general KM literature, as acquisition, creation, sharing, storage and documentation, and utilization of knowledge as mentioned earlier.

Knowledge Acquisition: Companies firstly try to identify knowledge that exists outside and inside of organization but cannot be detected/found, in the context of knowledge acquisition (Shi, 2010: 12; Isa, Abdullah, Hamzah, ArsHad, 2008: 105, Bratianu, 2011: 6, Al-Busaidi, 2011: 402, Sun, 2010: 508). In this stage, the required knowledge generally has information characteristics. Companies capture required information in two ways, from inside and outside of the organization (Wiig, 1999: 2). First, they capture knowledge existing in the organization by knowledge workers. Second, they outsource or purchase required information existing outside of the organization (Bergeron, 2003: 95). Companies capture required information by means of their customers, suppliers, competitors, relation with strategic alliances (Fink and Ploder, 2011: 52), books, software, academic publications, research reports and video conferences (Bratianu, 2011: 6). Besides companies utilize structured interviews, talk loud analysis, protocols, questionnaires, observations and simulations to capture the required information (Dalkir, 2005: 81). Bouncken (2002) states that in hospitality enterprises knowledge acquisition concentrates on external knowledge retrieval from customers, external experts, tourist offices and often enhances the assimilation of previously unnoticed information. The author also emphasizes that knowledge develops (captures) via service research, service practice and distribution and cooperation of knowledge among employees in hotels.

Knowledge Creation: Knowledge creation is getting new and useful knowledge from the information that is captured from the sources existing inside and outside of the organization. Nonaka and Takeuchi (1995: 59-73) describe knowledge creation as a process of socialization, externalization, combination and internalization. According to researchers, implicit/tacit knowledge creation is a spiral process starting at the individual level and moving up through expanding communities of interaction that crosses sectional, departmental, divisional and organizational boundaries (Nonaka and Takeuchi, 1995: 72). On the other hand, knowledge which is created in the organization should be shared before and after knowledge creation processes in order to use it efficiently at an individual and organizational level.

Knowledge Sharing: Knowledge sharing can be described as transferring or disseminating of knowledge from a worker, group or organization to another (Lee, 2001: 324). Also, it can be described as interaction between explicit and implicit knowledge (Lee, Gillespie, Mann and Wearing: 2010: 474). In a broader perspective, knowledge sharing is composed of the activities that involve gathering, absorbing, and/or transferring product and/or service information between organizations and customers, alliance partners, and/or employees (Chen and Barnes, 2006). To provide effective knowledge sharing in organizations; motivation and encouragement systems and an open organizational structure should be designed to support knowledge flow, technological support should be provided such as intranet and internet (Cook and Cook, 2004: 314; Riege, 2005: 29). Physical areas that enable informal communication such as talking rooms, water cooler/teapot and cafeteria areas should be designed and finally some activities that enable face to face communication should be organized such as meetings (Davenport and Prusak, 2000: 89-95). Contrary to this fact, high personnel turnover and rotating staff limit the knowledge sharing in hotels. Thus, hotels' management should concentrate on transforming tacit knowledge to explicit knowledge.

Knowledge Storage and Documentation: This process basically aims to make organizational knowledge accessible for everyone. Knowledge storage and documentation process identifies which knowledge will be stored in the organization (Hattendorf, 2002: 65), and includes codification and storing of knowledge captured from organization members and external sources (Alavi and Leidner, 1999).

Knowledge Utilization: This process basically consists of carrying out activities to ensure that the knowledge is applied productively for its benefits (Fink and Ploder, 2011: 52). Organizational knowledge utilization can be categorized as knowledge use at micro and macro level. Management of knowledge in micro level is prior and essential in organizational knowledge utilization to increase organizational

performance and profitability. On the other hand, it is intended to use explicit knowledge disclosed by the organization to its environment as a part of marketing strategy or as a survival tool in a competitive market (Reychav and Weisberg, 2006: 225). In knowledge utilization processes, companies gain competitive advantage and create value by combining knowledge with products and services, applying it within new projects (Kasvi, Vartiainen and Hailikari, 2003: 572), and using this knowledge in decision making, policy making, problem solving and developing new products to meet human/enterprise needs (Salo, 2009; Al-Busaidi, 2011: 403).

Knowledge Management in Thermal Hotels and Afyonkarahisar as a Thermal Tourism Destination

Utilization of thermal water resources for health purposes is one of the oldest travel motivations dating back to ancient Egypt, Greek and Roman periods (Özer, 1991). Today, the effort for the utilization of natural thermal resources with support of the modern medicine, has caused the emergence of thermal tourism which is defined as a type of tourism which consists of various types of utilization methods such as "thermo-mineral water bath, drinking, inhalation, mud bath, cure (treatment) applications which combine supporting treatment methods as the climatic cure, physical therapy, rehabilitation, exercise, psychotherapy and diet as well as the use of thermal waters for entertainment and recreational purposes (Kültür ve Turizm Bakanlığı, 2013). The realization of thermal tourism activities in an area is only possible with the existence of thermal facilities which includes spas where "mud, under-ground, sea and climate related natural healing elements are used as treatment instruments, drinking cure centres and climatic cure centres and recreational and treatment units in these locations (Resmi Gazete, 2005).

The necessity to meet the treatment and recreational demands together in thermal tourism, distinguishes management and organizational structure of thermal tourism enterprises from others (Özbek, 1991). Service delivery in the same place for healthy and patient guests in thermal enterprises, having cure units in their organizational structure, application of different programs (physical therapy, rehabilitation, diet etc.) to patients within the scope of cure applications and need for certain period of time (21 days in average) for the completion of curing practises (Arasıl, 1991) and necessity to enrich recreational areas require these enterprises to operate in a complex structure and system (Özbek, 1991). This structure makes the knowledge important in thermal hotel enterprises to be able to manage the activities efficiently and effectively.

Thermal hotels are the enterprises which produce hospitality services same as other accommodation enterprises. Therefore, the acquisition, creation, sharing, storage, and utilization of knowledge in all areas falling within the scope hospitality enterprises' operations also apply to thermal hotel enterprises. For example, collection of knowledge from health institutions in target markets on frequently observed common diseases and health problems which can be treated by thermal treatment in those areas or obtaining knowledge related to competitors and their operations refers to the acquisition of knowledge management processes. The use of that knowledge for the planning and execution of their activities and development of new treatment methods and services is knowledge creation. The delivery of knowledge about meals arranged by the specialist doctor in the cure centre to the kitchen for preparation and food and beverage departments for its service can be given an example to knowledge flow and share. The storage of knowledge related to treatment practices to use it on the patients who indicate the similar health problems in future in databases/warehouses, and keeping information on weekly, monthly and annual occupancy rates in the front office is knowledge storage / documentation process. The use of acquired, created, shared and stored knowledge in a thermal hotel for the determination of future management strategies can be expressed as an example of the knowledge use.

Afyonkarahisar, an Aegean Province, is located in Phrygian Region which is planned to be developed as thermal tourism destination together with Ankara, Eskisehir, Kütahya and Uşak provinces in the Turkey's tourism strategy for 2023 (Kültür ve Turizm Bakanlığı, 2013a). The basic attraction of the province, in terms of tourism is the natural thermal water resources located in its four regions; Omer-Gecek (Centre), Hüdai (Sandıklı), Heybeli (Bolvadin) and Gazlıgöl (İhsaniye). All of these four thermal tourism regions of Afyonkarahisar have been announced as Thermal Tourism Region by the Ministry of Culture and Tourism. According to the 2012 statistics of Ministry of Culture and Tourism, 14 Ministry registered operation licensed hospitality enterprises operate in Afyonkarahisar. The bed capacity is 4,925 in these enterprises. There are also 15 Ministry registered investment licensed hospitality enterprises with a 9,100 bed capacity. The hospitality supra-structure of Afyonkarahisar is largely formed by the hospitality enterprises established for thermal tourism purposes. The most quality enterprises are especially located in Ömer-Gecek in city centre and Sandıklı- Hüdai (The most quality enterprises are especially located in Ömer-Gecek in city centre and Sandıklı- Hüdai regions). There are 5 five-star hospitality enterprises with a 3,204 bed capacity in Ömer-Gecek thermal tourism region. 1,140 beds are available in Sandkl-Hüdai in two fivestar hospitality enterprises. The share of these two regions in total Ministry registered bed capacity reaches to as high as 88%. While mostly a condominium supra-

structure is observed in Gazlıgöl (While mostly a condominium supra-structure is observed in Gazlıgöl thermal tourism region), Heybeli thermal tourism region has small thermal enterprises which are operated by Bolvadin District Municipality. According to 2012 statistics of Ministry of Culture and Tourism, a total of 264,841 visitors of whom 7,720 are foreign and 257,121 are Turkish citizens were accommodated in Afyonkarahisar (Afyonkarahisar İl Kültür ve Turizm Müdürlüğü, 2013).

Methodology

In this descriptive study, it is primarily aimed to determine whether thermal hotels use KM and if it is to what degree they use KM processes in the scope of strategic management. Other basic objective of the study is to assign, on the condition that KM processes in thermal hotels differentiate according to some demographic variables of middle and senior hotel managers. It is also assumed that results of the survey will contribute to the related literature and hotel managers or owners who want to practice KM in his/her hotel in the context of strategic management to gain competitive advantage especially in the long term.

A quantitative research method was preferred to collect required data in this study. Thus, questionnaire method which is mostly preferred of quantitative research method was used. The questionnaire basically consists of two main sections. Some close-ended questions such as gender, age, department, and years of working experience in the hotel were asked to hotel managers in the first section. A 5-point Likert Scale consisting of 32 items about KM processes took part in the second section of the questionnaire. With these items, it is aimed to gather required data related to acquisition, creation, sharing, storage and documentation, and utilization of knowledge. KM process statements were adapted from Shi's (2010) PhD dissertation on KM.

The questionnaire was conducted starting from 10 February 2013 to 25 March 2013 in seven 5 star hotels located in Afyonkarahisar. A total of 67 middle and senior managers were asked to complete the questionnaire form vis-à-vis. PASW 18 statistical package programme was used to analyze the gathered data.

Data Analyses

For the purpose of the study, reliability analyses were performed in order to detect the validity of questionnaire data for the descriptive and discriminant analyses at beginning of the data analyze phase. As shown in Table 1, Cronbach Alpha defining

reliability coefficient was found 0.955 for the 32 items of the questionnaire. Furthermore, Cronbach Alpha coefficient was found over 0.70 in each sub-factors of the KM scale. Questionnaire where the Cronbach Alpha coefficient is over 0.70 is often accepted as reliable in social sciences (Lehman et al. 2005). Thus, the data collected via questionnaire in this study was accepted reliable for the descriptive and discriminant analyses.

	Cronbach Alpha	n
KM scale (32 items)	0.955	32
KM scale sub-factors		
a) Knowledge acquisition	0.853	6
b) Knowledge creation	0.834	5
c) Knowledge sharing	0.702	7
d) Knowledge storage and documentation	0.907	7
e) Knowledge utilization	0.871	7

Table 1. Reliability Test Results

Just after the reliability analyze some demographic variables of middle and senior managers of the thermal hotels were analysed by descriptive analysis. As shown in Table 2, a great majority of the participants are men (65.7%), and 39 participants are married (58.2%) while 41.8% of the population is single. More than half of 67 participants with 56.7% namely 38 managers are between the ages of 25 and 34. Other major group involves the participants whose ages are between 35 and 44. According to results in Table 2, 34.3% of the participants have bachelor degree, while 21 participants (31.3%) graduated from high school, and 15 participants (22.4) have associate's degree. So, it can be said that a great majority of the middle and senior managers of thermal hotels in Afyonkarahisar are well educated with the percent of 57.7. Thus, we assumed that most of the middle and senior thermal hotel managers have information about KM and they know how to use knowledge in accordance with a strategic perspective especially to gain competitive advantage in long term.

Variable	Sub-dimension	Frequency	Percentage	Cumulative Percentage
		(n)	(%)	(%)
Gender	Male	44	65.7	65.7
	Female	23	34.3	100
	24 and younger ages	7	10.4	10.4
	25 to 34 ages	38	56.7	67.1
Age group	35 to 44 ages	19	28.4	95.5
	45 to 54 ages	3	4.5	100
Marital	Married	39	58.2	58.2
status	Single	28	41.8	100
	Primary education	6	9.0	9.0
	High school graduated	21	31.3	40.3
Education	Associate's degree	15	22.4	62.7
	Bachelor degree	23	34.3	97.0
	Master/PhD degree	2	3.0	100
	Food and Beverage	17	25.4	25.4
	Front Office	12	17.9	43.3
	Housekeeping	7	10.4	53.7
	Spa-Wellness	7	10.4	64.1
	Accounting	6	9.0	73.1
Department	Sales Marketing	5	7.5	80.6
Department	Senior Management	3	4.5	85.1
	Public Relations	3	4.5	89.6
	Animation	3	4.5	94.1
	Technique Services	2	3.0	97.1
	Human Resources	1	1.5	98.6
	Missing Value	1	1.5	100
Voor of	Less than 1 year	14	20,9	20.9
rear of	1-5 years	35	52,2	73.1
working	6-10 years	12	17,9	91.0
in hotel	11 years and above	5	7,5	98.5
in noter	Missing Value	1	1,5	100
	Total (N)	67	100 %	

Table 2. Results of Some Demographic Variables of the Participants
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The descriptive analyze results indicate that 25.4% of the participants are working at Food and Beverage departments of the thermal hotels. Also, another major group consists of Front Office department chiefs/managers with the percentage of 17.9. Departments of the participants ranked after Front Office ranked as Housekeeping (10.4%), Spa-Wellness (10.4%), Accounting (9.0%), Sales and Marketing (7.5%), Senior Management (4.5%), Public Relations (4.5%), Animation (4.5%), and others (4.5%) including Technique Service and Human Resources. Thus, results of this study are largely depend on F&B, Front Office, Housekeeping and Spa-Wellness department chiefs/managers' answers. Lastly, results show that a great majority of the participants have been working in the hotel from 1 year to 5 years (52.2%, n: 35). The percentage of middle and senior managers working for the less than one year is 20.9 with 14 participants.

Degree of KM Use in Hotels

In this section, the degree of KM processes used in thermal hotels was evaluated based on participants' views with descriptive analysis. Means and standard deviations were calculated to determine participants' response rates to the items. Participants' views about KM processes are presented in Table 3. Due to the results of all items above 3.00 (No idea) mean level, it can be assumed that thermal hotels realize all required transactions in the scope of KM processes.

Sub- dimensions	Items	x	5.5
atimensions S	Our basel frequently seeks new knowledge outside the organization		
isiti	Our notel frequently seeks new knowledge outside the organization.		0.930
unb	Our stail regularly gets new knowledge from external sources.		0.946
Ac	Our hotel regularly captures knowledge of our competitors	4 04	0.976
qge	Our hotel captures knowledge obtained from public research institutions including	1.01	0.970
owle	universities and etc.		1.064
Kn	Our hotel regularly captures knowledge obtained from industrial associations, competitors, clients and suppliers.		0.821
z	Our hotel frequently comes up with new ideas about our products and/or services.	4.26	0.966
eatio	Our hotel frequently comes up with new ideas about our working methods and processes.	4.12	0.976
C C	If a traditional method is not effective anymore, our hotel develops a new method.	3.94	1.127
dge	Our hotel develops new ideas and innovations in collaboration between different	2.02	
wle	departments.	3.82	1.066
Kno	Our hotel develops new ideas and innovations in collaboration with external	4.01	0.913
	partners such as suppliers and clients.	2.04	1.1/0
	In our hotel information and knowledge are actively shared within the departments.	3.94	1.149
ing	Different departments actively share information and knowledge among each other.	3.88	1.122
bar	Employees and managers exchange a lot of information and knowledge.	3.88	1.038
° SI	Our hotel shares a lot of knowledge and information with strategic partners.	3.82	0.893
Our hotel shares knowledge with competitors (through industrial associations, directly, etc.). In our hotel, previously made solutions and documents are easily available.		3.61	0.936
		4.03	1.023
In our hotel, much knowledge is distributed in informal ways (in the corridors,			1.416
	break rooms, etc.).		
p	Our hotel does a lot of work to refine, organize and store the knowledge collected.	4.05	0.999
ge an on	The information sources, manuals and databases at our hotel's disposal are up-to- date.	3.99	0.929
. Stora ventati	Hotel staff is systematically informed of changes in procedures, instructions and regulations.	4.09	1.011
nn	Our hotel has much information in the form of documents, databases.	3.94	0.919
wle	Our hotel possesses many core business processes and services.	3.98	0.969
<i>Luo</i>	We are used to documenting in writing the things that are learnt in practice.	3.98	1.088
4	We make sure that the most important experiences gained are documented.	3.96	0.991
	Our hotel uses existing know-how in a creative manner for new applications.	3.92	0.966
ш	Our hotel is able to use the employees' knowledge in various business activities.	3.72	1.042
atic	Our hotel responds to changes in our customers' needs.	4.32	0.880
tiliz	Our hotel achieved major process improvements as a result of analyzing and	3.96	1.134
 applying knowledge from external parties. Different departments of our hotel frequently apply knowledge that was shared by 			-
vledy	other departments.	3.75	1.146
nou	Many new ideas that our hotel develops are brought into reality.	3.70	1.115
R	Our hotel's databases and documented knowledge are frequently used by	3.70	1.243

Table 3. Descriptive Analysis Results of Knowledge Management Processes

x: Mean, s.s: Standard Deviation.

Results shown in Table 3 indicate that, analyzing of customers' needs systematically (x: 4.21 and s.s: 0.946) is the most applied knowledge acquisition process. Capturing 162

knowledge from industrial associations, competitors, clients and suppliers (x: 4.19 and s.s: 0.821) is the second highest knowledge acquisition process among other acquisition activities. This activity followed by seeking new knowledge outside the organization (x: 4.15 and s.s: 0.949). On the other hand, capturing knowledge obtained from public research institutions including universities is the least realized process when it is compared to the others.

Participants' views about knowledge creation process refers that respondent thermal hotels effectively creates new knowledge in different ways. Coming up with new ideas about hotel products and services (x: 4.26 and s.s: 0.966) is the most applied method in knowledge creation process among these ways. Coming up with new ideas about our working methods and processes (x: 4.12 and s.s: 0.976) is the second most applied transaction. Thus, we can assume that thermal hotels operating in Afyonkarahisar are considered developing new ideas important. Also, as it is seen in knowledge creation sub-dimension, thermal hotels develop new methods when a classic method is not effective anymore (x: 3.94 and s.s: 1.127), and also, thermal hotels develop new ideas in collaboration between departments (x: 3.82 and s.s: 1.066). But these two methods are relatively less applied among others in knowledge creation process.

Participants' views about knowledge sharing process indicate that thermal hotels share the knowledge effectively, except for distributing knowledge in informal ways. With respect to the results in knowledge sharing sub-dimension, availability of previous solutions and documents (x: 4.03 and s.s: 1.023) is the most important part of the knowledge sharing in thermal hotels. Sharing knowledge effectively within departments is the second most important way of knowledge sharing experiences (x: 3.94 and s.s: 1.149) in respondent hotels. As mentioned before, the least applied way to share knowledge in thermal hotels among the others is the distribution of necessary knowledge in informal ways (x: 2.42 and s.s: 1.416). This fact reflects two close-related and important situations in thermal hotels. First, thermal hotels generally use formal ways in communication and sharing knowledge. Second, by preferring formal ways especially in communication, thermal hotels play an inhibiting role in sharing knowledge.

Also, from the results about knowledge storage and documentation process, it can be seen that storage and documentation of knowledge is an important phase for KM in thermal hotels. Thus, all items regarding to storage and documentation have a mean level upper than 3.90. Informing hotel staff about changes in procedures, instructions and regulations (x: 4.09 and s.s: 1.011) is the most applied method in knowledge storage and documentation. This method is followed by refining,

organizing and storing of collected data (x: 4.05 and s.s: 0.999), and updating information sources, manuals and databases (x: 3.99 and s.s: 0.929). Also, regarding the results, thermal hotels give an importance to possess core business processes and services (x: 3.98 and s.s: 1.088), documenting in writing (x: 3.98 and s.s: 0.969) and documentation of important experiences (x: 3.96 and s.s: 0.991).

At the final stage of descriptive analyses about KM process, knowledge utilization degree in thermal hotels is evaluated using participants' views. The results of this sub-dimension reflect that thermal hotels use knowledge in order to rapidly changing customers' needs (x: 4.32 and s.s: 0.880). When we consider the achievement of a hotel establishment basically depending on satisfying customer, using knowledge for better services becomes more and more important. Thus, we can clearly state that thermal hotels in Afyonkarahisar are aware of the importance of KM. Regarding results, achieving major process developments by gathering and analyzing knowledge from external parties (x: 3.96 and s.s: 1.134) is the second highest way in knowledge utilization. Other important using areas of knowledge in thermal hotels are developing new applications via know-how (x: 3.92 and s.s: 0.966), application of shared knowledge in different departments (x: 3.75 and s.s: 1.146), using employees' knowledge in business activities (x: 3.72 and s.s: 1.042).

If we summarize the descriptive results about KM, thermal hotels operating in Afyonkarahisar give importance to KM, and as a result KM processes are highly applied in these hotels. When we consider sub-processes in KM processes, knowledge creation (x: 4.03) is the most applied sub-process among the others. Knowledge acquisition (x: 4.02) and knowledge storage and documentation (x: 4.00), knowledge use (x: 3.85) and knowledge sharing (x: 3.65) sub-processes follow knowledge creation sub-process. Thus, it can be assumed that in thermal hotels, KM is an essential part of providing service quality and gaining competitive advantage in the scope of strategic management.

Discriminant Analyses of KM Processes

At this last phase of data analyses, to determine whether KM processes vary regarding to different thermal hotels and some demographic variables of participants. In this context, firstly a Kruskal-Wallis H test performed in order to determine whether KM process differs according to respondent hotels.

Kruskal-Wallis H test results presented in Table 4 indicate that KM processes differ in the context of thermal hotels (p<0.05 and p: 0.01). So, it can be figured out that each thermal hotel operating in Afyonkarahisar is applying its own KM project.

Then, it can be assumed that each hotel owns some core KM steps which vary their KM project from other thermal hotels in Afyonkarahisar. And, thus we can assume that KM projects are considered as a core competence by thermal hotels.

	Chi-Square	df	Asymp. Sig.
KM process in general	19.875	4	0.001*
Knowledge acquisition	13.762	4	0.008*
Knowledge creation	14.050	4	0.007*
Knowledge sharing	10.205	4	0.037*
Knowledge storage and documentation	19.423	4	0.001*
Knowledge utilization	24.436	4	0.000*

Table 4. Kruskal-Wallis H Test Results Regarding to Thermal Hotels

*: Correlation is important at 0.05 significant levels.

After determining KM processes which differ regarding to thermal hotels, Manny-Whitney U test and Kruskal-Wallis H tests were performed in order to identify whether KM processes differ regarding to participants' demographic variables. In this context, firstly Manny Whitney U tests were performed to see whether KM processes differs regarding to gender of the participants. Second, Kruskal-Wallis H tests were performed in order to determine whether KM processes differ in terms of different age group, education level, working department and year of working experience of participants. In all tests Asymp. Sig. which refers significant level is higher than 0.05 for general KM processes and its sub-dimensions. So, KM processes in thermal hotels do not significantly differ regarding to gender, age group, education level, working department and year of working experience of who took part in the study.

According to results of discriminant analysis presented in earlier paragraph, it is assumed that KM processes are not related with demographic variables of middle and senior managers in thermal hotels. When this fact has been taken into consideration within the scope of strategic management, it is seen that middle and senior managers apply similar KM processes in thermal hotels. Thus, thermal hotels apply KM processes in the scope of strategic management as their core competence, but these projects do not depend on managers' demographic variables.

Conclusion

In today's intensive competitive environment, thermal hotels improve their services with new strategic management tools in a creative manner. As one of these management tools, KM is gaining more importance among tourism industry and

among thermal hotels as an important contributor to tourism industry. On the other hand, since the KM applications are relatively new in thermal hotels, there are still many problems in application KM processes. Furthermore, some hoteliers still do not have enough knowledge about KM processes. Thus, with this study evaluating KM processes in thermal hotels, it is aimed to provide a basic resource to the hoteliers and the related literature.

According to the results of this study, thermal hotels operating in Afyonkarahisar give importance to KM. As a result, KM processes are highly applied in respondent hotels. Among them, knowledge creation is the most applied KM process and knowledge acquisition, knowledge storage and documentation, knowledge utilization and knowledge sharing follows knowledge creation process. On the other hand, KM projects differ according to each thermal hotel. So, it can be concluded that each thermal hotel has its own specific methods or steps in KM processes. Also, results show that KM projects are independent from demographic characteristics of hotel managers. Thermal hotels should consider some suggestions given below in order to gain more benefit from KM processes.

First of all, all respondent thermal hotels should be in collaboration with academic institutions in the scope of gathering external knowledge and making this knowledge usable in KM. For example, thermal hospitality enterprises can obtain knowledge on new treatment methods from universities and use them in their curing units. In addition, thermal hospitality enterprises can develop joint training programs with universities to improve ability and qualifications of their employees. Second, thermal hotels should develop much more processes that support knowledge sharing among departments. As well as formal knowledge flow, development of technology infrastructure which enables the enterprises to provide an electronic platform (intranet, e-mail etc.) to exchange information between employees can be encouraged. For example, the knowledge on diet programs prepared by the specialists in cure centers can be transferred to kitchen, service and front-office departments electronically. Electronic knowledge databases which provide access to all essential information for the departments can be formed. Third, knowledge sharing processes should be reconsidered in the hotels. In this context infrastructures required by new technologies can be formed to accelerate the flow of knowledge among departments. Fourth, effective using of knowledge databases should be encouraged among employees. The level of authorization of all staff can be increase to obtain all the necessary knowledge from the automation systems used in thermal hotel enterprises. For example, a cure centre employee can be authorized to get knowledge related to other departments from the joint databases. Fifth, informal communication should be supported to promote transforming of tacit knowledge to

explicit knowledge. In this context, especially during breaks, the practices can be promoted to share the knowledge related to employees' works. For instance, instead of unnecessary conversations like gossiping during the break, employees can be encouraged to be with knowledge facilitator in managerial position and share the knowledge. During the working hours, various social activities which enable employees to come together and exchange knowledge can be planned. In the process of socialization, asking newly recruited employees to work with the experienced employees in a master-apprentice relationship for a certain period of time speeds up the process of socialization as well as transfer of tacit knowledge into explicit knowledge can be possible through with working with experienced employees and new employees together. Sixth, thermal hotels should benefit more from experiences and expertise of employees. Empowerment practices and practices to allow employees to use their initiative and take more responsibility can be realized. And at last, in KM process, applying of developed ideas can improve knowledge sharing and motivation and satisfaction of employees.

Application of this research in a limited area such as seven thermal hotels in Afyonkarahisar is one of limitations of this study. Also, lack of quantitative researches about KM processes in tourism industry makes it difficult to compare the results of this study with other studies. Finally, to understand KM concept in hospitality industry, more detailed studies should be conducted and results of those studies should be compared with this study. For instance, similar studies should be conducted in different regions and in different hospitality enterprises. Relation between knowledge management and innovation and other related subjects must be analyzed. Information technologies and its impact on knowledge management in hotels should be investigated with future studies.

References

Afyonkarahisar İl Kültür ve Turizm Müdürlüğü (2013). Afyonkarahisar ili 2012 yılı turizm istatistikleri.

Alavi, M. & Leidner, D. E. (1999). Knowledge management systems: Issues, Challenges, and Benefits. *Communications of AIS*, 1, 2-37.

Al-Busaidi, K. A. (2011). Leveraging organizational knowledge management through corporate portal. In A. Fred, J. L. G. Dietz & L. Kecheng (Eds.) Knowledge discovery, knowledge engineering and knowledge management, (pp. 399-411). Germany, Berlin: Springer-Verlag Berlin Heidelberg.

Arasıl, T. (1991). Termal suların sağlık alanında kullanımı, *Anatolia Dergisi*, 2 (17-18), 45-48.

Baggio, R. (2006). Complex systems, information technologies and tourism: A network point of view. *Information Technologies and Tourism*, 13 (8), 15-29.

Bergeron, B. (2003). *Essentials of knowledge management*. USA, New Jersey: John Wiley & Sons, Inc.

Bouncken, R. B. (2002). Knowledge management for quality improvements in hotels. *Journal of Quality Assurance in Hospitality & Tourism,* 3 (3/4), 25-59.

Bratianu, C. (2011). Universities as knowledge-intensive learning organizations. In A. Eardly & L. Uden (Eds.) *Innovative knowledge management: Concepts for organizational creativity and collaborative design*, (pp. 1-17). USA, Hershey: IGI Global.

Bryant, S. E. (2003). The role of transformational and transactional leadership in creating, sharing and exploiting organizational knowledge. *Journal of Leadership & Organizational Studies*, 9 (4), 32-44.

Chen, L. Y. & Barnes, F. B. (2006). Relationship between leadership behaviours and knowledge sharing in professional service firms engaged in strategic alliances. *Journal of Applied Management and Entrepreneurship*, April, 1-19.

Cook, J. S. & Cook, L. (2004). Promoting organizational knowledge sharing. In B. Montano (Ed.) *Innovations of knowledge management*, (pp. 300-321). USA, Hershey: IRM Press.

Cooper, C. (2006). Knowledge management and tourism. *Annals of Tourism Research*, 33 (1), 47-64.

Dalkir, K. (2005). *Knowledge management in theory and practice*. USA, Burlington: Elsevier Butterworth–Heinemann.

Davenport, T. H. & Prusak L. (2000). *Working knowledge: How organizations manage they know*. USA, Boston: Harvard Business School Press.

Fink, K. and Ploder, C. (2011). Knowledge management toolkit for SMEs. In M. E. Jennex (Ed.) *Global aspects and cultural perspectives on knowledge management: Emerging Dimensions*, (pp. 49-60) USA, Hershey: IGI Global.

Gold, A. H., Malhotra, A. & Segars, A. H. (2001). Knowledge management: An organizational capabilities perspective. *Journal of Management Information Systems*, 18 (1), 185-214.

Gronau, N. (2002). The knowledge cafe– A knowledge management system and its application to hospitality and tourism. *Journal of Quality Assurance in Hospitality & Tourism*, 3 (3/4), 75-88.

Hallin, C. A. & Marnbug, E. (2007). Knowledge management in the hospitality industry: A review of empirical research. *Tourism Management*, 29 (2), 1-16.

Hattendorf, M. (2002). Knowledge supply chain matrix approach for balanced knowledge management: An airline industry Finn case. In R.B. Bouncken & S. Pyo (Eds.) *Knowledge Management in Hospitality and Tourism*, (pp. 61-73). USA: The Haworth Press.

Holsapple, C., Jones, K. & Singh, M. (2007). Linking knowledge to competitiveness: Knowledge chain evidence and extensions. In M. E. Jennex (Ed.) *Knowledge management in modern organizations*, (pp. 51-76). USA, Hershey: IGI Global.

Isa, R. M., Abdullah, N. L., Hamzah, N. & Arshad, R. (2008). The typology of intellectual capital and knowledge management in Malaysian hotel industry. *The Journal of Human Resource and Adult Learning*, 4 (2), 103-114.

Kahle, E. (2002). Implications of "New Economy" traits for the tourism industry. Journal of Quality Assurance in Hospitality & Tourism, 3 (3/4), 5-23.

Kasvi, J. J. J., Vartiainen, M. & Hailikari, M. (2003). Managing knowledge and knowledge competences in projects and project organisations. *International Journal of Project Management*, 21, 571-582.

Kotler, P., Bowen, J., & Makens, J. (1999). Marketing for hospitality and tourism. (2nd ed.). Upper Saddle River, NJ: Prentice-Hall International. Cited by Hallin, C. A. & Marnbug, E. (2007). Knowledge management in the hospitality industry: A review of empirical research. *Tourism Management*, 29 (2), 1-16.

Kültür ve Turizm Bakanlığı. (2013). Genel tanımlar. Retrieved October 09, 2013, from http://www.ktbyatirimisletmeler.gov.tr /TR,11475/genel-tanimlar.html

Kültür ve Turizm Bakanlığı. (2013a). Termal turizm master planı. Retrieved October 15, 2013, from http://www.ktbyatirim isletmeler.gov.tr/Eklenti/818,ttmppdf.pdf?0

Leavitt, P. (2003). *Using knowledge management to drive innovation*. USA, Texas: American Productivity & Quality Center Publications.

Lee, J. (2001). The impact of knowledge sharing, organizational capability and partnership quality on is outsourcing success. *Information & Management*, 38, 323-335.

Lee, P., Gillespie, N., Mann, L. & Wearing, A. (2010). Leadership and trust: Their effect on knowledge sharing and team performance. *Management Learning*, 41 (4), 473-491.

Lehman, A., Q'Rourke, N., Hatcher, L., & Stepanski E. J. (2005). *JMP* for basic univariate and multivariate statistics a step-by-step guide*. North Carolina: SAS Institute Inc.,

Liebowitz, J. (2001). *Knowledge management: Learning from knowledge engineering*. USA, Florida: CRC Press LLC.

Martensson, M. (2000). A critical review of knowledge management as a management tool. *Journal of Knowledge Management*, 4 (3), 204-216.

Medlik, S. (1990). *The business of hotels*. (2nd ed.). Oxford: Heinemann. Cited by Bouncken, R. B. (2002). Knowledge management for quality improvements in hotels. *Journal of Quality Assurance in Hospitality & Tourism.* 3 (3/4), 25-59.

Nonaka, I. and Takeuchi, H. (1995). *The knowledge-creating company: How Japanese companies create the dynamics of innovation.* USA, New York: Oxford University Press.

O'Connor, P. (1999). *Electronic information distribution in tourism and hospitality*, France, Cercy-Pontoise, Instut de Management Hotelier (IHMI) Grouppe-ESSEC.

Özbek, T. (1991). Dünya'da ve Türkiye'de termal turizmin önemi, *Anatolia Dergisi*, 2 (17-18), 15-29.

Özer, N. (1991). Kaplıca hekimliğinin çağdaş gelişimi, *Anatolia Dergisi*, 2 (17-18), 35-39.

Plunkett, P. T. (2001). *Managing knowledge @ work: An overview of knowledge management.* Knowledge Management Working Group of the Federal Chief Information Officers Council. Retrieved from: http://www.providersedge.com/docs/km_articles/KM_at_Work.pdf, August 13, 2012.

Pollack, A. (1995). The impact of information technology on destination marketing. *Travel & Tourism Analyst*, 3, 66-83.

Poon, A. (1993). *Tourism, technology and competitive strategies.* U.K, Oxon: CAB International.

Resmi Gazete. (2005). Turizm tesislerinin belgelendirilmesine ve niteliklerine ilişkin yönetmelik. Retrieved October 09, 2013, from

http://www.mevzuat.gov.tr/Metin.Aspx?MevzuatKod=3.5.20058948&MevzuatIliski =0&sourceXmlSearch=turizm_tesislerinin_belgelendirilmesi

Reychav, I. & Weisberg, J. (2006). Human capital in knowledge creation, management and utilization. In D. G. Schwartz (Ed.) *Encyclopedia of Knowledge Management*, (221-229). USA, Hershey: Idea Group Reference.

Riege, A. (2005). Three-dozen knowledge-sharing barriers managers must consider. *Journal of Knowledge Management*, 9 (3), 18-35.

Salo, N. (2009). The implications of knowledge management sustainability for leadership in an organization: An exploration and analysis of leadership theories and knowledge management practices in Bangwita Flores, Indonesia. *Journal of NTT Studies*, 1 (2), 95-135.

Sandhawalia, B. S. & Dalcher, D. (2010). Developing knowledge management capabilities: A structured approach. *Journal of Knowledge Management*, 15 (2), 313-328.

Schönström, M. (2005). Creating knowledge networks: Lessons from practice. *Journal of Knowledge Management*, 9 (6), 17-29.

Shi, X. (2010). *Knowledge management in China and in Finland: A cross-country comparison*. Lappeenranta University, Master's Thesis. Lappeenranta: Russia.

Stapleton, J. J. (2003). *Executive's guide to knowledge management*. USA, New Jersey: John Wiley & Sons, Inc.

Sun, P. (2010). Five critical knowledge management organizational themes. *Journal of Knowledge Management*, 14 (4), 507-523.

Tiwana, A. (2003). *Bilginin yönetimi.* (E. Özsayar, Trans.) – Dışbank Kitapları 5, İstanbul: Rota Yayın Yapım Tanıtım Tic. Ltd. Şti. (Original work published 1999).

Wiig, K. M. (1999). Successful knowledge management: Does it exist? Manuscript for the *European American Business Journal*. 1-6.

LIST OF REVIEWERS FOR THIS ISSUE

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